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Level Up Your Teaching: A Qualitative Analysis of Teachers' Perceptions on  
Gamification as a Tool for Learning

by

Bryant Wesley Lazenby

12-18-2025

A Dissertation submitted to the Education Faculty of Lindenwood University

In partial fulfillment of the requirements for the

Degree of

Doctor of Education

School of Education

Level Up Your Teaching: A Qualitative Analysis of Teachers' Perceptions on  
Gamification as a Tool for Learning

by

Bryant Wesley Lazenby

This dissertation has been approved in partial fulfillment of the requirements for the

degree of

Doctor of Education

at Lindenwood University by the School of Education

## Declaration of Originality

I do hereby declare and attest to the fact that this is an original study based solely upon my own scholarly work here at Lindenwood University and that I have not submitted it for any other college or university course or degree here or elsewhere.

Full Legal Name: Bryant Wesley Lazenby

## Acknowledgements

The process of writing this dissertation was both more stressful and rewarding than I ever could have imagined. For someone whose lifelong goal was to become an educator, transitioning to the role of academic researcher was both thrilling and intimidating. I learned more about myself as an individual throughout this process than I ever expected.

I could not have asked for a more supportive group of people to walk beside me throughout this journey. To my parents, Wes and Shery Lazenby, thank you for setting me up for success from the very beginning. My work ethic, passion, and love for learning came from you. To my grandparents, James and Mary Beth DeMotte, and Charlie and Bonnie Lazenby, thank you for the example you set in strength and perseverance. To my sister, Blaire Riley, thank you for always being my champion and confidant.

To my partner, Jeff Hermenet, and friends, too many to name, thank you for always believing in me, especially when I didn't believe in myself. Your patience, understanding, and constant encouragement helped me cross the finish line. I could not have done this without your support and the way you celebrated every triumph, big and small.

Lastly, I would like to thank the instructors who shaped my journey at Lindenwood, especially my committee: Dr. Jackie Ramey, for the constant reassurance that I was on the right track, and for challenging me to think creatively, and Drs. Robyne Elder and Tanya Vest for helping me keep my research focused. I am proud to add "Lion" to my list of alma mater mascots, alongside the Viking, Roadrunner, and Mule, each marking a special chapter in my lifelong pursuit of learning.

## Abstract

This qualitative study investigated K-12 teachers' views about gamification as an instructional tool to increase student motivation, self-efficacy, and learning mastery. Kelly's Curriculum Theory and Bandura's Self-Efficacy Theory were used to investigate how gamified learning environments affect teacher practice and self-efficacy. Seventeen teachers participated in a researcher-designed *Qualtrics* survey that included both Likert-style and open-ended items. The researcher used descriptive statistics and thematic coding of responses, based on participants' self-identified levels of gamification experience. The research produced three main findings, which showed that (1) Gamification motivates students through collaborative work, challenging tasks, and progress tracking systems, (2) Students build self-efficacy through real-time feedback, experience scaffolded difficulty, and have meaningful decision-making opportunities, and (3) Teachers practice focuses on creating gamified activities aligned to learning objectives while using assessment methods that emphasize differentiation and mastery-based learning. Participants noted that effective implementation requires intentional planning, time and professional development. The research indicates that gamification can effectively boost student engagement and teacher instructional efficacy when used purposefully. The findings require teachers to create gamified activities that pair autonomy with feedback, utilizing collaborative planning to support teachers and implementing curriculum-based approaches. Recommendations for future research include expanding the sample size, conducting longitudinal studies, and further investigating equity and accessibility in gamified learning environments.

*Keywords:* Gamification, K-12 education, teacher perceptions, student motivation, self-efficacy, curriculum alignment, breakout games.

## **Dedication**

I dedicate this to my colleagues, whose creativity, curiosity, and commitment to student growth inspire me every day. Your collaboration, care, and drive to make learning meaningful remind me that great design begins with empathy and ends with impact.

Next, to my students: past, present, and future, whose curiosity and resilience give purpose to every lesson designed and every idea explored. And finally, I dedicate this to myself, for continuing to learn, to imagine, and to believe in the power of education to change lives, including my own.

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## **Chapter One: Introduction**

### **Introduction**

Contemporary education faced an ongoing challenge to develop powerful instructional approaches, which boosted student engagement. Teachers continue their pursuit of new teaching methods to address modern learning requirements and technological innovations, while adapting to changing educational theories. Education has increasingly embraced gamification as a strategy through the implementation of gaming mechanics in non-gaming environments during recent years.

Education has increasingly adopted gamification as the approach used gaming motivational elements to boost student participation, along with their learning results and motivational levels (Deterding et al., 2011; Lampropoulos & Sidiropoulos, 2024). Teachers adopted game design and psychological principles to establish gamified learning spaces which modified traditional teaching practices through integration of challenges, rewards, competition, and narrative-based quests. Breakout games represented the movement as they provide players with immersive time-limited experiences to solve puzzles while working together to achieve learning objectives (Nicholson, 2015a).

The main appeal of gamification was based on the fact that it was able to activate the core motivational aspects and behavior patterns in people (Ratinho & Martins, 2023). Games remained as influential tools for student engagement because they created feelings of personal control, self-directed learning, and expertise development. For example, Aguilar et al. (2015, as cited in Ratinho & Martins, 2023) noted, “In each year, the benefits of the gamified course were evident in every class, student’s autonomy and

perceived competence increased, and the participation in class task was positive” (p. 11).

Teachers who knew how to activate the intrinsic motivation aspects of gamification in their teaching practice could create engaging learning experiences that would capture students’ minds and foster their desire to learn.

According to Hernandez-Fernandez et al. (2020), the impactful implementation of gamification in education needed both playfulness and self-management. Educational gamification became more enjoyable through playfulness because it combined interactive elements such as points and badges while promoting competition, collaboration, and student success. The success of gamification depended on students having self-management skills because they needed to learn goal-setting, progress monitoring, and time management. Students became active learners through gamification as they chose their learning path and received feedback on their performance from their teachers.

According to dela Cruz et al. (2021) and Garcia et al. (2021), students became active learners through interactive elements such as points, leaderboards, badges, levels, avatars, feedback systems, three-dimensional environments, competition, communication, and time management.

Educational gamification has gained momentum due to digital technologies and online learning platforms that enabled educators to develop diverse gamified learning experiences via various tools and resources across different subjects and grade levels. The educational possibilities of gamification extended to interactive quizzes, digital achievement badges, virtual simulations, and augmented reality experiences. Javed (2020) illustrated through his research the process of implementing gamification in anatomy teaching for medical students. The study implemented numerous digital

resources, including learning management systems, educational technology, gamification tools, and interactive resources to create educational activities with gaming characteristics that students used to interact with the learning materials. The learning management system delivered the gamified content while students access progress tracking and received feedback that increased their active participation and motivation levels and improved their memory retention of anatomical knowledge.

The developers of gamification technology established programs to support students who needed extra help. Students who needed extra assistance were able to utilize digital tools to access lesson content and educational resources outside the traditional learning environment. The system delivered instant feedback which helped students identify their learning weaknesses while reinforcing correct answers to support skill and concept mastery (Mee Mee et al., 2020). Riveria-Lozada et al. (2021) supported this discovery by showing that gamification led to positive impacts on student skill development in economics. Students gained improved practical economic theory application through gamification while developing their ability to assess various economic problem solutions. Students made economic decisions through gameplay that replicated real-world economic situations.

Current data show that gamification popularity continues to rise, but this positive trend contrasts with declining K-12 scores in reading and mathematics (NAEP, 2023, as cited in Carrillo, 2023). An urgent need exists to perform empirical studies about gamification implementation and its impacts on student learning within K-12 education. Available anecdotal evidence and case studies praise gamified learning environments but the number of rigorous empirical studies exploring teachers' perceptions and experiences

are still limited. A thorough study must explore ways to enhance student learning outcomes while focusing on the complex nature of K-12 public education environments. Research into gamification benefits also demonstrates the requirement for evidence-based educational methods when addressing modern educational challenges.

This study aimed to address the existing literature gap through an investigation of teachers' perceptions of gamification as a tool to boost student motivation, self-efficacy, and learning in K-12 public education settings. The research investigated teachers' views about gamified learning environments to generate findings that would guide educational practices, curriculum building, and professional development activities for creating engaging learning environments for all students.

### **Background of the Study**

Gamification emerged as a potential solution for developing modern teaching methods to address students' individual learning needs (Dichev & Dicheva, 2017). Breakout games became a popular modality because they provided an immersive and interactive experience that helped students develop a deeper understanding and engagement with course materials. Research indicated that breakout games within gamified learning environments boosts student motivation together with self-efficacy and lead to better learning results (Deterding et al., 2011; Nicholson, 2015a).

The increasing educational interest in gamification requires additional research to determine its impact to teaching and learning outcomes (Dichev & Dicheva, 2017). While gamification has been studied in both K-12 and higher education, K-12 gamification research emphasizes creating impactful learning environments, while higher education studies showcase empirical engagement in gamified behavioral changes (Dehghanzadeh

et al., 2023; Kim & Castelli, 2021). Systematic reviews across studies also reveal a lack of diversity in course subjects and research methods in K-12 gamification, highlighting a need for further exploration as compared to higher education (Kalogiannakis et al., 2021). Currently, research on gamified learning environments usually does not assess important factors such as teacher viewpoints (Reuter et al., 2020).

### **Statement of the Problem**

Existing research gaps in business and education literature demonstrated the necessity to study how gamification is implemented and its effects, specifically in breakout games within K-12 public education. Continued research into student motivation factors, self-efficacy, and learning outcomes from gamified activities can guide teaching practices and develop more adaptable teaching methods for 21<sup>st</sup>-century students. Research into teacher perceptions and gamified learning experiences delivers information about best practices and potential professional development needs.

In order to implement positive change, education stakeholders must evaluate student outcome results and evolving teacher perception when implementing gamification strategies into their teaching practice. As with any educational change, teachers are required to be active participants. Teachers' beliefs, attitudes, and insights about gamified learning environments could determine how they implement gamified learning and its overall effectiveness. Research must also examine both the effectiveness of gamified teaching practices and teachers' educational experiences. The understanding of teachers' perspectives and their implementation strategies for gamification could help determine its impact and lead to better implementation methods. Future research should

include teacher perspectives as an essential element when studying gamified learning environments.

### **Purpose of the Study**

The purpose of this qualitative research is to investigate the perceptions of teachers regarding how using breakout games to learn skills and concepts impacts student motivation, self-determination, self-efficacy, and self-regulation. The researcher aimed to highlight teachers' perceptions of a gamified instructional delivery mode and the possible impact it has on increasing student achievement and mastery of learning outcomes. The researcher conducted a qualitative examination to investigate teachers' attitudes and perceptions regarding traditional and gamified learning. The researcher wishes to highlight differences in the opinions of effectiveness of traditional and gamified learning by evaluating the teachers' perceptions of student motivation, self-efficacy, self-determination, and student achievement in both learning environments. The researcher also wishes to gain teachers' insight regarding how gamification might change learning in the future.

If during the initial survey of participants, a teacher is identified that is currently using breakout games in their classroom, the researcher will request to look at scores to compare secondary data points of the breakout game activity and traditional activity to see if there is any correlation between the student's activity score and assignment type.

Specifically, the study aimed to:

1. Discover how teachers view game-based learning environments.
2. Discover what teachers believed gamification would do to future educational practices.

3. Examine the effectiveness of breakout games on student motivation, self-efficacy, self-determination, and learning mastery.

### **Rationale of the Study**

With an increased need for differentiation and more rigorous, authentic forms of education, gamification has emerged as a probable solution for designing and implementing instruction (Dichev & Dicheva, 2017). Breakout games, specifically, take the concept of a breakout room where individuals race the clock to solve puzzles to escape a physical room into the classroom. Students participate in a content story-based “adventure” where they are required to use their content knowledge to solve a number of puzzles to receive clues used to win the game.

Breakout games are interactive activities that challenge players to solve puzzles and complete tasks to progress through a series of levels or rooms. These games have become increasingly popular in recent years to promote critical thinking, problem-solving, and teamwork skills (Nicholson, S. 2018). The research incorporates two theoretical ideas: A.V. Kelly’s Curriculum Theory (2004) and Albert Bandura’s Theory of Self-Efficacy (1977, 2012).

A.V. Kelly’s Curriculum Theory (2004) is based on the idea that curriculum is not just a set of subjects or knowledge educators transmit to students, but rather a social process that helps students develop knowledge, skills, and values that are relevant to their lives. Breakout games align with Kelly’s Curriculum Theory (2004) in several ways. First, breakout games are designed to promote critical thinking and problem-solving skills. Players must use their analytical skills to solve puzzles and complete tasks to progress through the game. This process of problem-solving helps players develop

critical thinking skills. Second, breakout games promote teamwork and collaboration (Menon & Romero, 2019). For example, players must work together to solve puzzles and complete tasks. This process of collaboration helps players develop their communication and social skills. Third, breakout games are designed to be relevant to the lives of players. The games often incorporate real-world scenarios and challenges that players might encounter in their daily lives. This relevance helps players see the value of the skills they are developing (Veldkamp et. al, 2020).

Albert Bandura's Theory of Self-Efficacy (1977, 2012) is based on the idea that a person's belief in their ability to succeed in a particular task or situation is a key factor in determining their level of success. According to Bandura, self-efficacy is developed through four sources of influence: mastery experiences, vicarious experiences, social persuasion, and emotion and physiological states. The study included an analysis of teachers' various perceptions of Breakout games that align with Bandura's Theory of Self-Efficacy in several ways. First, teachers provide opportunities for mastery experiences. Players (students) must complete tasks and solve puzzles to progress through the game. As players experience success in these tasks, their belief in their ability to succeed increases, which in turn enhances self-efficacy (Menon & Romero, 2019). Second, breakout games provide opportunities for vicarious experiences. For example, players can observe the success of their teammates and learn from them. While breakout games have gained popularity in educational settings as a form of gamified learning, there are still some areas that are often overlooked or excluded in current research. These may include:

- **Pedagogical strategies:** While classroom breakout games are often viewed as engaging and motivating for higher education students there is little research that systematically examines the pedagogical strategies that can enhance the learning outcomes of breakout games in K-12 public education (Dugnol-Menedez, 2021). For example, little research thoroughly investigates the alignment between the learning objectives, instructional content, and the game mechanics in breakout games. The specific ways in which breakout games can facilitate cognitive, social, and emotional learning processes is also underexplored.
- **Learning outcomes:** While game-based learning is designed to enhance knowledge and skills acquisition (Paulsen, 2017), research has not provided rigorous measures and evaluated the learning outcomes of these games. For example, the impact of breakout games on students' knowledge acquisition, critical thinking skills, problem-solving abilities, and other learning outcomes may not be adequately assessed. Further research is needed to provide empirical evidence of the effectiveness of breakout games as a pedagogical tool for achieving desired learning outcomes.
- **Individual differences:** classroom students have diverse backgrounds, abilities, and preferences, and research on classroom breakout games may not always consider these individual differences. For example, the impact of breakout games on students with different learning styles, levels of prior knowledge, or cultural backgrounds may not be thoroughly examined. Considering individual differences can help identify potential differential effects of breakout games on different

student populations and inform instructional strategies for diverse learners (Reuter et al., 2020).

- **Teacher perspectives:** While classroom breakout games often involve teachers as facilitators, research may not always include the perspectives of teachers in the implementation and evaluation of these games. “Teachers’ perceptions of the usefulness of digital games might be a reason for the limited application of digital games in education” (Huizenga et. al., 2017 p. 105). Understanding teachers’ perceptions, experiences, and challenges in using breakout games in their classrooms can provide valuable insights into the practical implementation of these games and inform professional development opportunities for teachers.
- **Authentic assessment:** Classroom breakout games often involve formative assessments, where students receive immediate feedback on their performance, but research may not fully explore the potential of authentic assessments in breakout games. Authentic assessments, such as performance-based assessments or assessments that mirror real-world challenges, can provide more meaningful and relevant feedback to students about their learning progress. Further research can investigate the alignment between the assessment strategies used in breakout games and the desired learning outcomes (Roig et al., 2023).
- **Inclusivity and accessibility:** Classroom breakout games may not always be designed with inclusivity and accessibility in mind. For example, the physical or virtual environments of breakout games may not be fully accessible to students with disabilities, or the game mechanics may not be inclusive for students with diverse needs. It is important to consider the inclusivity and accessibility aspects

of breakout games to ensure that all students can fully participate and benefit from the learning process (Ramos Aguiar et al., 2023).

- Long-term effects: Most classroom breakout game research tends to focus on short-term effects, such as immediate engagement or motivation, without examining the long-term effects on students learning and retention of knowledge. Understanding the sustainability of the effects of breakout games on students' learning outcomes over time can provide insights into the potential long-term benefits of incorporating these games into the classroom. According to Zichermann and Cunningham (2011), one of the roles of educators is to help create circumstances that would allow for intrinsic motivation to be born. Alsawaier (2018) concluded that if no permanent positive change is created in the learners, the long-term effects of gamification cannot be fully evaluated. This can only be done using a longitudinal study that captures the long-term effects of the relationship between gamification and learners' motivation and task engagement.

Further research that addresses these gaps can provide a more comprehensive understanding of the effectiveness and limitations of classroom breakout games as a pedagogical tool and inform instructional practices for maximizing their potential for student learning.

### **Study Site and Population**

For the purposes of this study the participating school district was given a pseudonym, "Heart of the Prairie School District." Nestled in the middle of the Show-Me State, Heart of the Prairie School District served as a valued educational institution within the community. With over 700 employees, the district served a cooperative pre-K-12<sup>th</sup>

grade enrollment of approximately 4,886 students, making it one of the largest employers in the community. During the study, the district focused on meeting identified “Classroom of the Future” outcomes and indicators.

The high school provided educational programs for students in grades 9 through 12; the junior high served students in grades 6 through 8; the middle school housed grade 5; the five elementary schools served students K through 4; and the county early childhood center met the needs of pre-kindergarten students. Additionally, an alternative high school provided 10 through 12th-grade students with another way to earn a high school diploma.

The school district offered specialized and extracurricular programs to meet the diverse student population's needs, including special education, Reaching Exceptional Academic and Creative Heights (REACH) gifted education, English Language Learners, honors courses, advanced placement courses (AP), fine and performing arts, career and technical education, Center for Advanced Professional Studies (CAPS), Missouri State High School Athletics Association (MSHSAA) sanctioned athletics and activities, and non-MSHSAA clubs. The district embraced a strong partnership between the local community and the school district. The community supported district programs and initiatives through business relationships, transparency, and successful bond measures. Community events, service organizations, fine arts, and many other public and private events occur in district facilities daily.

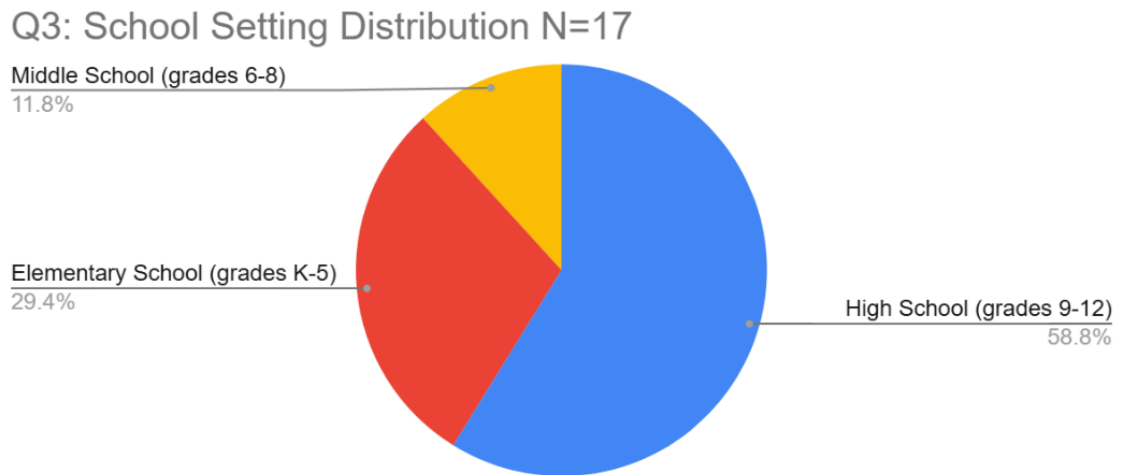
### **Participant Sampling**

The study included a sampling of elementary, middle, and high school educators. *Figure 1* shows the breakdown of the participants (N=17) by grade level. The largest

subset of the sample were high school teachers (N=10), followed by elementary teachers (N=5), with middle school teachers (N=2) representing the smallest level of participation.

**Figure 1.**

*School Setting Distribution*



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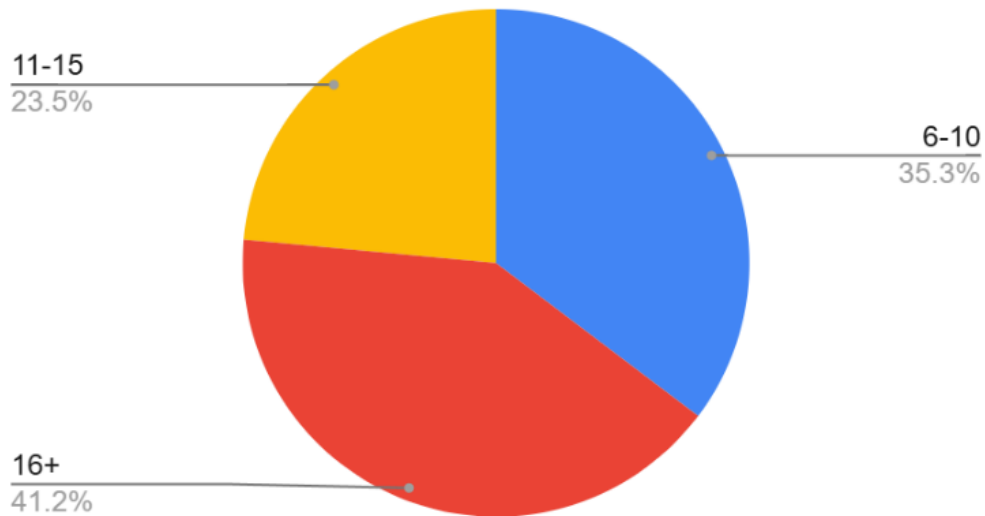
*Note:* High school teachers made up the largest percentage of the study sample.

*Figure 2* shows the breakdown of teaching experience reported by sample participants. Teachers reporting 16 or more years of teaching experience (N=7) made up the largest subset, followed by teachers reporting 6-10 years of experience (N=6), with teachers reporting 11-15 years of experience (N=4) making up the smallest subset. No teachers reporting having less than 6 years of experience.

**Figure 2.**

*Years in Education Distribution*

## Q4: Years in Education Distribution N=17



---

*Note:* Teachers reporting 16 or more years of experience made up the largest percentage of the population.

### Research Questions

The research questions that guided this study were:

1. What features in gamification do teachers perceive increase student motivation for learning mastery in the public-school setting?
2. What features in gamification do teachers perceive increase student efficacy for learning mastery in the public-school setting?
3. How does gamification change learning for students and teachers in the public-school setting?
4. What gamification attributes enhance teachers' self-efficacy regarding assignment planning for learning mastery evaluation in the public-school setting?
5. What are teachers' perceptions and dispositions toward using gamified learning in their classroom experiences?

6. Is there a statistically significant difference between students' activity scores in classroom breakout games and traditional classroom assignments?

H0: There is no difference in scores for breakout games and traditional classroom assignments for K-12th grade students at Heart of the Prairie School District (pseudonym).

H1: There is a difference in scores for breakout games and traditional classroom assignments for K-12th grade students at Heart of the Prairie School District.

- Research Question 6 was omitted from the study. However, since the researcher deemed this portion of the methodology important to note, the information surrounding the omitted quantitative research question was included.

### **Definition of Terms**

For the purpose of this study, the following terms were defined:

- *Enactivism* is a learning theory emphasizing learners' active role in shaping their learning experiences through their interactions with the environment (Pischetola et al., 2024, p. 255).
- *Escape Room* is a live-action team-based game where players discover clues, solve puzzles, and accomplish tasks to accomplish specific goals in a limited amount of time (Nicholson, S., 2015a, p. 1).
- *Gamification/Gamified Learning* is the process of incorporating elements of game design into non-game contexts to motivate people to achieve their goals. This term is used interchangeably with gamification gamified learning and breakout games. Terms are included in the literature review

and also describe “Breakout Games”, “Classroom Escape Games”, “Escape Room Learning”, and “Gamified Escape Activities”.

Gamification involves designing activities and systems that promote certain behaviors by tapping into people’s natural tendencies to play and compete (Deterding et al., 2011, p. 10).

- *Pointsification*, or relying on points to motivate students without providing meaningful game design and feedback systems, which can demotivate students (Hellberg & Moll, 2023; Ratinho & Martins, 2023).
- *Self-Determination* is the process by which individuals or groups can control their own lives and make decisions that affect their welfare (Ryan & Deci, 2000, p. 68).
- *Self-Efficacy* is an individual’s belief in their ability to perform a specific task or accomplish a particular goal (Bandura, 1977, p. 191)
- *Self-Regulation* is a learner’s ability to plan, conduct, and evaluate their learning (Persico & Steffens, 2017, p. 115).

### **Limitations, Assumptions, and Delimitations**

The following limitations, assumptions, and delimitations in the study were identified:

#### ***Limitations***

Even though this study had the potential to contribute to the current research, several limitations were recognized. First, the study design was based on the primary data from teachers and the potential secondary data from student activity scores, which are likely to be biased and inaccurate in such data collection methods. Secondly, the study was conducted in one school district, which may reduce the external validity of the

findings because school culture, student population and needs, and instructional practices may affect the impact of gamified learning environments in different ways. Lastly, relying on teacher perceptions and attitudes as the primary data source, the researcher may have missed out on some details of the student experience, which calls for further examination of the direct impacts of gamification on student learning and achievement.

### ***Assumptions***

As with any study, some assumptions were made in the methodology and interpretation of the results. First, the researcher believed that teachers' opinions on the impact of gamified learning environments in enhancing student motivation, self-efficacy, and learning results were correct. Although teachers' opinions are crucial in understanding instructional practices and pedagogical beliefs, they may not always match with actual measures of student learning mastery and achievement (Bleukx et al., 2024). Finally, the study assumed that student activity scores in breakout games were a good measure of learning and mastery without considering any other external factors that may have affected student performance.

### ***Delimitations***

This study has some delimitations that determine its scope and boundaries. First, the survey was administered in one midsize rural school district. This choice was made to ensure consistency in the educational context, school policies, and resource availability that could affect the application of gamification strategies, specifically in implementing classroom escape games. In order to give a detailed account of how gamification is received and used in a singular educational context, the study concentrates on a single district. This delimitation also limits the generalizability of the findings. The study does

not include participants from urban or suburban districts, nor from schools with different levels of technological access or professional development opportunities. The results may not fully describe the diverse experiences of teachers across different educational settings. Future research, described in Chapter Five, could address this delimitation.

Nonetheless, recognizing these assumptions, limitations, and delimitations, the study sought to advance knowledge on the complexities of gamified learning environments and their implications for teaching and learning in K-12 public schools.

### **Summary**

At the time of the study in educational research, classroom gamification was a topic of interest. Hernández-Fernández et al. (2020) raised the question of whether classroom gamification is counterproductive in terms of performance, which calls for further research. Topal & Akugan (2020) and Siew Fang (2022) focused on gamification in classroom management, which shows the possibility of using gamification strategies in educational settings. Javed (2020) applied the gamification approach in teaching anatomy to medical students in a flipped classroom. Mee Mee et al. (2020) stressed that gamification can create enthusiasm and curiosity in classroom teaching, which in turn increases the willingness to learn among learners. Furthermore, dela Cruz et al. (2021) identified badges, achievements, leaderboards, and levels as the most common forms of gamification that can enhance student motivation and achievement, especially for exceptional learners. Several researchers have tried to incorporate gamification with other teaching strategies. Rivera-Lozada et al. (2021) suggested pedagogical strategies including gamification for the training of economists, suggesting innovative ways to meet learning objectives. Finally, García et al. (2021) discussed the motivating role of

gamification in the childhood education classroom and how gamification can improve learning experiences and make content internalization fun.

In this chapter, the background and justification of the study are discussed. The conceptual framework and purpose of the study are explained. Research questions, limitations, and assumptions are explained in detail. The definitions of key terms are defined. Chapter Two presents the literature review of this study, followed by a discussion of the conceptual framework and a breakdown of the literature. The literature review is divided into sections that examine assessment in education, the foundations and applications of gamification, teacher self-efficacy, and classroom escape games, as well as student motivation, self-determination, and self-efficacy. The chapter ends by considering enactivism and includes a brief overview of the research methodology used to anchor the study's design within its theoretical context.

## Chapter Two: Literature Review

### Introduction

#### *Explanation of the Research Topic*

The education landscape has undergone a remarkable transformation in recent years, driven by the integration of technology, evolving pedagogical approaches, and a growing emphasis on student-centered learning, particularly since the COVID-19 pandemic. The evolving student-centered landscape has necessitated reevaluating traditional teaching methods, which often need help to engage and motivate modern learners immersed in digital environments. One notable innovation in this trajectory is the concept of gamification, which involves the infusion of game-like elements and mechanics into non-game contexts to enhance engagement, motivation, and learning outcomes (Afrif et al., 2019). As educators seek to enhance student engagement, motivation, and self-efficacy, integrating gamified elements into classroom activities has gained momentum as educators recognize its potential to create an immersive and interactive learning experience for students (Ouahbi et al., 2021). This study explored public school educators' perceptions of using classroom escape games as assessment tools, aiming to understand the multifaceted impact of gamification on teaching and learning.

Education systems are paradigm-shifting, propelled by technological advancements and evolving pedagogical perspectives globally (Zhao, 2020; Masqsood et al., 2021). Traditional teaching methods often need help to capture the attention of modern learners accustomed to interactive digital environments (Szymkowiak et al., 2021) and instant gratification (Leah, 2020 & Gokli, 2022). Gamification, drawing

inspiration from game design principles, offers a solution by infusing elements such as competition, rewards, and challenges into education contexts. Gamified approaches, such as classroom escape games, promise to transform the assessment process and invigorate the overall educational experience (Akoodie, 2020; Wiley et al., 2021).

In secondary education, student engagement becomes crucial when transitioning from foundational learning to specialized knowledge. Adolescents' cognitive development is intertwined with their need for autonomy and mastery, making gamified assessment methods potentially well-suited to cater to these developmental aspects (Reina-Reina et al., 2023). However, the integration of gamification within the assessment landscape introduces a range of questions regarding its impact on teaching methodologies, student motivation, and the overall learning environment.

### ***Significance of the Study***

Investigating teacher perceptions of classroom escape games as assessment tools may bridge gaps in theory and practice. Research has explored the theoretical underpinnings of gamification and its impact on learning, but further investigation is required to understand the practical implications of adopting such approaches in real classrooms require further investigation. Understanding how teachers perceive and experience gamified assessment methods can illuminate this innovative pedagogical shift's challenges, opportunities, and nuances.

Furthermore, this study held implications beyond the classroom. As education systems aim to foster critical thinking, problem-solving, collaboration, and creativity, gamification may cultivate these skills within the assessment process that resonate in broader societal contexts. Therefore, exploring teacher perceptions within the context of

classroom gamification as assessment tools contributes to a comprehensive understanding of gamification's potential as an educational catalyst, with the potential to shape the future of education and society at large.

### ***Research Questions***

This researcher addressed a series of research questions to comprehensively explore the impact of classroom escape games as assessment tools on teacher perceptions, student learning, and the overall educational environment. The researcher created these questions to investigate specific aspects of gamification and its potential impact on teaching and learning:

1. What features in gamification do teachers perceive increase student motivation for learning mastery in the public-school setting?
2. What features in gamification do teachers perceive increase student efficacy for learning mastery in the public-school setting?
3. How does gamification change learning for students and teachers in the public-school setting?
4. What gamification attributes enhance teachers' self-efficacy regarding assignment planning for learning mastery evaluation in public schools?
5. What are teachers' perceptions and dispositions toward using gamified learning in their classroom experiences?
6. Is there a statistically significant difference between students' activity scores in classroom breakout games and traditional classroom assignments?

H0: There is no difference in scores for breakout games and traditional classroom assignments for K through 12th-grade students at Heart of the Prairie School District.

H1: There is a difference in scores for breakout games and traditional classroom assignments for K through 12th-grade students at Heart of the Prairie School District.

- Research Question 6 was omitted from the study. However, since the researcher deemed this portion of the methodology important to note, the information surrounding the omitted quantitative research question was included.

### ***Purpose of the Literature Review***

The literature review synthesized existing research on gamification use in education, particularly in primary and secondary school settings. The researcher provided a comprehensive overview of the theoretical frameworks that underpin gamification, explored the various ways educators implemented learning in educational contexts, and examined the impact of these implementations on student learning outcomes and teacher perceptions.

Specifically, this literature review sought to:

1. Explore the theoretical foundations of gamification and their relevance to educational practice.
2. Examine previous studies on the application of gamification in classrooms, highlighting key findings and gaps in the literature.
3. Investigate teachers' perceptions and experiences of gamification and its impact on their teaching practices and self-efficacy.

4. Analyze the impact of gamification on student motivation, engagement, self-efficacy, and academic performance.

The literature review provided a solid foundation for the subsequent empirical investigation and contributed to understanding gamification as a learning tool.

### ***Organization of the Literature Review***

The researcher organized the literature review into several key sections to provide a coherent and comprehensive topic analysis which framed this study. The first section, Theoretical Framework, introduces the fundamental theories that underpin the study, including A.V. Kelly's Curriculum Theory (2004) and Albert Bandura's Theory of Self-Efficacy (1977, 2012). These theories are integral to understanding how gamification can influence educational outcomes, as they offer foundational insights into curriculum development and the psychological mechanisms that drive student motivation and learning. By framing this study within these theories, the research established a solid theoretical basis for exploring the impact of gamification on learning.

The following section, Assessment in Education, discusses the role of assessment in education, traditional assessment methods, and the evolution of assessment practices. The section highlights how educators have traditionally used assessment to measure learning outcomes and how innovative practices, such as gamification, have reshaped these methods. This section also connects the concept of gamification to innovative assessment techniques, showing how it can serve as both a motivational tool and a mechanism for providing real-time feedback to learners.

Following this, the section on Gamification in Education provides an in-depth overview of gamification, including its key attributes and examples of its use in

educational settings. The section also examines the principles that make gamification impactful, such as engagement, motivation, and the alignment of game elements with learning objectives. Case studies and examples illustrate how gamification has been successfully implemented in classrooms, offering evidence of its potential to enhance student learning and engagement.

The sections on Teacher Perceptions and Self-Efficacy and Gamification Features and Motivation explore the factors influencing teacher perceptions of gamification and the specific features that motivate student learning. These sections explore how teachers' beliefs about their own efficacy influence their willingness to adopt gamified strategies and how various gamification elements, such as points, badges, and leaderboards, can impact student motivation. The section also discusses the alignment with Kelly's Curriculum Theory (2004), Bandura's Self-Efficacy Theory, and Self-Determination Theory, providing a multi-dimensional view of how gamification interacts with teaching and learning processes.

Later sections examine the impact of gamification on teaching and learning, focusing on how these practices reshape the learning experience and promote new forms of interaction and engagement. These sections consider the role of gamification in enhancing teacher self-efficacy, showing how positive experiences with gamified learning can build teacher confidence and openness to further innovation. Specifically, classroom escape games are highlighted as a practical application of gamification, illustrating how teachers can integrate these tools into their curriculum to encourage collaboration, problem-solving, and mastery of learning. The final sections examine teacher and student perceptions of gamified learning, with a focus on motivation, self-

determination, and self-efficacy. These sections examine how gamified learning environments can impact teacher and student attitudes toward learning, highlighting the psychological factors that drive motivation. Finally, the chapter extends the discussion to include enactivism, which underscores the dynamic relationship between learners and their environments in gamified contexts. The methodology section outlines the research's design, participant selection, and data collection and analysis methods, providing a clear roadmap for the empirical investigation. This detailed approach ensures that the study is methodologically sound and capable of generating meaningful insights into the impacts of gamification on educational outcomes.

The chapter concludes by summarizing the main points discussed in the literature review, emphasizing the importance of the research, and highlighting potential contributions to theory and practice. The chapter reiterates the significance of exploring gamification in education, mainly through classroom escape games, to enhance teaching and learning experiences.

This study undertakes an exploration of the intricate relationship between gamification, assessment, and teacher perceptions. Focusing on classroom escape games, the researcher sought to contribute to pedagogical discourse by offering insight into the practical implications of gamification in education. Ultimately, this researcher aspired to provide an opportunity for well-informed decision-making and innovative practices within the dynamic landscape of 21st-century education.

### ***Theoretical Framework***

In education, theories and models serve as guiding principles, providing a framework for understanding the complexities of teaching and learning. For this study on

gamification in education, the researcher selected two primary theoretical frameworks: A.V. Kelly's (1931-2010) Curriculum Theory and Albert Bandura's Theory of Self-Efficacy (1977, 2012). The researcher utilized Kelly's Curriculum Theory (2004) as one of the theoretical foundations for this study due to its comprehensiveness, commonly recognized as a grand theory, which informs educators about curriculum planners' knowledge of what to select, what to choose, and what to organize. Kelly reinforces the view that although a curriculum can be scientifically rational, it can also be morally relevant, suggesting that curriculum construction should factor in the emotional aspects of a learner. Albert Bandura's Theory of Self-Efficacy (1977, 2012) establishes the theoretical base to explore students' emotional disposition, as beliefs about oneself strongly influence one's effectiveness. One's perception of one's ability powerfully affects one's behavior. One's level of self-confidence is the foundation of one's accomplishments. These beliefs could support or hinder one's efforts to acquire a new skill or construct new knowledge. So, from the perspective of Bandura, students will learn well if they believe they have the necessary skills. Educators can create classroom activities that incorporate games that provide structured mastery experiences. During games, players may also experience other sources, such as vicarious experiences, social persuasion, and emotional states, which are also related to self-efficacy characteristics (Bandura, 2012; Power et al., 2020). These frameworks provide valuable perspectives on how gamification can enhance learning experiences and outcomes in primary and secondary education settings.

***Overview of A.V Kelly's Curriculum Theory (2004)***

A.V. Kelly, a prominent figure in curriculum studies, has significantly contributed to our understanding of curriculum development. Kelly (2004) offered valuable insights into how educational programs construct, deliver, and evaluate their curriculum in his Curriculum Theory. To better understand how Kelly's theory intersects with gamified assessment, it is essential first to understand the core principles of his framework. Kelly's Curriculum Theory (2004) has developed from an emerging field of study to a well-structured school of thought. Kelly's theory is rooted in the idea that curriculum is dynamic and multifaceted, extending far beyond a mere collection of subjects or textbooks. For Kelly, the curriculum encompasses the prescribed content, and the processes and experiences students encounter during their educational journey (p. 2). Kelly's theory emphasizes the importance of examining curriculum through various lenses, including the intended, implemented, and achieved curriculum.

