

Gamification: An Approach in Developing Social Skills of Kindergarten Learners

Lyka Abegail R. Argueza

Master of Arts Major in Educational Management, Polytechnic College of La Union, Agoo, La Union, Philippines

Publication history: Received: June 1, 2026; Revised: July 2, 2026; Accepted: July 4, 2026

Email of Corresponding Author: lykaabegail.argueza@deped.gov.ph

Abstract

This study assessed gamification as an approach in developing the social skills of kindergarten learners in public elementary schools of Naguilian District, Division of La Union, during the school year 2025–2026. Guided by relevant learning theories and an Input-Process-Output framework, the study examined the perceived importance of gamification, the effectiveness of gamified strategies, the manifestation of learners' social skills, the extent of gamification's effects, problems encountered in implementation, and the differences between the perceptions of kindergarten teachers and school administrators. The study used a descriptive research design and a validated researcher-made questionnaire administered to thirty-five kindergarten teachers and twenty-seven school administrators, with data analyzed using frequency counts, weighted means, rankings, and t-test. Findings showed that both groups perceived gamification as highly important, the strategies as highly effective, learners' social skills as highly manifested, and the effects of gamification as great in extent. Gamification was especially associated with active participation, cooperative learning, teamwork, joyful play, storytelling, relays, and body language activities. However, problems such as large class size, learners' difficulty in following instructions, lack of discipline, and noisy classroom conditions were rated moderately serious. Significant differences were found in perceptions of the importance and effect of gamification, while no significant differences were found in strategy effectiveness, social skill manifestation, and problems encountered. The study concluded that gamification is necessary, relevant, and influential in developing kindergarten learners' social skills. It recommended the adoption of intervention strategies to strengthen weaker areas such as sportsmanship, camaraderie, respect for others' rights, and help-seeking behaviors. The study supports SDG 4, SDG 3, SDG 10, and SDG 17 by promoting inclusive early childhood learning, socio-emotional well-being, adaptable participation, and stakeholder collaboration. Its sustainability impact lies in supporting educational, socio-emotional, institutional, and community development through improved classroom engagement, teacher practice, and child social competence.

Keywords: Adaptability, Classroom Management, Early Childhood Education, Gamification, Kindergarten Learners, Naguilian District, Social Skills, Teamwork

1. Introduction

This study examines gamification as an approach in developing the social skills of kindergarten learners in public elementary schools of Naguilian District, Division of La Union. It focuses on how game-based strategies may support communication, cooperation, empathy, adaptability, sharing, turn-taking, and peer interaction. Guided by relevant learning theories and an Input-Process-Output framework, the study seeks to assess the importance, effectiveness, effects, and challenges of gamification as basis for proposed intervention strategies.

1.1 Gamification and Social Skills Development Among Kindergarten Learners

The early years of education are essential for developing social skills that support lifelong learning, classroom participation, and interpersonal success. Kindergarten learners begin to acquire communication, collaboration, empathy, adaptability, self-control, confidence, independence, and emotional management. According to Comedis (2014), social skills are linked to academic performance because they influence cooperative learning and classroom dynamics. Alotaibi's research (2024) also showed that game-based learning in early childhood education improves cognitive, social, and emotional outcomes, including engagement, self-expression, and peer interaction. Social competence varies among learners, and weaknesses in attention, language, motor skills, or peer interaction may affect friendship formation and social acceptance. Lawson (2020) stated that learners differ in their ability to form friendships and gain peer acceptance, while classroom peer evaluation may influence their social status (Lawson, 2020). Since social skills are learned behaviors, learners who lack them may experience social-emotional and academic difficulties (Yuan et al., 2025). These skills influence behavior, peer relationships, extracurricular participation, and school safety, requiring support from both teachers and parents (Yusuf & Omar, 2024). Gamification provides an interactive and learner-centered strategy for strengthening these competencies.