- *Intended Curriculum*: This aspect refers to what educators and policymakers intend for students to learn. It encompasses the formal objectives, goals, and content specified in curriculum documents (p. 6). Educators aim to assess the learning objectives using escape games in the context of gamified assessment. These objectives may extend beyond traditional knowledge acquisition to encompass skills such as critical thinking, collaboration, and adaptability (p. 6). Kelly's theory prompts us to examine how these objectives align with broader educational goals critically.
- *Implemented Curriculum*: This aspect focuses on how the curriculum is translated into classroom practices and considers the instructional methods, materials, and strategies teachers employ (pp. 2, 4, 7). The gamified assessment relates to how

educators design and administer escape games as assessment tools. Gamified assessment methods require careful planning and design. Teachers must consider the content and the gamification elements that will enhance student engagement and motivation. This aspect of Kelly's theory underscores the importance of thoughtful instructional strategies and game mechanics in realizing the intended curriculum.

- *Achieved Curriculum*: This aspect concerns students' learning outcomes and experiences (pp. 5-6). Achieved Curriculum acknowledges that what students learn may differ from the *intended curriculum* due to various factors, including teaching methods and student engagement (pp. 5-6). Gamified assessments may impact the achieved curriculum by influencing students' motivation, problem-solving skills, and content mastery. The achieved curriculum in the context of gamified assessment is a dynamic interplay of students' engagement, problem-solving abilities, and content mastery. Kelly's theory encourages us to explore how classroom escape games influence students' achievement of explicit learning objectives and broader educational outcomes such as self-directed learning and perseverance.

Furthermore, Kelly's theory encourages a reflective curriculum design and assessment approach. Building on Kelly's theory, this study explores whether students are achieving the intended content and skills within gamified assessments, examining evidence of learning outcomes and alignment with curriculum goals. Additionally, it investigates teacher perceptions of student learning experiences in a gamified environment,

considering whether the gamification elements enhance or detract from the educational process.

***Overview of Albert Bandura's Theory of Self-Efficacy (1977, 2012)***

According to Albert Bandura, self-efficacy is a person's particular beliefs that determine how well one can execute a plan of action in prospective situations (Bandura, 1977), or more simply, a person's belief in their ability to succeed in a particular situation. Best-selling author and educator Kathy Kolbe provided an alternative perspective on self-efficacy by writing:

Conation is the mental faculty that causes an individual to act, react and interact according to an innate pattern of behaviors. As one of the three elements of human behavior, its function is to convert the effective faculties, which are emotions, preferences, or beliefs, and the cognitive faculties, which are learned knowledge and skills, into visible and purposeful performance. It drive us to do what the other parts of the mind either make us want to do or know have to be done. (n.d., para. 1)

Individuals develop their self-efficacy beliefs by interpreting information from four primary sources of influence:

- *Mastery Experiences:* Mastery experiences, or performance accomplishments, are the most significant source of self-efficacy (Bandura, 1997). Success in completing a task boosts confidence, while failure can undermine it. Teachers who successfully implement gamified assessments will likely feel more confident in continuing to use these methods. These experiences provide direct evidence of their competence, reinforcing their belief in managing future challenges.

- *Vicarious Experiences*: Observing others successfully complete tasks similar to the ones they are attempting can strengthen individuals' self-efficacy (Bandura, 1986; Waddington, 2023). When teachers see colleagues effectively using gamified assessments, it can enhance their belief in their capacity to do the same, particularly when the observer identifies with the model.
- *Social Persuasion*: Social persuasion involves verbal encouragement or feedback from others (Waddington, 2023). Teachers who receive positive reinforcement from peers, administrators, or students about their efforts to implement gamified assessments may experience increased self-efficacy. Constructive feedback can motivate teachers to continue improving as they are reassured of their potential for success.
- *Emotional and Physiological States*: Emotional and physiological responses, such as anxiety, stress, or excitement, influence self-efficacy beliefs. A teacher who feels calm and energized during the planning and execution of a gamified assessment is more likely to believe in their ability to succeed. Specifically, Bandura (1977, p 198) states: "It is not the sheer intensity of emotional and physical reactions that is important, but rather how they are perceived and interpreted." Conversely, feelings of stress or anxiety may lead to self-doubt, which could hinder their confidence in using these innovative techniques.

### ***Relevance of these Frameworks to the Study***

The selection of A.V. Kelly's Curriculum Theory (2004) and Albert Bandura's Theory of Self-Efficacy (1977, 2012) as foundational frameworks for this study offered significant insight into the exploration of gamification, particularly in the context of

classroom escape games as assessment tools. These theories helped frame the investigation into how gamification influences teacher and student perceptions of learning and outcomes. Drawing on these frameworks, this study explored how structured curriculum design and self-efficacy shape the educational impact of gamified learning environments.

A.V. Kelly's Curriculum Theory (2004) provides a structured approach to designing and implementing educational environments, including gamified settings like classroom escape games. According to Kelly, a well-defined curriculum should include clear learning objectives that guide the educational process (Kelly, 2004). In a gamified environment, teachers integrate these learning objectives into the game's design, ensuring that students meet educational goals through immersive and engaging experiences. In classroom escape games, learning objectives are embedded within the game's challenges, allowing students to acquire knowledge and skills through play.

The structured nature of Kelly's theory aligns well with Tessmer and Wedman's Forward Design (1990) and Wiggins and McTighe's Backward Design (2006) models. Forward design emphasizes setting educational goals first and then creating activities to meet those goals, while backward design starts with the desired learning outcomes and works backward to develop the curriculum. Both models ensure the gamified experience is educationally sound and aligned with broader curriculum goals. By applying Kelly's theory in conjunction with these design models, educators can create gamified experiences that are engaging and impactful in achieving specific learning outcomes. This systematic integration of game mechanics into curriculum design could positively

influence teachers' perceptions of gamification, as it demonstrates a clear, structured pathway for embedding gamified assessments into their teaching practice.

Kelly's theory emphasizes the importance of aligning the intended, implemented, and achieved curriculum. This framework is particularly pertinent in analyzing how gamified assessments, like classroom escape games, meet intended learning objectives while transforming the lived educational experience of students. Kelly's view of curriculum as content and experience is essential for understanding how these interactive, game-like activities can reshape the educational landscape by promoting active learning and deeper student engagement. The flexibility required in curriculum design when integrating game elements also aligns with Kelly's theory, which supports a dynamic approach to education that adapts to the needs and experiences of learners.

Albert Bandura's Theory of Self-Efficacy (1977, 2012) complements this perspective by providing a psychological foundation for understanding how gamified learning environments influence the beliefs of both teachers and students in their abilities to succeed. For teachers, implementing gamified assessments—such as escape games—serve as mastery experiences that can boost their self-efficacy, encouraging the adoption of innovative pedagogical strategies.

Bandura's framework helped this researcher analyze how teachers' confidence in gamification is shaped by their experiences, feedback, and emotional resources. The framework also aligned with one of the study's core aims: to investigate how these gamified assessments impact teacher self-efficacy in planning and delivering engaging, impactful lessons.

For students, self-efficacy is crucial in shaping their experiences within gamified learning environments. Bandura's theory suggests that the challenge-based nature of escape games can enhance students' confidence in their problem-solving abilities, thus increasing motivation and engagement. This study explored whether game mechanics—such as rewards, challenges, and collaboration—foster a sense of accomplishment and self-efficacy, ultimately leading to improved academic performance. Bandura's emphasis on mastery experiences, vicarious experiences, and social persuasion is key to understanding how students interpret success or failure in gamified activities and how these perceptions influence their learning outcomes.

This research delved into gamification's structural and psychological dimensions by integrating Kelly's Curriculum Theory (2004) and Bandura's Self-Efficacy Theory by providing a comprehensive understanding of how classroom escape games, as an innovative assessment tool, can reshape teaching and learning practices. This integration offered valuable insights into gamification's potential to enhance public education engagement, motivation, and learning outcomes.

### **Assessment in Education**

Assessment is a critical element in education, serving as the primary tool for measuring student learning and informing instructional decisions. Assessment is how teachers gather data about their teaching and students' learning (Karaman, 2021). Assessment also provides teachers and learners with essential feedback on progress, helping to identify strengths, areas for improvement, and learning gaps. Through assessment, educators can evaluate whether students have met the learning objectives and adjust their teaching strategies accordingly. Assessment also prompts accountability for

students who need to demonstrate their understanding and for teachers tasked with ensuring that educational outcomes are achieved. K-12 classrooms typically use assessment strategies that fit into one of three distinct categories: formative assessment, summative assessment, and diagnostic assessment (Neigel, 2017).

### ***Formative Assessment***

Educators utilize formative assessments to collect data regarding students' current understanding before embarking on a new unit (Sortwell et al, 2024). As Black and Wiliam defined, formative assessment is “all those activities undertaken by teachers, and by their students in assessing themselves, which provide information to be used as feedback to change the teaching and learning activities in which they are engaged” (1998, p. 7). According to Wiliam (2011), formative practices in the classroom involve gathering, interpreting, and using evidence of student performance to inform the next steps in teaching more effectively (as cited in Ismail et al., 2022).

These assessments often take the form of quizzes, essays, projects, or exams that the teacher grades and provides student feedback. Unlike summative assessments, occurring at the end of an instructional period, formative assessments are ongoing and integrated into daily instruction (Karaman, 2021). The primary goal is to provide real-time feedback, allowing students and teachers to adjust the learning process as needed.

This feedback-driven approach helps students identify areas that need improvement while allowing teachers to modify their instruction accordingly. Research shows that formative assessments significantly impact student achievement, fostering deeper learning and promoting student engagement (Karaman, 2021). When used

appropriately, formative assessments support self-regulation and encourage students to take ownership of their academic progress.

Feedback is central to formative assessments, and the literature emphasizes that it must be specific, timely, and actionable to be most beneficial (Lee et al., 2020).

Formative assessments also play a key role in differentiated instruction by providing teachers with data that can help tailor learning experiences to meet the needs of individual students or groups (Westbroek, 2020). For instance, teachers can use quick checks for understanding, such as exit tickets or quizzes, to determine which students need more focused instruction in specific areas.

The collaborative nature of formative assessments foster a positive teacher-student relationship, where assessments are viewed not as judgmental but as part of a dialogue to improve learning (Xuan et al., 2022). Despite their benefits, challenges in implementing formative assessments include high-stake test-driven culture, large class sizes, and the need for adequate professional development for teachers (Xuan et al., 2022). Sortwell et al. (2024 p.17) writes: “These challenges can reduce students’ motivation, self-efficacy, participation and interaction, which are crucial non-cognitive learning processes (e.g., memorization, retention) and outcomes such as recall”. Addressing these barriers may enhance the effectiveness of formative assessments in promoting positive learning environments, as they directly impact student engagement and learning experiences.

Finally, formative assessments can contribute to more significant equity in the classroom by providing all students with multiple opportunities for feedback and improvement. By focusing on individual progress and learning needs rather than solely

on summative performance, formative assessments help reduce performance gaps and support students from diverse backgrounds (Fincke et al., 2021 & Xuan et al., 2022).

### ***Summative Assessment***

Summative assessments determine if students have mastered content standards introduced throughout a unit or instructional period. These assessments often include end of unit projects, semester exams and end-of-year state standardized exams. Summative assessments serve as a measure for teachers to evaluate the quality of student performance concerning established standards after instruction has taken place (Ismail et al., 2022).

Salinas and Guajardo (2022) debated the effectiveness of standardized tests in promoting deep learning and retention, as they often encourage rote memorization rather than critical thinking or problem-solving despite providing valuable data for grading, placement, and accountability. The authors suggested that standardized testing has several negative impacts on public education, ultimately arguing that these tests often lead to a “dumbing down of education” (p. 1219). The high stakes associated with summative assessments can influence teaching practices, sometimes leading to "teaching to the test," which can narrow the curriculum and prioritize test-taking skills over broader educational experiences (Zakharov & Carnoy, 2021). While some educators use data from these assessments to improve instruction, the pressure to achieve high test scores may constrain instructional creativity and flexibility.

Summative assessments can also affect student motivation and well-being. While some students are motivated by the challenge, others may experience anxiety or disengagement, especially if they struggle with the content or format (Ismail et al.,

2022). Additionally, Salinas & Guajardo (2022) highlighted that standardized tests do not consider cultural relevance and fail to equitably distribute resources, which can adversely affect culturally diverse student bodies. The authors question whether these tests genuinely measure student achievement or simply serve “as a distraction that hinders economically disadvantaged students from accessing necessary resources for success (p. 1218). They also note that the focus on standardized testing can manipulated educational practices to align with governmental requirements rather than promoting true learning, writing: “The most conclusive determination is that the use of standardized testing creates a form of education than can easily be manipulated and pursued by those looking for funds from state and national budgets” (p. 1219).

Concerns about equity and fairness are also prominent in the literature.

Standardized tests, a common form of summative assessment, have been criticized for favoring certain socioeconomic, cultural, or linguistic groups, potentially perpetuating inequalities (Au, 2022). As a result, these assessments may fail to account for diverse learning styles and experiences. Finally, educators often contrast summative assessments with formative assessments, which they use to provide ongoing feedback to support learning. Educators see formative assessments as more conducive to improving student learning and guiding instruction. Scholars advocate for a balanced approach integrating formative and summative assessments to support student growth better while fulfilling accountability requirements.

### ***Diagnostic assessment***

Diagnostic assessments offer educators a detailed understanding of students’ standing concerning specific learning objectives, enabling them to tailor instruction to

meet individual needs and maximize learning outcomes. Additionally, diagnostic assessments are typically administered at the beginning of a course or unit to evaluate students' baseline knowledge and skills (Kholid et al., 2024). Unlike ongoing formative and summative assessments, which evaluate learning at the end of an instructional period, diagnostic assessments serve as a precursor to instruction.

The primary goal is to utilize this information to develop more impactful lesson plans that cater to the student's current understanding and meet their needs. These assessments can take various forms, such as diagnostic tests, quizzes, or interviews, and they focus on pinpointing learning gaps that might hinder a student's ability to grasp new content. The impact of diagnostic assessments on teaching and learning is significant. Research suggested that these assessments enable teachers to provide more personalized and practical instruction by identifying individual learning needs and tailoring lessons accordingly. Kholid et al. (2024) explains, "This early identification facilitates the creation of personalized learning pathways, ensuring that the unique needs of each students are effectively addressed" (p. 445). For example, utilizing diagnostic assessments enable teachers to focus on areas where students require the most support, thereby reducing unnecessary repetition of concepts that students have already mastered. For students, these assessments provide valuable insights into their strengths and weaknesses, which can support goal-setting and self-regulation. Liz-Domínguez et al. (2022) highlighted that diagnostic assessments create an environment where students are more aware of their starting point and what they need to focus on to succeed. Diagnostic assessments come in a variety of formats. From standardized diagnostic tests assessing skills such as reading or mathematics to informal tools like concept maps or skills

inventories, the aim remains to identify areas requiring intervention before instruction begins (Kholid et al., 2024). Common examples include pre-assessment tests, concept maps that reveal how students connect ideas, skills inventories, and diagnostic interviews, which involve one-on-one discussions to identify areas of misconception. A notable strength of diagnostic assessments is their ability to uncover misconceptions that can impede learning. The research underscores the importance of addressing incorrect prior knowledge early in the instructional process to prevent it from obstructing new learning (Khalid et al., 2024; Liz Dominguez et al., 2022)

By revealing these misconceptions, diagnostic assessments allow teachers to correct misunderstandings before they become entrenched. These assessments are also valuable for supporting differentiated instruction. Diagnostic data enables teachers to group students by ability, ensuring that instruction is tailored to meet diverse learning needs within mixed-ability classrooms (Sujinah et al., 2024).

Ensuring that all students, regardless of their starting point, can make meaningful progress through the unit is particularly important for fostering equitable learning outcomes. Impactful implementing diagnostic assessments presents challenges. The literature identifies several obstacles, including time constraints, limited resources, and the requirement for teachers to possess the expertise to accurately interpret diagnostic data (Sujinah et al., 2024).

Without proper intervention following these assessments, their potential value diminishes. Additionally, diagnostic assessments must be well-aligned with instructional goals to ensure the data they generate is actionable and relevant to future learning (Khalid et al., 2024). Finally, diagnostic assessments have significant implications for

equity. Identifying learning gaps early provides an opportunity to ensure that all students, including those from marginalized communities, receive the necessary support to succeed (Au, 2022). However, educators must ensure that diagnostic tools are culturally responsive and do not perpetuate biases that could lead to inaccurate assessments of students' abilities.

The importance of assessment goes beyond simply measuring student performance. It also fosters the development of essential skills such as critical thinking, problem-solving, and self-regulation. Effective assessment can motivate students by providing clear goals and feedback, encouraging them to take ownership of their learning. In this way, assessment plays a vital role in both the instructional process and the broader educational experience, influencing the development of student competencies and lifelong learning habits.

### ***Evolution of Assessment Methods***

The evolution of assessment methods in recent years, particularly in response to the COVID-19 pandemic and the shift to remote learning, highlights a movement toward more flexible, technology-driven, and student-centered approaches (Yakimova et al., 2023). These changes aim to meet modern educational goals by fostering a supportive learning environment and aligning assessment practices with the realities that Generation Z and Generation Alpha bring to 21st-century education—a shift to a more flexible and holistic approach to education (Annus et al., 2023) with a strong focus on collaboration and data-informed assessment (Sato et al., 2024). Studies by Veugen et al. (2022) emphasized that the rise of formative assessment practices is essential for fostering a

supportive learning environment where assessments are integrated into the instructional process rather than serving as standalone events.

### ***Learning Enhancement with Technology***

K-12 teachers utilize various methods to teach, assess, and evaluate, just as students learn differently (Ross, 2020). Scholars such as Cheah et al. (2023), Arif et al. (2024), and Brown et al. (2021) have explored the integration of technology as a tool for teaching, assessment, and evaluation in culturally responsive classrooms. However, detailed guidelines on using technology for competent evaluations to enhance educational practices are limited (Ross, 2020). While teachers have widely used traditional paper-based methods for tracking assessment data, they must now become proficient with digital tools in today's technology-driven world. According to Cheah et al. (2023), professional development is essential for equipping teachers with the knowledge, skills, and reflective practices needed to leverage technology in ways that promote equitable learning opportunities for all students. Their findings underscore the importance of technological innovations in fostering teachers' leadership abilities, which are crucial for managing large datasets. Moreover, Ross (2020) writes: "A third component of program sustainability is conducting continuous evaluation studies to provide formative feedback and accountability data on implementation fidelity, participant experiences, and proximal outcomes at different phases of program maturity" (p. 2015). Utilizing various technological tools and resources underscores the positive impact of school leadership in integrating technology (Torrato et al., 2021).

Leveraging technology for instruction, assessment, record-keeping, and student self-assessment provides students with the autonomy to monitor their progress, fostering

intrinsic motivation. Educators adopting various tools for teaching and learning is key to embracing and implementing culturally responsive education, as Abacioglu et al. (2020) suggested. Teachers must remain mindful of their classrooms' diverse, multicultural nature (Bullock & Pack, 2020). This mindset, reflected in one school division's policy on using information and communication technology (Technology Handbook, 2023), recognized the importance of diverse teaching, assessment, and evaluation practices. Embracing these practices can help address disparities present in traditional classroom settings. The variety in classroom techniques should be central to teachers' strategies for crisis management, enabling continuous improvement in instruction and reflective assessments. Furthermore, incorporating tools like virtual reality (Brown et al., 2021) can enhance student engagement in the classroom (Kwong et al., 2022; Ross, 2020; Torrato et al., 2021).

## **Gamification in Education**

### ***Introduction to Gamification in Education***

Gamification, the application of game design principles in non-game contexts, has emerged as a widely discussed approach in education. By incorporating elements such as points, levels, challenges, and rewards into the learning process, gamification seeks to enhance student engagement and participation in the learning process (Lampropoulos & Sidiropoulos, 2024). Proponents argue that gamification leverages the natural human inclination for play and achievement, creating environments that foster both intrinsic and extrinsic motivation (Rahiman et al., 2023; Luo, 2024). Utilizing this approach has gained traction as educators seek innovative ways to enhance learning experiences through increased interactivity and enjoyment.

Gamification is consistent with educational theories that support students' active learning and student-centered learning. It provides a framework for designing participatory and collaborative instructional activities and potentially accommodates a range of learning styles. Additionally, gamification can also become part of an educational technology landscape where adaptive and immersive learning experiences are presented along with various technologies. While the potential benefits of gamification should be encouraged, gamification in education requires careful consideration of some challenges. Critics warn against over-emphasizing rewards, which could undermine learning (Anselme et al., 2024), or create counterproductive competition (Kaya & Ercag, 2023). Additionally, successfully gamifying learning requires careful consideration of the implementation that aligns the game mechanics with learning goals (Wang, 2021) or disengagement (M. Li et al., 2023). Further research and critical consideration are required to gain a fuller understanding of the implications of gamification on teaching and learning outcomes.

### ***Key Attributes of Gamification***

**Points & Scoring.** Points and scoring systems in gamified learning assign numerical values to student achievements or progress, offering a clear and quantifiable metric for success (Christopoulos & Mystakidis, 2023). Educators frequently award points for actions such as completing tasks, answering questions correctly, or participating in class activities. These points are often displayed on leaderboards, offering students immediate recognition and a sense of visible progression (Christopoulos & Mystakidis, 2023). Quiz platforms such as *Kahoot!* and *Quiziz* are often used to award points in real-time for each response, fostering friendly competition and engagement. As

one of the most widely used elements in classroom gamification, points are often integrated with badges or leaderboards to further incentivize participation (Ratinho & Martins, 2023).

From a pedagogical perspective, points are designed to increase engagement by tapping into students' intrinsic motivation. They offer instant feedback and a quick sense of accomplishment, which can encourage learners to continue engaging with course material (Mitra, 2024). Research suggested that when points are used, especially alongside other game elements, they can enhance motivation and participation, particularly in the short term (Ratinho & Martins, 2023). Furthermore, the visibility of progress helps satisfy students' need for achievement and can drive their desire to master content. When implemented thoughtfully, point systems also support goal-setting and self-monitoring, enabling students to track mastery over time (X. Li et al., 2022).

While the use of points has fostered engagement and achievement gains for some students in certain contexts (Jipli & Elaklouk, 2025), ongoing issues remain. Points cannot necessarily maintain motivation over an extended period of time. *Pointsification* is defined as an over-reliance on point-based rewards without any underlying game design or meaningful context (Hellberg & Moll, 2023). Pointsification can generate surface-level engagement, that ultimately reduces learning, particularly when student focus shifts to collecting rewards as opposed to the learning itself. The authors of the aforementioned article warn that simply adding points and badges is not sufficient, nor the result of a larger pedagogical approach, which constitutes a misapplication of the gamification framework (para 1). In addition, the impact of awarded points may diminish quickly when the novelty fades under the initial motivational element (Ratinho & Martins, 2023).

Researchers have noted that point systems are most impactful when combined with narrative, challenge, feedback, and clear learning objectives (Ratinho & Martins, 2023; Christopoulos & Mystakidis, 2023).

**Challenges & Quests.** Challenges and quests are often seen as objective-focused tasks that occur within context of game-like story. Quests in education gamification are themed challenges that clearly outline objectives, steps to reach the objective, and a reward that follows completion of a challenge (Philpott & Son, 2022). Typical challenges and quests mimic the missions in a role-playing game with a story—students complete tasks to accomplish the quest (Christopoulos & Mystakidis, 2023) and as Jipli and Elaklouk (2025) describe, “must feature missions with differing difficulty to accommodate various learner capabilities (p. 33). Challenges can take different forms—from completing a quiz question that is particularly challenging to completing a multi-step process that might take two or more days. When challenges are wrapped in narrative or thematic framing, such as, "mission" challenges become more enticing and meaningful for learners (Christopoulos & Mystakidis, 2023).

Pedagogically, the benefit of incorporating challenges and quests in the classroom lies in their ability to enhance student motivation. Educators implement quests and challenges in a variety of ways. Quest-based learning may involve a series of interconnected tasks that students complete across a unit or semester (Philpott & Son, 2022). Digital tools often support this approach. Prodigy, a math-focused game, immerses students in fantasy quests that require solving math problems to advance (Bledsaw, 2024). Similarly, *Minecraft: Education Edition* incorporates challenges and missions, such as building structures to solve physics problems, that foster creativity and

exploration in Science, Technology, Engineering, and Mathematics (STEM) subjects (Crespo, 2021). By presenting academic activities as quests or challenges, educators harness students' natural desire to overcome obstacles and achieve goals.

*Challenges & Quests* are not without limitations. While studies generally report higher student engagement, time-on-task, and improved learning outcomes (Jipli & Elakloun, 2025), poorly designed and increasingly difficult tasks may create frustration among students rather than motivation. Ratinho & Martins (2023) explain:

Competition certainly seems to be an influential variable in shaping decreases in student motivation, as some students appear to lose interest in gamification if they fail. Moreover, with regard to competition, some students can feel less motivated when they are competing. Competition is one of the reasons for failure in gamified learning systems, and, consequently, social comparison should be avoided. (p. 12)

**Narrative & Storytelling.** Raffone (2022) described narrative as the “primary element for the transition of knowledge” (p. 2). In gamification, narratives can present opportunities to contextualize learning by allowing students to immerse themselves in a story-driven journey by helping characters solve problems. By embedding educational content within the narrative, educators can make learning more engaging and relatable, allowing students to connect with course objectives more deeply (Jipli & Elakloun, 2025).

Pedagogically, narrative and storytelling allow students to connect emotionally to their learning and deepen their engagement. A compelling story can increase students' interest and make content more memorable (Jipli & Elakloun, 2025). Studies by Parra-

Gonzalez et al. (2021) and Jarrah et al. (2024) found that students exposed to gamified learning environments driven by stories showed higher motivation, interest, and retention levels than their peers in non-narrative settings. Teaching via narrative has also been shown to support cultural relevance. Jarrah et al. (2024) also described that teachers who incorporate narrative and storytelling in their lessons may find their students have a deeper appreciation for their own cultural traditions. “It is possible that instructors might offer a better learning environment if they included engaging tales that resonated with their students’ cultural identities” (p. 5).

Despite its advantages, narrative and storytelling also present valid challenges. The complexity of designing meaningful narratives that combine educational content without appearing superficial or disconnected from learning goals is a significant challenge (Jipli & Elakloun, 2025). Careful planning and alignment of storytelling elements with learning objectives are required to ensure narrative and storytelling positively impact the gamified learning experience rather than serve as a distraction. Striking a balance between entertainment and educational rigor is also essential. Raffone (2022) cautions that a narrative overshadowing of educational goals is risky potentially reducing clarity and educational impact. Another challenge is the potential for cognitive overload or stress that complex narratives might impose on students is another challenge. Jipli and Elakloun (2025) discuss that not all students respond equally to gamified storytelling, with some finding detailed storylines overwhelming or distracting. Lastly, technology and accessibility pose significant challenges. To be effective, gamified storytelling often relies on digital tools and learning platforms requiring reliable internet

access and suitable devices, which are critical for successful implementation (Raffone, 2022).

**Real-time Feedback.** *Real-time feedback* refers to the instant response learners receive based on their activity. Within gamification, it is critical to inform learners of their progress or help adjust their behavior or strategy. Real-time feedback elements often include notifications of correct or incorrect answers, progress bars, points, or badges awarded after task completion or achievement (Jipli & Elaklouk, 2025; Khoshnoodifar et al., 2023).

In gamification, real-time feedback can enhance student engagement through positive reinforcement, which, in turn, helps students maintain interest and motivation. Khoshnoodifar et al. (2023), describe that gamification utilizes real-time feedback through points, progress indicators, scoreboards, and instant correctness notifications and motivates students to participate and concentrate on educational activities. Immediate feedback supports self-efficacy by allowing students to recognize their competence and quickly change their learning strategy (Ratinho & Martins, 2023). Real-time feedback is also important in maintaining interactivity. For example, students may perceive gamified tasks as more manageable and enjoyable when they receive instant performance updates reinforces their learning (Wulan et al., 2024). Furthermore, real-time feedback can boost learner motivation as students work to improve their overall standing or achieve recognition against their peers (Jipli & Elaklouk, 2025).

Despite these benefits, implementing real-time feedback presents several challenges. A primary challenge is designing the feedback mechanism to align with educational objectives without relying only on memorization. Ratinho and Martins

(2023) described that the risk of emphasizing extrinsic rewards decreases intrinsic motivation over time. Real-time feedback can also overemphasize competition over collaboration creating stress and anxiety among learners. Jipli and Elakouk (2025) note that common feedback mechanisms like leaderboards can negatively affect intrinsic motivation if they draw attention to the performance gaps or pressure learners to compete rather than cooperate. Lastly, real-time feedback heavily relies on digital platforms and reliable internet access. Inequality in technology among students can negatively impact learning outcomes (Wulan et al., 2024).

**Choice & Autonomy.** *Choice and Autonomy* in gamification refer to the student's control and decision of learning activities. Autonomy also allows learners to make learning decisions without pressure (Kam & Umar, 2023; Passalacqua et al., 2021). Kam and Umar (2023) described how genuine autonomy allows learners to make meaningful decisions, such as whether or not to participate, rather than limited choices, such as designing an avatar that doesn't directly impact their learning; "in order to foster the sense of autonomy, gamification should be applied in a context where the learning activity is optional, and learners are free to decide on their level of engagement without the threat of penalties" (p. 370).

Cao et al. (2023) explored autonomy by allowing learners to choose their competitors' skill levels during gamified activities. They found that allowing learners to choose opposing skill levels significantly enhanced emotional positivity, feelings of competence, and improved learning performance when compared to gamified activities where the activity selected competitor skill levels. Passalacqua et al. (2021) highlighted the importance of personalization, suggesting that adapting gamified elements to the

student enhances intrinsic motivation and leads to better performance. Their study illustrated that the success of autonomy as a key attribute of gamification depends on the alignment of gamified elements and learner characteristics. Kam and Umar (2023) also describe autonomy-supportive gamification as emphasizing voluntary engagement while avoiding mandatory or graded tasks. Their research indicated that the approach fosters intrinsic motivation and positive educational outcomes.

Autonomy presents several implementation challenges. Kam and Umar (2023) caution against using autonomy for non-learning focused choices like selecting an avatar as they are not tied to intrinsic motivation and the learner's decision to participate in the activity. Offering only surface-level choices related to customization may create an illusion of autonomy without meaningful impact. Autonomy should also consider learners' emotional and psychological responses. Cao et al. (2023) found that allowing students autonomy in selecting task difficulty could lead to uneven learning outcome mastery, as some students regularly selected more manageable tasks that restricted learning opportunities. Additionally, Ratinho and Martins (2023) observed a "novelty effect" (pp. 2-4) where the initial benefits of choice and autonomy declined over time, highlighting the need for regular evaluation of how choice and autonomy are presented in gamified activities.

**Time Constraints.** *Time constraints* in gamification refer to using limited time duration or deadlines to complete tasks, creating a heightened sense of urgency that can motivate learners (Jipli & Elakloul, 2025). Teachers use time constraints to encourage quick decision-making, maintain learner participation, and enhance engagement (Christopoulos & Mystakidis, 2023). However, time constraints can introduce several

challenges, including cognitive overload, stress, and anxiety negatively impacting learners' abilities to process information when exploring complex ideas or performing unfamiliar tasks (Khoshnoodifar et al., 2023; Jipli & Elaklouk, 2025). The rigid nature of time constraints may also cause equity and accessibility issues and creating disadvantages for learners who require more time on task due to cognitive delays or unfamiliar content (Jipli & Elaklouk, 2025). While strategically valuable, educators must use care when implementing time constraints to balance motivational advantages with the potential cognitive challenges they may present.

**Feedback Loops.** *Feedback loops* refer to the continual cycle of information learners receive on their activity performance. This key attribute of gamification connects outcomes and learners through repeated cycles of goal-setting, action, feedback, and adjustment (Nordby et al., 2024; Walther, 2024). Feedback loops typically consist of points, badges, leaderboards, or achievements that reinforce learning activities and keep learners interacting with the content (Sotirov et al., 2024). Xiao and Hew (2024) explain that feedback loops work by first using game elements to boost learners' motivation. This increase to motivation then influences learners' behavior during learning to improve understanding and mastery of the learning objectives. Well-designed feedback loops encourage self-regulated learning as students reflect on their performance, set new goals, and engage with learning tasks.

However, feedback loops can present several challenges. Walther (2024) describes their oversimplification of the learning process as a primary concern. He explains, "Human cognition is characterized by nonlinear processes of sense-making and meaning construction, which go beyond simple input-output models" and "The reliance

on cybernetic feedback in gamified systems risks reducing learning to a series of predictable responses, neglecting the organic complexity of the learning process” (p. 3). Using feedback loops may reduce learners’ curiosity and exploration within an activity as they complete short-term rewards. Designing effective feedback loops that align with learning objectives can be complex. Poorly designed feedback loops can cause cognitive overload or disengagement, especially if the feedback received is excessive, irrelevant, or overly negative. (Wulan et al., 2024). Wulan (2024) explains that feedback relying on learners’ competitive nature, such as leaderboards, can increase stress, anxiety, or feelings of inadequacy among students regularly ranked lower than their peers.

**Social Interaction.** Valantiejiene and Girdauskiene (2021) defined social interaction as the “sharing of information and the exchange of learning information” (p. 2) and emphasize the importance of relationship-building to motivate learners. These interactions then shape learner behaviors and influence engagement by fostering feelings of community and belonging. Dikcius et al. (2020) based their analysis of social interaction in Massive Open Online Courses (MOOCs), using Social Exchange Theory (SET). They explained the role of positive interaction, such as peer support, group recognition, and influence, to support learner’s perceived usefulness and enjoyment, stating:

The benefits may include not only the qualifications gained from the course (formally confirmed by a document of completion) but also more general benefits, such as the support and recognition of various publics and the appreciation of other course participants, that are also very important. All this contributes to the increased perception of usefulness and enjoyment as indicators of gains received

from the social exchange during the learning process. (Dikcius et al., 2020, p. 162)

Social interaction within gamified activities often includes specific game elements to foster collaboration and competition. Common features include leaderboards, badges, collaborating on tasks or quests, and feedback (Jipli & Elaklouk, 2025; Ratinho & Martins, 2023). Team collaboration activities stimulate peer interactions, enhance motivation, and foster a sense of community. The competitive elements, such as leaderboards, can motivate learners through goal-setting (Ratinho & Martins, 2023). Ratinho and Martins (2023) explained that collaborative gamification elements motivate learners by addressing psychological needs for autonomy, relatedness, and competence. By addressing intrinsic needs, social interaction in gamification boosts short-term engagement while creating opportunities for long-term motivation and participation.

However, despite these benefits, social interaction can present several challenges. A significant challenge is the potential to reduce intrinsic motivation. The pressure of competition without supporting feedback can shift the learner's focus from learning-based to performance-based goals, undermining motivation and long-term engagement (Ratinho & Martins, 2023). Secondly, the effectiveness of social interactions relies on social support mechanisms. Valantiejiene and Girdauskiene (2021) concluded that a lack of social support in gamified activities negatively impacts learner engagement and performance. They explained, "it is important to encourage users to set up close social relationships with others and to increase a feeling of belonging" (p. 1). This highlights the importance of designing gamified activities that encourage building a strong and supportive community. Finally, individual learners' preferences towards social interaction

vary. Gamified activities must balance competition and collaboration for a diverse group of learners. An imbalance or carelessness can lead to a decrease in engagement and motivation for learners. As Jipli and Elakloun (2025) note, aligning gamification features with what drives learner motivation is important for developing meaningful learning experiences with high participation.

### **Gamification Frameworks in Education**

Educational gamification research focuses on specific elements, such as points, challenges, and narratives; however, teachers need frameworks that convert these elements into practical classroom applications (Bisz & Mondelli, 2021; Botturi & Babazadeh, 2020; Kapp, 2025; Lim et al., 2024; Nicholson, 2015). The educational use of frameworks enables teachers to adopt structured approaches for integrating game elements into their teaching methods while maintaining learning objectives (Botturi & Babazadeh, 2020; Lim et al., 2024). The frameworks help educators integrate game elements purposefully into their activities because they ensure that all playful aspects support both learning objectives and cognitive development (Bisz & Mondelli, 2021; Kapp, 2025; Nicholson, 2015).

The 6D Framework, developed by Werbach and Hunter (2020), is a well-known design model that guides developers in establishing business targets, identifying target behaviors and player characteristics, creating activity loops, maintaining fun elements, and selecting suitable tools. The corporate background of the 6D Framework makes it challenging for classroom teachers to understand, as they often do not relate to business terminology. The RECIPE framework for meaningful gamification, as proposed by Nicholson (2015), consists of six elements: Reflection and Engagement, Choice and

Information, Play and Exposition. The RECIPE framework helps designers create intrinsic motivation by establishing play activities that connect to individual meaning. The framework offers significant educational value, but its abstract nature makes it challenging for teachers to develop specific lesson plans. The two frameworks provide essential design elements for player motivation and iterative development yet need substantial adaptation to work effectively in K–12 and higher education learning environments.

The current generation of frameworks addresses the educational needs of teachers through their design focus. The design process of ALLURE by Bisz and Mondelli (2023) guides teachers through six sequential steps to convert standard educational content into interactive games, starting with "Ask" and ending with "Evaluate." The ALLURE (Bisz and Mondelli, 2023) framework utilizes simple language that teachers can understand, providing design templates, flashcards, and examples to help them create games without requiring game design expertise. The process begins by identifying learning points where play can add value, then connects mental operations to game elements, and concludes with activity execution and assessment. The ALLURE (Bisz and Mondelli, 2023) framework provides teachers with straightforward methods to implement in their classrooms because it directly supports curriculum requirements.

Karl Kapp introduced Action-First Learning as a teaching method (2025), which requires students to perform actions before receiving explanations. The framework starts with problem-solving activities and active participation, followed by reflection and debriefing sessions. The Action-First Learning approach aligns with gamification principles because it puts learning experiences, discovery, and reflection above traditional

lecture-based teaching methods. The two frameworks demonstrate how gamification has evolved into teaching methods that focus on making learning accessible while increasing student engagement and teacher confidence in the classroom.

The literature demonstrates the significance of intentional design in gameful teaching through its presentation of gamification frameworks, which begin with 6D and RECIPE and progress to ALLURE (Bisz and Mondelli, 2023) and Action-First Learning. The frameworks demonstrate to educators how to transition from complex models that require interpretation to practical methods that directly support classroom teaching and learning. The development of gamification in education demonstrates its increasing acceptance while simultaneously focusing on teacher-friendly approaches, educational support systems, and classroom implementation methods.

### **Impact of Gamification on Teaching and Learning**

Gamification's impact on teaching and learning is evident in three areas: student engagement, learning outcomes, and curriculum integration (Botturi, 2020; Lim, 2024; López-Pernas, 2023; and Kim et al., 2024). As discussed, the key attributes of gamification help learners stay focused and motivated. Specifically, Chen et al. (2024) found that eighth-grade students who participated in an escape game on civics were more significantly motivated than their peers in traditional online instruction. Similarly, Veldkamp et al. (2021) noted that teachers reported their students became more active and engaged during the competitive nature of the escape room activities because the game required the students' full attention to succeed while creating an energetic learning environment. González-Yubero et al. (2023) established that the use of creative puzzles, feelings of control, and active problem solving fostered intrinsic motivation in university

students. When thoughtfully designed, gamification creates interactive learning environments that encourage students to invest in their learning.

However, this active engagement alone is insufficient unless it leads to increased mastery of learning outcomes. López-Pernas (2023, p.3) and Kim et al. (2024, p. 224) demonstrated significant support for learning outcome mastery ( $d \approx 1.4$  and  $d \approx 0.86$ , respectively), indicating that escape games supported learners of all ages and subject matters. Classroom-level research also supports these findings. Chen et al. (2024) found that eighth-graders in a gamified civics class scored higher on critical thinking skills. Nursing students in Çakmak and Kaymaz's (2024) study reported increased student self-efficacy and motivation for critical thinking, with over 90% affirming that the escape games improved their ability to remember and recall content. Roig et al. (2024, p. 9) found that engineering students achieved an additional 10% better academic performance and their success rate increased by 14% when gamified activities replaced traditional assessments.

The long-term successful implementation of gamification depends on its alignment with learning outcomes and curriculum design. Gamified activities have been implemented successfully as formative reviews, interdisciplinary projects, and performance-based assessments to show their effectiveness in different educational settings. However, the design process needs explicit guidance to ensure activities remain connected to learning outcomes. The STAR framework (Botturi & Babazadeh, 2020) focuses on connecting gamified activities to learning outcomes and requires students to review their work after completion. The CREATE framework (Lim, 2024) focuses on using gamified activities as part of Science, Technology, Engineering, and Mathematics

(STEM) learning through real-world investigations. To make gamification more approachable for classroom teachers, Bisz and Mondelli (2021) created the ALLURE (*Ask, List, Link, Understand, Run, Evaluate*) (Bisz and Mondelli, 2023) method. ALLURE (Bisz and Mondelli, 2023) offers a simple and effective process that lowers design barriers while supporting curriculum. Kapp's 12-step framework in *Action-First Learning* (2025) introduces accessibility into the mix to "create an inclusive experience without sacrificing the fun and immersive aspects of the game" (p. 87) while also providing opportunities to manage logistics and sustainability for continued implementation. This evolution illustrates how gamification has transformed from theory to a set of practical instructional design tools.

### **Gamification and Teacher Self-Efficacy**

The successful implementation of gamification depends on teachers' beliefs, attitudes, and self-efficacy. Teachers need strong self-efficacy beliefs about their ability to deliver and direct gamified learning experiences. Bacsa-Karolyi and Fehervari (2024) showed that teachers' attitudes and past experiences are a key factor in the success of gamification implementation. "Teacher preparation and professional development are keys to successful gameful implementations (Kapp, 2012 as cited in Bacsa-Karolyi & Fehervari, 2024, p. 2). Teachers who perceive themselves as competent in gamification strategies and feel supported by their peers and community are more likely to implement gamification effectively. "Teachers' personal development and self-efficacy beliefs (n=13), competencies (n=8), and specific personality traits (e.g. openness) (n=9) can support their practices" ) while "fear of change (n=23) and lack of digital skills (n=6) can obstruct gameful practices" (Bacsa-Karolyi & Fehervari, 2024, p. 6).

Leiss et al. (2025) utilized the Theory of Planned Behavior (TPB) framework to analyze teaching factors that influenced their willingness to adopt gamification. Teachers' intentions to use gamification depended on their overall positive attitude towards gamification, perceived social pressure, and their self-efficacy in their capability to implement the gamified strategy. While the studied variables accurately predicted to Leiss et al. (2025) found “mediating effects of teachers' intention in the relationship between their attitude and behavior” (p. 1) demonstrating how self-efficacy functions both directly and indirectly guiding teacher action. This finding also aligns with the Theory of Planned Behavior, which posits that intention is the most immediate predictor of behavior and that attitude, perceived pressure, and self-efficacy influence that intention.

Costley (2022) demonstrated that educators maintain positive feelings about gamification but struggle with regular implementation because of their limited self-efficacy skills. Teachers faced challenges with complicated development processes and the significant amount of time needed for successful implementation. The perceived barriers to gamification arise from inadequate professional development which supports that professional development programs should focus on building teacher's self-efficacy and their ability to use gamification (Costely, 2022). Mårell-Olsson (2022) confirms the presence of these obstacles. Teachers recognized gamification as a beneficial tool for student motivation but faced similar time and development challenges.

### **Classroom Escape Games**

Recreational escape rooms, or “live action, team-based games where players discover clues, solve puzzles, and accomplish tasks in one or more rooms in order to

accomplish a specific goal (usually escaping from the room) in a limited amount of time” (Nicholson, 2015, as cited in Lopez-Pernas, 2023, p. 1) have become more widely implemented in classroom learning environments. Educators converted the game structure into a format that includes educational content, such as puzzles to make mastering learning objectives necessary to progress through the game. In this manner, escape games represent an integration of active learning, collaborative learning, and constructivist principles, enabling students to use their existing knowledge and learn new content and build their understanding with their peers during interactive problem-solving (Kapp, 2025; López-Pernas, 2023).

Escape games often feature many of the gamification elements described earlier in this study. Puzzles are the root of the game and serve challenges or quests that players must complete in a sequence, leading to a final “meta-puzzle” which presents the central objective (Wiemker et al., 2015, as cited in Alabdulaziz, 2023). Learners become more engaged through the narrative and storytelling aspects which create authentic storylines to make the time constraints meaningful and increase their motivation (López-Pernas, 2023). Feedback is naturally built into the game and provides learners with immediate access to their progress through task unlocking or confirmation (Veldkamp, et al., 2021). The main characteristic of this game involves time limitations. Time limitations through countdowns peak student interest and create tension, which impacts the learner’s focus. Teachers and students acknowledge time constraints both motivating and limiting which requires thoughtful balance according to Veldkamp et al. (2021). The teacher’s role as facilitator further enhances feedback loops by providing occasional hints allowing groups to successfully progress and meet the intended learning objectives (López-Pernas, 2023).

Escape games are social in nature and teaches collaboration, communication, and teamwork as student groups work together to solve problems (Veldkamp et al., 2021).

*Table 1* demonstrates how these components translate gamification elements into classroom practice.

**Table 1**

*Gamification Features in Educational Escape Games*

Gamification Feature	How It Appears in Escape Games	Supporting Evidence
Challenges & Quests	Puzzles act as discrete challenges leading to a final “meta-puzzle” or overarching quest.	Wiemker et al. (2015, as cited in Alabdulaziz, 2023).
Narrative & Storytelling	Storylines (e.g., curing a patient, defusing a bomb) provide immersion and purpose.	López-Pernas (2023).
Real-Time Feedback	Solving puzzles provides immediate confirmation and unlocks subsequent tasks.	Veldkamp et al. (2021).
Choice & Autonomy	Open or hybrid puzzle structures allow teams to choose paths or strategies.	Alabdulaziz (2023).
Time Constraints	Strict countdowns create urgency but can hinder deep processing.	Veldkamp et al. (2021).
Feedback Loops	Teacher hints and debriefing provide corrective guidance and reflection.	López-Pernas (2023).
Social Interaction	Team-based design emphasizes collaboration, communication, and interdependence.	Veldkamp et al. (2021).

*Note:* This researcher-created table displays how escape games illustrate how multiple gamification features are embedded in their design.

Studies have shown the academic value escape games provide. López-Pernas (2023) meta-analysis of 33 studies and 5,322 participants demonstrated that escape games resulted in substantial positive effects on knowledge acquisition (Cohen’s  $d = 1.4$ ,  $p = .3$ ) and yielded similar results in multiple subjects and educational levels. The research on

specific subjects showed similar positive effects. Alabdulaziz (2023) studied 80 secondary mathematics students in Saudi Arabia and found that escape games produced better results and higher motivation and learning freedom and reduced students' negative feelings toward math. Similarly, Veldkamp et al. (2021) found that the implementation of escape games in science education led to an improvement in student critical thinking abilities, collaboration, and persistence levels. Students reported enjoying the sense of mastery and autonomy during gameplay while teachers highlighted escape game benefits for processing information, practice, and formative assessment while acknowledging that the strict time constraints prevented students from continued content exploration (Veldkamp et al., 2021).

### **Student Motivation and Self-Determination**

Self-Determination Theory (SDT) explains students' motivation in terms of three psychological needs: autonomy, a sense of volition or ownership; competence, feeling effective; and relatedness, feeling connected. In learning environments, the fulfillment of these needs leads to better autonomous motivation and well-being. However, not regularly meeting these needs can lead to amotivation (Ryan & Deci, 2020). Education research indicates that need-supportive teaching methods enhance intrinsic and extrinsic motivation demands (Ryan & Deci, 2020). Self-Determination Theory distinguishes intrinsic motivation, doing schoolwork for its inherent interest or enjoyment, for example, from extrinsic motivation, which can range in regulatory quality from more autonomous to more controlled forms. These types of regulation fall along a continuum of self-determination and have been regularly examined in education research (Ryan & Deci, 2020; Bureau et al., 2022).

Studies based on meta-analysis showed intrinsic and identified forms of autonomy have better connections to positive outcomes and external regulation, but amotivation leads to negative results (Howard et al, 2021). Intrinsic motivation typically declines for students as they progress through high school, underscoring the importance of need-supportive contexts (Engler & Westphal, 2024). Instructional practices, particularly the degree of autonomy support and structure teachers provide, greatly influence the immediate and long-term quality of student motivation and achievement of learning outcomes (Cheon et al., 2020; Bureau et al., 2022; Engler & Westphal, 2024). Bureau et al. 2022 meta-analysis demonstrated that students' psychological need satisfaction and self-determined motivation depend more on teacher autonomy support than on parental autonomy support, with competence demonstrating the strongest link to self-determined motivation.

Experimental evidence supports these findings. Two longitudinal studies involving secondary physical education teachers found that teacher training that combined autonomy support with structured autonomy-friendly methods improved teacher efficacy and well-being while strengthening relationships with students. Students demonstrated better engagement, skill development, and higher anticipated achievement levels. The mediation process revealed that students' need satisfaction for autonomy and competence increased as a result (Cheon et al., 2020). Complementing these results, large-scale longitudinal panel research in literacy showed that autonomy-supportive teaching can also serve as a protective factor over time. Using data from the National Educational Panel Study dataset (n = 8,193; grades 5-8), Engler and Westphal (2024) found that while intrinsic reading motivation typically declined during these years, earlier

perceptions of teacher autonomy support significantly slowed this decline according to a dual change score model.

### **Student Self-Efficacy**

Student self-efficacy stands as a fundamental concept in Bandura's (1997) social cognitive theory because it measures students' confidence toward reaching academic targets. The belief system shapes student motivation together with academic engagement and achievement results. Research findings showed that self-efficacy maintains a robust connection to academic achievement results. The research conducted by Usán et al. (2022) demonstrated that students with strong academic self-efficacy maintain higher motivation levels and exhibit better perseverance and educational satisfaction. Students who hold these beliefs approach academic work as tasks they can accomplish through confidence and personal accountability. Their research involving 1,800 Spanish high school students demonstrated that academic self-efficacy strongly linked to optimism levels and academic achievement results because it “stimulates adaptive behaviours” and “contributes to a more satisfactory academic experience” (p. 2). Basileo et al. (2024) demonstrated that self-efficacy develops a robust positive relationship which impacts academic results in every subject area. The researchers used hierarchical linear modeling to study German middle school students and found self-efficacy acted as the main factor influencing academic achievement while linking student grades to autonomous motivation.

Self-efficacy enhances students' independent learning capabilities which proves essential for digital and mobile learning environments. Zhang et al. (2024) studied Internet and communication self-efficacy as predictors for K-12 students' self-directed

learning with mobile technology (SDLMT). The researchers used engagement in behavioral, cognitive, emotional and social domains to link self-efficacy with SDLMT positioning self-efficacy as the fundamental competence needed for modern educational settings which require students to manage themselves and develop digital competencies.

### **Enactivism**

*Enaction* was first introduced by Varela, Thompson, and Rosch in *The Embodied Mind*: “The enactive approach consists of two points: (1) perception consists in perceptually guided action and (2) cognitive structures emerge from the recurrent sensorimotor patterns that enable action to be perceptually guided” (Varela et al., 1993, p. 173). At its foundation, enactivism highlights how the student’s mind, body, and environment are connected. This suggested that cognition emerges through the body’s ongoing interactions with both the physical world and social contexts.

Enactivism emphasizes embodied cognition because students learn through hands-on, purposeful activities. According to Macrine and Fugate (2021), embodied learning enhances learning outcomes by using sensorimotor experiences because cognition is rooted in the body’s engagement with its surrounding environment. Videla et al. (2021) support this idea by presenting education as an embodied cognitive assemblage, illustrating that effective STEAM learning relies on collaborative experiences nurtured through an enactive approach.

The development of self-efficacy through mastery experiences, social modeling, and feedback, according to Bandura (Tsang et al., 2012), showed how enactivism directly relates to his Theory of Self-Efficacy. The most important source of self-efficacy,

according to Gale et al. (2021), is enactive mastery experiences, as these experiences powerfully affect how teachers perceive their teaching abilities. Enactivism's alignment here suggested that students and teachers develop self-efficacy through meaningful embodied interactions within learning environments that produce meaningful, actionable experiences. According to Kelly (2024), curriculum should not be viewed as a content transmission, but as a developing process. The enactive approach supports Kelly's perspective by creating curricula that focus on student participation and the nature of the learning experience. Helliwell and Ebbelind (2024) demonstrate that curriculum practices that integrate enactive and systemic perspectives produce better learning outcomes by showing the impact of educational interactions on student learning.

Lastly, the teaching of enactivism includes experiential learning activities, interactive simulations, and embodied learning tasks. Mathematics students benefit from interactive tablet applications according to Abrahamson et al. (2022) when these applications use motor-control tasks. The perceptual solutions that stem from bodily engagement help students have a deeper understanding of abstract mathematical ideas. Aguayo et al. (2023) demonstrate how enactivism practical applications in inclusive STEAM learning design leads to inclusive learning environments that value different learning approaches and promotes active student participation.

### **Methodology**

This qualitative study explored Kindergarten through 12<sup>th</sup>-grade public school teachers' perceptions of gamification and its impact on student motivation, self-efficacy, self-determination, and self-regulation. Data was collected through a researcher-developed Qualtrics survey, which included both Likert-scale and open-ended questions.

The survey was distributed to approximately 300 certified teachers in the Heart of the Prairie school district in the midwestern United States. Seventeen valid responses were used. Participants self-identified their level of experience with gamification and determined the specific survey track they received. The survey explored the research questions, described earlier in this chapter, that focused on gamification's perceived effects on student learning and teacher efficacy and a quantitative comparison of student scores. The survey instrument was designed to align each question to research objectives. Descriptive statistics and thematic analysis were used to examine participant responses by experience level.

### **Conclusion**

The literature review described how gamification related to assessment methods through an evaluation of theoretical bases and current assessment methods and classroom escape game practices from a teacher's point of view. The review demonstrated that Kelly's Curriculum Theory (2004) and Bandura's Theory of Self-Efficacy offer vital analytical tools to student gamification effects on teaching methods and learning outcomes by analyzing structural and psychological factors. Together, these theories showed that curriculum alignment, student-centered learning, and self-belief worked together to create motivation and mastery.

Research indicated that educational assessment methods needed to evolve toward authentic, flexible approaches that enhanced deep learning in all assessment stages, including formative, summative, and diagnostic assessment. Escape games and other gamified learning opportunities showed great potential to solve these needs because they promoted teamwork and problem-solving and gave players independence and critical

thinking skills. At the same time, the literature cautioned that poorly designed game-based activities, those that prioritize pointification or superficial competition, may undermine intrinsic motivation or create equity concerns.

The success of gamified learning depended on teacher perceptions of the approach and their personal self-efficacy. The literature indicated that teachers understood that gamification brought motivational and engaging benefits to learning. However, they faced obstacles, including insufficient time, inadequate training, and digital tool proficiency, to implement it effectively. The educational frameworks ALLURE (Bisz and Mondelli, 2023) and Action-First Learning offered teachers simple methods to implement their approaches while maintaining their focus on meaningful, curriculum-based gamification design.

The literature demonstrated that students reached better learning outcome mastery and showed increased interest because their autonomy and motivational levels improved. Gamification included multiple game elements that supported both constructivist and enactive learning approaches. Research conducted through meta-analysis and subject-specific studies demonstrated that these experiences resulted in better overall student enjoyment, improved critical thinking, content understanding, and student persistence. The literature also showed that gamification functioned as an interactive system with the ability to transform assessment, teaching, and student achievement methods when thoughtfully developed. The literature also revealed research gaps that prompted the researcher to investigate teacher options regarding gamification and classroom escape games.

Building on the theoretical foundations and existing literature reviewed in Chapter Two, the next step was to explain how these findings guided the development of this study. The research design for Chapter Three describes the methodological approach to study K-12 teacher perceptions about gamification through classroom escape games as assessment methods. The research design section of Chapter Three explains the participant characteristics, data collection tools, and analysis methods. The methodology section of Chapter Three establishes the necessary framework to study how gamification affects student motivation, self-efficacy, and teaching methods in classroom environments based on existing research.

## Chapter Three: Methodology

### Introduction

This study examined Kindergarten through 12th-grade teachers' perceptions of gamification on their students' motivation, self-determination, self-efficacy, and self-regulation. A researcher-created survey tool was used to collect qualitative data to determine teachers' perceptions of gamification to encourage students. Data were analyzed to determine the interaction of teachers' perceptions of gamification on their students' motivation, self-determination, self-efficacy, and self-regulation in the public-school setting.

Chapter Three reiterates the problem and purpose, presents the research questions and research design, describes the population and sample, instrumentation, and data collection procedures, and discusses ethical considerations.

### Problem and Purpose Overview

This Qualitative research investigated teachers' perceptions of breakout games to enhance student motivation, self-determination, self-efficacy, and self-regulation.

Specifically, the researcher of the study aimed to provide an informed discussion that:

- Explore teachers' attitudes and perceptions regarding traditional and gamified learning environments.
- Examine differences in the effectiveness of traditional and gamified learning environments in student motivation, self-efficacy, self-determination, and learning outcomes.
- Investigate teachers' insights into the potential impact of gamification on future learning practices.

Through this exploration, the researcher sought to unearth nuanced insights into the impact of traditional versus gamified learning environments, examining how they influenced critical aspects such as student engagement, confidence, and learning outcomes. Additionally, the study enabled the researcher to examine teachers' visions for the future of education by analyzing educators' perspectives on the transformative potential of gamification. The research contributed to the academic discussions on gamified learning and offered practical implications for pedagogical practice and curriculum design.

This researcher examined how gamification affected traditional teaching and learning methods in public education from Kindergarten through 12th grade. The research focused on teachers' perceptions and experiences with gamified learning to address gaps in the current literature and to enhance understanding of the effects of gamification on educational practice. The research contributed to academic discussions and supported the adoption of innovative methodologies to address the diverse needs of modern learners, potentially leading to improvements in educational outcomes.

### **Research Questions and Hypotheses.**

The following research questions and hypotheses guided this study:

1. What features in gamification do teachers perceive increase student motivation for learning mastery in the public-school setting?
2. What features in gamification do teachers perceive increase student efficacy for learning mastery in the public-school setting?
3. How does gamification change learning for students and teachers in the public-school setting?

4. What gamification attributes enhance teachers' self-efficacy regarding assignment planning for learning mastery evaluation in public schools?
5. What are teachers' perceptions and dispositions toward using gamified learning in their classroom experiences?
6. Is there a statistically significant difference between students' activity scores in classroom breakout games and traditional classroom assignments?

H0: There is no difference in scores for breakout games and traditional classroom assignments for Kindergarten through 12th-grade students at Heart of the Prairie School District.

H1: There is a difference in scores for breakout games and traditional classroom assignments for K through 12th-grade students at Heart of the Prairie School District.

- The researcher initially designed the research methods as a mixed-method investigation. However, due to low participation and lack of quantitative data, the quantitative analysis did not take place, and Research Question 6 was omitted from the study.

### **Research Design**

Qualitative data were collected through a survey administered to public school teachers from Kindergarten through 12th grade across the district. This approach provided comprehensive insights into the experiences and perspectives of educators at various grade levels. The researcher aimed to gain qualitative data about teachers' perceptions of gamification features on student learning through self-efficacy, motivation, and self-determination.

The survey was administered through Qualtrics and distributed via email to the district superintendent. Once approval was granted, the superintendent sent the study to district-certified teachers through their internal mail lists. Specific details about the survey instrument are detailed in the instrumentation section.

### **Population and Sample**

This study encompassed a potential population of approximately 380 Kindergarten through 12th-grade public school teachers in a midwestern school district in the United States. The entire school district's certified teaching staff was approached as possible participants to enhance the depth and accuracy of analysis while minimizing selection bias. A total of 34 teachers initially participated in the survey, with 18 completing it. One response was omitted due to a lack of relevant experience, resulting in a final sample size of 17 educators.

Participants represented a range of experience levels: four had little experience, nine had moderate experience, and four had extensive experience. All participants had a minimum of six years of experience working as a teacher in K-12 public education and were categorized into three experience groups: 6-10 years of teaching experience, 11-15 years of teaching experience, and 16 or more years of teaching experience. Additionally, participants ranged in age from 20 to over 50 years. While age-distribution data were not examined categorically, the data helped describe the research sample demographics. A detailed summary of participant age and teaching experience is provided in *Tables 2 and 3*.

### **Table 2**

#### *Participant Age Distribution*

Age Range	n	Percentage
20-30	2	11.8%
31-40	6	35.3%
41-50	5	29.41%
51 or older	4	23.5%
Total	17	100%

*Note:* Age data were not analyzed as categorical variables but were used to describe the sample.

### **Table 3**

#### *Participant Teaching Experience*

Years of Teaching Experience	n	Percentage
6-10 years	6	35.3%
11-15 years	4	23.5%
16+ years	7	41.2%
Total	17	100%

*Note:* Experience categories are based on total years teaching in K-12 public education.

### **Sample Demographics**

Thirty-four participants agreed to take the survey. Of the 34 participants who began the survey, 18 completed it. Of those 18 participants, four participants' answers were categorized as having little experience with gamification, nine participants were categorized as having moderate experience with gamification, and four participants were categorized as having a lot of experience with gamification. One participant reported no experience with gamification, which limited the study's scope and led to the exclusion of that participant, yielding a participant sample of 17 educators.

#### *Age Distribution*

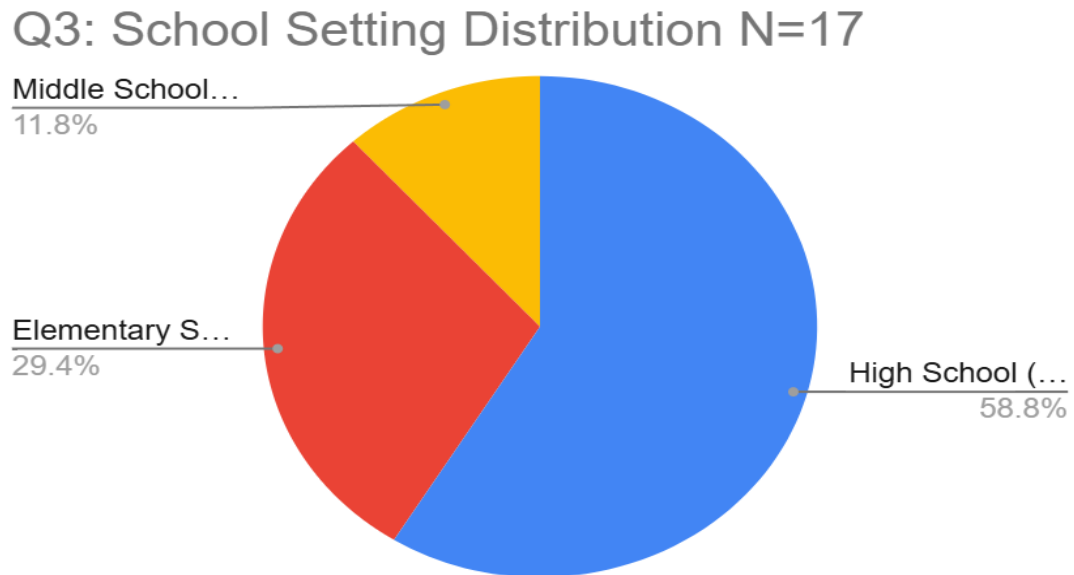
The age distribution of the sample is summarized in *Table 2*.

#### *School Setting*

The participant sample included 17 Kindergarten through 12th-grade public school teachers. The school setting distribution is illustrated in *Figure 3*.

**Figure 3**

*School Setting Distribution*



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*Note:* A majority of the sample participants worked in the high school setting.

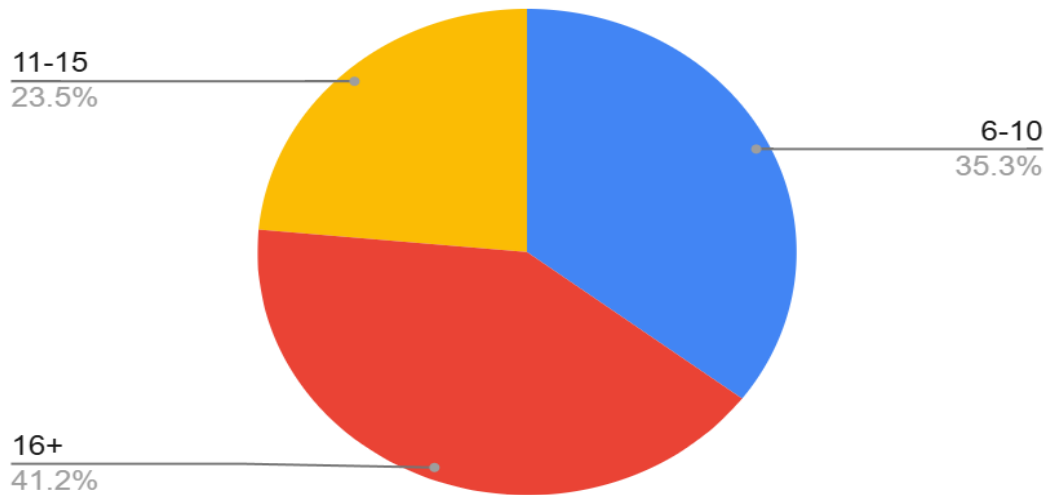
***Years in Education Distribution***

The participant sample included public school teachers who were categorized into categorical descriptive data of less than 5 years, 6-10 years, 11-15 years, and 16+ years. No participants had fewer than 5 years of teaching experience. The years in education setting distribution is illustrated in *Figure 4*.

**Figure 4**

*Years in Education Distribution*

## Q4: Years in Education Distribution N=17



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*Note: A majority of the same participants worked in education 16+ years.*

While this study provides valuable insights into the impact of gamification, two limitations must be acknowledged.

First, the sample size posed a significant constraint. Because participants were self-selected from a single district, the results may not fully represent larger populations of K-12 educators. This raises the possibility of sampling bias where certain groups of teachers, for example, those already interested in gamification, may have been more likely to respond (Bhandari, 2023). Additionally, only one participant indicated having no prior experience with gamification, making it impossible to conduct a meaningful comparative analysis between those with and without prior exposure. As a result, any conclusions drawn from the study reflect the experiences and perceptions of participants already familiar with gamification. This limits the generalizability of the findings to teachers who may be new to incorporating gamification strategies in their classrooms.

Second, Research Question 6, aimed to explore participants' experiences with breakout games through a focus group discussion, was removed due to insufficient participation and was omitted from the study. Despite initial interest, only one participant ultimately volunteered for the focus group, rendering it infeasible as a data-collection method. Consequently, the study lacks qualitative insights that could have provided a deeper understanding of teachers' experiences, challenges, and best practices related to breakout games.

These limitations highlight the challenges of recruiting a diverse sample of participants with varying levels of gamification experience and securing engagement in follow-up qualitative discussions. Future research, described in Chapter Five, could address these limitations.

### **Research Site**

For the purposes of this study, the participating school district was given a pseudonym, "Heart of the Prairie School District." Nestled in the middle of the Show-Me State, Heart of the Prairie School District served as a valued educational institution within the community. With over 700 employees, the district served a cooperative pre-K-12<sup>th</sup> grade enrollment of approximately 4,886 students, making it one of the largest employers in the community. During the study, the district focused on meeting identified "Classroom of the Future" outcomes and indicators. The district's effort worked with students to personalize education to prepare them for college, career, and life.

The high school provided educational programs for students in grades 9 through 12; the junior high served students in grades 6 through 8; the middle school housed students in grade 5; the five elementary schools served students in grades K through 4;

and the county early childhood center served pre-kindergarten students. Additionally, an alternative high school provided 10th through 12th-grade students with another way to earn a high school diploma.

The school district offered specialized and extracurricular programs to meet the diverse student population's needs, including special education, Reaching Exceptional Academic and Creative Heights (REACH) gifted education, English Language Learners, honors courses, advanced placement courses (AP), fine and performing arts, career and technical education, Center for Advanced Professional Studies (CAPS), Missouri State High School Athletics Association (MSHSAA) sanctioned athletics and activities, and non-MSHSAA clubs. The district embraced a strong partnership between the local community and the school district. The community supported district programs and initiatives through business relationships, transparency, and successful bond measures. Community events, service organizations, fine arts, and many other public and private events occur in district facilities daily.

### **Instrumentation**

Two separate tools were developed to collect data for this study. The researcher developed the survey statements. The qualitative Likert-scale and open-ended question survey included a comprehensive data triangulation, ensuring a deep understanding of the outcomes (Creswell & Creswell, 2022). To increase trustworthiness, the survey was aligned to each research question and designed to establish credibility, confirmability, dependability, and transferability, as described by Kakar et al. (2023) and Ahmed (2024). Participants were sorted into one of two tracks related to their self-identified experience with gamification. The survey tool included questions based on their perceived

gamification experiences, utilizing two answer paths. Participants indicated their gamification experience using a four-point scale: no experience, little experience, moderate experience, or a lot of experience. The researcher developed two tracks so all participants felt they had something to contribute to the study. Teachers who indicated familiarity with gamification were presented with 32 questions followed by three optional questions related to their interest in joining a focus group or the current use of escape games within their classroom. Teachers who indicated that they had no experience with gamification were presented with a reworded series of questions about their perceptions of gamification's impact on their classroom. They were also asked to describe any barriers to incorporating gamification into their classroom. The online survey tool, Qualtrics, was emailed to the district superintendent to forward to Kindergarten through 12th-grade teaching staff. Transferability was supported through detailed contextual descriptions of the school district, participants, and instructional environments, which allowed readers to determine applicability to their own educational settings (Ahmed et al., 2024; Stalmeijer, Brown, & O'Brien, 2024).

### **Data Collection**

A recruitment letter (Appendix A) was emailed to the superintendent of Sedalia School District #200. Once the superintendent agreed to participate in the study, he was asked to forward the letter of participation (Appendix B), the consent form (Appendix C), and the survey (Appendix D) to all elementary, middle, and secondary school-certified teachers.

The letter of participation included information about the study's purpose and recruitment period. A consent form was also included, explaining the procedures the

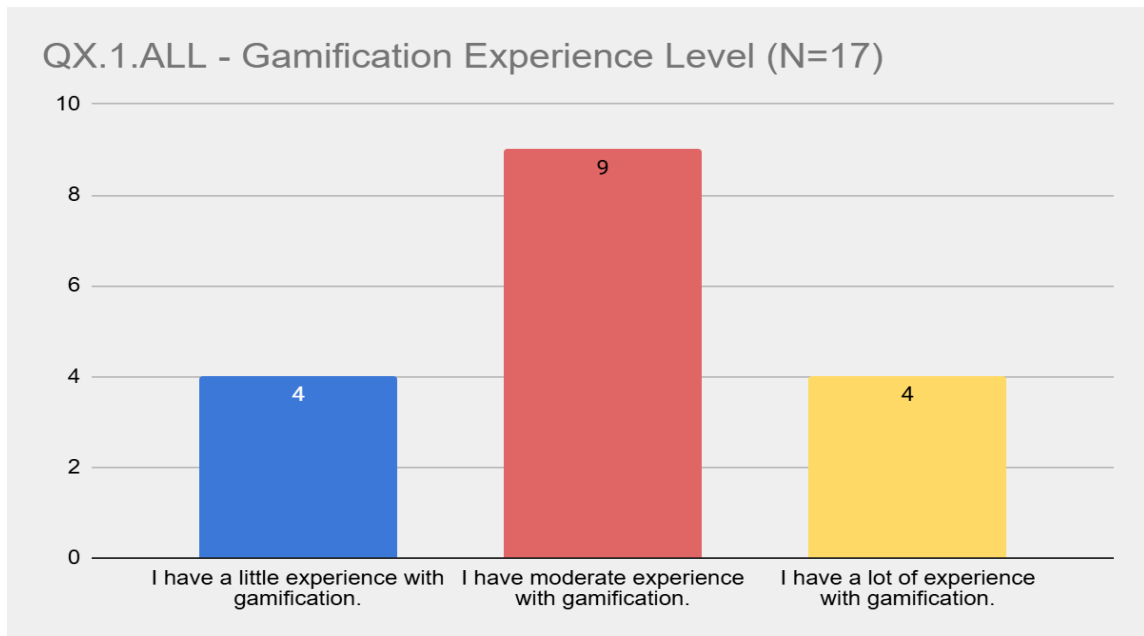
Institutional Review Board approved. The survey was available through the web-based program Qualtrics. Two weeks after the survey was distributed, the study link closed. All data were securely stored in password-protected files accessible only to the researcher.

### **Data Analysis**

The researcher arranged the collected data according to the related study questions. Data was organized by participant experience levels. The research questions guided the researcher in developing the survey instrument, which included specific perception items for each research question. Data were compared across three categories of continuous experience data: participants who self-identified as having little experience, moderate experience, or a lot of experience with gamification in education. The analysis included descriptive data, specifically central averages, to determine central tendency across each category. *Figure 5* illustrates the categories compared between the 17 sample participants.

### **Figure 5**

*Gamification Experience*



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*Note:* A majority of the sample participants self-identified having a moderate level of experience with gamification in education.

### **Teacher Survey**

The district's superintendent received an email from the researcher inviting instructors to participate in the study. The email included a link to the Qualtrics survey (Appendix D). District teachers who consented to participate completed the survey on the Qualtrics platform, which provided secure data storage and participant anonymity. The researcher used Qualtrics to collect participant responses and identify common themes.

### ***Research Question 1 Survey***

RQ 1: What features in gamification do teachers perceive increase student motivation for learning mastery in the public-school setting?

This survey section explored participants' perceptions of gamification and student motivation in the classroom, categorized by the participants' self-reported gamification experience levels. Participants were prompted to consider various features of gamified

classrooms or activities and to assess how they perceived each feature's potential to motivate students, regardless of their gaming experience. Additionally, respondents were asked to provide specific examples of gamification elements or strategies that have impactfully increased student motivation in their classrooms, offering practical insights into the application of gamification. Furthermore, participants were encouraged to reflect on challenges or obstacles while implementing gamification to enhance student motivation and potential solutions to address these challenges. Through these inquiries, the survey aimed to capture nuanced perspectives, experiences, and strategies related to gamification and its impact on student motivation, providing valuable insights for the overarching research study. *Table 4* highlights the alignment between the survey instrument's questions and the research questions driving the study.

**Table 4***Student Motivation Questions*

Question Number	Stem
1.1	When you think of a gamified classroom or activity, how do you feel each feature listed below motivates students?
1.1B	In the previous question, you stated that you have no experience with gamification. Read the definition of gamification below. When you think of a gamified classroom or activity, how do you feel each feature listed below might motivate students?
1.2/1.2B	In your opinion, what other specific gamification elements or strategies, if any, do you believe might increase student motivation?
1.3	In your experience, please provide any challenges or obstacles (if any) you have encountered trying to implement gamification to enhance student motivation?
1.3B	Please provide any challenges or obstacles (if any) you believe exist when educators implement gamification to enhance student motivation?
1.4	If applicable, how have you addressed gamification challenges to improve motivation?

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1.4B If your opinion, how could educators address gamification challenges to improve motivation?

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*Note.* Survey was authored by the researcher.

### ***Research Question 2 Survey***

RQ 2: What features in gamification do teachers perceive increase student efficacy for learning mastery in the public-school setting?

This survey segment examined participants' perceptions regarding gamification and students' self-efficacy, categorized by the participants' self-reported gamification experience levels. The researcher asked respondents to consider various features of gamified classrooms or activities and reflect on how each contributes to increasing students' self-efficacy. Following this, participants are prompted to provide their opinions on specific gamification elements or strategies that could enhance student self-efficacy, drawing from provided definitions of gamification and self-efficacy. Participants were then asked about differences in students' attitudes toward learning and self-efficacy when comparing gamified learning methods to traditional methods, both from the respondents' observed experiences and their anticipated impacts. The final set of questions in this series sought to identify any reservations participants may have had or hold regarding the exploration of gamification in education, thereby shedding light on potential barriers to its adoption. Through these inquiries, the survey aimed to gather nuanced insights into the perceived impact of gamification on students' self-efficacy and attitudes toward learning and educators' openness to incorporating gamification into their teaching practices. *Table 5* highlights the alignment between the survey instrument's questions and the research questions driving the study.

**Table 5***Student Self-efficacy Questions*

Question Number	Stem
2.1/2.1B	When you think of a gamified classroom or activity, how do you feel each feature listed below increases students' self-efficacy?
2.1B	In the previous question, you stated that you have no experience with gamification. Read the definition of gamification below. When you think of a gamified classroom or activity, how do you feel each feature listed below might motivate students?
2.2/2.2B	In your opinion, what other specific gamification elements or strategies, if any, do you believe might increase student self-efficacy?
2.3/2.3B	In your opinion, what differences could occur in students' attitudes toward learning and self-efficacy when comparing gamified learning to traditional methods?
2.4/2.4B	How open are you to the idea of incorporating gamification into your teaching practice, even if you haven't done so yet?
2.5/2.5B	What are current (or previous) reservations (if any) you have had about exploring gamification?

*Note.* Survey was authored by the researcher.

***Research Question 3 Survey***

RQ 3: How does gamification change learning for students and teachers in the public-school setting?

This survey section explored participants' perceptions of gamification's impact on learning and classroom dynamics, categorized by the participants' self-reported gamification experience levels. Respondents were asked to rate the overall impact of gamification on student engagement in their classroom, both from their current experience and from a hypothetical perspective. Next, the researcher asked respondents how much gamification influences student collaboration and interaction in the classroom, providing insights into its potential impacts on teamwork and social interaction. Following this, participants were asked to explore how gamification has or could

influence their teaching methods, shedding light on its role in instructional practices. Additionally, this section sought to understand the impact of gamification on students' perceptions of the learning process and examined its broader influence on the teaching and learning environment. The final questions prompted participants to consider specific statements and evaluate how gamification influences students based on their current experience or understanding, providing nuanced insights into its impacts on various aspects of learning. Through these inquiries, the survey aimed to gather comprehensive perspectives on the influence of gamification on learning and classroom dynamics. *Table 6* highlights the alignment between the survey instrument's questions and the research questions driving the study.

**Table 6***Gamification's Influence on Learning Questions*

Question Number	Stem
3.1	Please rate the overall impact of gamification on student engagement in your classroom:
3.1B	Please rate the overall impact that gamification would (or could) have on student engagement in the classroom:
3.2	To what extent do you believe gamification influences the dynamics of student collaboration and interaction in the classroom?
3.2B	To what extent do you believe gamification would or could influence the dynamics of student collaboration and interaction in the classroom?
3.3	How has gamification influenced (if at all) your teaching methods?
3.3B	How would (or could) gamification influence (if at all) your teaching methods?
3.4	In your opinion, how has gamification influenced (if at all) the way students perceive the learning process?
3.4B	In your opinion, how could gamification influence (if at all) the way students perceive the learning process?

3.5	What influence (if any) do you believe gamification has on the teaching and learning environment?
3.5B	What influence (if any) do you believe gamification could have on the teaching and learning environment?
3.6/3.6B	Based on your current experience or understanding, how does gamification influence students based on the following statements:

*Note.* Survey was authored by the researcher.