Bangcaya et al. (2021) highlighted that learner-centered strategies improve motivation and teamwork among Filipino learners. Gamification uses rewards, levels, challenges, feedback, and collaboration to make learning engaging and goal-oriented. Maria et al. (2025) found that interactive educational games improved communication, cooperation, and empathy among preschool learners, while Wang et al. (2025) confirmed that cooperative challenges and feedback improve social interaction and communication. Similarly, Lasala (2024), Villarta and Dioso (2023), and Antonio (2022) showed that game-based and gamified activities support motivation, social skills, cognitive development, and learning engagement.

1.2 Related Literature on Gamified Strategies for Communication, Cooperation, Empathy, and Adaptability

The literature consistently presents social skills as important to kindergarten readiness, holistic development, and academic success. These skills include communication, collaboration, empathy, adaptability, emotional regulation, self-control, cooperation, and positive peer interaction (Dahalan et al., 2023). Social-emotional skills influence children's transition to structured schooling (Caemmerer & Hajovsky, 2022), while Baucom et al. (2023) suggest that these competencies are linked to later academic performance. Play-based interventions, structured group activities, storytelling games, and role-play support communication, cooperation, emotional expression, empathy, and problem-solving (Welsh et al., 2020; Issah & Sunu, 2024; Aljunaidi et al., 2023). Social competence is also connected to literacy, numeracy, classroom participation, and self-regulation. Learners with stronger social skills tend to collaborate better, communicate more effectively, and regulate emotions more appropriately (Caemmerer & Hajovsky, 2022). Learners with practical communication and self-regulation skills participate more confidently and seek help more appropriately (Nob et al., 2024). Parents also serve as early social models, and home-school collaboration supports empathy, communication, conflict resolution, and well-being (Abriol et al., 2022; Puccioni et al., 2021; Samosa et al., 2021). Gamification is the use of game-design elements in non-game learning contexts to improve engagement, motivation, and learning outcomes (Smiderle et al., 2020). It includes points, badges, levels, leaderboards, rewards, collaborative tasks, and feedback systems. Ahmad et al. (2024) and Ferriz-Valero et al. (2020) show that gamification raises learner involvement through playful and interactive elements. In early childhood education, gamified environments improve engagement and cognitive skills, while play-based gamification supports problem-solving, critical thinking, peer collaboration, and inclusivity (Diaz, 2024; Samortin, 2023). Gamification also strengthens socio-emotional learning by encouraging teamwork, respect, empathy, adaptability, and conflict resolution. Social skills enable children to interact verbally and nonverbally (Nurjanah et al., 2022), while peer relationships help children learn cooperation and social norms (Munawaroh et al., 2023). Early childhood social skills shape children's emotional, social, and academic development. Gamified activities motivate learners to cooperate, rely on peers, and practice communication (Lorenzo-Lledó et al., 2023; Warsinsky et al., 2021) also found that gamified activities improve emotional awareness and interpersonal responses. Games in classroom lessons enhance motivation, participation, collaboration, problem-solving, peer relationships, stress reduction, and memory retention. Boghian and Cojocariu (2023) emphasized that game-based activities increase attention and participation, while Hasan & Husein (2024) noted that controlled competition reduces fear of failure. Rincón-Flores et al. (2022) linked games with problem-solving and critical thinking. Aldini et al. (2023) associated games with peer positivity, and Arboleya & Miralles (2022) noted that games help children work as a team, take turns, and respect others. However, teachers may still face concerns about time, resources, costs, goal alignment, parent support, and ICT confidence (Mee et al., 2020). Despite these challenges, studies show that gamification improves engagement, motivation, teamwork, critical thinking, and holistic development (Aksoy et al., 2022; Mediavilla et al., 2024; Abbassyakhrin et al., 2024).