#### ***Research Question 4 Survey***

RQ 4: What gamification attributes enhance teachers' self-efficacy regarding assignment planning for learning mastery evaluation in the public-school setting?

This survey section examined participants' self-efficacy in integrating gamification into their instructional practices, categorized by participants' self-reported gamification experience levels. Participants were asked to rate the extent to which gamification has or could increase their confidence in planning and delivering assignments for student learning mastery, providing insights into the perceived impact of gamification on their teaching effectiveness. Next, participants were asked about the influence of gamified elements on educators' self-efficacy in designing practical assessments for students' learning mastery and explored the contribution of gamification elements to educators' self-efficacy in addressing the diverse needs of their students when planning assignments. Participants delved into how the integration of gamification elements affects educators' self-efficacy in promoting inclusive and accessible learning experiences for all students. Additionally, questions aimed to investigate the challenges and opportunities encountered or anticipated when using gamification to design assignments, particularly in promoting authentic assessment and inclusion, and how educators have addressed or would address them. Lastly, participants assessed their

confidence in planning a lesson with a gamified element, providing insights into their readiness to incorporate gamification into their instructional practices. Through these inquiries, the survey aimed to gather comprehensive perspectives on educators' self-efficacy in utilizing gamification to enhance teaching and learning experiences. *Table 7* highlights the alignment between the survey instrument's questions and the research questions driving the study.

**Table 7**

*Educators' Self-efficacy Questions*

Question Number	Stem
4.1	Please rate the extent to which gamification has increased your confidence in planning and delivering assignments for students learning mastery:
4.1B	Please rate the extent to which gamification might increase your confidence in planning and delivering assignments for student learning mastery:
4.2	In has the use of gamified elements influenced your self-efficacy in designing effective assessments for students' learning mastery?
4.2B	How might the use of gamified elements influence your self-efficacy in designing effective assessments for students' learning mastery?
4.3/4.3B	To what degree do gamification elements contribute to your self-efficacy in addressing the diverse needs of your students when planning assignments?
4.4/4.4B	In your opinion, how has the integration of gamification elements influenced your self-efficacy in promoting inclusive and accessible learning practices?
4.5/4.5B	In thinking of challenges mentioned in a previous question, how would you address planning authentic assessment and inclusion in a gamified learning environment?
4.6/4.6B	If you were asked today to plan a lesson that had a gamified element, how confident would you be?

*Note.* Survey was authored by the researcher.

***Research Question 5 Survey***

RQ 5: What are teachers' perceptions and dispositions toward using gamified learning in their classroom experiences?

This survey section explored participants' attitudes and dispositions toward gamification in their teaching practice, categorized by the participants' self-reported gamification experience levels. Participants rated their interest in exploring gamified learning in their classrooms, providing insights into their openness to incorporating gamification. Following this, educators evaluated the alignment of gamified learning with their teaching philosophy and goals, offering reflections on the compatibility of gamification with their educational values. The researcher asked participants about the potential influences of external factors, such as peer recommendations or professional development, on educators' willingness to explore gamified learning in their classrooms, highlighting the role of external support in shaping attitudes toward gamification. Educators were invited to share their experiences with implementing gamified learning in their classrooms, along with the outcomes or insights gained from these experiences, providing valuable insights into the practical implications of gamification. Lastly, participants were asked to articulate any concerns or reservations about integrating gamified elements into their teaching and offered perspectives on potential challenges or barriers to adoption. Through these inquiries, the survey aimed to gather comprehensive insights into educators' attitudes, experiences, and considerations regarding the incorporation of gamified learning approaches. *Table 8* highlights the alignment between the survey instrument's questions and the research questions driving the study.

**Table 8**

*Teacher Disposition*

Question Number	Stem
5.1/5.1B	Please rate your interest in exploring gamified learning in your classroom.
5.2/5.2B	To what extent do you believe gamified learning aligns with your teaching philosophy and goals?
5.3/5.3B	Please rate the potential influence of external factors, such as peer recommendations or professional development, on your willingness to explore gamified learning:
5.4/5.4B	Describe your experiences, if any, with implementing gamified learning in your classroom and what outcomes or insights have you gained from these experiences?
5.5/5.5B	What potential concerns or reservations (if any) do you have about integrating gamified elements into your teaching?

*Note.* Survey was authored by the researcher.

### ***Research Question 6 Survey***

RQ 6: Is there a statistically significant difference between students' activity scores in classroom breakout games and traditional classroom assignments?

Research Question 6 was omitted from the study. However, since the researcher deemed this portion of the methodology important to note, the information surrounding the omitted quantitative research question was included. This survey section planned to assess educators' use of escape games with their students and their interest in participating in a focus group to discuss their experiences. Participants were asked whether they currently use or have ever used a breakout game with their students, enabling identification of educators with practical experience with this instructional approach. Educators who expressed an interest in joining a focus group to discuss their experiences were directed to a separate form to provide their contact information; the original survey remained anonymous. Alternatively, educators who had not used breakout games were asked to indicate any common obstacles they perceived that may have prevented them from using this instructional method, providing insights into potential

barriers to adoption. Through these inquiries, the survey aimed to gather information about educators' experiences and attitudes regarding using escape games in the classroom and their interest in further engagement through focus group discussions, and allowed the researcher to gather data to prove their hypothesis. However, due to a lack of participation, the focus group did not take place, and the quantitative portion of research question 6 was omitted. *Table 9* highlights the alignment between the survey instrument's questions and the research questions driving the study.

**Table 9**

*Breakout Games & Focus Group*

Question Number	Stem
F1.1/F1.1B	Are you currently using or have you ever used a breakout game (escape room) with your students?
F1.2	If you are interested in joining a focus group to discuss your experiences, please fill out the Microsoft Form with your contact information. This form will open in a new tab. When you are entering your information, please return to this tab to finish the survey and submit your responses.
F1.2B	You have indicated that you have not used breakout games with your students. Below are some common obstacles, please indicate which, if any, apply to you:

*Note.* Survey was authored by researcher.

**Ethical Considerations**

The researcher applied to the Lindenwood University Institutional Review Board to gain permission to conduct the study, and permission was granted. The researcher ensured participant confidentiality and anonymity as outlined in the research consent form (Appendix E). To protect the privacy of the respondents, the researcher only collected the names of participants currently using gamification in their classrooms and volunteered to participate in the optional focus group. The reported results did not include

the school district name and individual participant names. Electronic data were stored on the University's password-protected server. The researcher followed university guidelines regarding keeping data for at least three years before destroying the data.

### **Summary**

Chapter Three provided an overview of the research problem and the purpose of the study, and restated the research questions. It also detailed the research design, population, sample, and survey instrumentation. The data collection process was clarified, and the method of data analysis was described. Lastly, ethical considerations regarding the study were addressed. Analysis procedures described in Chapter Three were followed to ensure rigor and consistency in coding and interpretation. Chapter Four includes an overview of the purpose and analysis of the data. Each research question and related survey question organize the data. Additionally, tables and figures are presented to aid the reader in understanding the data.

## Chapter Four: Analysis of Data

### Introduction

Gamification had gained traction as a dynamic approach to addressing the challenges of engaging students in diverse learning environments. By integrating game-based elements into education, gamified strategies, such as breakout games, have demonstrated the potential to enhance student motivation, self-efficacy, and learning outcomes (Nicholson, 2015; Deterding et al., 2011). Breakout games are particularly notable for their ability to create immersive and interactive experiences that capture students' attention while promoting deeper engagement with academic content (Nicholson, 2015).

Despite growing interest in gamified learning, research exploring implementation and impacts within K-12 public education remained limited (Dichev & Dicheva, 2017; Dugnot-Menedez, 2021). While existing studies emphasized benefits in higher education, a noticeable gap existed in understanding gamification implications in primary and secondary school contexts, where students' needs and classroom dynamics significantly differed. Moreover, the existing body of literature overlooked critical aspects such as pedagogical strategies, teacher perspectives, and the practical challenges of integrating gamified methods into traditional educational settings (Reuter et al., 2020).

The researcher of this qualitative study sought to address these gaps by investigating teachers' perceptions of breakout games within K-12 education. Specifically, exploring how gamification enhanced teaching and learning practices in the K-12 education setting. The researcher highlighted educators' insights to provide an informed discussion aimed to shape successful K-12 implementation. By exploring

teachers' attitudes, strategies, and challenges, the researcher aimed to provide actionable recommendations for leveraging gamification as an impactful instructional tool in public school classrooms.

The following research questions guided the study, each of which is significant in understanding the role of gamification in K-12 education:

1. What features in gamification do teachers perceive increase student motivation for learning mastery in the public-school setting?
2. What features in gamification do teachers perceive increase student efficacy for learning mastery in the public-school setting?
3. How does gamification change learning for students and teachers in the public-school setting?
4. What gamification attributes enhance teachers' self-efficacy regarding assignment planning for learning mastery evaluation in public schools?
5. What are teachers' perceptions and dispositions toward using gamified learning in their classroom experiences?
6. Is there a statistically significant difference between students' activity scores in classroom breakout games and traditional classroom assignments?

H0: There is no difference in scores for breakout games and traditional classroom assignments for Kindergarten through 12th-grade students at Heart of the Prairie School District.

H1: There is a difference in scores for breakout games and traditional classroom assignments for K through 12th-grade students at Sedalia School District 200.

- The researcher initially designed the research methods as a mixed-method investigation. However, due to low participation and lack of quantitative data, the quantitative analysis did not take place, and Research Question 6 was omitted from the study.

The researcher developed two tools to collect data for this study. The survey consisted of qualitative Likert-scale items and open-ended questions, facilitating a robust data triangulation process and enabling a nuanced understanding of the findings (Creswell & Creswell, 2022). Participants were directed into one of two survey tracks based on their responses to question five, which assessed their familiarity with gamification. This design ensured that all participants could contribute meaningfully to the study regardless of their experience with gamification. Teachers familiar with gamification completed a track containing 32 questions, followed by three optional items regarding their interest in participating in a focus group and their use of escape games in the classroom. Teachers without prior experience with gamification were presented with a reworded series of questions that focused on their perceptions of gamification's potential impact and asked to identify barriers to its implementation in their classrooms. Due to the limited number of respondents indicating no prior gamification knowledge, the sample size was too small to quantify any results, and therefore, this portion of the study was omitted. Additionally, due to low participation and lack of quantitative data, the quantitative analysis did not take place, and Research Question 6 was omitted from the study.

The survey instrument (Appendix D) was administered through Qualtrics, an online platform, and distributed via email to the district superintendent for further

dissemination to Kindergarten through 12<sup>th</sup>-grade teachers. This approach not only streamlined distribution but also ensured strict alignment with district policies and procedures, thereby reassuring and garnering support from policymakers.

Chapter Four includes an introduction of the study, data results, an explanation of participants' demographics, and the data analysis procedures applied to the questionnaire where data was organized by research question. The chapter concluded with a summary of the findings.

### **Participants**

The researcher included the entire population of approximately 380 educators to provide deeper insights into the targeted population. The chosen method allowed the researcher to develop a more complex analysis and significantly reduce estimation. This method also eliminated the risk of biased selection often encountered in random study samples (Bhandari, 2022). The recruited population of this study included 17 Kindergarten through 12<sup>th</sup>-grade public school teachers.

### **Overview of Data Analysis and Presentation**

The researcher arranged the collected data according to the related study questions. Data was organized by participant experience levels. The research questions guided the researcher in creating the survey tool which included specific perception questions based on each research question. Data was compared by each category of continuous experience data within three categories which included participants self-identified as having '*little experience*', '*moderate experience*', and '*a lot of experience*' with gamification in education. The analysis included descriptive data, specifically averages, to determine central tendency across each category.

## Presentation of Findings

### *Research Question 1*

#### **Research Question 1: What features in gamification do teachers perceive increase student motivation for learning mastery in the public-school setting?**

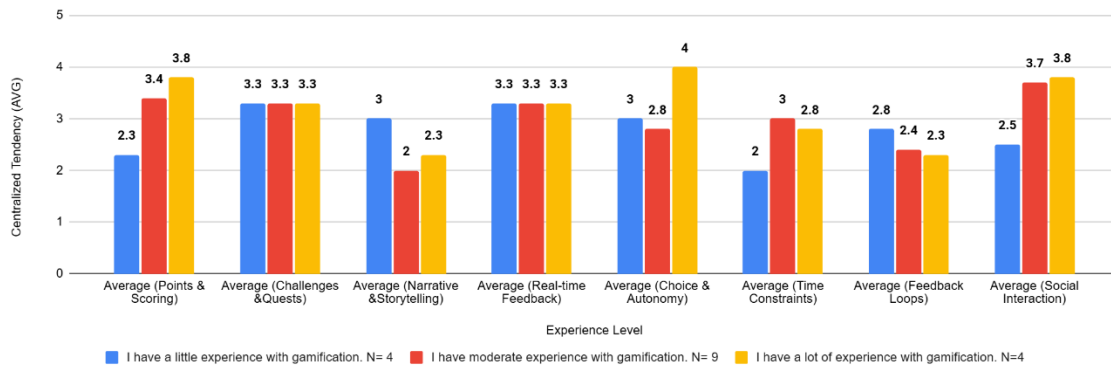
This survey section examined teachers' perceptions of how gamification features influence student motivation in the classroom. Participants identified specific gamified elements or strategies they found impactful in fostering engagement, providing practical examples from their experiences. Additionally, the survey explored challenges teachers faced when implementing gamification to enhance motivation and the potential solutions they proposed to address these obstacles.

**Q1.1.** *Figure 6* presents an analysis of survey responses to Q1.1 which examined how different gamification features motivate students in a learning environment. Participants were asked to rate the motivational impact of various elements including 'Points & Scoring', 'Challenges & Quests', 'Narrative & Storytelling', 'Real-time Feedback', 'Choice & Autonomy', 'Time Constraints', 'Feedback Loops', and 'Social Interaction'. The responses were categorized based on participants' experience levels with gamification, providing insight into how motivation differs across varying degrees of familiarity with gamified learning.

#### **Figure 6.**

### *Gamification Variables that Motivate Students*

Q1.1 Gamification Variables that Motivate Students N=17



*Note:* Participants rated *Social Interaction* and *Challenges & Quests* as the most motivating gamification features across all experience levels.

Across all experience levels, *Social Interaction* (3.4) and *Challenges & Quests* (3.3) were among the highest-rated motivational factors. Participants also found *Real-time Feedback* (3.3) and *Choice & Autonomy* (3.1) as impactful motivators. Conversely, *Narrative & Storytelling* (2.3) and *Feedback Loops* (2.5) were perceived as less motivating. Variations in perception emerged based on participants' experience levels, with more experienced users favoring certain features more than others.

**Analysis By Feature.** *Social Interaction* had the highest rating (3.4), followed by *Challenges and Quests* (3.3) and *Real-time Feedback* (3.3). *Choice & Autonomy* (3.1) was rated highest by experienced users (4.0). *Points & Scoring* had a central tendency rating of 3.8 among experienced users and 2.3 among those with little experience. *Narrative & Storytelling* had a lower central tendency rating of 2.3, with little experience participants rating it 3.0. *Feedback Loops* had a central tendency rating of 2.5, with little-experience participants rating it the highest (2.8). *Time Constraints* had a central tendency rating of 2.7, with moderate experience participants rating it highest (3.0).

***Experience Level Differences.*** Participants with little gamification experience rated *Narrative & Storytelling* (3.0) and *Feedback Loops* (2.8) higher than more experienced users. Those with a lot of experience found *Choice & Autonomy* (4.0) and *Points & Scoring* (3.8) to be the most impactful motivators.

**Q1.2.** This section presents an analysis of participant responses to Q1.2, which examined teachers' perceptions of gamification features that enhanced student motivation for learning mastery. Responses were categorized by key themes that emerged, illustrating the various ways educators perceived gamification as a tool for increasing student engagement.

***Competition and Social Interaction.*** Several participants emphasized the role of competition in fostering motivation. Gamified learning environments that incorporated competitions between students and classes, opportunities for students to challenge the teacher, and team-based collaboration were identified as highly engaging. Additionally, the social aspects of gamification, such as building relationships between students and teachers, were noted as key motivators. Participants highlighted that students naturally enjoyed competing and that integrating competition into learning enhanced engagement. One participant stated, "Students naturally like to compete, so when learning is turned into a competition, it automatically receives buy-in from all parties." Another response emphasized how social connections influence motivation: "Games help build relationships between teacher and student, which increase motivation."

***Reward Systems and Incentives.*** The use of rewards was frequently mentioned as a way to increase motivation. Participants described the impact of tangible incentives such as prizes, badges, and food rewards for recognizing student achievement. One

participant notes, “Prizes for winners help maintain student interest.” Another highlights the impact of structured incentives, stating, “Food rewards for high school students based on top winners, most improved, and working as a team have been effective.”

***Engagement Through Game Mechanics.*** Participants identified specific game mechanics as essential in driving student motivation. Elements such as points, badges, challenges, levels, avatars, storytelling, and instant feedback were repeatedly cited as increasing engagement. The role of novelty, autonomy, and personalization were also emphasized as key factors in sustaining motivation. One response details the importance of these mechanics: “In addition to points, badges, and levels, incorporating elements like challenges, competitions, personalized avatars, and narrative-based storytelling boosts student motivation.” Another participant emphasizes the need for instant feedback and student choice, stating, “Providing instant feedback, allowing for student choice and autonomy, and integrating social elements such as group activities or collaborative gameplay enhances engagement.”

***Low-Stakes Learning and Growth Mindset.*** Several participants described gamification as an opportunity to create low-stakes learning environments where students feel comfortable taking risks. One participant referenced the “Mario Effect” explaining how infinite retries in video games help sustain motivation in education settings. They explained, “I saw a TED Talk about the ‘Mario Effect’ and how gamification changes the way we teach. In a game, lives are limitless. If children believe they will get another shot as passing a level, they are more likely to sustain the task and continue working.” Another participant describes the role of gamification in reducing anxiety, stating,

“Offering a more challenging level without consequences allows students to work towards something without fear, which I really like.”

***Gamification as a Cross-Subject Tool.*** Gamification was also presented as an interdisciplinary strategy that ties together different subjects and creates continuity across instructional units. By using gamification elements consistently across subjects, teachers believed they can enhance student engagement throughout the curriculum. One participant noted “Using it across subjects helps ‘tie’ together units of instruction, making learning feel more connected and purposeful.

**Q1.3.** This section presents an analysis of participant responses to Q1.3, which examined the challenges and obstacles teachers have encountered with implementing gamification to enhance student motivation. Responses were categorized into key themes that emerged, highlighting common barriers and difficulties faced by teachers in incorporating gamified learning strategies.

***Time and Preparation Constraints.*** One of the most frequently cited challenges was the time required to create, implement, and manage gamified activities. Teachers noted that the process of researching, preparing, and executing gamified lessons can be overwhelming, especially when coupled with the demands of curriculum pacing. Some participants mentioned that finding the right games that align with instructional goals required significant effort and sometimes the overwhelming number of choices made it difficult to know where to start. Participants expressed frustration with the extensive time investment needed to develop gamification strategies. One participant stated, “Time required to put together the game and research what game to use for the unit you are studying is a major obstacle.” Another participant noted, “Nothing is worse than wasting

20 minutes of planning time researching for a game and coming up empty. Then I fall back on my old strategies, and even I am tired of them.”

***Technology and Access Issues.*** Many participants highlighted technological barriers as significant challenges in implementing gamification. Issues such as server problems, unreliable access to digital platforms, and student device limitations created obstacles for teachers trying to integrate gamified activities into instruction. Additionally, rising costs of educational game platforms were cited as a growing concern, with some teachers struggling to secure funding for necessary resources. One participant shared, “Server issues, randomly logging students off-site, and game sites becoming unresponsive make it difficult to rely on gamification tools.” Another stated, “Certain physical games cost money (like breakout boxes), and districts may not want to purchase them. Paid subscriptions to websites can also be an obstacle.”

***Student Engagement and Equity Concerns.*** While gamification was generally seen as an engagement booster, some participants reported student apathy and uneven participation in challenges. Teachers note that certain students might focus more on the game aspect than the learning content, while others may struggle to engage due to reading difficulties or comprehension gaps. One participant explained:

Sometimes Special Education students have difficulty reading instructions or questions, so I have to read them aloud to the class. This does not negatively impact the rest of the class, but some students still get words or questions turned around while trying to read and listen.” Another participant noted, “Some students become so focused on playing the game that they no longer want to verbally communicate and may become unregulated when they 'lose'.

***Balancing Gamification with Curriculum Standards.*** Another common concern was ensuring that gamified activities align with required curriculum content. Some teachers expressed frustration that gamification is not explicitly included in curriculum guides, making it difficult to justify its implementation. Others mentioned that balancing time between gamification and traditional instruction can be a challenge when covering mandated curriculum objectives. One participant commented, “There is not enough time given the amount of curriculum content required.” Another noted, “Gamification is not on the curriculum guide, so it can be difficult to incorporate without justification.”

***Teacher Support and Institutional Resistance.*** Several participants mentioned a lack of training and resistance from traditional educational norms as challenges in adopting gamification strategies. Some teachers expressed that parents, administrators, or other educators may be hesitant about gamification because it does not fit into the conventional educational model they are accustomed to. Additionally, some educators felt underprepared to integrate gamification effectively due to a lack of professional development opportunities. One participant described the challenge of institutional resistance, stating, “Gamification is fairly new, and getting people on board (parents/admin) can be difficult because it isn’t the ‘normal’ style of education we are used to seeking.” Another participant emphasized the need for professional development, explaining, “Providing adequate training and support for educators to effectively implement gamification strategies can be a hurdle.”

**Q1.4.** This section presents an analysis of participant responses to Q1.4, which examined the strategies educators have used to overcome challenges in implementing gamification to improve student motivation. Responses were categorized into key themes

that emerged, highlighting various approaches teachers have taking to refine and sustain gamified learning experiences.

***Adjusting Game Structures to Reduce Frustration.*** Several participants emphasized the importance of modifying game structures to decrease competitive pressure and maintain student engagement. Some educators reported selecting games that do not emphasize winning or losing, while others managed manipulatives or game elements to ensure a controlled and supportive environment. One participant stated, “I choose games that do not have a clear winner or loser, I don’t focus on winning, and I find games that have manipulatives that I can withhold if necessary to maintain control of the game.” Another participant noted, “Proper supervision, participating in the game, and not overusing a game help maintain engagement and control.”

***Incorporating Collaboration and Peer Support.*** Collaboration among students was another commonly cited solution. Some teachers found that paring students together or along them to trade groups helped sustain motivation and foster engagement. One participant mentioned, “Sometimes allowing the students to work with another student or trade groups helps keep them motivated.” Another participant emphasized teacher collaboration, stating, “Collaborating with other teachers and sharing game ideas that have worked for them has been helpful in overcoming constraints.”

***Leveraging Technology and Reviewing Content Through Games.*** Many teachers addressed gamification challenges by integrating digital tools such as Kahoot, Blooket, and digital breakout rooms to enhance student motivation. Gamification was also used to help students retain information, particularly in review activities. One participant noted, “Reviewing for tests with Blooket and Kahoot has shown improved test scores.” Another

participant described, "I have used digital breakout rooms as well as team-building challenges. When reviewing content, I usually try to play some type of game with the students."

***Providing Incentives and External Motivators.*** Some educators tackled gamification challenges by incorporating prizes and external motivators. Providing tangible incentives was seen as a way to increase participation and engagement. One participant stated, "I have given prizes and made the games available outside of class time to encourage engagement." Another participant mentioned, "Students might not sit and study their flashcards of vocabulary, but maybe they'll play a game if I encourage them enough."

***Supporting Special Education and Diverse Learners.*** A few participants highlighted strategies for making gamification more accessible for students with diverse learning needs, including Autistic students and students who struggle with reading comprehension. Tools such as visual planning maps and timers were used to help students stay engaged and transition between activities more effectively. One participant shared, "For Autistic students, a 'Ready, Do, Done' map often helps. Timers can be helpful for all students." Another participant mentioned, "Sometimes Special Education students have difficulty reading instructions, so I read them aloud to the class to ensure they can participate."

***Maintaining Engagement Over Time.*** To sustain long-term motivation, teachers reported that regularly updating gamification elements, differentiating challenges, and fostering a positive classroom culture helped ensure continued engagement. Some educators emphasized that despite the challenges, they remained committed to

gamification because of the positive impact on student engagement. One participant explained:

Even though the setup is a lot of work and not every person around me understands or initially sees the value, I do it anyway because I know at the end that I am going to have actively engaged students with the content. (Survey Participant)

Another teacher discussed the importance of adaptation, stating, "To maintain engagement over time, I regularly update and refresh gamified elements to keep them novel and exciting."

### ***Research Question 2***

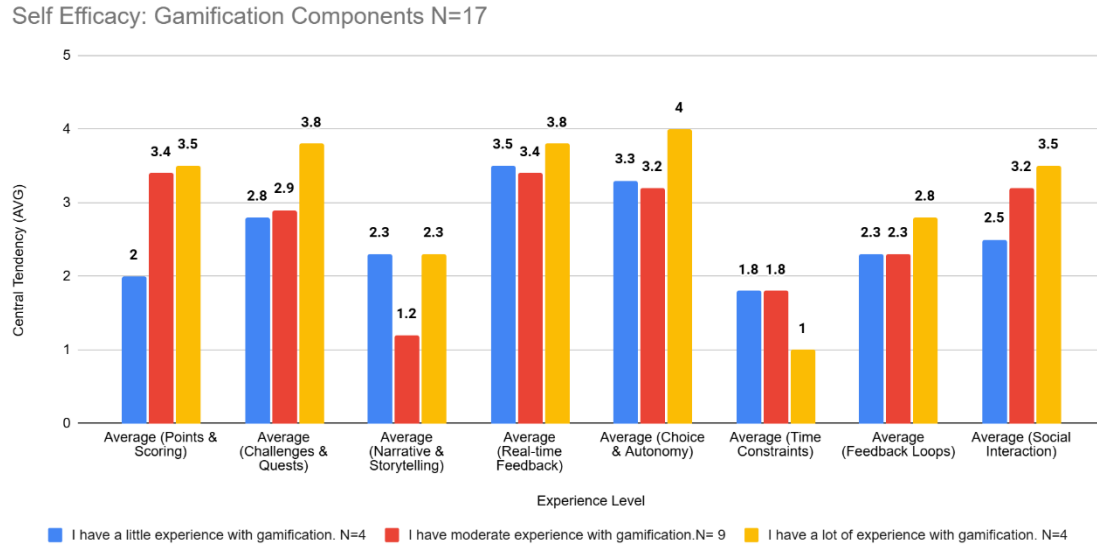
#### **Research Question 2: What features in gamification do teachers perceive increase student efficacy for learning mastery in the public-school setting?**

This survey segment explored teachers' perceptions of how gamification influences students' self-efficacy. Participants reflected on gamified classroom features and strategies they believed could enhance student's confidence in their ability to succeed, comparing these methods to traditional approaches. Additionally, the survey examined educators' observations of changes in student's attitudes toward learning and their reservations about adopting gamification, highlighting potential barriers to its implementation.

**2.1.** *Figure 7* presents an analysis of participant responses to Q2.1, which examined how various gamification features impact students' self-efficacy. Participants rated how each gamification feature influenced student self-efficacy, and the results were summarized by key statistical measures and participant experience levels.

**Figure 7.**

*Self Efficacy: Gamification Components*



*Note:* The data indicate that Real-time Feedback, Choice & Autonomy, and Social Interaction received the highest overall ratings for enhancing student self-efficacy. In contrast, Time Constraints and Narrative & Storytelling were rated the lowest. Responses varied based on participant experience levels, with educators who had more gamification experience rating some features higher than those with minimal experience.

**Analysis By Feature.** *Real-time Feedback* received the highest rating, with a central tendency score of 3.5 and a median of 4. *Choice & Autonomy* followed closely with a central tendency of 3.4 and a median of 4. *Challenges & Quests* and *Social Interaction* both had a central tendency rating of 3.1. *Points & Scoring* had a similar rating, with a central tendency of 3.1. *Feedback Loops* received a moderate rating (2.1). In contrast, *Narrative & Storytelling* had a central tendency score of 1.7, and *Time Constraints* received the lowest rating with a central tendency score of 1.6.

***Experience Level Differences.*** Participants with little gamification experience rated *Narrative & Storytelling* and *Time Constraints* slightly higher than their more experienced colleagues. Participants with moderate gamification experience showed strong support for *Social Interaction, Points & Scoring,* and *Choice & Autonomy.* Participants with extensive gamification experience ranked *Challenges & Quests, Real-time Feedback,* and *Choice & Autonomy* as the most influential factors in improving student confidence in learning.

**Q2.2.** This section presents an analysis of participant responses to Q2.2, which examined teachers' perspectives on how gamification strategies can enhance students' self-efficacy. Responses were categorized into key themes that emerged, highlighting various approaches teachers use to support student confidence and motivation through gamified learning experiences.

***Competition and Goal Setting.*** Several participants emphasized the role of competition and personal goal-setting in increasing self-efficacy. Participants indicated that students tend to challenge themselves to beat their last score, reinforcing a sense of progress and achievement. The presence of peer competition was also highlighted as a motivator, as students compare their performance with classmates and strive to improve. One participant noted, "Competition among students helps drive motivation." Another stated, "Trying to challenge themselves to beat their last score keeps students engaged."

***Multiple Attempts and Scaffolding.*** The ability to retry tasks and practice skills was frequently mentioned as a way to enhance self-efficacy. Participants reported that students benefit from multiple opportunities to win a game or challenge, reinforcing persistence and resilience. Additionally, scaffolding was cited as a valuable strategy,

where students gradually increase the difficulty of tasks while receiving appropriate support. A participant noted, “If students know they only have one chance, they may not feel as confident as they would knowing that if they lose the first time, they can try again.” Another added, “Gradually increasing the difficulty level of tasks and providing support as needed can help students build confidence as they master each stage of the activity.”

***Choice and Autonomy in Learning.*** Providing students with choice and autonomy in gamified learning environments was a key theme in the responses. Participants observed that when students feel a sense of control over their learning, they are more engaged and confident in their abilities. One participant explained, “Gamification allows students to feel as if they have some control over what they learn in the classroom that day.” Another participant stated, “Allowing students to make choices within gamified activities empowers them to take ownership of their learning, leading to increased confidence in their abilities.”

***Mastery-Oriented Feedback and Progress Tracking.*** Participants highlighted the importance of progress tracking and mastery-based feedback in increasing self-efficacy. They noted that visual indicators of progress, such as points or badges, help students recognize their growth over time. Additionally, feedback that focuses on improvement rather than performance was seen as a strategy for fostering a growth mindset. One participant emphasized, “Providing visual indicators of progress and achievements can help students see their growth over time, boosting their confidence in their ability to succeed.”

***Social Interaction and Collaboration.*** Social Interaction was another recurring theme, with participants noting that collaborative gameplay and group-based activities help students develop confidence. Participants mentioned that working together in a game fosters peer encouragement and social comparison, which can positively impact self-efficacy. One participant noted, “Encouraging healthy competition or collaboration with peers provides students with opportunities to compare their progress positively, leading to increased self-efficacy.”

***Gamification as a Tool for Engagement.*** Several participants described how students are more likely to engage in learning when they enjoy the process. One participant noted, “When students enjoy the games they are playing, they are more likely to stick with it and learn along the way, which increases their self-efficacy.” One mentioned that gamification can help trick students into learning by making academic tasks feel more likely play rather than graded assignments. A participant noted,

By scaffolding the content in the games and making it non-grade-based, I think I can sort of 'trick' students into learning and reinforcing the content from our lessons. It can influence students to play just for the sake of playing without grade consequences, which is important for high-achievers.

**Q2.3.** This section presents an analysis of participant responses to Q2.3, which examined how gamification influences students’ attitudes toward learning and self-efficacy. Responses were categorized into key themes that emerged, highlighting various ways educators perceive gamified learning as shaping student engagement and confidence in their abilities.

***Increased Motivation and Engagement.*** Many participants noted that gamification enhances student motivation by making learning more engaging and enjoyable. Some participants reported that students are more excited to come to class and participate when gamified elements are present. One participant shared,

My students are motivated by having a game to play while they work on their language targets. They don't even realize they are 'working' on language targets and social communication because the game is fun.

Another participant commented, "If a student knew they would get a chance to use the game in class to study, they could become more excited to take part in the activity."

***Sense of Accomplishment and Risk-Taking.*** Several responses emphasized how gamification fosters a sense of accomplishment by providing clear milestones, rewards, and immediate feedback. Participants indicated that when students progress through levels or earn recognition for their efforts, they gain confidence in their ability to succeed. One educator stated, "Gamified learning provides immediate feedback and clear milestones, fostering a sense of accomplishment as students progress through levels or earn rewards." Additionally, gamified environments were described as encouraging risk-taking and resilience, allowing students to experiment in a safe setting and persevere despite challenges.

***Autonomy and Ownership of Learning.*** A common theme among responses was the idea that gamification empowers students by giving them more control over their learning process. Participants reported that when students feel a sense of ownership over their progress, their self-efficacy increases. One educator noted, "Gamification allows students to feel as if they have some control over what they learn in the classroom that

day." Another participant shared, "Gamified learning often allows for more autonomy and choice, empowering students to take ownership of their learning process."

***Gamification as a Learning Alternative.*** Participants highlighted that gamification serves as a valuable alternative to traditional instructional methods, particularly for students who struggle with conventional learning approaches. One educator remarked, "The biggest difference I have witnessed is that learning has a fun element and is not viewed as 'drudgery' or hard work. The questions or challenge provide a side door to learning for the student." Another participant emphasized the flexibility of gamified learning, stating, "Gamification allows learning, reteaching, and reviewing to be on the level of student interest as compared to traditional methods of learning."

***Social Comparison and Collaboration.*** Some participants discussed the role of social comparison and peer interaction in enhancing self-efficacy. Participants noted that gamification provides opportunities for students to benchmark their progress against peers in a supportive way, fostering motivation through healthy competition and collaboration. One educator described how social engagement enhances self-efficacy, stating, "Encouraging healthy competition or collaboration with peers provides students with opportunities to compare their progress positively, leading to increased self-efficacy."

***Considerations and Limitations.*** While many participants viewed gamification as a positive influence on student attitudes and self-efficacy, some educators expressed concerns about its limitations. One participant cautioned, "If using the game solely to motivate learning, it will most likely fail. The student needs to have some intrinsic

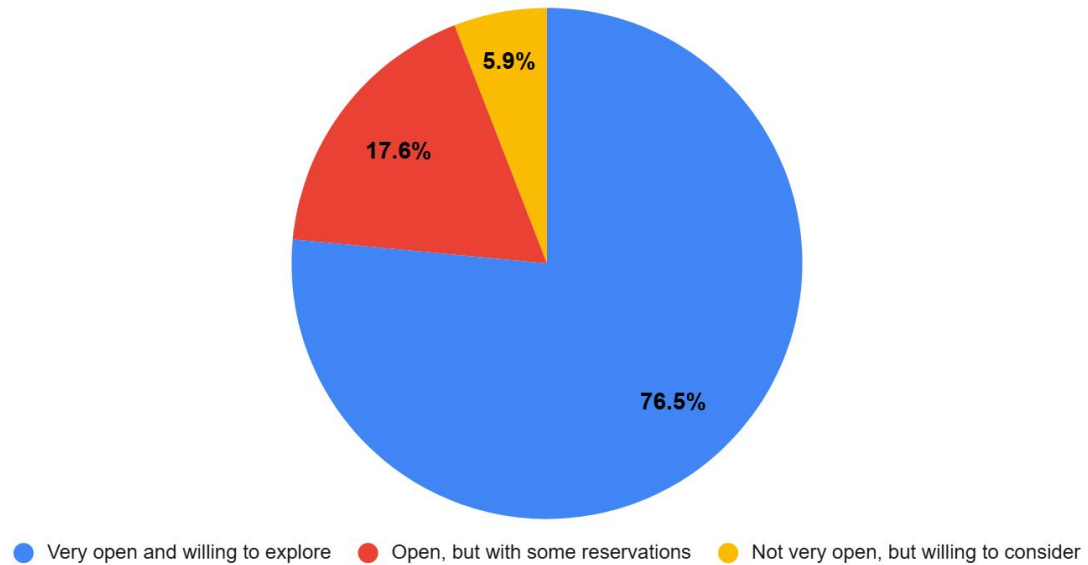
motivation or will to learn. It should also be used with other teaching strategies that we know work." Others emphasized that gamified learning should be aligned with quality teaching practices to maximize gamification’s overall impact.

**Q2.4.** *Figure 8* presents an analysis of participant responses to Q2.4, which examined educators’ openness to implementing gamification in their classrooms. Responses were categorized into key themes that emerged, highlighting varying levels of willingness and reservations among teachers based on their experience with gamification.

**Figure 8**

*Self Efficacy: Teacher Perception of Incorporating Gamification*

Q2.4 - Overall Self Efficacy: Teacher Perception of Incorporating Gamification; N=17




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*Note:* While a portion of teachers with little experience remained open, they also displayed the highest level of reservations.

**Overall Openness to Gamification.** A quantitative breakdown of responses revealed that 76.5% of participants reported being very open and willing to explore gamification. When disaggregated by experience level, 100% of those with extensive

experience, 88.9% of those with moderate experience, and 25% of those with little experience expressed a strong willingness to incorporate gamification. Additionally, 17.6% of all participants reported being open, but with some reservations, with 50% of those with little experience and 11.1% of those with moderate experience fell into this category. Only 5.9% of respondents, exclusively from the little experience group, indicated being not very open, but willing to consider. No participants reported being completely opposed to gamification. The majority of participants expressed a high level of openness to implementing gamification in their classrooms. Of the 17 respondents, 13 indicated that they were very open and willing to explore gamification strategies

***Experience Level Differences.*** Participants with moderate and extensive experience with gamification showed the highest levels of openness. Among those with moderate experience, seven out of nine participants reported being very open and willing to explore, while all four participants with extensive gamification experience expressed the same level of enthusiasm.

In contrast, educators with little to no experience with gamification displayed a mix of responses. Three participants with little experience reported being open, but with some reservations, while one indicated being not very open, but willing to consider gamification.

***Key Considerations and Reservations.*** Among those who expressed reservations, participants noted concerns related to implementation challenges, instructional alignment, and student engagement. Some educators reported that time constraints were a barrier, while others mentioned concerns about aligning gamification with instructional goals. Additionally, participants identified challenges in ensuring that gamification effectively

engages all students. These responses highlight specific considerations that may influence educators' openness to gamified learning approaches.

**Q2.5.** This section examines participant responses to Q2.5, which explored the concerns and reservations teachers have regarding gamification in their classrooms. Responses were categorized into the following key themes that emerged, including time constraints, implementation challenges, alignment with educational goals, student engagement, and accessibility.

***Time Constraints and Preparation.*** One of the most frequently mentioned concerns was the time required to create and implement gamified activities. Several participants noted that developing questions and structuring the game elements took significant preparation time. One respondent stated, "Just coming up with the questions, taking the time to create the game." Another educator emphasized, "Time required to implement and resources." Additionally, some teachers expressed that prep time was a major barrier, with one participant stating, "I have honestly not found many games that are available to use as a study tool in class for free online. Unfortunately, I am not talented or have enough time to make games on my own."

***Implementation and Classroom Management.*** A common concern was that students might become too focused on the game itself rather than the learning objectives. Some educators noted that students could become disengaged from the core content and focus primarily on playing the game. One participant expressed, "Students only wanting to 'play games.'" Another shared, "Making sure the students are actually completing the work as assigned."