1.3 Local, National, and Global Context of Gamification in Early Childhood Education

Global and regional studies support gamification as a strategy for developing social and socio-emotional skills. Carcelén-Fraile (2025) has shown that active gamification improves self-concept, self-esteem, cooperation, assertiveness, and social skills. Lyu and Zhang (2025) suggested that challenges and immediate feedback cultivate constructive social behaviors, while de la Fuente et al. (2025) linked gamified SEL practices with better emotional regulation and learning. Aydin and Aksoy (2025) add that open, goal-oriented play enhances attention and socio-emotional skills. In Southeast Asia, Rifayanti (2025) and Lathifah et al. (2025) showed that cooperative games and gamified activities improve interaction and early-childhood social skills. In the Philippines, Aurelio and Santiago (2024) have shown that points, badges, leaderboards, and collaborative challenges strengthen engagement and teamwork. Lasala (2024) found that game-based activities improved social interaction and attitudes toward science, Bangcaya et al. (2021) reported improved learning outcomes and motivation, Villarta and Dioso (2023) found that eGames supported cognitive and social development, and Antonio (2022) confirmed that gamification sustained motivation during the pandemic. Earlier studies by Gatchalian (2017) and Manzano (2019) also examined games and social skills among young learners. The need for this study is reinforced by post-pandemic concerns and local classroom observations. Nunes et al. (2025) revealed declines in emotional regulation, social competence, and peer interaction during the pandemic, while Casia et al. (2024) found that Filipino learners improved in cooperation and self-reliance after recovery programs. Hamari et al. (2020), Su and Cheng (2021), and Zainuddin et al. (2020) showed that gamification can re-engage learners, reduce negative emotions, and improve self-esteem and social skills. In Naguilian District, kindergarten learners still show difficulties in communication, cooperation, adaptability, turn-taking, sharing, and group participation, making gamification a relevant strategy for local intervention.

1.4 Theoretical and Conceptual Foundations of Gamification for Kindergarten Social Skills

This study is supported by theories that explain motivation, engagement, modeling, collaboration, and social learning. Self-Determination Theory emphasizes autonomy, competence, and relatedness as drivers of engagement (Aubert & Friedrich, 2021). In gamified settings, choices and collaborative tasks can strengthen motivation, competence, relatedness, and social interaction (Baah et al., 2024; Aljunaidi et al., 2023; González-Fernández et al., 2022). Flow Theory explains that learners become engaged when activities balance challenge and ability (Patterson et al., 2022), while gamified tasks that match learners' capabilities may improve engagement and social skill practice (Galen et al., 2020; Baah et al., 2024; Fu et al., 2024). Social Learning Theory and Social Cognitive Theory explain that learners acquire behaviors through observation, imitation, modeling, and self-efficacy (Rao et al., 2022; Rivera & Garden, 2021; Ilmiani et al., 2021). Group-based gamified tasks allow learners to observe, imitate, and practice cooperation, sharing, and collaboration (Miao & Hua, 2022; Erwin, 2022). Constructivist Learning Theory and Sociocultural Theory also support the study because learners build knowledge through experience, peer interaction, and cultural context (Hope et al., 2022). Gamified group activities promote collaborative problem-solving, communication, and shared learning (Rao et al., 2022; Trinidad et al., 2021), while multiplayer games and peer-supported tasks strengthen cooperation and communication (Ramu & Aziz, 2020; Zhang, 2023). Cognitive Load Theory emphasizes the need to design gamified activities that are engaging but not overwhelming (Nakiyemba, 2024), while Connectivism and Gamified Learning Theory explain how digital and game-based environments promote social engagement, participation, and learning behaviors (Kumar & Sharma, 2021; Landers, 2014; Zaric et al., 2021). Conceptually, the study follows an Input-Process-Output framework. The inputs include the perceived importance of gamification, effectiveness of strategies, manifestation of social skills, effects of gamification, and problems encountered. The process involves analyzing these variables, while the output is a set of proposed intervention strategies to enhance gamification in developing the social skills of kindergarten learners in Naguilian District.