***Alignment with Educational Goals and Standards.*** Some educators expressed reservations about ensuring gamification aligns with curriculum standards and educational outcomes. One participant stated, "One reservation I've had about exploring gamification is ensuring that it aligns with educational goals and standards." Another concern was that gamification could shift students' focus toward extrinsic motivation rather than intrinsic learning, as one educator explained, "If the focus becomes solely on earning points or rewards rather than genuine learning and mastery, it could undermine the long-term benefits of education."

***Access to Resources and Quality of Games.*** Several participants mentioned access to free, high-quality games as a limitation. One educator commented, "I have honestly not found many games that are available to use as a study tool in class for free online. Unfortunately, I am not talented or have enough time to make games on my own." Additionally, concerns were raised about the expense of high-quality gamification tools, with one respondent stating, "Just finding quality games with appropriate content + expense."

***Equity and Accessibility.*** A few participants highlighted concerns regarding equity and accessibility in gamified learning environments. One educator noted, "Not all students may have equal access to technology or may face barriers to participation based on their individual needs and preferences." Another emphasized the importance of ensuring all students, regardless of learning needs, can engage meaningfully with gamified activities.

### ***Research Question 3***

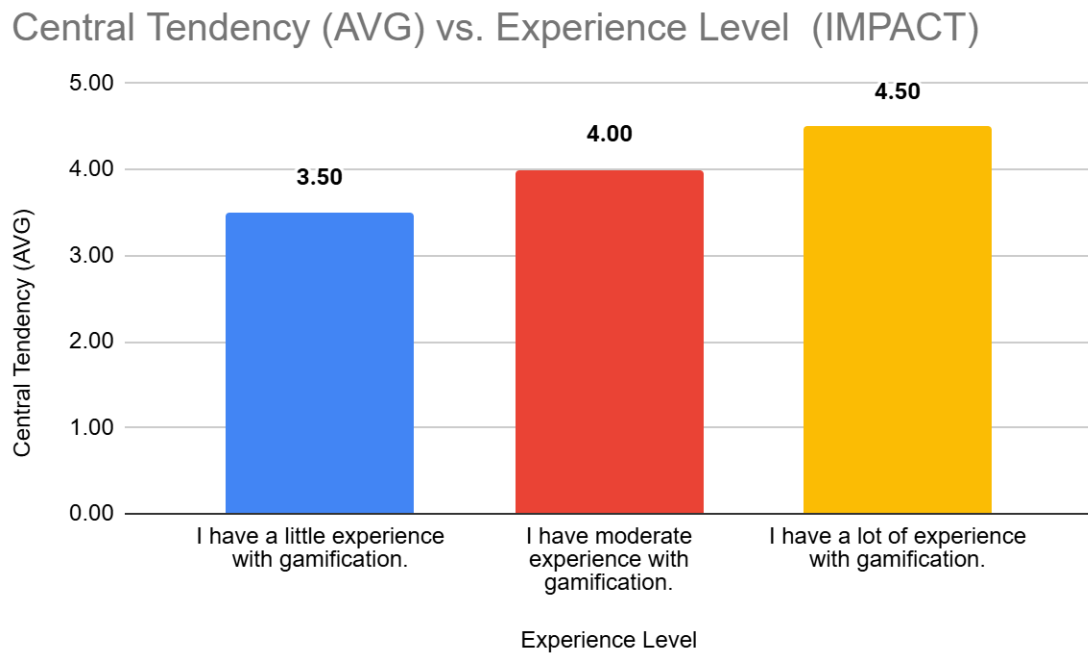
**Research Question 3: How does gamification change learning for students and teachers in the public-school setting?**

This survey section examined participants' perceptions of gamification's impact on learning and classroom dynamics. Teachers reflected on how gamification influences student engagement, collaboration, and interaction, offering insights into its impact on teamwork and social learning. Additionally, the survey explored gamification's role in shaping teaching methods and students' perceptions of the learning process, providing a comprehensive view of its influence on instructional practices and classroom environments.

**Q3.1.** Figure 9 presents an analysis of participant responses to Q3.1, which examined teachers' perceptions of gamification's impact on student engagement. Responses were quantified and categorized based on experience levels with gamification to determine patterns in how educators view its impact in fostering student participation.

**Figure 9**

*Gamification Impact on Student Engagement*




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*Note:* A half-step (0.5) central tendency was reported between each experience level.

***Overall Impact on Student Engagement.*** Participants rated the impact of gamification on student engagement on a 5-point scale, where 1 represented no impact and 5 represented a significant impact. The overall central tendency rating was 4.2, indicating that most respondents perceived gamification as having a positive impact on student engagement. A majority of participants (52.9%) rated the impact as a 4, while 35.3% rated it as a 5. A smaller portion of respondents (11.8%) rated the impact as a 3. No participants rated the impact below 3.

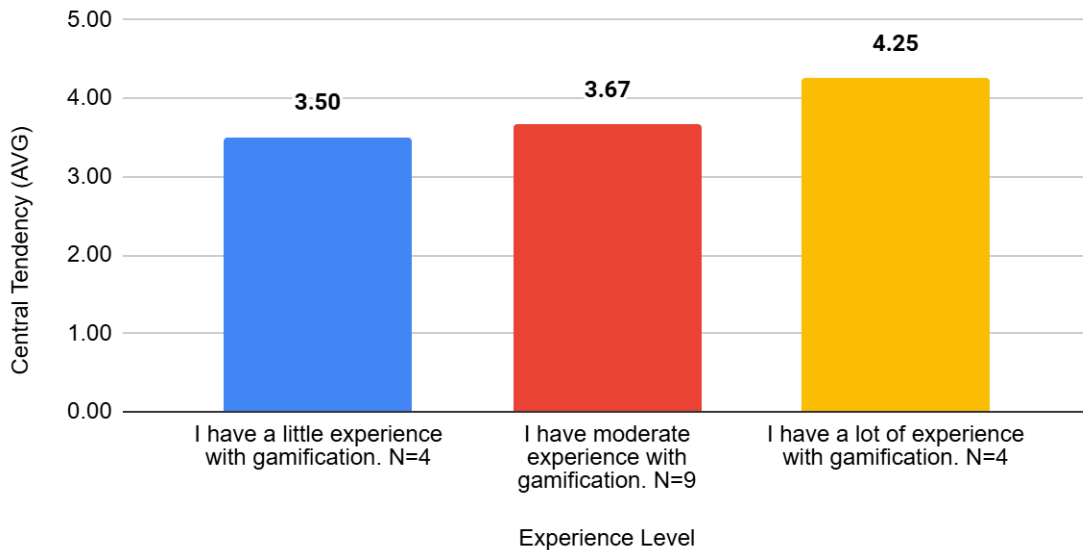
***Experience Level Difference.*** Perceptions of gamification's impact on student engagement varied based on participants' experience levels with gamification. Those with little experience ( $N=4$ ) reported a central tendency rating of 3.5. Educators with moderate experience ( $N=9$ ) provided a higher central tendency rating of 4.4. Educators with a lot of experience ( $N=4$ ), reported the highest central tendency rating of 4.5.

**Q3.2.** *Figure 10* presents the analysis to RQ3.2, which asked participants to rate the extent to which they believed gamification influences student collaboration and interaction in the classroom. Across all participants ( $N=17$ ), responses ranged from *Disagree* (2) to *Strongly Agree* (5). When grouped by experience level, educators with little experience ( $N=4$ ) reported a central tendency rating of 3.50, indicating a moderate perception of influence. Educators with moderate experience ( $N=9$ ) reported a slightly higher central tendency of 3.67, and those with a lot of experience ( $N=4$ ), reported the highest central tendency of 4.25.

**Figure 10.**

*Gamification's Influence on Student Collaboration*

RQ3.2: Central Tendency (AVG) vs. Experience Level Student Collaboration & Interaction N=17



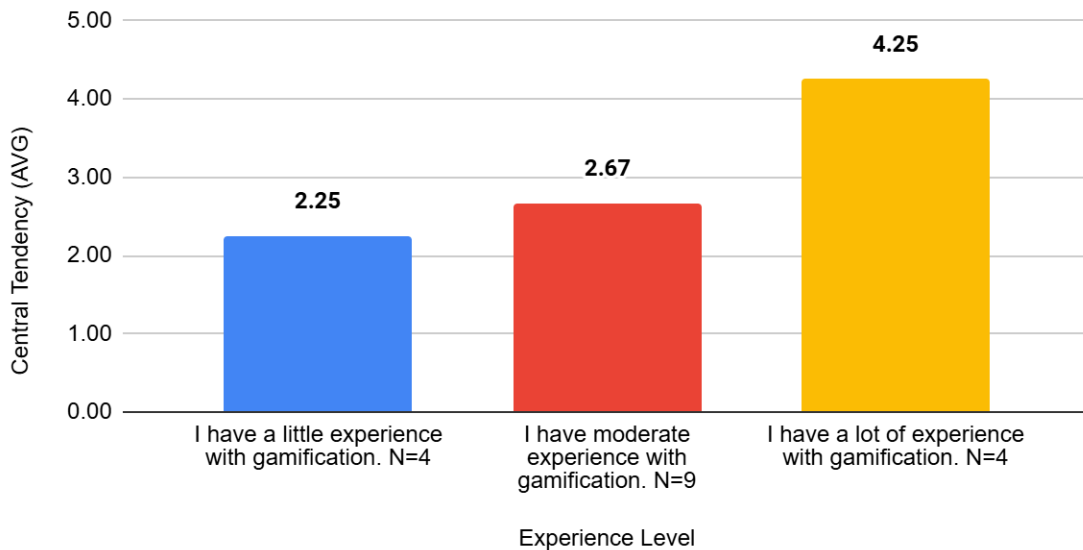
*Note:* A majority of participants indicated that they believed gamification influenced student collaboration and interaction in the classroom.

**Q3.3.** *Figure 11* presents the analysis of responses to RQ3.3, which explored participants’ perceptions of how gamification has influenced their own teaching methods. Across all participants ( $N=17$ ), the responses demonstrated varied perceptions based on experience with gamification. The overall trend indicated that increased experience with gamification was associated with a greater perceived impact on teaching methods. Educators with little experience ( $N=4$ ), reported the lowest level of influence, with a central tendency rating of 2.25. Educators with moderate experience ( $N=9$ ) reported a slightly higher central tendency of 2.67, reflecting a modest impact. In contrast, educators with a lot of experience ( $N=4$ ), reported the highest central tendency of 4.25.

**Figure 11.**

*Belief that Gamification Influences Teaching Methods*

RQ3.3 Central Tendency (AVG) vs Experience Level Teaching Methods or Approaches N=17

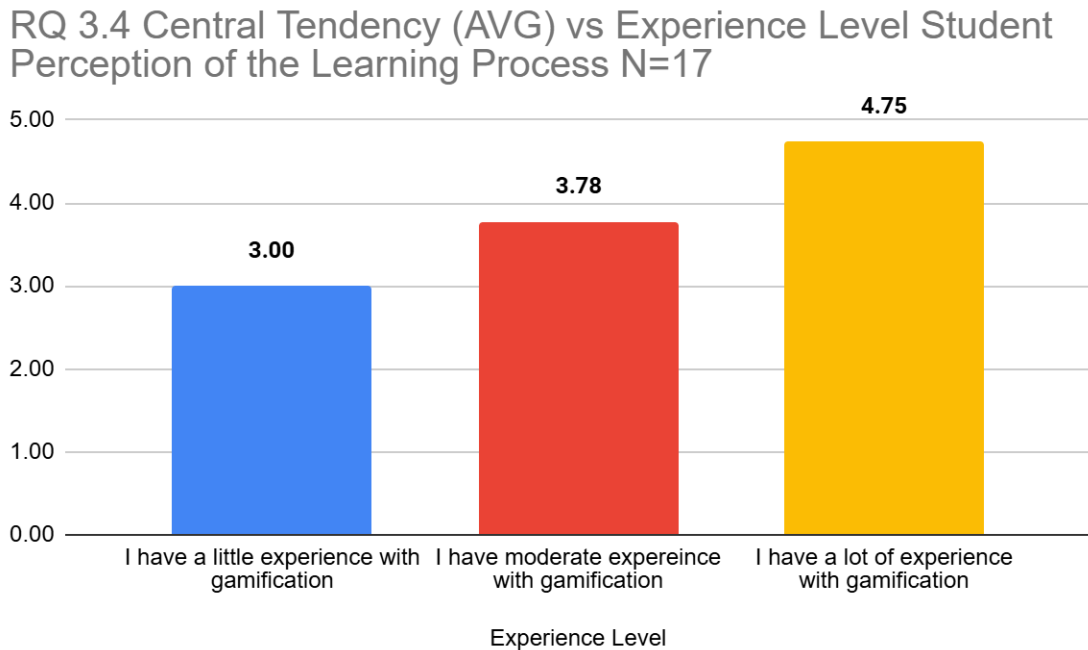


*Note:* Responses across the three groups showed increasing agreement that gamification has shaped the way educators design and deliver instruction.

**Q3.4.** *Figure 12* presents an analysis of participant responses to RQ3.4, which asked participants to reflect on how gamification has influenced students’ perceptions of learning. The overall trend across all participants ( $N=17$ ) suggests that educators perceive gamification as having a positive impact on student perceptions of learning. When grouped by experience level, educators with little experience ( $N=4$ ), reported a central tendency rating of 3.00. Educators with moderate experience ( $N=9$ ) reported a higher central tendency of 3.78. Those with a lot of experience ( $N=4$ ) reported the highest rating at 4.75.

**Figure 12.**

*Gamification’s Influence on Student Perception of the Learning Process*




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*Note:* Educators with more experience in gamification reported increasingly positive perceptions of its impact on how students view the learning process. The central tendency rating rose steadily across experience levels.

**Q3.5.** This section presents an analysis of participant responses to Q3.5, which examined educator’s perspectives on how gamification influences the teaching and learning environment. Responses were categorized based on key themes that emerged from the data, highlighting areas where gamification has impacted classroom dynamics.

***Increased Student Engagement and Enjoyment.*** Several participants reported that gamification increases student engagement and motivation, making learning more enjoyable. Participants noted that students responded positively to gamification, with one participant stating, “Students enjoy gamification study methods.” Another participant added, “Anytime students are having fun, they are happier in the classroom, and if they can learn while playing a game, that is a win-win.” The presence of light competition was also cited as a factor that contributed to increased engagement, with one participant noting that gamification “adds some fun and light competition.”

***Facilitation of Social and Communication Skills.*** Participants with more experience in gamification highlighted its role in teaching social skills, self-regulation, and embedded language skills. One respondent, a speech-language therapist, stated, “It is amazing at teaching social skills, self-regulation, and many embedded language targets such as ‘put in,’ ‘take out,’ ‘next,’ ‘first,’ ‘again,’ etc.” Others noted that gamification fosters a collaborate learning experience, helping students engage with peers and teachers in a structured, interactive environment. One participant stated, “Gamification can foster a sense of community and collaboration among students by encouraging social interaction, teamwork, and competition.”

***Gamification as a Learning Alternative.*** Several educators commented on gamification’s ability to make the learning environment more inviting and student-

centered. One participant stated, “It can make the learning environment more enjoyable for the students and make the environment more relaxed and inviting.” Others emphasized that gamification flips the role of the teacher, placing more emphasis on student-driven learning. One participant noted, “It flips the role of the teacher completely” while another stated, “By offering choice, autonomy, and adaptive challenges, gamified learning environments can cater to diverse learning styles and abilities, promoting a more personalized approach to education.”

***Academic Benefits and Skill Development.*** Educators with experience in gamification reported that it helped improve academic performance and reduce frustration with learning tasks. One participant noted,

I always post review games on a page in our learning platform for every chapters and remind students to go to it when they finish our classwork. The students who do this are stronger, for sure, and they struggle less with content which leads to less frustration overall and a more positive feeling about learning.

Another participant stated that gamification helps keep students engage in content, explaining, “It is grabbing their attention where before they might have been disinterested.”

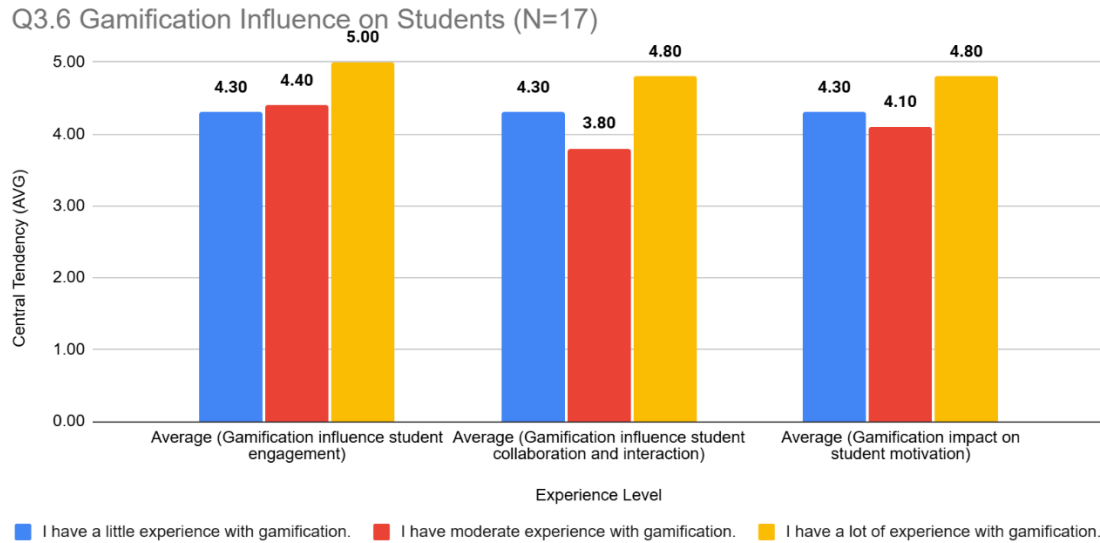
***Comprehensive View of Gamification’s Influence.*** One participant with extensive experience in gamification provided a detailed response outlining several ways in which gamification impacts the teaching and learning environment. They identified five key areas: increased engagement, motivation, personalization, skill development, and collaboration. They explained that gamification provides progress tracking, feedback, and rewards, helping students stay engaged and motivated. Additionally, the ability to

customize learning experiences and provide adaptive challenges supports students with diverse needs. The participant further noted that gamification enhances problem solving, critical thinking, and teamwork, contributing to a more well-rounded learning experience.

**Q3.6.** *Figure 13* presents an analysis of RQ3.6 which analyzed participants' perceptions of how gamification influences student engagement, collaboration, and motivation. Data were analyzed across three categories and grouped by experience level. Across all respondents ( $N=17$ ), the central tendency rating for gamification's influence on student engagement was 4.5; those with moderate experience reported 4.4; and respondents with a lot of experience rated it the highest at 5.0. The median rating across all groups was 5, indicating an overall strong agreement with minimal variability among the most experienced respondents. The central tendency rating for gamification's influence on student collaboration and interaction was 4.1. Respondents with little experience gave and central tendency of 4.3, those with moderate experience reported 3.8, and those with a lot of experience rated it 4.8. Median scores for this area also increased with experience, from 4.0 to 5.0. Participants rated gamification's influence on student motivation with a central tendency of 4.3 overall. Respondents with little experience reported 4.3, those with moderate experience rated it 4.1, and respondents with a lot of experience again rated this the highest at 4.8.

**Figure 13.**

*Gamification Influence on Students*



*Note:* Educators with more experience using gamification consistently reported higher levels of perceived student engagement, collaboration, and motivation, with the highest scores appearing in the "a lot of experience" group across all three categories.

#### ***Research Question 4***

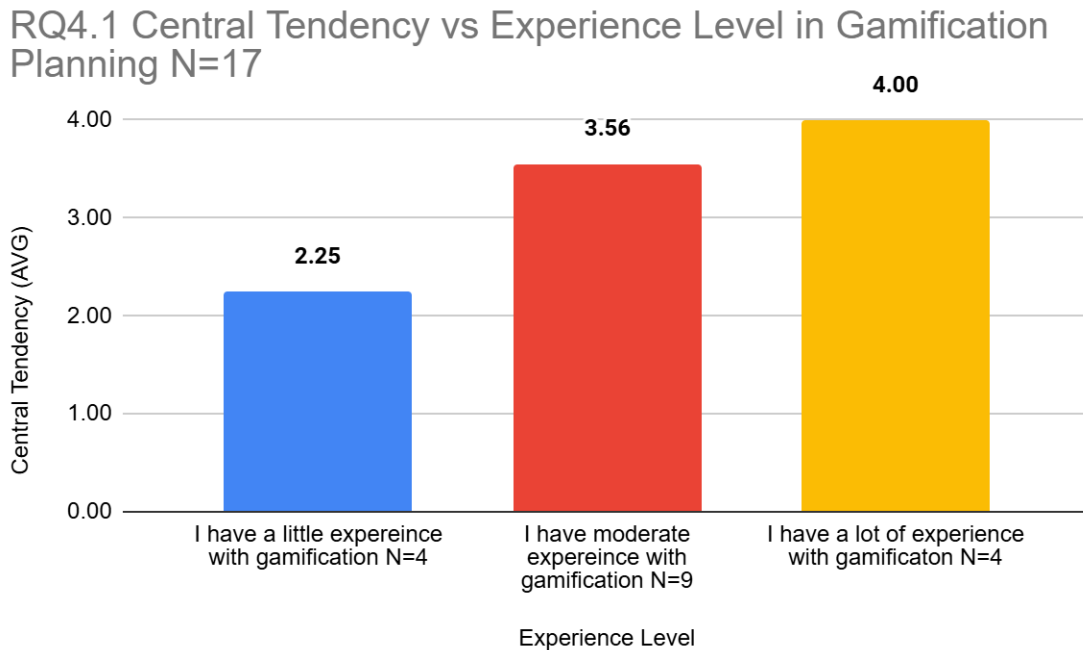
**Research Question 4: What gamification attributes enhance teachers' self-efficacy regarding assignment planning for learning mastery evaluation in public schools?**

This survey section explored educators' self-efficacy in integrating gamification into their instructional practices. Participants reflected on how gamification influences their confidence in planning assignments, designing assessments, and addressing diverse student needs, offering insights into its impact on teaching effectiveness. Additionally, the survey examined educators' readiness to create inclusive, accessible, and authentic learning experiences through gamification, highlighting both challenges and opportunities in implementation.

**Q4.1.** *Figure 14* presents the analysis of participant responses to RQ4.1, which asked participants to rate the extent to which gamification has increased their confidence in planning and delivering assignments for student learning mastery. Educators with little experience with gamification ( $N=4$ ) reported a central tendency rating of 2.25. Those with moderate experience ( $N=9$ ), proved a higher central tendency rating of 3.56. Educators with a lot of experience ( $N=4$ ), reported the highest central tendency rating of 4.00, reflecting a strong perceived increase in confidence related to assignment planning and delivery.

**Figure 14.**

*Gamification's Impact on Increased Confidence in Planning and Delivering Assignments*




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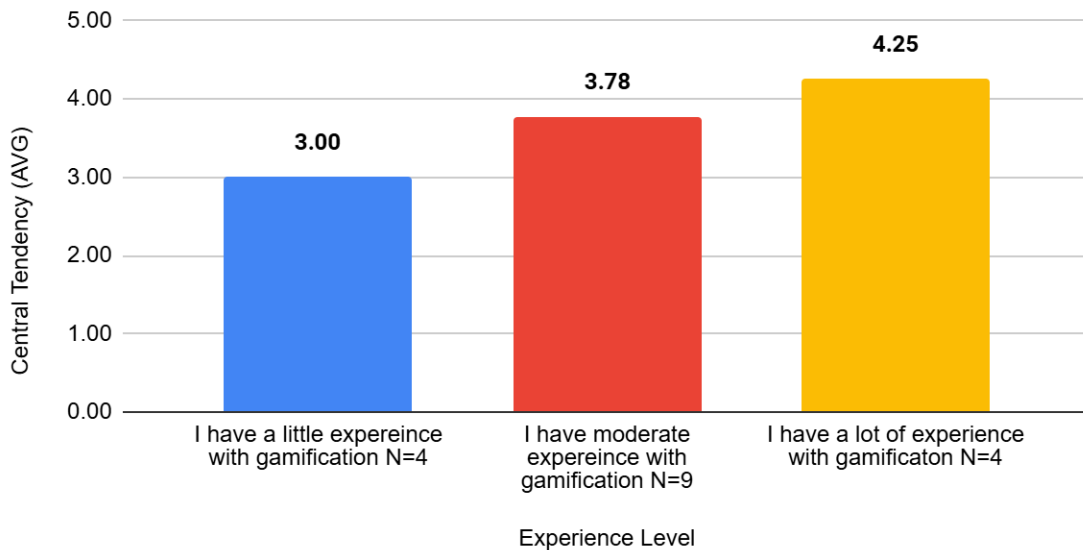
*Note:* Confidence in planning and delivering assignments for student learning mastery increased with experience in gamification, with the highest central tendency rating reported by educators who had a lot of experience using gamified strategies.

**Q4.2.** *Figure 15* presents an analysis of participant responses to RQ4.2, which asked participants to rate how the use of gamified elements has influenced their self-efficacy in designing impactful assessments for student learning mastery. Respondents with little experience in gamification ( $N=4$ ), reported a central tendency rating of 3.00. Those with moderate experience ( $N=9$ ), reported a central tendency rating of 3.78 and educators with a lot of experience ( $N=4$ ) reported the highest central tendency at 4.25.

**Figure 15.**

*Gamification's Influence on Teacher Self-Efficacy in Assessment Design*

RQ4.2 Central Tendency vs. Experience Level Designing Gamification Assessment N=17




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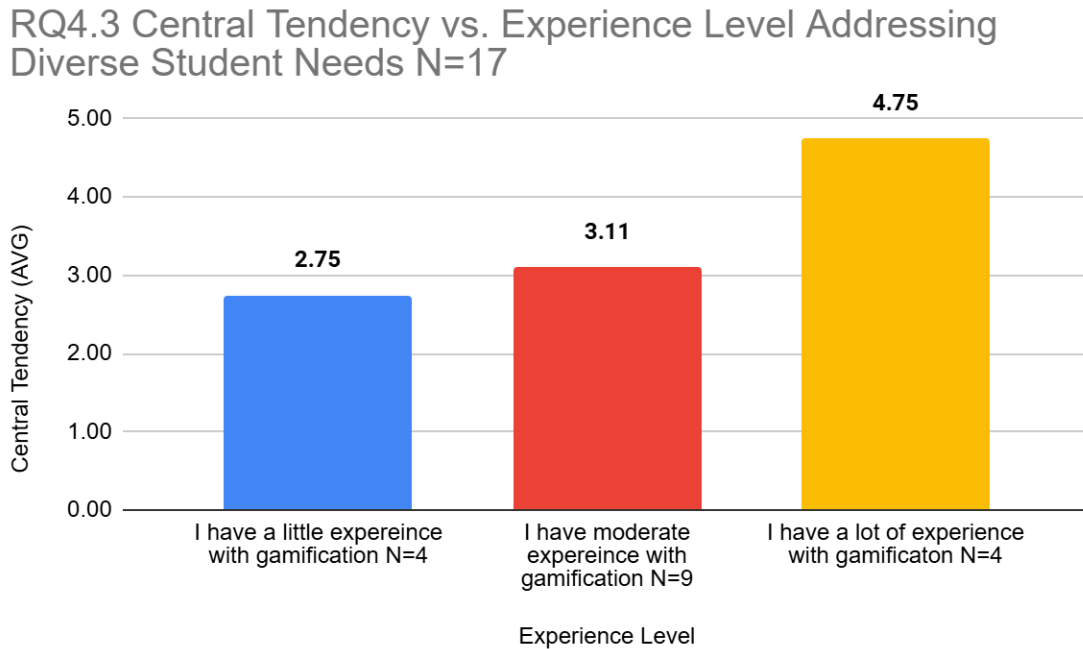
*Note:* Educators with more gamification experience reported higher self-efficacy in designing assessments for learning mastery, with a clear increase in central tendency ratings from 3.00 to 4.25 across experience levels.

**Q4.3.** *Figure 16* presents an analysis of responses to RQ4.3, which asked educators to rate the degree to which gamification elements contribute to their self-

efficacy in addressing the diverse needs of students when planning assignments. Educators with little experience with gamification ( $N=4$ ), reported a central tendency rating of 2.75. Those with moderate experience ( $N=9$ ) reported a higher central tendency of 3.11. In contrast, educators with a lot of experience ( $N=4$ ), reported a significantly higher central tendency of 4.75. These results indicate a clear trend: as experience with gamification increases, so does the perceived contribution of gamified strategies to differentiated instructional planning.

**Figure 16.**

*Teacher Perceptions of Gamification Addressing Diverse Student Needs*



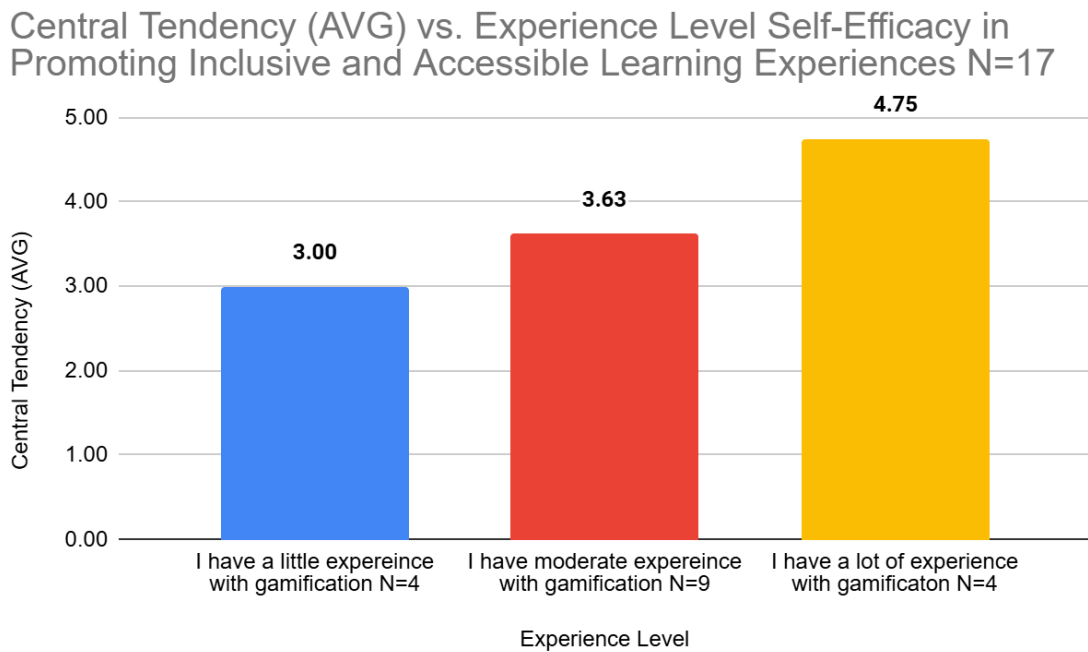

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*Note:* Educators with extensive gamification experience reported the strongest confidence in using gamified strategies to meet diverse student needs, with a central tendency rating of 4.75 compared to 2.75 among those with little experience.

**Q4.4.** *Figure 17* presents an analysis of responses to RQ4.4, which asked educators to rate how the integration of gamification elements has influenced their self-efficacy in promoting inclusive and accessible learning experiences for all students. Educators with little experience with gamification ( $N=4$ ), reported a central tendency rating of 3.0, indicating a neutral perception of gamification’s impact on inclusive and accessible teaching. Those with moderate experience ( $N=9$ ) reported a central tendency rating of 3.63. Educators with a lot of experience ( $N=4$ ), reported the highest rating, with a central tendency rating of 4.75. These results suggest that educators who are more experienced with gamification perceive greater benefits in its ability to foster accessible and inclusive learning environments.

**Figure 17.**

*Self-Efficacy in Promoting Inclusive and Accessible Learning Experiences*



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*Note:* Perceived self-efficacy in promoting inclusive and accessible learning increased with gamification experience, with the highest central tendency rating reported by educators with extensive experience (4.75).

**Q4.5.** This section presents an analysis of participant responses to Q4.5, which examined how educators address authentic assessment and inclusion in a gamified learning environment. Responses were categorized based on key strategies and challenges reported by participants, highlighting different approaches to integrating gamification into assessment practices.

***Strategies for Aligning Gamification with Assessment.*** Several participants reported using intentional planning to ensure gamification aligns with assessment objectives. One participant stated, “I plan my IEP targets ahead of time and will change the game accordingly to ensure we’re focusing on the necessary goals.” Another respondent emphasized the importance of aligning game elements with assessment criteria, explaining, “Ensure that gamified activities and assessments are aligned with educational standards and learning objectives. Design assessment tasks that reflect real-world skills and competencies, allowing students to demonstrate their understanding and application of key concepts within the context of gameplay.” Some educators also noted the value of using direct test questions within gamified activities, with one participant stating, “I would like to use questions directly from the test and quiz to allow students to trust the game as a study tool.”

***Use of Diverse and Inclusive Assessment Methods.*** To address inclusion and authenticity, some participants incorporated varied assessment methods to cater to diverse learning needs. One participant explained, “I would consider mastery of the game an

assessment if I felt the game thoroughly required application of curriculum concepts.”

Other highlighted the importance of providing meaningful feedback through the gaming experience, with one educator stating, “Provide timely and meaningful feedback to students throughout the gamified learning process. Offer specific feedback on students' performance, progress, and areas for improvement, helping them understand their strengths and weaknesses and guiding their learning journey effectively.”

***Challenges in Gamified Assessment.*** Participants identified several challenges in integrating gamification into assessment including time constraints, curriculum alignment, and financial barriers. Many participants reported that gamified assessments require significant preparation and planning, as one participant stated, “Just coming up with the questions, taking time to create the game.” Another participant noted the difficulty of maintaining curriculum alignment, explaining, “Formulating questions and experiences that truly show the mastery level of students,” while another responded, “I don’t think of gamification as part of assessment—it’s the practice for the assessment.” Additionally, some participants expressed concerns about the rigidity of traditional assessment expectations, with one participant stating, “I think we are so inundated with what we believe assessments ‘should’ look like that we don’t design truly authentic assessments, and sometimes I don’t have the creativity to dream of what that looks like.” Financial limitations were another significant barrier identified by a participant who mentioned, “Time factor and possible expense—having to purchase the app or program.”

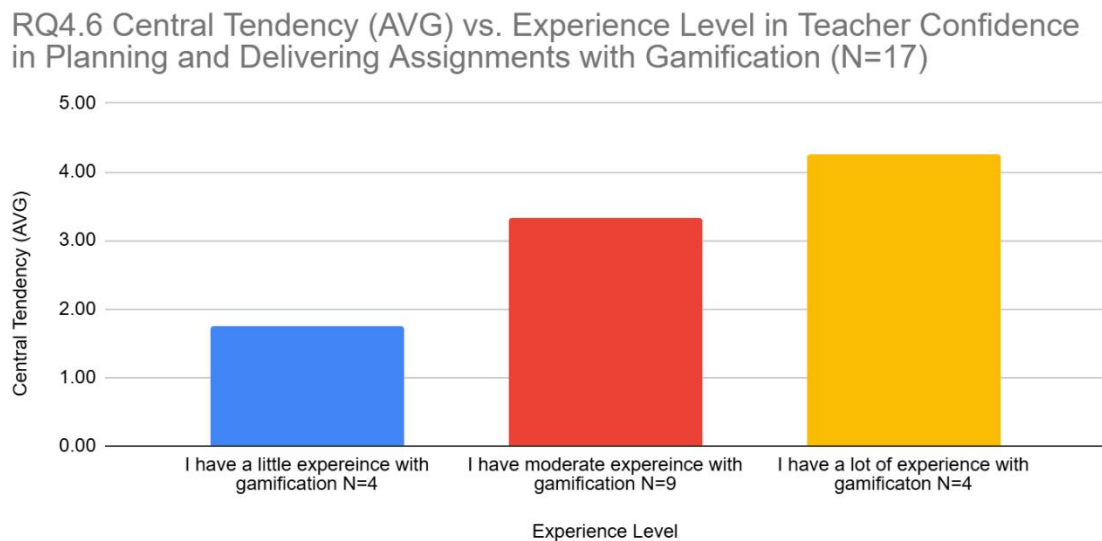
***Comprehensive Approach to Authentic Assessment.*** One participant with extensive experience in gamification provided a detailed response outlining multiple strategies for addressing authentic assessment and inclusion. They emphasized aligning

gamified activities with learning objectives, incorporating diverse assessment methods, providing authentic feedback, and ensuring inclusive design to accommodate all students. They also highlighted the importance of fostering collaboration within gamified learning environments, explaining how teamwork and peer interactions contribute to a more equitable and engaging assessment process.

**Q4.6.** *Figure 18* presents an analysis of responses to RQ4.6, which asked participants to rate their confidence in planning a lesson that included a gamified element. Educators with little experience with gamification ( $N=4$ ) reported the lowest central tendency confidence rating of 1.75. Those with moderate experience ( $N=9$ ) reported a higher central tendency of 3.33, indicating moderate confidence. Educators with a lot of experience ( $N=4$ ), reported the highest central tendency of 4.25. The data shows a clear positive trend between gamification experience and confidence in lesson planning, with confidence ratings increasing as familiarity with gamified strategies grows.

**Figure 18.**

*Teacher Confidence in Planning & Delivering Assignments with Gamification*



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*Note:* Teacher confidence in planning a gamified lesson increased with experience, ranging from a central tendency of 1.75 among those with little experience to 4.25 among the most experienced educators.

### ***Research Question 5***

#### **Research Question 5: What are teachers' perceptions and dispositions using gamified learning in their classroom experiences?**

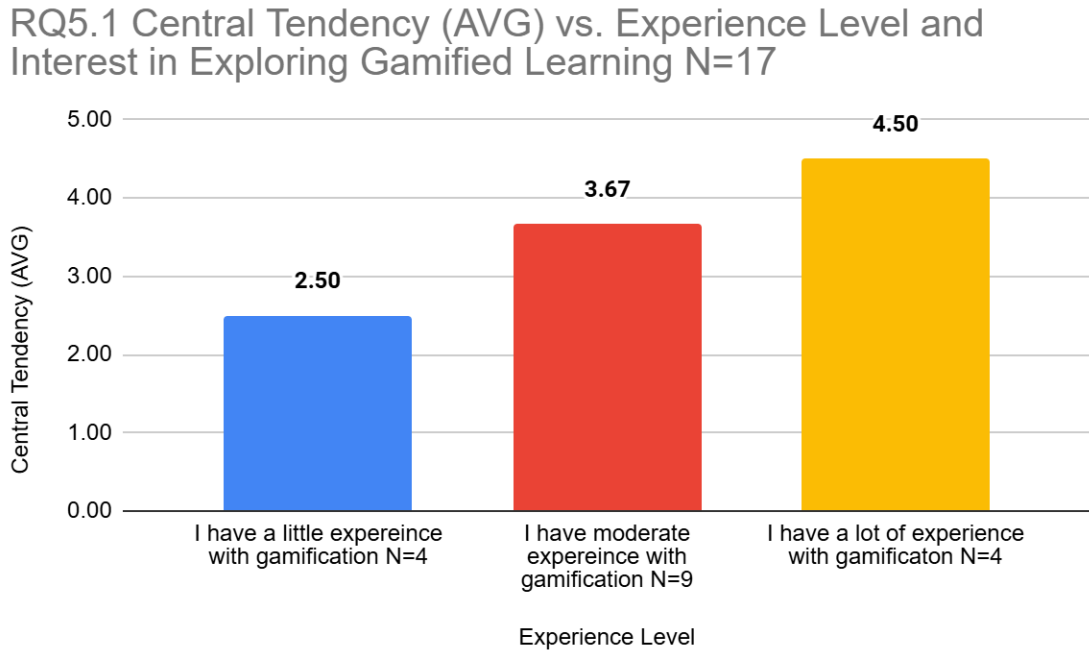
This survey section examined educators' attitudes and dispositions toward incorporating gamification into their teaching practices. Participants reflected on their interest in gamified learning, its alignment with their teaching philosophy, and the influence of external factors like peer recommendations or professional development on their willingness to explore gamification. Additionally, educators shared their experiences with implementing gamified learning, the outcomes observed, and any concerns or challenges they encountered, offering valuable perspectives on the practical and philosophical implications of gamification in education.

**Q5.1.** *Figure 19* presents an analysis to RQ5.1, which asked educators to rate their interest in exploring gamified learning in their own classrooms. Educators with little experience with gamification ( $N=4$ ) reported the lowest interest level, with a central tendency rating of 2.50. Those with moderate experience ( $N=9$ ) reported a higher central tendency of 3.67, indicating increased interest in exploring gamified instructional practices. Educators with a lot of experience ( $N=4$ ) reported the highest interest, with a central tendency of 4.50, reflecting strong enthusiasm for continuing or expanding the use of gamification. These results indicate that greater familiarity with gamification is

associated with higher interest in integrating gamified learning strategies into classroom practice.

**Figure 19.**

*Teacher Experience Level and Interest in Gamification*



*Note:* Educator interest in exploring gamified learning increased with experience, with the highest levels of interest reported by those with a lot of gamification experience.

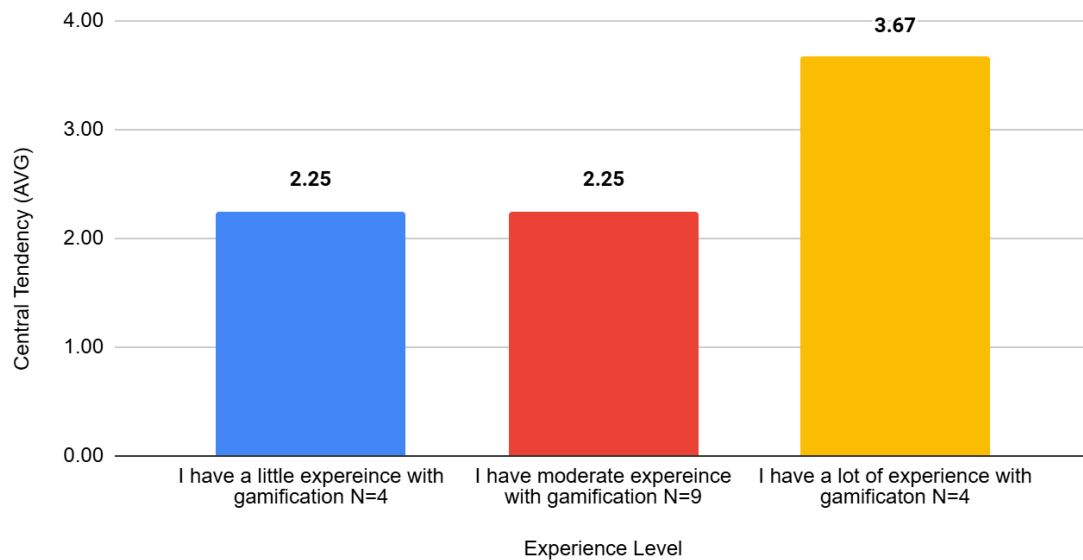
**Q5.2.** *Figure 20* presents an analysis of responses to RQ5.2, which asked educators to rate the extent to which they believed gamified learning aligns with their teaching philosophy and goals. Respondents with little experience ( $N=4$ ) and those with moderate experience ( $N=9$ ), reported the same central tendency rating of 2.25, indicating a relatively low perceived alignment between gamified learning and their personal teaching philosophy. In contrast, educators with a lot of experience ( $N=4$ ) reported a

notably higher central tendency of 3.67, reflecting a more favorable perception of alignment between gamification strategies and their instructional values and goals.

**Figure 20.**

*Gamified Learning Alignment to Teaching Philosophy and Goals*

RQ5.2 Central Tendency (AVG) vs. Experience Level on Gamified Learning Alignment to Teaching Philosophy and Goals N=17



*Note:* Educators with a lot of experience using gamification perceived a stronger alignment between gamified learning and their teaching philosophy compared to those with less experience.

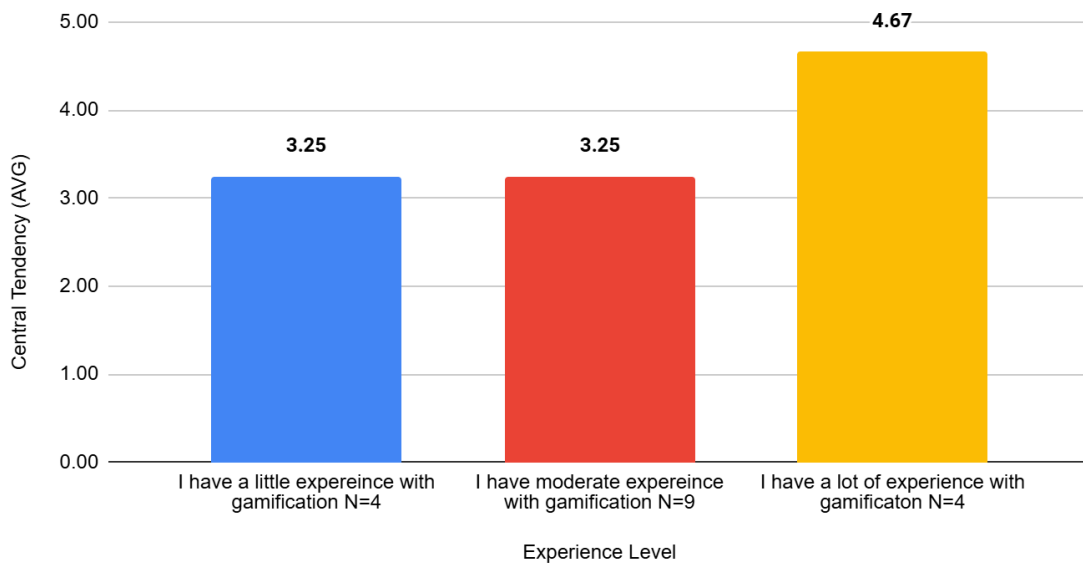
**Q5.3.** *Figure 21* presents an analysis of responses to RQ5.3, which asked participants to rate the potential of external factors of their willingness to explore gamified learning. Educators with little experience ( $N=4$ ) and those with moderate experience ( $N=9$ ) reported an identical central tendency rating of 3.25, indicating a moderate influence of external factors on their willingness to explore gamification. In contrast, participants with a lot of experience ( $N=4$ ) reported a significantly higher

central tendency of 4.67. These results indicate that while external influences may have a moderate impact on those newer to gamification, they appear to have a more substantial impact among educators who are already well-versed in gamified instruction.

**Figure 21.**

*External Factors Influencing Teachers’ Willingness to Explore Gamification*

RQ5.3 Central Tendency (AVG) vs. Experience Level and Influence of External Factors on Willingness to Explore Gamification N=17



*Note:* Educators with a lot of experience in gamification reported a significantly higher influence of external factors—such as peer support and professional development—on their willingness to explore gamified learning.

**Q5.4.** This section presents an analysis of participant responses to Q5.4, which examined participants’ observations regarding the impact of gamification on student learning and engagement. Responses were categorized based on key themes, including engagement, learning outcomes, social interactions, and instructional challenges.

***Increased Student Engagement.*** Many educators reported that gamification enhanced student engagement by making learning more enjoyable and interactive. One participant noted, “Students enjoy gamification study methods,” while another emphasized that gamification “adds some fun and light competition.” Some educators highlighted how gamification encouraged participation even among typically reserved students. One participant stated, “Using games in class to help students helped me see how much they do like to compete and how it can help a shy, quiet student come out of their shell.”

***Impact on Learning Outcomes.*** Several participants observed that gamified learning led to improved student performance and retention of concepts. One educator shared, “Improved kids’ test scores,” while another explained, “Students were engaged and even talking to other students about their results after playing a game in science class.” Another respondent described a financial literacy simulation where students had to survive financially for 30 days, stating, “It is a great way to see if students can APPLY the concepts that they have been taught in class.” However, this same participant noted that while gamification is effective for application, it may not always be the best tool for initial content acquisition.

***Social Interactions and Collaboration.*** Gamified activities were also linked to enhanced social interactions and collaboration. One participant stated, “When using team-building games, it encourages students to work with others that they may not normally work with in the classroom.” Others emphasized the role of game mechanics in promoting fairness and inclusivity. One educator explained, “I like to use review game

sites that use chance as a game mechanic. This ensures that even if the student doesn't have the most correct answers, they still have chances to win the game."

***Challenges and Considerations.*** While most participants described positive experiences, some also noted challenges. One educator stated, "Within a writing-centered classroom, gamification becomes difficult. When reviewing basic writing skills, gamification definitely takes a boring subject and enhances engagement." Others highlighted that some students may be reluctant to participate in gamified activities. One participant observed, "Students are generally eager to play; however, there is usually one or two students that will not participate." Additionally, another participant expressed concern about the planning involved, stating, "The front work can be a lot, but once you do it once, it truly does become easier, and the class will basically run itself."

**Q5.5.** RQ5.5 asked participants to describe any potential concerns or reservations they had about integrating gamified elements into their teaching. No participants provided responses to this open-ended item. As a result, no qualitative data were available for analysis.

## **Summary**

Chapter Four presented the results of the qualitative survey examining Kindergarten-12<sup>th</sup> grade educators' perceptions of gamification in public school classrooms. The data were organized by research question and analyzed by participants' self-identified experience level with gamification: little, moderate, or a lot. Across all five research questions, participants with moderate and high experience levels with gamification consistently reported stronger positive perceptions of gamification's impact on student motivation, engagement, collaboration, and learning outcomes compared to those with

little experience. These differences were reflected in both Likert-scale responses and open-ended qualitative statements.

RQ1 was: What features in gamification do teachers perceive increase student motivation for learning mastery in the public-school setting? Participants rated “social interaction,” “challenges/quests,” and “real-time feedback” as the most motivation gamification features. Participants described increased student engagement through competition, rewards, and game mechanics. Challenges included time constraints, alignment with curriculum standards, and lack of professional development.

RQ2 was: What features in gamification do teachers perceive increase student efficacy for learning mastery in the public-school setting? Participants rated “real-time feedback,” “choice/autonomy,” “and social interaction” as the most supportive features of student self-efficacy. Participants observed increased student confidence through mastery-based progression, repeated attempts, and collaborative gameplay.

RQ3 was: How does gamification change learning for students and teachers in the public-school setting? Participants reported that gamification improved student engagement, collaboration, and overall classroom culture. Gamification also influenced teaching approaches, with more experienced educators reporting that it transformed how they play instruction and view the learning process.

RQ4 was: What gamification attributes enhance teachers' self-efficacy regarding assignment planning for learning mastery evaluation in public schools? Participants with more gamification experience reported increased self-efficacy in planning assignments, designing assessments, and addressing diverse learning needs. Participants noted a

growing confidence in creating inclusive and differentiated instruction using gamified methods.

RQ5 was: What are teachers' perceptions and dispositions toward using gamified learning in their classroom experiences? Interest in exploring gamification and perceived alignment with teaching philosophy increased with participant experience. External factors such as peer support and professional development had a stronger influence among experienced users. Although no concerns were submitted in the final open-ended question, earlier responses indicated hesitancy around time, resource availability, and alignment with educational goals. Chapter Five includes detailed discussions, interpretations, and conclusions based on these findings along with implications and recommendations.

## Chapter Five: Conclusions and Implications

### Introduction

This study examined teachers' perceptions of gamification as tools for instruction and assessment in K-12 public school classrooms. The research aimed to investigate teachers' perceptions of the impact of gamification on student motivation, self-efficacy, and learning mastery, as well as its influence on their own teaching practices. The study used Kelly's (1931-2010) Curriculum and Bandura's Theory of Self-Efficacy (1977, 2012) to explore how gamified learning environments affect curriculum alignment, teacher self-efficacy, and student-centered teaching.

The study conducted at Heart of the Prairie School District involved 17 teachers from varying grade levels and subject areas. Data were collected using a web-based survey designed by the researcher. The instrument included both quantitative and qualitative items that addressed six research questions. Quantitative data were analyzed using descriptive statistics to identify the central tendency. Qualitative responses were coded by theme to identify shared participant experiences. To better understand differences in perception, findings were organized by the participants' self-identified levels of gamification experience (little n=4, moderate n=9, a lot n=4). This organization provided the researcher with an opportunity to explore how familiarity with gamification influences teacher perceptions of motivation, efficacy, and instructional design. Participants provided insights into the benefits, challenges, and practical considerations for using gamification in their classrooms.

Chapter Four presented the results of both quantitative and qualitative analyses for each research question. Chapter Five interprets these findings through broader

conceptual themes that highlight the relationships between gamification, student learning, and teacher practice. These themes provide a complete understanding of how gamified learning influences both instructional design and classroom dynamics by connecting observations to the theoretical frameworks guiding the study. Although the study initially included six research questions, the sixth question, intended to compare student performance between gamified and traditional assignments, was omitted from analysis due to limited participation.

The following sections present the findings organized into three interconnected themes:

1. Gamification on Student Motivation and Engagement
2. Gamification and Self-Efficacy for Learning Mastery
3. Gamification and Teacher Practice

Each theme integrates quantitative and qualitative data to illustrate key patterns and contextual meanings, providing a foundation for the conclusions, implications, and recommendations. Together, these themes offer a clearer picture of how gamified learning environments shape classroom dynamics and instructional choices, and they set the stage for the conclusions and recommendations that follow.

## **Findings**

### ***Theme 1: Student Motivation and Engagement***

This theme, addressing RQ1 and the portions of RQ3 related to student engagement, examines how participants perceive gamification as an educational tool to enhance student motivation and increase active participation and persistence. Across all experience levels, participants reported that gamification encouraged students to

participate actively and kept their interest through challenges, feedback, and progress tracking mechanisms. These findings align with research that describes gamification as an engaging, goal-oriented strategy that increases student participation and focus by establishing clear goals, visible progress, and prompt feedback (Christopoulos & Mystakidis, 2023; Lampropoulos & Sidiropoulos, 2024; Lee et al., 2020).

Participants identified social interaction, *Challenges & Quests*, and *Choice & Autonomy* as the most common elements motivating students to take ownership of their work, collaborate with peers, and see the connection between effort and performance. In the reviewed literature, these features are commonly associated with immediate feedback, progress indicators, and collaborative problem-solving (Christopoulos & Mystakidis, 2023; Jipli & Elaklounk, 2025; Khoshnoodifar et al., 2023; Ratinho & Martins, 2023; Wulan et al., 2024). These patterns also demonstrate Bandura's (1997) theory that mastery experiences and social modeling increase self-efficacy and perseverance, and Kelly's (2004) emphasis on a curriculum of aligned objectives, activities, and feedback.

Differences across the experience levels suggested that participants' familiarity with gamification supported a more intentional use of structure and feedback. Participants who used gamification often described how they used level difficulty, progress indicators, and cooperative activities to reinforce persistence and reflection. The reviewed literature shows that clear goals, balanced difficulty, and timely feedback encourage engagement (Christopoulos & Mystakidis, 2023; Ratinho & Martins, 2023). The literature also warns against overreliance on points without meaningful game design or context (Hellberg & Moll, 2023; Ratinho & Martins, 2023). The study's findings on success boosting student self-confidence are consistent with Bandura's mastery

experience (1997) and Kelly's alignment of intended, implemented, and achieved curriculum (2004).

The participant's qualitative responses suggested that the benefits of motivation extended to individual success. Participants described stronger collaboration, peer support, and positive classroom culture when students completed team-based tasks. The reviewed literature indicated that well-designed cooperative puzzles, team challenges, and feedback increase collaborative problem-solving (Dikčius et al., 2020; Ratinho & Martins, 2023; Valantiejiene & Girdauskienė, 2021). Poorly designed competitive elements or weak support, however, can worsen motivation and engagement (Ratinho & Martins, 2023; Valantiejiene & Girdauskienė, 2021). These observations support Self-Determination Theory, where autonomy, competence, and relatedness are linked to higher motivation (Ryan & Deci, 2020).

Overall, the findings show that gamification motivates students by creating interactive, collaborative learning environments, focusing on progress rather than performance. Participant observations about increased levels of participation, persistence, and resilience are consistent with the reviewed literature. These patterns also align with the guiding frameworks, underscoring how intentional design links game elements to learning outcomes and supports student engagement in pursuit of mastery. Building on the first theme of motivation and engagement, the next theme examines how these key attributes contribute to self-efficacy for learning mastery among students and teachers. The third theme considers implications for teacher practice, including purposeful planning, assessment alignment, and inclusive educational practices.

### ***Theme 2: Self-Efficacy for Learning Mastery***

This theme, addressing RQ2 and the portions of RQ3 related to participants' perceptions of changes in student learning, examines how gamification features support students' confidence in their ability to succeed. The survey addressed the following key features of gamification: *Points & Scoring, Challenges & Quests, Narrative & Storytelling, Real-time Feedback, Choice & Autonomy, Time Constraints, Feedback Loops, and Social Interaction*. Across all participants, *Real-time Feedback, Choice & Autonomy, Challenges & Quests*, and collaborative structures were the most frequently identified as the core supports for student confidence and persistence in meeting learning objectives. These patterns align with a self-efficacy view that mastery experiences and immediate feedback with progress cues build perceived competence and sustain effort (Bandura, 1997), and with a curriculum view emphasizing alignment of intended goals, implemented tasks, and achieved outcomes (Kelly, 2004).

Participants consistently emphasized that *Real-Time Feedback* was essential to building students' confidence. Participants described that providing regular, actionable feedback to students clarified expectations, reduced uncertainty, and recognized the connection between effort and progress towards learning goals. The reviewed literature also indicated that students maintain higher levels of engagement and persistence when they receive timely feedback, have clear criteria, and visible progress indicators because they understand how their actions lead to achievement (Christopoulos & Mystakidis, 2023; Lampropoulos & Sidiropoulos, 2024; Lee et al., 2020). Bandura's view also supports that people develop strong self-efficacy beliefs through mastery experiences and clear evidence of success (Bandura, 1997).

*Choice & Autonomy* was also identified as an important contributor to self-efficacy. Participants reported that students became more invested in their learning when they were able to select their own pathways, strategies, or roles. The reviewed literature also described that students maintain higher levels of participation when autonomy, appropriate difficulty, and clear progress indicators are present, reinforcing the link between choice and success (Christopoulos & Mystakidis, 2023; Ratinho & Martins, 2023). These elements serve as structured mastery experiences which help students work towards success while learning to connect their progress to their own efforts and choices (Bandura, 1997).

Participants believed the use of repeated practice and increasing difficulty present in *Challenges & Quests* helped students learn persistence. Participants observed students staying focused throughout gamified activities, especially when difficulty increased or they experienced failure. The reviewed literature emphasized the importance of setting clear, attainable goals and balancing challenge difficulty. It also cautioned against *pointsification*, or relying on points to motivate students without providing meaningful game design and feedback systems, which can demotivate students (Hellberg & Moll, 2023; Ratinho & Martins, 2023). The participants' observations further support the idea that appropriate levels of difficulty and feedback build confidence over time and develop mastery experiences (Bandura, 1997).

Finally, *Social Interaction* and team problem-solving were identified as collaborative structures that developed confidence. Participants described that students working in teams towards a shared goal provided opportunities for stronger collaboration, peer-to-peer support, and a supportive learning environment. The reviewed literature

linked cooperative puzzles, team challenges, and supportive feedback to increased relatedness and collective problem-solving. However, when competition is used inappropriately, or the activity doesn't provide enough support for students, motivation and confidence can be reduced (Dikčius et al., 2020; Ratinho & Martins, 2023; Valantiejiene & Girdauskienė, 2021). This suggests that students seeing their peers succeed and receive positive feedback can strengthen their own self-efficacy development and align with self-efficacy development through social modeling and encouragement (Bandura, 1997).

Collectively, these findings indicate that when gamification is implemented purposefully and supported with real-time feedback, meaningful choice, scaffolded challenge, and supportive collaboration can help students develop self-efficacy, leading to more learning persistence. These findings also reflect Bandura's emphasis on mastery experience (Bandura, 1997) and Kelly's view that alignment of intended, implemented, and achieved curriculum is essential for learning (Kelly, 2004). The following theme extends these patterns by analyzing their effects on teaching practice through purposeful planning, assessment alignment, and inclusive educational practices.

### ***Theme 3: Efficacy and Curriculum Alignment***

The final theme, addressing RQ4, RQ5, and portions of RQ3 related to the participants' perceptions of changes in teaching practice, examines how gamification influences lesson planning, assessment development, learner-centered differentiation, and classroom environment. All participants described using game elements to create assignments aligned with learning objectives and structured feedback, allowing students to monitor their progress. These practices align with Kelly's theory, which requires

teaching methods to align with the curriculum (Kelly, 2004) and Bandura's theory that mastery experiences build self-efficacy (Bandura, 1997).

Participants supported that intentional planning and assessment alignment were necessary for successful gamification implementation. Planning requires decisions selecting game features that clearly identify criteria, provide instant feedback, and connect tasks to learning outcomes. The reviewed literature emphasized that these features support student engagement and performance tracking, which supports teachers' efforts to design assessments to reinforce mastery instead of one-time performance (Christopoulos & Mystakidis, 2023; Lampropoulos & Sidiropoulos, 2024; Lee et al. 2020). This also demonstrates Kelly's requirement for curriculum alignment and Bandura's explanation that students and teachers develop efficacy through multiple successful experiences (Kelly, 2004; Bandura, 1997).

Participants identified differentiation and inclusion as essential elements to creating successful gamified activities. Participants described using adjusting difficulty, creating alternative pathways, and group work assignments as strategies to support diverse learners' needs. The reviewed literature showed that students are more regularly engaged when the classroom environment supports autonomy through balanced challenges and scaffolded peer interactions. It warns, however, that insufficient scaffolding and an overreliance on competition can demotivate students (Dikćius et al., 2020; Ratinho & Martins, 2023; Valantiejiene & Girdauskienė, 2021). The selection of these gamification features creates accessible mastery experiences and opportunities for social modeling, which help students succeed and understand that their progress stems from their own actions (Bandura, 1997).

Most participants indicated an openness to implementing gamification when time, collaboration, resources, and professional development are available. Participants valued opportunities to share and collaborate on content, as well as receiving help when designing activities to ensure appropriate gamification features were selected and implemented. Building on the frameworks already described, ALLURE (Bisz & Mondelli, 2023), STAR (Botturi & Babazadeh, 2020), CREATE (Lim, 2024), and Action-First (Kapp, 2025) could serve as models for successful implementation. The frameworks can help teachers align the intended learning goals with implemented activities and achieved outcomes, strengthening consistency between gamification features and learning evidence (Kelly, 2004).

Participants also discussed challenges influencing their teaching practice. Preparation time, limited access to high-quality resources, and fitting activities into existing pacing guides and common assessments were top concerns. The reviewed literature cautions against overly relying on points (“*pointsification*”) without supporting gamification features or context, and states that competition can decrease motivation when social support and constructive feedback are absent (Hellberg & Moll, 2023; Ratinho & Martins, 2023; Valantiejiene & Girdauskieniė, 2021). Taken together, participant reports and the literature suggest that professional development, collaboration time, and ready-to-use exemplars are important for sustainable gamification implementation.

## **Conclusions**

Overall, the findings show that gamification’s contribution to teaching practice depends on intentional design and assessment alignment. These practices also reflect the

study's framework: Kelly (2004) emphasizes integrated curriculum design that aligns intended objectives, implemented activities, and achieved outcomes, and Bandura (1997) highlights mastery experiences and social modeling to create student confidence and persistence. These findings establish the basis for the Implications of Practice by identifying specific support measures that districts can provide, including scheduled planning time, standards-aligned exemplar banks, and professional development focusing on feedback design, scaffolded difficulty, and meaningful student choice.

### **Implications for Practice**

The findings suggest that gamification works best when teachers create activities with clear objectives, timely feedback, visible progress, and collaboration in mind. These design strategies follow Kelly's (2004) emphasis on consistency throughout the curriculum and Bandura's (1997) explanation of mastery experiences and social modeling, which develop confidence and persistence. The following sections present practical applications of the themes, providing teachers, curriculum leaders, and school districts with specific actions to take. As noted in Chapter Three, findings should be interpreted within the context of a single-district sample with self-reported data.

#### ***For Teachers***

Teachers can focus on incorporating visual progress cues into their timely, directed feedback so students can identify where they are in the activity or objective and determine what they should do next. In practice, this means pairing criteria with formative checks for understanding, written or audio/visual comments, and progress indicators, including badges, checkpoints, or levels that show student comprehension instead of solely depending on point values (Christopoulos & Mystakidis, 2023;

Lampropoulos & Sidiropoulos, 2024; Lee et al., 2020). These structures help teachers convert classroom activities into observable mastery experiences, showing students how their efforts led to improvement (Bandura, 1997).

Designing activities around an appropriate difficulty level enables students to remain interested while avoiding frustration. Teachers need to organize tasks from basic to challenging, provide students opportunities to retry, and include short self-assessment questions that help students identify mistakes as information for future learning (Ratinho & Martins, 2023). This approach supports student self-efficacy and confidence by allowing students to see and interpret their progress throughout the entire activity rather than at the end (Bandura, 1997).

When paired with clear expectations, meaningful student choice enables students to take ownership of their learning and builds confidence. Teachers can offer options in roles, tools, or task pathways that connect to success criteria and work examples that demonstrate achievement, regardless of every student's choice (Christopoulos & Mystakidis, 2023; Ratinho & Martins, 2023). Students reach their highest achievement when they get to make purposeful, goal-oriented decisions and receive feedback demonstrating the impact of their choices on their outcomes.

Using collaborative structures can enhance collective problem-solving capabilities. Teachers need to establish team roles, standards for peer support, and check-ins that prompt explanation and encouragement, while taking steps to prevent unbalanced competition that leads to decreased student motivation (Dikčius et al., 2020; Ratinho & Martins, 2023; Valantiejiene & Girdauskienė, 2021). The facilitation methods establish

social environments that allow students to observe their peers succeed and receive encouragement, both of which strengthen self-efficacy (Bandura, 1997).

Use established frameworks to assist in designing gamified activities that are grounded in the curriculum. The frameworks highlighted in the reviewed literature offer teachers effective methods to implement gamification by providing actionable strategies. ALLURE offers a structured method (Ask, List, Link, Understand, Run, Evaluate) with templates and examples that may help develop learning objectives, link content and gamification features, run activities, and evaluate the results (Bisz & Mondelli, 2023). Action-First Learning begins with hands-on activities, followed by structured debriefing sessions, and reflection focuses on making learning accessible (Kapp, 2025). The STAR (Botturi & Babazadeh, 2020) method requires explicit alignment, requiring each gamified task to link to a specific learning objective and to include student review, which supports criteria decisions and evidence of learning. Teachers can use the CREATE (Lim, 2024) framework to develop real-world investigations, especially in Science, Technology, Engineering, and Math (STEM) subjects, by planning authentic tasks, checkpoints, and assessments. This ensures that gamification features support investigation without interrupting it (Lim, 2024). The models use intentional planning to link game elements to a curriculum that specifies goals, tasks, evidence, and feedback so the gamified activity supports learning rather (Bisz & Mondelli, 2023; Botturi & Babazadeh, 2020; Kapp, 2025; Lim, 2024).

Finally, teachers should avoid *pointsification* by linking recognition systems to learning evidence and providing students with formative guidance. Points or leaderboards, if used, should be contextualized with criteria, reflective prompts, and retry

opportunities so the focus remains on learning rather than comparative performance (Hellberg & Moll, 2023; Ratinho & Martins, 2023). This balance maintains motivation and equity among diverse learners.

### ***For Curriculum Leaders***

Curriculum leaders can support the implementation process by providing standards-based exemplar banks that demonstrate proper feedback language, progress indicators, and inclusive collaboration. Exemplar activities show how game components are tied to learning objectives and assessments, which helps teachers create activities that prioritize learning over the novelty of simply playing a game (Christopoulos & Mystakidis, 2023; Lee et al., 2020). A well-curated selection of exemplars also enables teams and grade levels to establish consistent expectations.

Curriculum leaders should reserve time for collaborative planning so teams and grade levels can adapt, test, and debrief on existing activities to ensure appropriate gamification features, curriculum alignment, difficulty, and supports are in place for all learners (Ratinho & Martins, 2023; Valantiejiene & Girdauskienė, 2021). This cyclical approach enables the alignment of the intended, implemented, and achieved curriculum by making the design, implementation, and evaluation of gamified activities visible (Kelly, 2004). During professional development, planning framework tools: ALLURE (Bisz & Mondelli, 2023), STAR (Botturi & Babazadeh, 2020), CREATE (Lim, 2024), and Action-First (Kapp, 2025), serve as additional resources that keep attention on learning outcomes, assessment data, and feedback. The goal is to provide access to support that makes planning for gamification more effective.

### ***For School District Leaders***

School district leaders should direct professional development funding efforts toward teaching staff how to create effective feedback systems, appropriately leveled difficulty, and meaningful student choice rather than specific platforms or games. Professional development should model gamification best practice by delivering short, interactive modules on writing actionable feedback, establishing progress checkpoints, designing retry opportunities, and facilitating peer support systems (Christopoulos & Mystakidis, 2023; Lampropoulos & Sidiropoulos, 2024). This aligns with Badura's mastery experience approach (1997) and Kelly's curriculum alignment model (2004) by clearly identifying pathways towards improvement.

School district leaders should create a rubric to evaluate tools that emphasize objectives, actionable feedback systems, visible progress indicators, and support for collaboration. When adopting a tool, district leaders should also consider differentiation features, assessment alignment, and learning goal-based analytics. Additionally, tools should include accessibility, and inclusion supports and classroom management features that enable cooperative work, private feedback, and constructive recognition practices to prevent pointsification and unintended peer comparison (Hellberg & Moll, 2023; Ratinho & Martins, 2023). These defined criteria create equal learning opportunities across classrooms and schools while aligning digital choices with instructional purpose.

Finally, school district leaders can provide opportunities for collaboration and knowledge sharing, such as short presentations during grade- or team-level meetings or a gamified activity repository that all teachers can share and use. These opportunities allow for the continued alignment and refinement of activities (Botturi & Babazadeh, 2020; Bisz & Mondelli, 2023; Lim, 2024). Over time, this approach enables a continuous

improvement environment in which gamification enhances, rather than replaces, the core work of teaching and learning.

When viewed together, these implications emphasize that gamification adds the most value when instructional choices are meaningful, feedback is actionable, and the classroom environments support inclusion and collaboration. Guidance for teachers, curriculum leaders, and school district leaders centers on aligning learning outcomes, activities, and assessments (Kelly, 2004) to promote sustained student achievement through mastery experiences (Bandura, 1997). District-wide success will require consistent support for planning, sharing, and thoughtful tool adoption. Building on these directions, the next section outlines future research directions to study durability over time, differences between subject areas, implementation resources, and student perspectives. These areas offer opportunities to deepen understanding and strengthen the practical application of gamification in K-12 settings.

### **Recommendations for Future Research**

Future research should build on these results by expanding on the scope, methods, and populations that were beyond the limits of this study. The following recommendations focus on creating designs that explain cause-and-effect relationships, improve measurement, and broaden viewpoints while maintaining direct ties to the classroom environments described by participants.

1. Examine gamification's impact over time.

Future research should track student motivation, engagement, and self-efficacy development patterns across weeks, quarters, and school years to study long-term stability. Gamified activities that follow the same class or grade level across

multiple units of study enable researchers to determine if results can be generalized to new content, formats, or teachers. The study would determine if gamification's novelty would lead to long-term improvement when feedback, progress indicators, and collaboration are consistent.

2. Compare subject areas and grades.

Future research needs to verify if patterns exist differently between Science, Technology, Engineering, and Math (STEM) courses, English Language Arts, and Social Studies, and if different educational levels require specific game features or approaches. Comparative studies can determine where collaboration, difficulty, and choice have the greatest impact, and where adjustments are needed to provide support. This analysis can then be used to develop subject-specific exemplars and progression maps.

3. Include student voices to help validate perspectives.

This study focuses on teacher perceptions, but future investigations should include student feedback through surveys, interviews, focus groups, and work samples to study how teachers and students understand feedback, challenge, and collaboration. Evaluating these design elements requires teachers to report their understanding, students to share their perspectives, and classroom observation to determine where student and teacher understanding overlap and differ. This method may also reveal patterns of participation, support, and self-efficacy among different groups.

4. Study the implementation frameworks and professional development.

Experimental studies can test how specific gamification frameworks affect the quality and consistency of design. Evaluating planning frameworks such as ALLURE (Bisz & Mondelli, 2023), STAR (Botturi & Babazadeh, 2020), CREATE (Lim, 2004), and Action-First Learning (Kapp, 2025) against non-framework teams will determine which approach leads to better alignment of intended, implemented, and achieved curriculum. Research could also explore how planning, collaborating, and exemplar sharing influence teachers' commitment and self-efficacy over time.

5. Analyze how badging may prevent *pointsification*.

Future research needs to examine how visual progress indicators, like mastery-oriented badging provides purpose, increase motivation, and prevent *pointsification*. Mixed-methods research designs can evaluate common badging analytics (earn rates, retries, and completion time) with assessment data and interviews to see how students use interpret earning criteria and use badging to determine next steps and how teachers use badging to set appropriate difficulty levels and provide timely feedback.

6. Revisit the omitted performance comparison (RQ6).

A dedicated study should address the comparative performance question from this study that could not be evaluated. The study would achieve better results through proper sampling and standardized outcome assessments to evaluate breakout games and traditional assessments. Using interim mastery checks and reflections would further clarify both immediate and long-term application.

7. Strengthen the survey to monitor motivation, self-efficacy, and engagement metrics.

Future research should utilize validated instruments and standardized definitions for key gamification features to achieve better comparisons of results. Using quantitative scales with behavioral indicators and rubric-based performance evidence allows for a more detailed understanding of change. Measuring student learning at three intervals: pretest, posttest, and delayed posttest allows researchers to assess baseline, initial, and retained effects, respectively, of the gamified activity.

8. Examine equity and inclusion results.

Research studies should focus on understanding how key gamification features influence students with diverse learning needs. Research can evaluate Universal Design for Learning (UDL) methods against gamified activities to assess their impact on access, participation, and progress towards learning targets. Collecting student and paraprofessional interviews can identify perceived usefulness.

9. Examine professional development's impact on design expertise.

Future research can track how teachers' design decisions evolve as they gain experience with gamification. Studies can help identify teacher development stages through observation or analyzing the gamified activity design and implementation process. This research may provide insight for professional development pathways to desired teaching practice.

10. Connect classroom outcomes to curriculum coherence.

Studies specifically grounded in Kelly's Curriculum Theory (2004) can help understand how coherence connects game elements and learning. Protocols for alignment, specific feedback, and quality evidence enables researchers to link

gamification features to observed results and offer specific guidance on gamification's implementation across subject area or grade level.

These proposed recommendations for future research provides insights that may help explain how gamification creates reliable motivational effects, increased self-efficacy, and lasting achievement across all learning environments. They also establish a path for developing the evidence teachers and leaders need to create sustainable, learning-focused practices.

### **Summary**

This study investigated teachers' perceptions of gamification as a tool for teaching and assessment in K-12 public schools, specifically focusing on student motivation, self-efficacy, learning mastery, and teacher professional development. Data were gathered through a researcher-designed, web-based survey of one district in rural central Missouri. Seventeen teachers across varying grade levels and subjects participated. The study was driven by Kelly's curriculum theory, which aligns the intended, implemented, and achieved curriculum, and by Bandura's self-efficacy, emphasizing mastery experiences and social modeling.

The quantitative and qualitative results from Chapter Four were presented with the study's research questions, and Chapter Five organized the results into three themes: motivation and engagement, self-efficacy for learning mastery, and teacher practice. Participants' responses showed that gamification was most effective when gamified activities were designed with explicit goals, provided timely and actionable feedback, and included visual student progress indicators. The study also noted that the sixth research

question, comparing gamified and traditional assignments, could not be analyzed because of limited participation.

The first theme addressed student motivation and engagement, drawing on responses linked to Research Question 1 and the engagement-related aspects of Research Question 3. Participants noted that students were the most engaged when activities included social elements, challenging tasks, meaningful choice, and progress cues. The responses aligned with the reviewed literature, which described gamification as an interactive system based on goal achievement, and supported Bandura's theory that observing peer success helps build confidence and maintain engagement. Collectively, participants observed that students were more willing to collaborate, persist through difficulty, and focus on learning goals when classrooms combined autonomy and clear expectations.

The second theme examined self-efficacy for learning mastery and connected Research Question 2 to the learning-related aspects of Research Question 3. Participants described that *real-time feedback*, student *choice and autonomy*, *challenges and quests*, and collaboration provided the most effective support for increased self-efficacy. Participants explained that students needed timely, actionable feedback to track progress and determine their next steps, and that difficulty and opportunities to retry encouraged persistence after failure. These conditions demonstrate Bandura's self-efficacy development through mastery experiences and align with Kelly's principle of matching activity design to desired results.

The third theme focused on teacher practice and examined Research Questions 4, 5, and the practice-related aspects of Research Question 3. Participants explained how

they used gamification to plan assignments, design actionable feedback, and support diverse learning needs through collaboration and differentiated learning pathways.

Participants listed three main barriers: insufficient preparation time, limited access to high-quality resources, and current curriculum pacing schedules. The reviewed literature also warned against an over-reliance on points as a reward mechanism, as it fails to give students meaningful feedback, and competition can reduce motivation for some students.

Together, these findings support three conclusions. First, the combination of clear goals, timely feedback, visible progress, and supportive collaboration in classrooms led to increased motivation and student engagement. Second, students developed stronger self-efficacy when they experienced incremental success, monitored their progress, and made meaningful choices about their work within structured tasks. Third, teaching practice benefited when strategic planning and assessment alignment were used to connect game elements to learning and avoid pointsification, which would shift student attention from learning to performance. These findings validated Kelly's curriculum alignment model and Bandura's theory that mastery experiences build confidence and persistence.

Overall, the findings have specific implications for classrooms and school districts. For teachers, results showed a need to establish learning environments that incorporate timely, actionable feedback, appropriate difficulty levels, meaningful student choice, and supportive, inclusive collaboration. For curriculum leaders, the results highlight standards-aligned exemplar banks, designated time for collaborative lesson development among grades and subjects, and adaptable planning frameworks that keep gamified activities focused on learning outcomes and evidence. For districts, the findings recommend professional development focusing on feedback and progress evaluation

techniques, developing a rubric to evaluate a learning tool or system's accessibility and alignment to learning, and creating opportunities to share and refine gamified content across subjects and grade levels.

Recommendations for future research establish paths to build on this study. Priorities might include studying long-term durability, evaluating design quality across subjects and grade levels, using student feedback to validate the findings of this study, and studying how the planning frameworks discussed in Chapter Two and professional development affect the quality of gamification implementation. Additionally, research studies should investigate how mastery-oriented badging can prevent *pointification*, revisit this study's omitted research question (RQ6) with proper sampling, and strengthen the survey instrument to ensure consistent measures of motivation, engagement, and self-efficacy. Studies that rate how objectives, activities, feedback, and assessments are aligned may reveal if that alignment is the reason gamification leads to improved learning.

Finally, the results showed that gamification adds the most value when instructional choices are purposeful, feedback is timely and actionable, and the classroom environment promotes inclusion and collaboration. When gamified activities include visible progress, connect activities with outcomes, and provide multiple opportunities for success, teachers are better able to use gamification to show student learning. The research provides essential knowledge for improving the implementation of gamification in today's classrooms while developing evidence-based methods for long-term, learning-focused applications of gamification.

### References

- Abacioglu, C. S., Volman, M., & Fischer, A. H. (2020). Teachers' multicultural attitudes and perspective-taking abilities as factors in culturally responsive teaching. *British Journal of Educational Psychology*, 90(3), 736–752.  
<https://doi.org/10.1111/bjep.12328>
- Abrahamson, D., Dutton, E., & Bakker, A. (2022). Towards an enactivist mathematics pedagogy. In S. A. Stolz (Ed.), *The body, embodiment, and education: An interdisciplinary approach* (pp. 156–182). Routledge.
- Akoodie, Y. (2020). Gamification in psychological assessment in South Africa: A narrative review. *African Journal of Psychological Assessment*, 2, Article e24.  
<https://doi.org/10.4102/ajopa.v2i0.24>
- Aguayo, C., Videla Reyes, R., López-Cortés, F., Rossel, S., & Camilo Ibacache. (2023). Ethical enactivism for smart and inclusive STEAM learning design [Ethical enactivism, Immersive learning, Systems thinking, Planetary wellbeing]. *Heliyon* 9.(12), e19205. <https://doi.org/10.1016/j.heliyon.2023.e19205>
- Aguilar, L. R. R., Rodríguez, F. J. Á., Aguilar, J. R. M., Plascencia, V. N., Mendoza, L. M. P., Valdez, J. R. Q., Pech, J. R. V., Leon, A. M., & Ortiz, L. E. L. (2023). Implementing Gamification for Blind and Autistic People with Tangible Interfaces, Extended Reality, and Universal Design for Learning: Two case studies. *Applied Sciences*, 13(5), 3159. <https://doi.org/10.3390/app13053159>
- Ahmed, S. K. (2024). The pillars of trustworthiness in qualitative research. *Journal of Medicine Surgery and Public Health*, 2, 100051.  
<https://doi.org/10.1016/j.glmedi.2024.100051>

- Alabdulaziz, M. S. (2023). Escape rooms technology as a way of teaching mathematics to secondary school students. *Education and Information Technologies*, 28(10), 13459–13484. <https://doi.org/10.1007/s10639-023-11729-1>
- Alsawaier, R. S. (2017). The effect of gamification on motivation and engagement. *International Journal of Information and Learning Technology*, 35(1), 56–79. <https://doi.org/10.1108/ijilt-02-2017-0009>
- Annuš, N., Takáč, O., Štempel'ová, I. & Dancsa, D. (2023). Z and Alpha generation teaching methods: digitalization of learning material, *International Journal of Advanced Natural Sciences and Engineering Researches*, 7(4),224-229.
- Anselme, P., & Hidi, S. E. (2024). Acquiring competence from both extrinsic and intrinsic rewards. *Learning and Instruction*, 92, 101939. <https://doi.org/10.1016/j.learninstruc.2024.101939>
- Arif, Y. M., Nugroho, F., Aini, Q., Fauzan, A. C., & Garcia, M. B. (2024). A Systematic Literature review of Serious Games for Physical Education. In *Advances in educational technologies and instructional design book series* (pp. 1–36). <https://doi.org/10.4018/979-8-3693-3952-7.ch001>
- Au, W. (2022). *Unequal by design*. Routledge. <https://doi.org/10.4324/9781003005179>
- Bacsa-Károlyi, B., & Fehérvári, A. (2024). Teachers' views on gameful practices – A scoping review. *Teaching and Teacher Education*, 150, Article 104730. <https://doi.org/10.1016/j.tate.2024.104730>

- Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioral change. *Psychological review*, 84(2), 191-215. <https://doi.org/10.1037/0033-295X.84.2.191>
- Bandura, A. (1986). *Social Foundations of Thought and Action: A social cognitive theory*. Prentice-Hall, Inc.
- Bandura, A. 1997. *Self-efficacy: The Exercise of Control*. W.H. Freeman and Company.
- Bandura, A. (2012). On the functional properties of perceived self-efficacy revisited. *Journal of Management*, 38(1), 9–44. <https://doi.org/10.1177/0149206311410606>
- Basileo, L. D., Otto, B., Lyons, M., Vannini, N., & Toth, M. D. (2024). The role of self-efficacy, motivation, and perceived support of students' basic psychological needs in academic achievement. *Frontiers in Education*, 9. <https://doi.org/10.3389/feduc.2024.1385442>
- Bhandari, P. (2023). Sampling Bias and How to Avoid It | Types & Examples. <https://www.scribbr.com/research-bias/sampling-bias/>
- Bisz, J., & Mondelli, V. L. (2023). *The Educator's Guide to Designing Games and Creative Active-Learning Exercises: The Allure of Play*. Teachers College Press.
- Black, P. & Wiliam, D. (1998). Assessment and Classroom Learning. *Assessment in Education: Principles, Policy & Practice*, 5(1), 7-74.
- Bledsaw, J. A. (2024). *Investigating Prodigy Math Program to improve students' success in mathematics*. The Keep. <https://thekeep.eiu.edu/theses/5010>
- Bleukx, N., Denies, K., Van Keer, H. Aesaert, K. (2024). The interplay between teacher beliefs, instructional practices, and students' reading achievement: National

- evidence from PIRLS 2021 using path analysis. *Large-scale Assess Educ* 12, 25  
<https://doi.org/10.1186/s40536-024-00212-z>
- Botturi, L., & Babazadeh, M. (2020). Designing educational escape rooms: Validating the Star Model. *International Journal of Serious Games*, 7(3), 41–57.  
<https://doi.org/10.17083/ijsg.v7i3.367>
- Brown, B., Boda, P., Ribay, K., Wilsey, M., & Perez, G. (2021). A technological bridge to equity: How VR designed through culturally relevant principles impact students appreciation of science. *Learning Media and Technology*, 46(4), 564–584. <https://doi.org/10.1080/17439884.2021.1948427>
- Bullock, D. K., & Pack, J. A. (2020). The untapped potential of culturally responsive teaching in C.T.E. *Techniques: Connecting Education & Careers*, 95(7), 10–11.
- Bureau, J. S., Howard, J. L., Chong, J. X. Y., & Guay, F. (2021). Pathways to student motivation: A meta-analysis of antecedents of autonomous and controlled motivations. *Review of Educational Research*, 92(1), 46–72.  
<https://doi.org/10.3102/00346543211042426>
- Çakmak, B., & Kaymaz, T. T. (2024). The effect of an escape room game on students' academic self-efficacy and motivation for critical thinking: Oncology nursing course. *BMC Nursing*, 23(1). <https://doi.org/10.1186/s12912-024-02586-5>
- Cao, Y., Gong, S., Wang, Y., Zheng, Q., & Wang, Z. (2022). How to provide competitors in educational gamification: The roles of competitor level and autonomous choice. *Computers in Human Behavior*, 138, 107477.  
<https://doi.org/10.1016/j.chb.2022.107477>

Carrillo, S. (2023). U.S. reading and math scores drop to lowest level in decades. *NPR*.

<https://www.npr.org/2023/06/21/1183445544/u-s-reading-and-math-scores-drop-to-lowest-level-in-decades>

Cheah, Y. H., Oliveri, A. R., & Hughes, J. E. (2023). Unpacking K-12 teachers' technology-supported, equitable practices: A mixed-methods systematic review. *Teaching and Teacher Education*, *125*, 103984.

<https://doi.org/10.1016/j.tate.2022.103984>

Chen, F., Li, S., Lin, L., & Huang, X. (2024). Identifying temporal changes in student engagement in social annotation during online collaborative reading. *Education and Information Technologies*, *29*(13), 16101–16124.

<https://doi.org/10.1007/s10639-024-12494-5>

Cheon, S. H., Reeve, J., & Vansteenkiste, M. (2020). When teachers learn how to provide classroom structure in an autonomy-supportive way: Benefits to teachers and their students. *Teaching and Teacher Education*, *90*, 103004.

<https://doi.org/10.1016/j.tate.2019.103004>

Christopoulos, A., & Mystakidis, S. (2023). Gamification in education. *Encyclopedia*, *3*(4), 1223–1243. <https://doi.org/10.3390/encyclopedia3040089>

Costley, N. N., MPhil, Harland, D. J., Jayasena, A., Van Gelder, L., & Subocz, S., Ph. D. (2022). Teacher perceptions of gamification in K-8 classrooms. In Walden University, *International Journal of Game-Based Learning*, *12*(3), 1-15.

Crespo, A. (2021). *Innovations in game-based learning: How lead users created Minecraft: Education edition* (thesis). (E. von Hippel, Ed.) *Innovations in game-based learning: how lead users created Minecraft: Education Edition*.

Massachusetts Institute of Technology, Cambridge, MA. Retrieved from <https://dspace.mit.edu/bitstream/handle/1721.1/140362/Crespo.Amelia-Sloan-2021-Redacted.pdf?sequence=1&isAllowed=y>.

Creswell, J. W., & Creswell, J. D. (2022). *Research design: Qualitative, quantitative, and mixed methods approaches (6th ed.)*. SAGE Publications.

Dehghanzadeh, H., Farrokhnia, M., Dehghanzadeh, H., Taghipour, K., & Noroozi, O. (2023). Using gamification to support learning in K-12 education: A systematic literature review. *British Journal of Educational Technology*, 55(1), 34–70. <https://doi.org/10.1111/bjet.13335>

dela Cruz, C. S., Arenas, M. R., Palaoag, T. D., & Berba, E. M. (2021). Game-Based Learning System: An exceptional learners motivation for better performance. *International Journal of Organizational Business Excellence*, 1(1). <https://doi.org/10.21512/ijobex.v1i1.7157>

Dikcius, V., Urbonavicius, S., Adomaviciute, K., Degutis, M., & Zimaitis, I. (2020). Learning marketing online: The role of social interactions and gamification rewards. *Journal of Marketing Education*, 43(2), 159–173. <https://doi.org/10.1177/0273475320968252>

Deterding, S., Dixon, D., Khaled, R., & Nacke, L. (2011). From game design elements to gamefulness: Defining “gamification”. *Proceedings of the 15th international academic MindTrek conference*. ACM.

Dichev, C., Dicheva, D. (2017). Gamifying education: What is known, what is believed and what remains uncertain: A critical review. *Int J Educ Technol High Educ* 14, 9. <https://doi.org/10.1186/s41239-017-0042-5>

- Dugnot-Menéndez, J., Jiménez-Arberas, E., Ruiz-Fernández, M.L. (2021). A collaborative escape room as gamification strategy to increase learning motivation and develop curricular skills of occupational therapy students. *BMC Med Educ* 21, 544 <https://doi.org/10.1186/s12909-021-02973-5>
- Engler, L., & Westphal, A. (2024). Teacher autonomy support counters declining trend in intrinsic reading motivation across secondary school. *European Journal of Psychology of Education*, 39(4), 4047–4065. <https://doi.org/10.1007/s10212-024-00842-5>
- Fang, A. L. S. (2022). Effectiveness of a gamification tool for classroom management in education setting. *Higher Education and Oriental Studies*, 2(5). <https://doi.org/10.54435/heos.v2i5.77>
- Fincke, K., Morrison, D., Bergsman, K., & Bell, P. (2021). Formative Assessment for Equitable learning. *The Science Teacher*, 89(2), 32–36. <https://doi.org/10.1080/00368555.2021.12293651>
- Gale, J., Alemdar, M., Cappelli, C., & Morris, D. (2021). A mixed methods study of self-efficacy, the sources of self-efficacy, and teaching experience. *Frontiers in Education*, 6. <https://doi.org/10.3389/feduc.2021.750599>
- García, S. G., Nicolás, A. H., Cano, M. G., & Alonso, J. M. (2021). Gamification in the childhood education classroom. *South Florida Journal of Development*, 2(1), 623–632. <https://doi.org/10.46932/sfjdv2n1-045>
- Gokli, A.A. (2022). Teaching and communicating with millennial Learners. In: Catanzano, T. (eds) *Image-Based Teaching: Techniques, Tips and Tricks* (pp. 15–31).Springer. [https://doi.org/10.1007/978-3-031-11890-6\\_2](https://doi.org/10.1007/978-3-031-11890-6_2)

- González-Yubero, S., Mauri, M., Cardoso, M. J., & Palomera, R. (2023). Learning through challenges and enigmas: Educational escape room as a predictive experience of motivation in university students. *Sustainability*, *15*(17), 13001. <https://doi.org/10.3390/su151713001>
- Hellberg, A., & Moll, J. (2023). A point with? Clarifying and separating pointsification from gamification in education. *Frontiers in Education*, *8*. <https://doi.org/10.3389/educ.2023.1212994>
- Helliwell, T., & Ebbelind, A. (2024). Combining enactivism and systemic functional linguistics: A methodology for examining (mathematics teacher educator) language. *Journal of Mathematics Teacher Education*. <https://doi.org/10.1007/s10857-024-09619-5>
- Hernández-Fernández, A., Olmedo-Torre, N., & Peña, M. (2020). Is classroom gamification opposed to performance? *Sustainability*, *12*(23), 9958. <https://doi.org/10.3390/su12239958>
- Howard, J. L., Bureau, J. S., Guay, F., Chong, J. X. Y., & Richard M. Ryan. (2021). Student motivation and associated outcomes: A meta-analysis from self-determination theory. *Perspectives on Psychological Science*, *16*(6), 1300–1323. <https://doi.org/10.1177/1745691620966789>
- Huizenga, J., Dam, G. T., Voogt, J., & Admiraal, W. (2017). Teacher perceptions of the value of game-based learning in secondary education. *Computers & Education*, *110*, 105–115. <https://doi.org/10.1016/j.compedu.2017.03.008>
- Ismail, S. M., Rahul, D. R., Patra, I., & Rezvani, E. (2022). Formative vs. summative assessment: Impacts on academic motivation, attitude toward learning, test

anxiety, and self-regulation skill. *Language Testing in Asia*, 12(1), 40.

<https://doi.org/10.1186/s40468-022-00191-4>

Jarrah, H. Y., Bilal, D. A., Halim, M., Helali, M. M., AlAli, R. M., Alfandi, A. A. A., & Khasawneh, M. A. S. (2024). The impact of storytelling and narrative variables on skill acquisition in gamified learning. *International Journal of Data and Network Science*, 8(2), 1161–1168. <https://doi.org/10.5267/j.ijdns.2023.11.018>

Javed, K. (2020). Teaching anatomy to medical students through flipped classroom with gamification approach. *International Journal of Scientific & Engineering Research*, 11(01), 133–137. <https://doi.org/10.14299/ijser.2020.01.03>

Jipli, A. N., & Elaklouk, A. M. S. (2025). Motivating Learners through gamification: Effective game elements and key factors. *International Journal of Innovative Technology and Exploring Engineering*, 14(4), 27–36.

<https://doi.org/10.35940/ijitee.d1062.14040325>

Kakar, Z. U. H., Rasheed, R., Rashid, A., & Akhter, S. (2023). Criteria for assessing and ensuring the trustworthiness in qualitative research. *CUNY Academic Works*. [https://academicworks.cuny.edu/yc\\_pubs/342/](https://academicworks.cuny.edu/yc_pubs/342/)

Kalogiannakis, M., Papadakis, S., & Zourmpakis, A. (2021). Gamification in Science Education. A Systematic Review of the literature. *Education Sciences*, 11(1), 22. <https://doi.org/10.3390/educsci11010022>

Kam, A. H. T., & Umar, I. N. (2023). Fostering autonomous motivation: A deeper evaluation of gamified learning. *Journal of Computing in Higher Education*, 36(2), 368–388. <https://doi.org/10.1007/s12528-023-09358-1>

- Kapp, K. M. (2025). *Action-First learning: Instructional Design Techniques to Engage and Inspire*. American Society for Training and Development.
- Karaman, P. (2021). The effect of formative assessment practices on student learning: A meta-analysis study. *International Journal of Assessment Tools in Education*, 8(4), 801–817. <https://doi.org/10.21449/ijate.870300>
- Kaya, O. S., & Ercag, E. (2023). The impact of applying challenge-based gamification program on students' learning outcomes: Academic achievement, motivation and flow. *Education and Information Technologies*, 28(8), 10053–10078. <https://doi.org/10.1007/s10639-023-11585-z>
- Kelly, A. V.(2004). *The curriculum: Theory and practice*. (5th ed.). SAGE Publications.
- Kholid B., Rahman A., & Ari Irawan, L. (2024). Implementing diagnostic assessment in designing differentiated learning for English language learning at the junior high schools. *Journal of Language and Literature Studies*, 4(2), 445–458. <https://doi.org/10.36312/jolls.v4i2.1934>
- Khoshnoodifar, M., Ashouri, A., & Taheri, M. (2023). Effectiveness of gamification in enhancing learning and Attitudes: A study of statistics education for health school students. *Journal of Advances in Medical Education & Professionalism*, 11(4) 230–239. <https://doi.org/10.30476/JAMP.2023.98953.1817>
- Kim, J., & Castelli, D. M. (2021). Effects of gamification on behavioral change in education: A meta-analysis. *International Journal of Environmental Research and Public Health*, 18(7), 3550. <https://doi.org/10.3390/ijerph18073550>

- Kim, C., Na, H., Zhang, N., & Bai, C. (2024). Escape rooms for education: A meta-analysis. *International Journal of Instruction*, 17(4), 219–234.  
<https://doi.org/10.29333/iji.2024.17413a>
- Kolbe K. (2009) *Conation*. <https://e.kolbe.com/knol/conation.html>
- Kwong, V., Falzon, J., & Feighery, J. (2022). Integrating immersive experiences to instruction through BreakoutEDU. *International Journal of Librarianship*, 7(1), 116–126. <https://doi.org/10.23974/ijol.2022.vol7.1.209>
- Lampropoulos, G., & Sidiropoulos, A. (2024). Impact of gamification on students' learning outcomes and academic performance: A longitudinal study comparing online, traditional, and gamified learning. *Education Sciences*, 14(4), 367.  
<https://doi.org/10.3390/educsci14040367>
- Leah, C. (2020). Online teaching and the iGen. In I. Boldea, C. Sigmirean, & D. Buda (Eds.), *Paths of communication in postmodernity: Communication, journalism, education sciences, psychology and sociology* (p. 56). Arhipelag XXI Press.
- Leiss, L., Großschedl, J., Wilde, M., Fränkel, S., Becker-Genschow, S., & Großmann, N. (2025). Gamification in education—teachers' perspectives through the lens of the theory of planned behavior. *Frontiers in Psychology*, 16, 1571463.  
<https://doi.org/10.3389/fpsyg.2025.1571463>
- Lee, H., Chung, H. Q., Zhang, Y., Abedi, J., & Warschauer, M. (2020). The effectiveness and features of formative assessment in US K-12 education: A systematic review. *Applied Measurement in Education*, 33(2), 124-140.

- Li, M., Ma, S., & Shi, Y. (2023). Examining the effectiveness of gamification as a tool promoting teaching and learning in educational settings: A meta-analysis. *Frontiers in Psychology, 14*. <https://doi.org/10.3389/fpsyg.2023.1253549>
- Li, X., Xia, Q., Chu, S. K. W., & Yang, Y. (2022). Using gamification to facilitate students' self-regulation in e-learning: A case study on students' L2 English learning. *Sustainability, 14*(12), 7008. <https://doi.org/10.3390/su14127008>
- Lim, I. (2024). A design framework for educational escape rooms in STEM: CREATE. *Research in Science & Technological Education, 1–16*.  
<https://doi.org/10.1080/02635143.2024.2431273>
- Liz-Dominguez, M., Llamas-Nistal, M., Caeiro-Rodriguez, M., & Mikic-Fonte, F. A. (2022). Profiling students' self-regulation with learning analytics: A proof of concept. *IEEE Access, 10*, 71899–71913.  
<https://doi.org/10.1109/access.2022.3187732>
- López-Pernas, S. (2023). Educational escape rooms are effective learning activities across educational levels and contexts: A meta-analysis. *IEEE Transactions on Learning Technologies, 6*. <https://doi.org/10.1109/TLT.2023.3328913>
- Luo, J. (2024). Validating the impact of gamified technology-enhanced learning environments on motivation and academic performance: Enhancing TELEs with digital badges. *Frontiers in Education, 9*.  
<https://doi.org/10.3389/feduc.2024.1429452>
- Macrine, S. L., & Fugate, J. M. B. (2021). Translating embodied cognition for embodied learning in the classroom. *Frontiers in Education, 6*.  
<https://doi.org/10.3389/feduc.2021.712626>

- Mårell-Olsson, E. (2022). Teachers' perception of gamification as a teaching design. *Interaction Design and Architecture(S) Journal - IxD&A: Vol. N.53–N.53* (pp. 70–100). [https://ixdea.org/wp-content/uploads/IxDEA\\_art/53/53\\_4.pdf](https://ixdea.org/wp-content/uploads/IxDEA_art/53/53_4.pdf)
- Maqsood, A., Abbas, J., Rehman, G., & Mubeen, R. (2021). The paradigm shift for educational system continuance in the advent of COVID-19 pandemic: Mental health challenges and reflections. *Current Research in Behavioral Sciences*, 2, 100011. <https://doi.org/10.1016/j.crbeha.2020.100011>
- Mee Mee, R. W., Tengku Shahdan, T. S., Ismail, M. R., Abd Ghani, K., Pek, L. S., Von, W. Y., Woo, A., & Rao, Y. S. (2020). Role of gamification in classroom teaching: Pre-service teachers' view. *International Journal of Evaluation and Research in Education (IJERE)*, 9(3), 684. <https://doi.org/10.11591/ijere.v9i3.20622>
- Menon, D., & Romero, M. (2019). Game mechanics supporting a learning and playful experience in educational escape games. *Advances in educational technologies and instructional design book series* (pp. 143–162). <https://doi.org/10.4018/978-1-7998-2015-4.ch007>
- Mitra, P. (2024, July 22). *Gamification at every level of Education*. <https://www.linkedin.com/pulse/gamification-every-level-education-proloy-mitra-rjpnc/>
- Neigel, S. (2017). Assessing the meaning and value of traditional grading systems: Teacher practices and perspectives. In *ProQuest LLC eBooks*. <https://eric.ed.gov/?id=ED582648>
- Nicholson, S. (2015a). *Peeking behind the locked door: A survey of escape room facilities* [White paper]. <http://scottnicholson.com/pubs/erfacwhite.pdf>

- Nicholson, S. (2015b). *A RECIPE for meaningful gamification* [Manuscript version]. In **K. L. Spector, B. B. Lockee, & M. D. Childress** (Eds.), *Learning, education and games: Volume 1: Curricular and design considerations* (pp. 1–20). ETC Press.  
<https://scottnicholson.com/pubs/recipepreprint.pdf>
- Nordby, A., Vibeto, H., Mobbs, S., Sverdrup, H. U. (2024). System thinking in gamification. *SN Computer Science* 5(299), Article 299.  
<https://doi.org/10.1007/s42979-023-02579-2>
- Ouahbi, I., Darhmaoui, H., & Kaddari, F. (2021). Gamification approach in teaching web programming courses in php: Use of kahoot application. *International Journal of Modern Education and Computer Science*, 13(2), 33-39.  
<https://doi.org/10.5815/ijmeecs.2021.02.04>
- Parra-González, M. E., López-Belmonte, J., Segura-Robles, A., & Moreno-Guerrero, A. (2021). Gamification and flipped learning and their influence on aspects related to the teaching-learning process. *Heliyon*, 7(2), e06254.  
<https://doi.org/10.1016/j.heliyon.2021.e06254>
- Passalacqua, M., Sénécal, S., Frédette, M., Nacke, L. E., Pellerin, R., & Léger, P.-M. (2021). Should gamification be personalized? A self-deterministic approach. *AIS Transactions on Human-Computer Interaction*, 13(3), 265–286.  
<https://doi.org/10.17705/1thci.00150>
- Paulsen, E. K. (2017). *Addressing 21st century skills: Breakout games in the EFL classroom* [Master's thesis, Inland Norway University of Applied Sciences]. Brage Data Archive. <https://brage.inn.no/inn-xmlui/handle/11250/2468528>

- Persico, D., & Steffens, K. (2017). Self-regulated learning in technology-enhanced learning environments. In E. Duval, M. Sharples, & R. Sutherland (Eds.), *Technology-enhanced learning: Research themes* (pp. 115–126). Springer.  
[https://doi.org/10.1007/978-3-319-02600-8\\_11](https://doi.org/10.1007/978-3-319-02600-8_11)
- Philpott, A., & Son, J. (2022). Quest-based learning and motivation in an EFL context. *Computer Assisted Language Learning*, 37(1–2), 279–306.  
<https://doi.org/10.1080/09588221.2022.2033790>
- Pischetola, M., & Dirckinck-Holmfeld, L. (2024). Enactivism and digital learning platforms. *Proceedings of the International Conference on Networked Learning*, 12, 254–262. <https://doi.org/10.54337/nlc.v12.8666>
- Power, J., Lynch, R., & McGarr, O. (2020). Difficulty and self-efficacy: An exploratory study. *British Journal of Educational Technology*, 51(1), 281–296.  
<https://doi.org/10.1111/bjet.12755>
- Raffone, A. (2022). Gamifying English language learning through interactive storytelling and MALL Technologies. *Language Teaching Research*. Advance online publication. <https://doi.org/10.1177/13621688221110206>
- Rahiman, H. U., Kodikal, R., & Suresh, S. (2023). Game on: Can gamification enhance productivity? *F1000Research*, 12, 818.  
<https://doi.org/10.12688/f1000research.131579.2>
- Ratinho, E., & Martins, C. (2023). The role of gamified learning strategies in student's motivation in high school and higher education: A systematic review. *Heliyon*, 9(8), e19033. <https://doi.org/10.1016/j.heliyon.2023.e19033>

- Reina-Reina, C., Conesa, P. J., & Duñabeitia, J. A. (2023). Impact of a cognitive stimulation program on the reading comprehension of children in primary education. *Frontiers in Psychology, 13*, 985790.  
<https://doi.org/10.3389/fpsyg.2022.985790>
- Reuter, J., Dias, M. F., Amorim, M., Figueiredo, C., & Veloso, C. (2020). How to create educational escape rooms? Strategies for creation and design. In *Proceedings of the Eighth International Conference on Technological Ecosystems for Enhancing Multiculturality (TEEM '20)* (pp. 799–805). Association for Computing Machinery. <https://doi.org/10.1145/3434780.3436584>
- Rivera-Lozada, I. C., Rivera-Lozada, O., & Bonilla-Asalde, C. A. (2021). Pedagogical mediation and complexity. A perspective on the training of economists. *International Journal of Emerging Technologies in Learning (iJET), 16*(16), 91.  
<https://doi.org/10.3991/ijet.v16i16.23305>
- Roig, P. J., Alcaraz, S., Gilly, K., Bernad, C., & Juiz, C. (2023). Using escape rooms as evaluation tool in active learning contexts. *Education Sciences, 13*(6), 535.  
<https://doi.org/10.3390/educsci13060535>
- Roig, P. J., Alcaraz, S., Gilly, K., Bernad, C., & Juiz, C. (2024). A generic multilevel structure for educational escape rooms. *Education Sciences, 14*(5), 488.  
<https://doi.org/10.3390/educsci14050488>
- Ross, S. M. (2020). Technology infusion in K-12 classrooms: A retrospective look at three decades of challenges and research and practice advancements. *Educational Technology Research & Development, 68*(5), 2003–2020.  
<https://doi.org/10.1007/s11423-020-09756-7>

- Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American psychologist*, 55(1), 68-78 <https://doi.org/10.1037/0003-066X.55.1.68>
- Ryan, R. M., & Deci, E. L. (2020). Intrinsic and extrinsic motivation from a self-determination theory perspective: Definitions, theory, practices, and future directions. *Contemporary Educational Psychology*, 61, 101860. <https://doi.org/10.1016/j.cedpsych.2020.101860>
- Salinas, J., & Guajardo, C. (2022). A review of standardized testing and its relevance to public education. In E. Langran (Ed.), *Proceedings of the Society for Information Technology & Teacher Education International Conference* (pp. 1216–1221). Association for the Advancement of Computing in Education.
- Sato, S. N., Condes Moreno, E., Rubio-Zarapuz, A., Dalamitros, A. A., Yáñez-Sepúlveda, R., Tornero-Aguilera, J. F., & Clemente-Suárez, V. J. (2024). Navigating the new normal: Adapting online and distance learning in the post-pandemic era. *Education Sciences*, 14(1), Article 19. <https://doi.org/10.3390/educsci14010019>
- Sedalia School District #200. (2023). Policies: *Technology handbook*. S.S.D. <https://www.sedalia200.org/cms/lib/MO01910139/Centricity/Domain/325/SSD%20TREC%20Handbook%202023-24x.pdf>
- Sortwell, A., Trimble, K., Ferraz, R., Geelan, D. R., Hine, G., Ramirez-Campillo, R., Carter-Thuiller, B., Gkintoni, E., & Xuan, Q. (2024). A systematic review of meta-analyses on the impact of formative assessment on K-12 students' learning:

toward sustainable quality education. *Sustainability*, 16(17), Article 7826.

<https://doi.org/10.3390/su16177826>

Sotirov, M., Petrova, V., & Nikolova-Sotirova, D. (2024). Personalized gamified education: Feedback mechanisms and adaptive learning paths. In *2024 8th International Symposium on Innovative Approaches in Smart Technologies (ISAS)* (pp. 1–6). IEEE. <https://doi.org/10.1109/ISAS64331.2024.10845384>

Stalmeijer, R. E., Brown, M. E. L., & O'Brien, B. C. (2024). How to discuss transferability of qualitative research in health professions education. *The Clinical Teacher*, 21(6). <https://doi.org/10.1111/tct.13762>

Sujinah, N., Isnah, E. S., Jalis, F. M. M., & Kharis, M. (2024). Utilizing cognitive diagnostic assessments to identify and address student needs in differentiated classrooms. *Journal of Higher Education Theory and Practice*, 24(1). <https://doi.org/10.33423/jhetp.v24i1.6763>

Szymkowiak, A., Melović, B., Dabić, M., Jeganathan, K., & Kundi, G. S. (2021). Information technology and Gen Z: The role of teachers, the internet, and technology in the education of young people. *Technology in Society*, 65, 101565. <https://doi.org/10.1016/j.techsoc.2021.101565>

Tessmer, M., & Wedman, J. F. (1990). A layers-of-necessity instructional development model. *Educational Technology Research and Development*, 38(2), 77–85. <https://doi.org/10.1007/BF02298271>

Topal, M., & Akgün, Ö. E. (2021). The views of university students on gamification-enhanced online learning experiences. *Sakarya University Journal of Education*, 11(1), 121–154. <https://doi.org/10.19126/suje.747623>

- Torrato, J. B., Aguja, S. E., & Prudente, M. S. (2021). Examining school administrators' technology integration leadership. *International Journal of Learning and Teaching*, 38–42. <https://doi.org/10.18178/ijlt.7.1.38-42>
- Tsang, S. K. M., Hui, E. K. P., & Law, B. C. M. (2012). Self-efficacy as a positive youth development construct: A conceptual review. *The Scientific World Journal*, 2012, Article 452327. <https://doi.org/10.1100/2012/452327>
- Usán, P., Salavera, C., & Quílez-Robres, A. (2022). Self-efficacy, optimism, and academic performance as psychoeducational variables: Mediation approach in students. *Children*, 9(3), 420. <https://doi.org/10.3390/children9030420>
- Valantiejiene, D., & Girdauskienė, L. (2021). Social interaction through gamification in mobile learning: Case study analysis. In *2021 IEEE International Conference on Technology and Entrepreneurship (ICTE)* (pp. 1–7). IEEE. <https://doi.org/10.1109/ICTE51655.2021.9584509>
- Varela, F. J., Thompson, E., & Rosch, E. (1993). *The embodied mind: Cognitive science and human experience*. MIT Press.
- Veldkamp, A., van de Grint, L., Knippels, M.-C. P. J., & van Joolingen, W. R. (2020). Escape education: A systematic review on escape rooms in education. *Educational Research Review*, 31, 100364. <https://doi.org/10.1016/j.edurev.2020.100364>
- Veldkamp, A., Knippels, M.-C. P. J., & van Joolingen, W. R. (2021). Beyond the early adopters: Escape rooms in science education. *Frontiers in Education*, 6, 622860. <https://doi.org/10.3389/feduc.2021.622860>

- Veugen, M. J., Gulikers, J. T. M., & den Brok, P. (2022). Secondary school teachers' use of online formative assessment during COVID-19 lockdown: Experiences and lessons learned. *Journal of Computer Assisted Learning*. Advance online publication. Advance online publication. <https://doi.org/10.1111/jcal.12699>
- Videla, R., Aguayo, C., & Veloz, T. (2021). From STEM to STEAM: An enactive and ecological continuum. *Frontiers in Education*, 6, 709560. <https://doi.org/10.3389/educ.2021.709560>
- Waddington, J. (2023). Self-efficacy. *ELT Journal*, 77(2), 237–240. <https://doi.org/10.1093/elt/ccac046>
- Walther, B. K. (2024). Overcoming the instrumentalization of gamification? *Iris Journal of Educational Research*, 4(2), 1–7. <https://doi.org/10.33552/IJER.2024.04.000582>
- Wang, Y. (2021). *A meta-analysis: Gamification in education* (Master's thesis). Missouri University of Science and Technology. [https://scholarsmine.mst.edu/masters\\_theses/8070](https://scholarsmine.mst.edu/masters_theses/8070)
- Westbroek, H. B., van Rens, L., van den Berg, E., & Janssen, F. (2020). A practical approach to assessment for learning and differentiated instruction. *International Journal of Science Education*, 42(6), 955–976. <https://doi.org/10.1080/09500693.2020.1744044>
- Werbach, K., & Hunter, D. (2020). *For the win: The power of gamification and game thinking in business, education, government, and social impact*. Wharton School Press.

- Wiggins, G., & McTighe, J. (2006). *Understanding by design: A framework for effecting curricular development and assessment*. Association for Supervision and Curriculum Development.
- Wiley, K., Robinson, R., & Mandryk, R. L. (2021). The making and evaluation of digital games used for the assessment of attention: Systematic review. *JMIR Serious Games*, 9(3), e26449. <https://doi.org/10.2196/26449>
- Wulan, D. R., Nainggolan, D. M., Hidayat, Y., Rohman, T., & Fiyul, A. Y. (2024). Exploring the benefits and challenges of gamification in enhancing student learning outcomes. *Global International Journal of Innovative Research*, 2(7), 1657–1674. <https://doi.org/10.59613/global.v2i7.238>
- Xiao, Y., & Hew, K. F. (2024). Personalized gamification versus one-size-fits-all gamification in fully online learning: Effects on student motivational, behavioral and cognitive outcomes. *Learning and Individual Differences*, 113, 102470. <https://doi.org/10.1016/j.lindif.2024.102470>
- Xuan, Q., Cheung, A., & Sun, D. (2022). The effectiveness of formative assessment for enhancing reading achievement in K-12 classrooms: A meta-analysis. *Frontiers in Psychology*, 13, 990196. <https://doi.org/10.3389/fpsyg.2022.990196>
- Yakimova, S., Chernova, O., Burovkina, L., Prishchepa, A., Ponomarenko, E., & Altunina, J. (2023). Métodos de avaliação de aprendizagem remota implementados durante a COVID-19. *Revista on-line de Política e Gestão Educacional*, 27, e023059. <https://doi.org/10.22633/rpge.v27i00.18529>

Zakharov, A., & Carnoy, M. (2021). Does teaching to the test improve student learning?

*International Journal of Educational Development*, 84, 102422.

<https://doi.org/10.1016/j.ijedudev.2021.102422>

Zhang, M., Jiang, Q., Xiong, W., Li, Q., & Zhao, W. (2024). Self-efficacy predicting K–

12 students' self-directed learning with mobile technology: Analyzing the

mediating role of student engagement. *Educational Technology & Society*, 27–

27(3), 236–252. [https://doi.org/10.30191/ETS.202407\\_27\(3\).SP03](https://doi.org/10.30191/ETS.202407_27(3).SP03)

Zhao, Y. (2020) . COVID-19 as a catalyst for educational change. *Prospects* 49, 29–33.

<https://doi.org/10.1007/s11125-020-09477-y>

Zichermann, G., & Cunningham, C. (2011). *Gamification by design: Implementing game*

*mechanics in web and mobile apps*. O'Reilly Media.

<https://ci.nii.ac.jp/ncid/BB08348570>

**Appendix A: Recruitment Letter**

Dear [REDACTED]:

I am writing to request permission to survey your district's teachers for my doctoral dissertation research project at Lindenwood University. I believe the information gathered through this study will positively contribute to the body of knowledge regarding student engagement and gamification.

With an increased need for differentiation and more rigorous, authentic forms of education, gamification has emerged as a probable solution for designing and implementing instruction (Dichev & Dicheva, 2017). Breakout games, specifically, take the concept of a breakout room where individuals race the clock to solve puzzles to escape a physical room into the classroom. Students participate in a content story-based "adventure" where they are required to use their content knowledge to solve a number of puzzles to receive clues used to win the game. The purpose of the survey is to gain qualitative data about the variables of student engagement, self-efficacy, and gamification.

Upon approval, I will be able to finalize my IRB documentation to send a Qualtrics survey link to distribute to teachers. Participation in this study is completely voluntary and may be withdrawn at any time. Confidentiality is assured as specific data related to school districts will be coded and kept locked up at all times. Teacher's consent to participate in the study is given by either completing the survey or with a non-response. I am hoping to recruit 15 K-5 and 15 6-12 grade teachers in my study.

If you agree to participate in the survey, please respond with approval. If you have any questions or concerns, please don't hesitate to contact me at [REDACTED] or by phone [REDACTED]. I look forward to hearing from you.

Sincerely,

A handwritten signature in black ink, reading "Bryant Lazenby", enclosed in a thin black rectangular border.

Bryant Lazenby

Doctoral Candidate

Lindenwood University

**Appendix B: Participation Letter**

Dear Staff:

On behalf of Bryant Lazenby, a doctoral candidate at Lindenwood University, I'm forwarding an opportunity to participate in his district-approved research study on your perceptions of gamification.

Please note the survey will remain open for approximately two weeks. Thank you for your consideration in helping Mr. Lazenby conduct his dissertation research. Please complete the survey to the best of your ability. Surveys may be accessed through the Qualtrics link below:

[Gamification Perceptions Survey](#)

Please find the attached survey information form for your records.

If you have any questions, you may contact him at [REDACTED] or his faculty advisor, Dr. Jackie Ramey, at [REDACTED].

Thank you for your time, effort, and participation.

Sincerely,

Todd Fraley  
Superintendent of Schools, Sedalia #200

### Appendix C: Consent Form

Welcome to the research study!

You are being asked to participate in a research study. We are doing this study to understand elementary and secondary teachers' perceptions of gamification and breakout games. During this study you will answer the following survey questions about your perceptions regarding gamification and breakout games. It will take about 25 minutes to complete this study.

Your participation is voluntary. You may choose not to participate or withdraw at any time.

There are no risks from participating in this project. There are no direct benefits for you participating in this study.

We are collecting data that could identify you, such as your name and contact information (email) should you wish to participate in the later focus group. Every effort will be made to keep your information secure and confidential. Only members of the research team will be able to see your data.

We will do everything we can to protect your privacy. We do not intend to include information that could identify you in any publication or presentation. Any information we collect will be stored by the researcher in a secure location. The only people who will be able to see your data are: members of the research team, qualified staff of Lindenwood University, representatives of state or federal agencies.

#### Who can I contact with questions?

If you have concerns or complaints about this project, please use the following contact information:

Bryant Lazenby, Principal Investigator: [REDACTED]

Dr. Jackie Ramey, Chair: [REDACTED]

If you have questions about your rights as a participant or concerns about the project and wish to talk to someone outside the research team, you can contact the LU Institutional Review Board at 636-949-4155 or [irb@lindenwood.edu](mailto:irb@lindenwood.edu).

By clicking the button below, you acknowledge:

Your participation in the study is voluntary. You are 18 years of age. You are aware that you may choose to terminate your participation at any time for any reason.

- I consent; begin the study (1)
- I do not consent; I do not wish to participate (2)

**Appendix D: Survey**

**Q2 If I may ask, which of the following age categories below applies to you?**

- Answer Declined (1)
  - 20-30 years (2)
  - 31-40 years (3)
  - 41-50 years (4)
  - 51+ years (5)
- 

**Q3 Which school setting do you primarily teach in?**

- Elementary School (grades K-5) (1)
  - Middle School (grades 6-8) (2)
  - High School (grades 9-12) (3)
- 

**Q4 Number of years in education?**

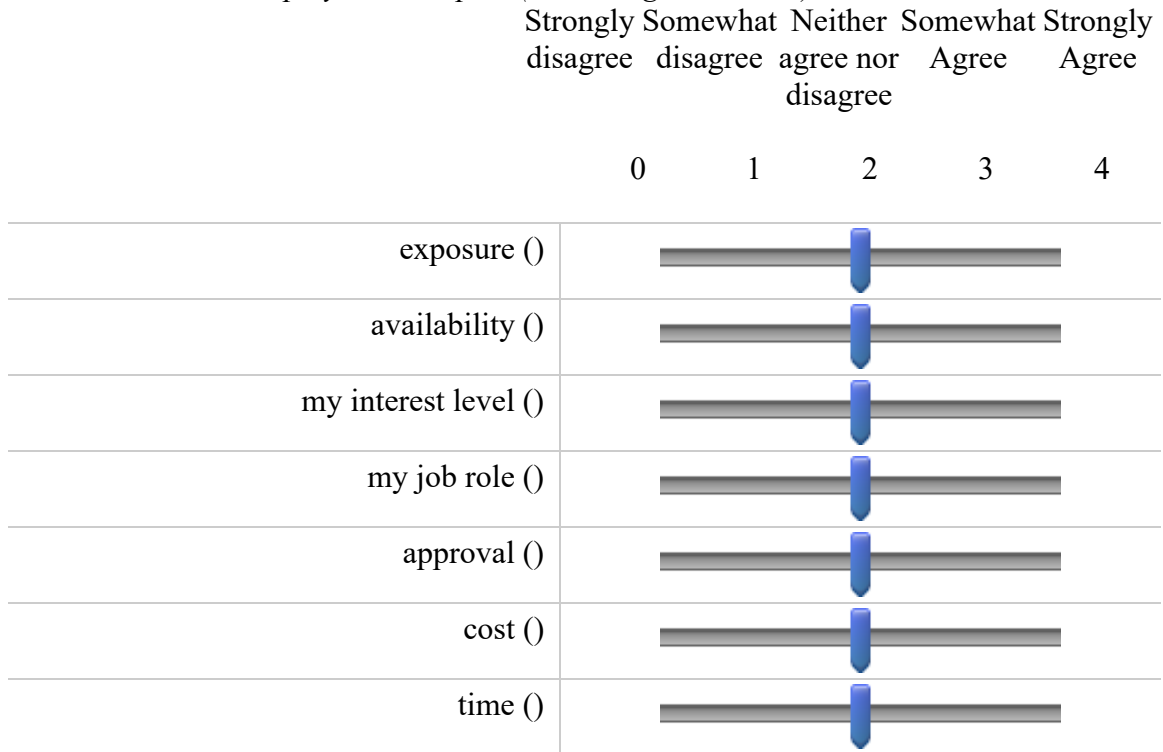
- Less than, or equal to 5 (1)
  - 6-10 (2)
  - 11-15 (3)
  - 16+ (4)
- 

**QX.1 ALL Choose the answer that best describes your experience using educational or training-based gamification in the classroom. Some examples of gamification may include card games, board games, breakout games, interactive quizzing,**

**computer games, app-based games on a mobile device or tablet, or video games on a PC or gaming console, etc.** *Note: Gamification is the process of incorporating elements of game design into non-game contexts to motivate people to achieve their goals. It involved designing activities and systems that promote certain behaviors by tapping into people's natural tendencies to play and compete (Deterding et.al, 2011).*

- I have no experience with gamification. (1)
- I have a little experience with gamification. (2)
- I have moderate experience with gamification. (3)
- I have a lot of experience with gamification. (4)

**QX.2 ALL Please rate how likely the following reasons apply to your gamification experience level:** *Note: Gamification is the process of incorporating elements of game design into non-game contexts to motivate people to achieve their goals. It involved designing activities and systems that promote certain behaviors by tapping into people's natural tendencies to play and compete (Deterding et.al, 2011).*



*Display this question:*  
 If Choose the answer that best describes your experience using educational or training-based gamific... = I have no experience with gamification.

**QX.3 ALL If the barriers listed in the previous question were removed, how likely would you use gamification?** *Note: **Gamification** is the process of incorporating elements of game design into non-game contexts to motivate people to achieve their goals. It involved designing activities and systems that promote certain behaviors by tapping into people's natural tendencies to play and compete (Deterding et.al, 2011). \*Barriers listed: exposure, education role, availability, experience, my interest level, my job role, approval, cost, time, student interest, other.*

- Definitely not (1)
- Probably not (2)
- Undecided (3)
- Probably yes (4)
- Definitely yes (5)

End of Block: Demographics

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Start of Block: RQ1- Motivation Questions

*Display this question:*  
 If Choose the answer that best describes your experience using educational or training-based gamific... != I have no experience with gamification.

**Q1.1 This section of the survey focuses on questions about gamification and student motivation. When you think of a gamified classroom or activity, how do you feel each feature listed below motivates students?** *Note: **Gamification** is the process of incorporating elements of game design into non-game contexts to motivate people to achieve their goals. It involved designing activities and systems that promote certain behaviors by tapping into people's natural tendencies to play and compete (Deterding et.al, 2011).*

No	Little	No	Somewhat	High
Motivation	Motivation	Impact	Increased	Increased
			Motivation	Motivation
0	1	2	3	4

Points & Scoring ()	
Challenges & Quests ()	
Narrative & Storytelling ()	
Real-time Feedback ()	
Choice & Autonomy ()	
Time Constraints ()	
Feedback Loops ()	
Social Interaction ()	

*Display this question:*  
 If Choose the answer that best describes your experience using educational or training-based gamific... = I have no experience with gamification.

**Q1.1B This section of the survey focuses on questions about gamification and student motivation. In the previous question, you stated that you have no experience with gamification. Read the definition of gamification below. When you think of a gamified classroom or activity, how do you feel each feature listed below might motivate students?** *Note: **Gamification** is the process of incorporating elements of game design into non-game contexts to motivate people to achieve their goals. It involves designing activities and systems that promote certain behaviors by tapping into people's natural tendencies to play and compete (Deterding et.al, 2011).*

No Little No Somewhat High  
 MotivationMotivation Impact Increased Increased  
 MotivationMotivation  
 0 1 2 3 4

Points & Scoring ()	
Challenges & Quests ()	
Narrative & Storytelling ()	
Real-time Feedback ()	
Choice & Autonomy ()	
Time Constraints ()	
Feedback Loops ()	
Social Interaction ()	

*Display this question:*

*If Choose the answer that best describes your experience using educational or training-based gamific... != I have no experience with gamification.*

**Q1.2 Please re-read the definition of gamification.** *\*Gamification is the process of incorporating elements of game design into non-game contexts to motivate people to achieve their goals. It involved designing activities and systems that promote certain behaviors by tapping into people's natural tendencies to play and compete (Deterding et.al, 2011). In your opinion, what other specific gamification elements or strategies, if any, do you believe might increase student motivation?*

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Display this question:

If Choose the answer that best describes your experience using educational or training-based gamific... = I have no experience with gamification.

**Q1.2B Please re-read the definition of gamification below:** *\*Gamification is the process of incorporating elements of game design into non-game contexts to motivate people to achieve their goals. It involved designing activities and systems that promote certain behaviors by tapping into people's natural tendencies to play and compete (Deterding et.al, 2011).* ***In your opinion, what other specific gamification elements or strategies, if any, do you believe might increase student motivation?***

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Page Break

Display this question:  
If Choose the answer that best describes your experience using educational or training-based gamific... != I have no experience with gamification.

**Q1.3 In your experience, please provide any challenges or obstacles (if any) you have encountered trying to implement gamification to enhance student motivation.** *Note: **Gamification** is the process of incorporating elements of game design into non-game contexts to motivate people to achieve their goals. It involved designing activities and systems that promote certain behaviors by tapping into people's natural tendencies to play and compete (Deterding et.al, 2011).*

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Display this question:  
If Choose the answer that best describes your experience using educational or training-based gamific... = I have no experience with gamification.

**Q1.3B Please provide any challenges or obstacles (if any) you believe may exist when educators implement gamification to enhance student motivation.** *Note: **Gamification** is the process of incorporating elements of game design into non-game contexts to motivate people to achieve their goals. It involved designing activities and systems that promote certain behaviors by tapping into people's natural tendencies to play and compete (Deterding et.al, 2011).*

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Page Break

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Display this question:  
If Choose the answer that best describes your experience using educational or training-based gamific... != I have no experience with gamification.

**Q1.4 If applicable, how have you addressed gamification challenges to improve motivation?** *Note: **Gamification** is the process of incorporating elements of game design into non-game contexts to motivate people to achieve their goals. It involved designing activities and systems that promote certain behaviors by tapping into people's natural tendencies to play and compete (Deterding et.al, 2011).*

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Display this question:  
If Choose the answer that best describes your experience using educational or training-based gamific... = I have no experience with gamification.

**Q1.4B In your opinion, how could educators address gamification challenges to improve motivation?** *Note: **Gamification** is the process of incorporating elements of game design into non-game contexts to motivate people to achieve their goals. It involved designing activities and systems that promote certain behaviors by tapping into people's natural tendencies to play and compete (Deterding et.al, 2011).*

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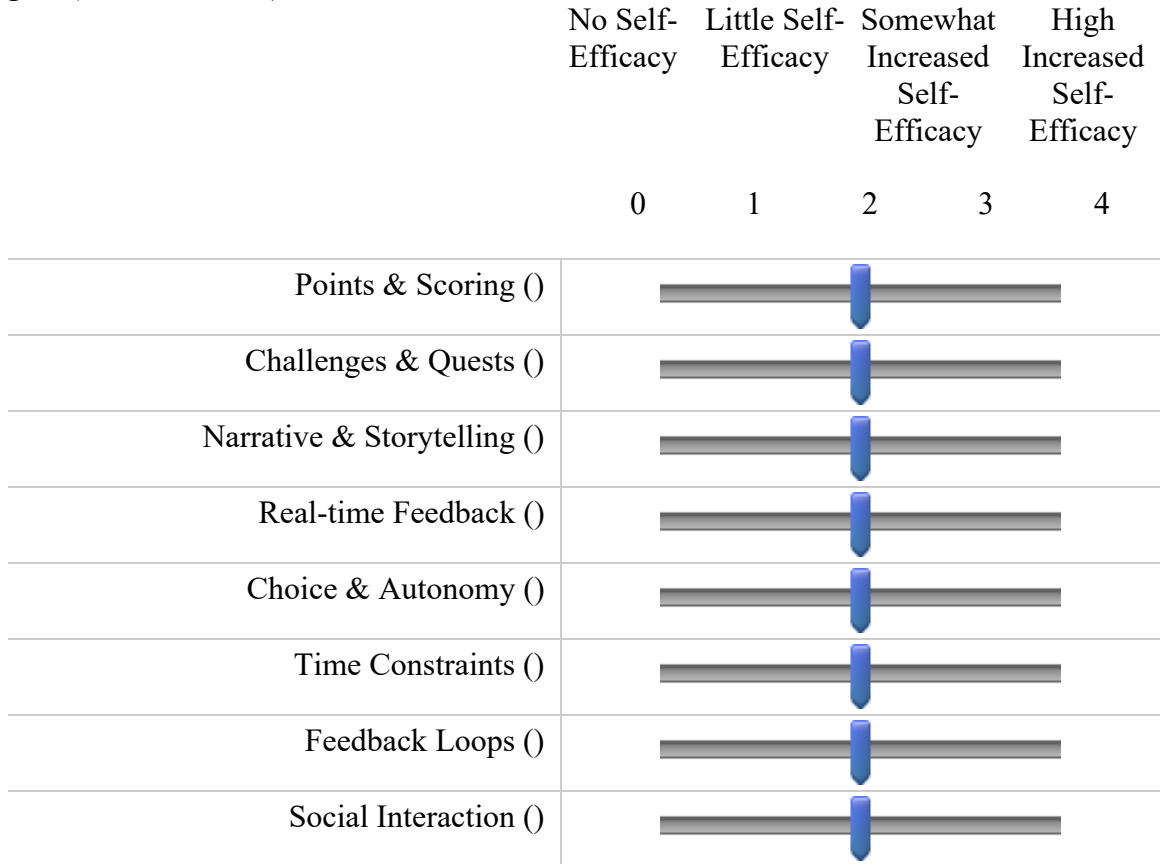
End of Block: RQ1- Motivation Questions

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Start of Block: RQ2- Student Self-efficacy Questions

*Display this question:*  
 If Choose the answer that best describes your experience using educational or training-based gamific... != I have no experience with gamification.

**Q2.1 This survey section focuses on questions about gamification and students' self-efficacy. When you think of a gamified classroom or activity, how do you feel each feature listed below increases students' self-efficacy?** *Note: Self-efficacy is an individual's belief in their ability to perform a specific task or accomplish a particular goal (Bandura, 1977).*



*Display this question:*  
 If Choose the answer that best describes your experience using educational or training-based gamific... = I have no experience with gamification.

**Q2.1B**

**This survey section focuses on questions about gamification and students' self-efficacy.**

**When you think of a gamified classroom or activity, how do you feel each feature listed below might increase students' Self-efficacy?** *Note: Self-efficacy is an individual's belief in their ability to perform a specific task or accomplish a particular goal (Bandura, 1977).*



*Display this question:*  
 If Choose the answer that best describes your experience using educational or training-based gamific... != I have no experience with gamification.

**Q2.2 Please re-read the definition of gamification and self-efficacy below:** *\*Gamification is the process of incorporating elements of game design into non-game contexts to motivate people to achieve their goals. It involved designing*

*activities and systems that promote certain behaviors by tapping into people's natural tendencies to play and compete (Deterding et.al, 2011).* \***Self-efficacy** is an individual's belief in their ability to perform a specific task or accomplish a particular goal (Bandura, 1977). **In your opinion, what other specific gamification elements or strategies, if any, do you believe might increase student self-efficacy?**

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Display this question:  
 If Choose the answer that best describes your experience using educational or training-based gamific... = I have no experience with gamification.

**Q2.2B Please re-read the definition of gamification and self-efficacy below:**

\***Gamification** is the process of incorporating elements of game design into non-game contexts to motivate people to achieve their goals. It involved designing activities and systems that promote certain behaviors by tapping into people's natural tendencies to play and compete (Deterding et.al, 2011).

\***Self-efficacy** is an individual's belief in their ability to perform a specific task or accomplish a particular goal (Bandura, 1977). **In your opinion, what other specific gamification elements or strategies, if any, do you believe might increase student self-efficacy?**

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Display this question:  
If Choose the answer that best describes your experience using educational or training-based gamific... != I have no experience with gamification.

**Q2.3 In your opinion, what differences could occur in students' attitudes toward learning and self-efficacy when comparing gamified learning to traditional methods?** \*Self-efficacy is an individual's belief in their ability to perform a specific task or accomplish a particular goal (Bandura, 1977).

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Display this question:  
If Choose the answer that best describes your experience using educational or training-based gamific... = I have no experience with gamification.

**Q2.3B In your opinion, what differences could occur in students' attitudes toward learning and self-efficacy when comparing gamified learning to traditional methods?** \*Self-efficacy is an individual's belief in their ability to perform a specific task or accomplish a particular goal (Bandura, 1977).

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**Q2.4 and Q2.4B How open are you to the idea of incorporating gamification into your teaching practice, even if you haven't done so yet?**

- Very open and willing to explore (1)
- Open, but with some reservations (2)
- Not very open, but willing to consider (3)
- Not open at all (4)

**Q2.5 and Q2.5B What are current (or previous) reservations (if any) you have had about exploring gamification?**

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End of Block: RQ2- Student Self-efficacy Questions

Start of Block: RQ3 Influence Questions

*Display this question:*  
 If Choose the answer that best describes your experience using educational or training-based gamific... != I have no experience with gamification.

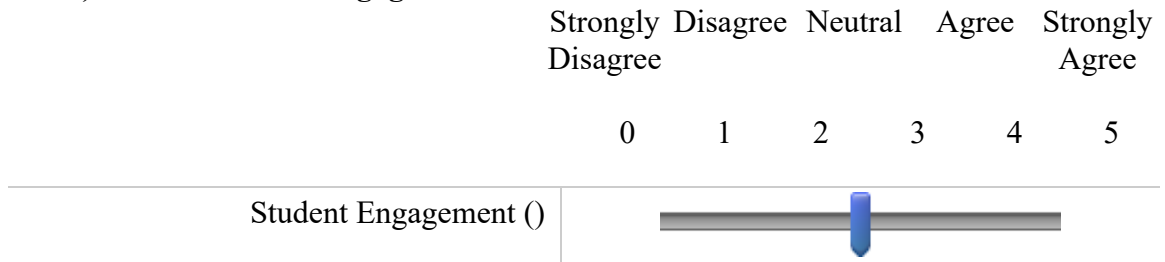
**Q3.1 Impact** This survey section focuses on questions about gamification and its influence on learning. **Please rate the overall impact of gamification on student engagement in your classroom:**

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
0	1	2	3	4



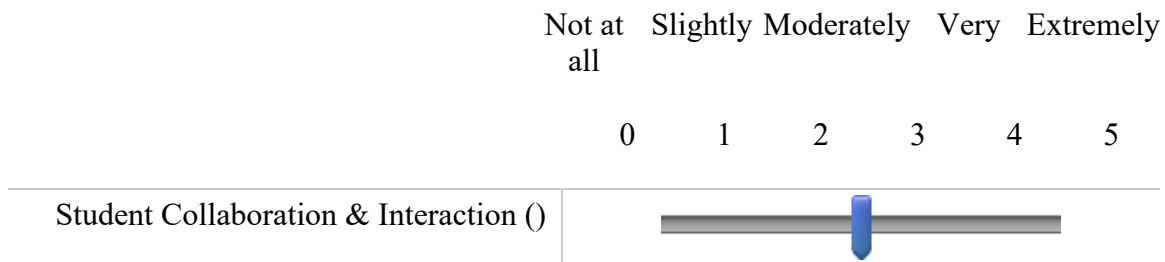
*Display this question:*  
 If Choose the answer that best describes your experience using educational or training-based gamific... = I have no experience with gamification.

**Q3.1B Influence This survey section focuses on questions about gamification and its influence on learning. Please rate the overall impact that gamification would (or could) have on student engagement in the classroom:**



*Display this question:*  
 If Choose the answer that best describes your experience using educational or training-based gamific... != I have no experience with gamification.

**Q3.2 Influence To what extent do you believe gamification influences the dynamics of student collaboration and interaction in the classroom?**



*Display this question:*  
 If Choose the answer that best describes your experience using educational or training-based gamific... = I have no experience with gamification.

**Q3.2B Influence To what extent do you believe gamification would or could influence the dynamics of student collaboration and interaction in the classroom?**

Not at all   Slightly   Moderately   Very   Extremely

0   1   2   3   4   5



*Display this question:*  
 If Choose the answer that best describes your experience using educational or training-based gamific... != I have no experience with gamification.

**Q3.3 Influence How has gamification influenced (if at all) your teaching methods?**

Very low impact   Low impact   Moderate impact   High impact   Very high impact

0   1   2   3   4   5



*Display this question:*  
 If Choose the answer that best describes your experience using educational or training-based gamific... = I have no experience with gamification.

**Q3.3B Influence How would (or could) gamification influence (if at all) your teaching methods?**

Very low influence   Low impact   Moderate impact   High impact   Very high impact

0   1   2   3   4   5



*Display this question:*  
 If Choose the answer that best describes your experience using educational or training-based gamific... != I have no experience with gamification.

**Q3.4 Influence In your opinion, how has gamification influenced (if at all) the way students perceive the learning process?**

Negative influence	Slight negative influence	No influence	Slight positive influence	Positive influence	
0	1	2	3	4	5



*Display this question:*  
 If Choose the answer that best describes your experience using educational or training-based gamific... = I have no experience with gamification.

**Q3.4B Influence In your opinion, how could gamification influence (If at all) the way students perceive the learning process?**

Negative influence	Slight negative influence	No influence	Slight positive influence	Positive influence	
0	1	2	3	4	5



*Display this question:*  
 If Choose the answer that best describes your experience using educational or training-based gamific... != I have no experience with gamification.

**Q3.5 Influence** What influence (if any) do you believe gamification has on the teaching and learning environment?

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*Display this question:*  
*If Choose the answer that best describes your experience using educational or training-based gamific... = I have no experience with gamification.*

**Q3.5B influence** What influence (if any) do you believe gamification could have on the teaching and learning environment?

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*Display this question:*  
*If Choose the answer that best describes your experience using educational or training-based gamific... != I have no experience with gamification.*

**Q3.6 Influence** Based on your current experience or understanding, how does gamification influence students based on the following statements?

No influence at all	Extreme negative influence	Slight negative influence	Slight positive influence	Extreme positive influence	
0	1	2	3	4	5

Gamification influence student engagement ()	
Gamification influence student collaboration and interaction ()	
Gamification impact on student motivation ()	

*Display this question:*  
 If Choose the answer that best describes your experience using educational or training-based gamific... = I have no experience with gamification.

**Q3.6B Influence Based on your current experience or understanding, how does gamification influence students based on the following statements?**

No influence at all    Extreme negative influence    Slight negative influence    Slight positive influence    Extreme positive influence

0      1      2      3      4      5

Gamification influence on student engagement ()	
Gamification influence on student collaboration and interaction ()	
Gamification impact on student motivation ()	

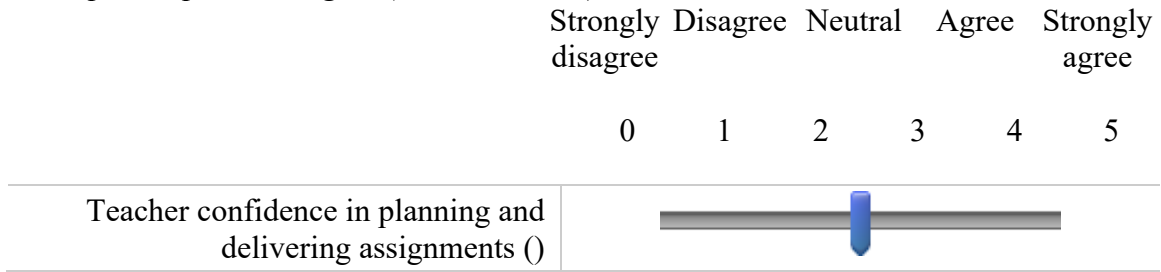
End of Block: RQ3 Influence Questions

Start of Block: RQ4 Self-efficacy

*Display this question:*  
 If Choose the answer that best describes your experience using educational or training-based gamific... != I have no experience with gamification.

**Q4.1 This survey section focuses on educators' self-efficacy as it applies to gamification. Please rate the extent to which gamification has increased your confidence in planning and delivering assignments for student learning mastery:**

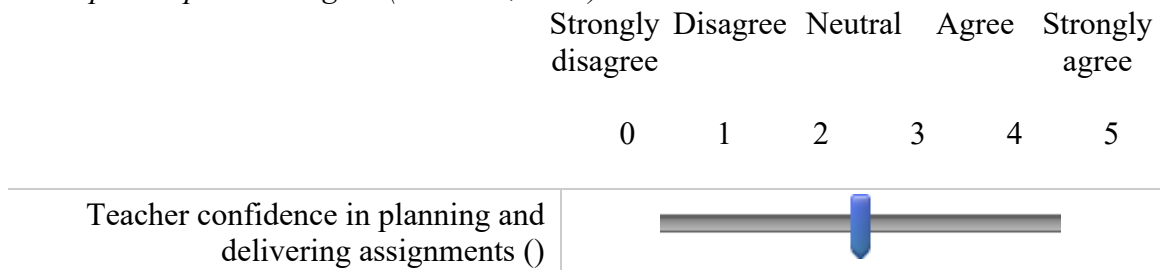
Note: **Self-efficacy** is an individual's belief in their ability to perform a specific task or accomplish a particular goal (Bandura, 1977).



Display this question:  
 If Choose the answer that best describes your experience using educational or training-based gamific... = I have no experience with gamification.

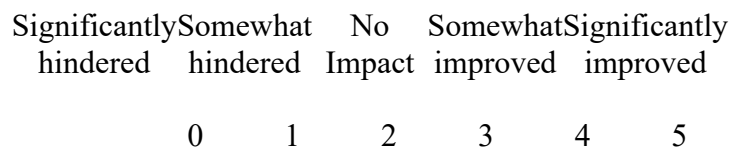
**Q4.1B This survey section focuses on educators' self-efficacy as it applies to gamification. Please rate the extent to which gamification might increase your confidence in planning and delivering assignments for student learning mastery:**

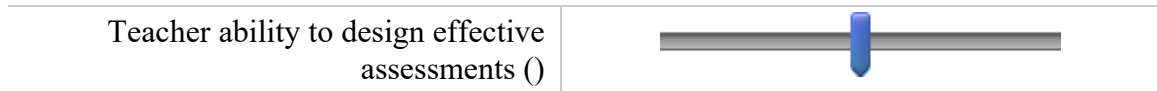
Note: **Self-efficacy** is an individual's belief in their ability to perform a specific task or accomplish a particular goal (Bandura, 1977).



Display this question:  
 If Choose the answer that best describes your experience using educational or training-based gamific... != I have no experience with gamification.

**Q4.2 How has the use of gamified elements influenced your self-efficacy in designing effective assessments for students' learning mastery?** Note: **Self-efficacy** is an individual's belief in their ability to perform a specific task or accomplish a particular goal (Bandura, 1977).

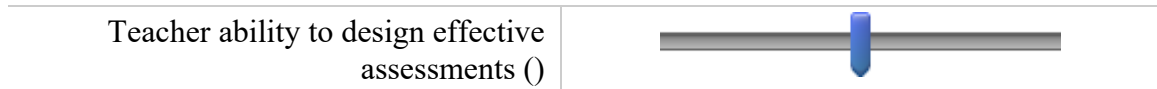




*Display this question:*  
 If Choose the answer that best describes your experience using educational or training-based gamific... = I have no experience with gamification.

**Q4.2B How might the use of gamified elements influence your self-efficacy in designing effective assessments for students' learning mastery?** *Note: Self-efficacy is an individual's belief in their ability to perform a specific task or accomplish a particular goal (Bandura, 1977).*

Significantly hindered    Somewhat hindered    No Impact    Somewhat improved    Significantly improved  
 0                    1                    2                    3                    4                    5

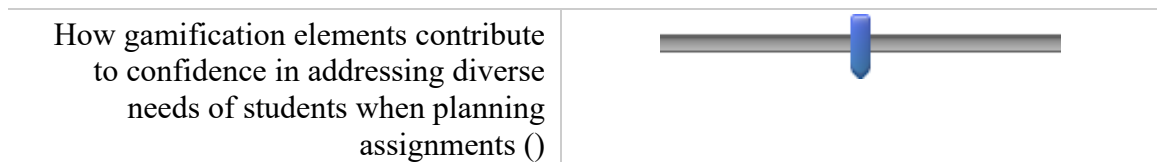


*Display this question:*  
 If Choose the answer that best describes your experience using educational or training-based gamific... != I have no experience with gamification.

**Q4.3 To what degree do gamification elements contribute to your self-efficacy in addressing the diverse needs of your students when planning assignments?** *Note: Self-efficacy is an individual's belief in their ability to perform a specific task or accomplish a particular goal (Bandura, 1977).*

Not at all    Slightly    Moderately    Very    Extremely  
 all

0                    1                    2                    3                    4                    5



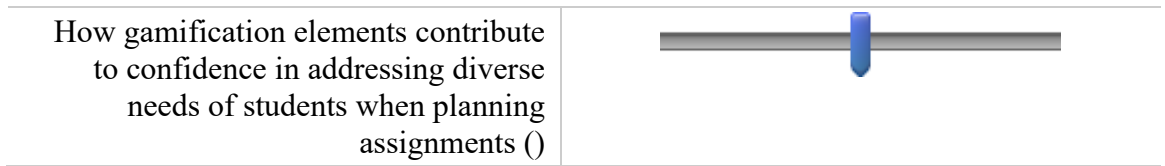
Display this question:  
 If Choose the answer that best describes your experience using educational or training-based gamific... = I have no experience with gamification.

**Q4.3B To what degree might gamification elements contribute to your self-efficacy in addressing the diverse needs of your students when planning assignments?**

Note: **Self-efficacy** is an individual's belief in their ability to perform a specific task or accomplish a particular goal (Bandura, 1977).

Not at Slightly Moderately Very Extremely  
all

0 1 2 3 4 5

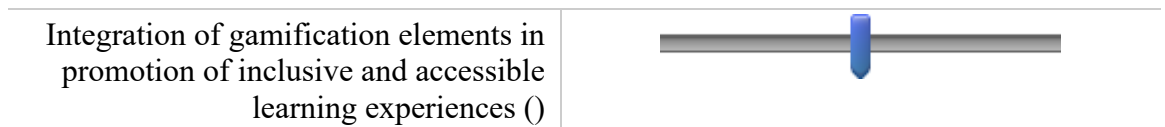


Display this question:  
 If Choose the answer that best describes your experience using educational or training-based gamific... != I have no experience with gamification.

**Q4.4 In your opinion, how has the integration of gamification elements influenced your self-efficacy in promoting inclusive and accessible learning experiences for all students?** Note: **Self-efficacy** is an individual's belief in their ability to perform a specific task or accomplish a particular goal (Bandura, 1977).

Negative Slight No Slight Positive  
influence negative influence positive influence  
influence influence

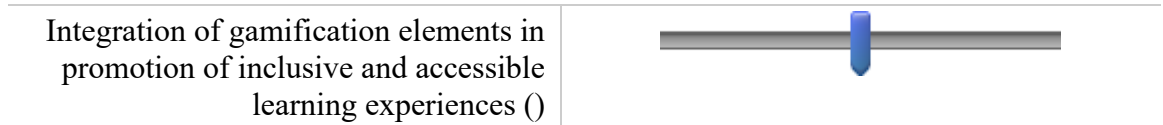
0 1 3 4 5



*Display this question:*  
 If Choose the answer that best describes your experience using educational or training-based gamific... = I have no experience with gamification.

**Q4.4B In your opinion, how might the integration of gamification elements influence your self-efficacy in promoting inclusive and accessible learning experiences for all students?** *Note: Self-efficacy is an individual's belief in their ability to perform a specific task or accomplish a particular goal (Bandura, 1977).*

Negative influence    Slight negative influence    No influence    Slight positive influence    Positive influence  
 0                      1                      3                      4                      5



*Display this question:*  
 If Choose the answer that best describes your experience using educational or training-based gamific... != I have no experience with gamification.

**Q4.5 In thinking of challenges mentioned in a previous question, how would you address planning authentic assessment and inclusion in a gamified learning environment?**

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*Display this question:*  
 If Choose the answer that best describes your experience using educational or training-based gamific... = I have no experience with gamification.

**Q4.5B In thinking of challenges mentioned in a previous question, how would you address planning authentic assessment and inclusion in a gamified learning environment?**

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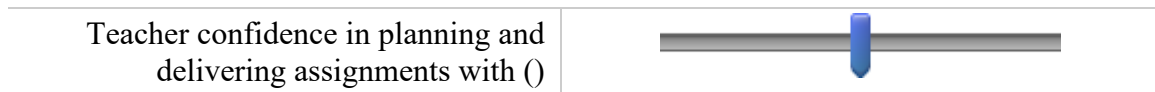


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**Q4.6 & Q4.6B If you were asked today to plan a lesson that had a gamified element, how confident would you be?**

Not at all confident   Slightly confident   Moderately confident   Very confident   Extremely confident

0      1      2      3      4      5



End of Block: RQ4 Self-efficacy

Start of Block: RQ5 - Teacher Disposition

*Display this question:*  
 If Choose the answer that best describes your experience using educational or training-based gamific... != I have no experience with gamification.

**Q5.1 This survey section focuses on questions about educators' dispositions about gamification. Please rate your interest in exploring gamified learning in your classroom. Note: *Gamification* is the process of incorporating elements of game design into non-game contexts to motivate people to achieve their goals. It involved designing activities and systems that promote certain behaviors by tapping into people's natural tendencies to play and compete (Deterding et.al, 2011).**

Not at all interested   Slightly interested   Moderately interested   Very interested   Extremely interested

0      1      2      3      4      5



*Display this question:*  
 If Choose the answer that best describes your experience using educational or training-based gamific... = I have no experience with gamification.

**Q5.1B This survey section focuses on questions about educators' dispositions about gamification. Please rate your interest in exploring gamified learning in your classroom.** *Note: **Gamification** is the process of incorporating elements of game design into non-game contexts to motivate people to achieve their goals. It involved designing activities and systems that promote certain behaviors by tapping into people's natural tendencies to play and compete (Deterding et.al, 2011).*

Not at all   Slightly   Moderately   Very   Extremely  
 interested   interested   interested   interested   interested

0   1   2   3   4   5



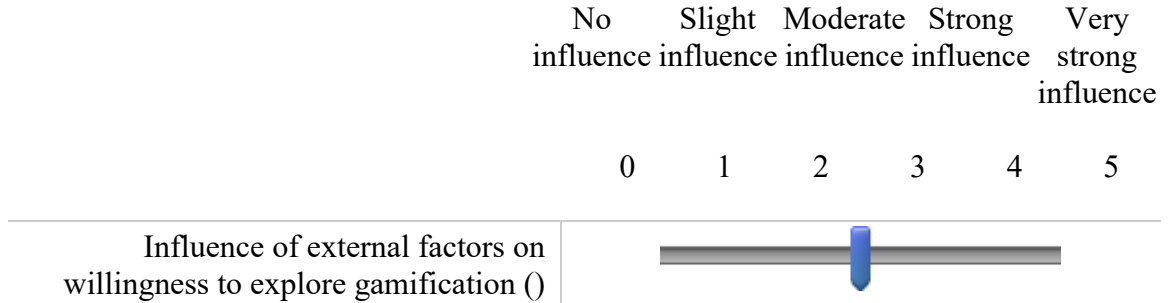
**Q5.2 & 5.2B To what extent do you believe gamified learning aligns with your teaching philosophy and goals?**

Not at all   Slightly   Moderately   Very   Completely  
 aligned   aligned   aligned   aligned   aligned

0   1   2   3   4



**Q5.3 & Q5.3B Please rate the potential influence of external factors, such as peer recommendations or professional development, on your willingness to explore gamified learning:**



**Q5.4 & Q5.4B Describe your experiences, if any, with implementing gamified learning in your classroom and what outcomes or insights have you gained from these experiences?**

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*Display this question:*  
*If Choose the answer that best describes your experience using educational or training-based gamific... = I have no experience with gamification.*

**Q5.5 & Q5.5B What potential concerns or reservations (if any) do you have about integrating gamified elements into your teaching?**

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End of Block: RQ5 - Teacher Disposition

Start of Block: Breakout Games & Focus Group

Display this question:  
If Choose the answer that best describes your experience using educational or training-based gamific... != I have no experience with gamification.

F1.1 & F1.1B Are you currently using or have you ever used a breakout game (escape room) with your students? Note: Escape room is a live-action team-based game where players discover clues, solve puzzles, and accomplish tasks in order to accomplish a specific goal in a limited amount of time (Nicholson, S. 2018).








- Yes (1)
No (2)

F1.2 If you are interested in joining a focus group to discuss your experiences, please fill out the Microsoft Form with your contact information. The form will open in a new tab. When you are entering your information, please return to this tab to finish the survey and submit your responses. Otherwise, you may proceed to submit your results.

Display this question:  
If Are you currently using or have you ever used a breakout game (escape room) with your students?... = No

F1.2B You have indicated that you have not used breakout games with your students. Below are some common obstacles, please indicate which, if any, apply to you:

Strongly disagree 0
Somewhat disagree 1
Neither agree nor disagree 2
Somewhat agree 3
Strongly agree 4
5

exposure ()	
availability ()	
my interest level ()	
my job role ()	
approval ()	
cost ()	
time ()	

End of Block: Breakout Games & Focus Group

## **Appendix E: Safeguard Examples**

### **Confidentiality**

1. All research materials were securely stored in an encrypted digital folder on the school's server and accessible only to the researcher.
2. All electronic data will be destroyed three years after the study's completion in accordance with institutional research policy.

### **Anonymity**

1. When presenting contextual or demographic data, only general descriptors were used to minimize the possibility of identifying participants or their institution.
2. Participants were assigned pseudonyms in all data records and publications to protect their identities.
3. Participants were informed that, in small sample settings, there remained a minimal risk that individual comments could be recognizable despite the use of pseudonyms and approximations.

### **Overall**

1. Each participant received an informed consent form (Appendix C) outlining the purpose of the study, the procedures involved, any potential risks or benefits, and their right to withdraw from participation at any time without penalty.
2. The consent form included contact information for the researcher and the university's Institutional Review Board should participants have questions or concerns about the study.

## Vitae

### **Bryant Wesley Lazenby**

Bryant Wesley Lazenby was born and raised on his family's century-old farm in central Missouri. After high school, he attended State Fair Community College, where he obtained his Associate of Arts degree before transferring to the University of Central Missouri to complete a Bachelor of Science in Business Teacher Education. In the fall of 2012, he began teaching technology and digital media classes to 9th through 12<sup>th</sup>-grade students at Smith-Cotton High School in Sedalia, Missouri. He also advised Future Business Leaders of America, Tiger Pride Productions, and *Archives* yearbook.

In 2014, he began teaching as an adjunct for State Fair Community College. In 2016, he completed his master's degree in educational technology from the University of Central Missouri and became an adjunct professor for the School of Professional Leadership. In 2021, he left Smith-Cotton and joined Mizzou Online as an instructional designer, providing design services to the University of Missouri-Columbia. In 2022, he co-authored his first publication, "Becoming an Instructional Designer," for the Society of Information Technology and Teacher Education (SITE), and has since presented at both regional and national conferences on various topics. In his free time, he can generally be found at the movies, enjoying craft beer at a local brewery, or trying new recipes. Bryant graduated from Lindenwood University with a Doctorate in Instructional Leadership Fall 2025.