1.5 Research Gaps and Rationale for Studying Kindergarten Learners in Naguilian District

Although studies show the benefits of gamification, gaps remain in relation to kindergarten social skills. Many local studies focus on older learners, science, mathematics, motivation, or general learning outcomes rather than structured kindergarten skills such as sharing, turn-taking, cooperation, communication, empathy, and adaptability. Studies by Lasala (2024), Bangcaya et al. (2021), and Villarta & Dioso (2023) provide useful evidence, but they do not focus mainly on kindergarten social skill outcomes. Dicheva et al. (2021) similarly emphasize that studies often focus on engagement, motivation, and cognitive gains rather than foundational social skills. Hussein et al. (2023) also revealed that gamified learning works best when adapted to local play practices, but many studies do not specifically measure kindergarten social skills. This study therefore assessed gamification as an approach in developing the social skills of kindergarten learners in public elementary schools of Naguilian District, Division of La Union, during school year 2025–2026. It examined the perceived importance of gamification, effectiveness of strategies, manifestation of social skills, effects of gamification, seriousness of problems encountered, differences in perceptions of kindergarten teachers and school administrators, and proposed intervention strategies. The study also considers strategies and challenges in gamification. Cooperative games, role-playing, instant feedback, rewards, friendly competition, and serious games may develop communication, cooperation, empathy, emotional recognition, and social-emotional skills (Lasala, 2024; Ramirez, 2022; Alotaibi, 2024; Salum et al., 2024; López-Faican & Jaén, 2021; López et al., 2022; Saputra et al., 2021; Löytömäki et al., 2023; Aurelio & Santiago, 2024). However, implementation may be affected by teacher attitudes, resources, competition, learner motivation, unclear definitions, and assessment issues (Lester et al., 2023; Ouanes, 2024; Biryukov et al., 2021; Kim & Castelli, 2021; Panga et al., 2024). Thus, proposed interventions should include teacher training, inclusive design, sustained engagement, balanced motivation, flexible assessment, and continuous feedback (Nadi-Ravandi & Batooli, 2022; Casia et al., 2024; Kaya & Erçağ, 2023; Rodrigues et al., 2022; Powell et al., 2022; Bermejo, 2024; Sailer & Sailer, 2020; Samartin, 2023).

1.6 Alignment of Gamified Kindergarten Social Skills Development with Relevant Sustainable Development Goals

This study aligns with SDG 4 – Quality Education because it focuses on improving early childhood learning through inclusive, innovative, and learner-centered strategies. By examining gamification as a way to develop communication, cooperation, empathy, adaptability, and participation, the study supports foundational education and holistic child development. It also supports SDG 3 – Good Health and Well-Being because it addresses socio-emotional development, emotional regulation, peer interaction, confidence, and positive classroom experiences. SDG 10 – Reduced Inequalities is relevant because the study recognizes diverse learner needs and supports adaptable strategies for more inclusive participation. SDG 17 – Partnerships for the Goals also applies because teachers, school administrators, families, researchers, and education stakeholders share roles in strengthening early childhood social development.

1.7 Importance of Gamification to Educational, Socio-Emotional, Institutional, and Community Sustainability

The study contributes to educational sustainability by promoting strategies that improve engagement, participation, social competence, and holistic development in kindergarten classrooms. It may guide the Department of Education, school administrators, and teachers in strengthening gamification-based practices and intervention planning. It also supports socio-emotional and community sustainability by focusing on children's well-being, cooperation, sharing, confidence, communication, and positive peer relationships. Socially competent learners are better prepared to participate

constructively in classrooms, families, and communities. Finally, the study contributes to institutional and research sustainability by providing a basis for teacher development, school-level intervention, and future studies on gamification and early childhood education.

2. Material and methods

2.1 Research Design

This study used the descriptive research design. Yazon et al. (2019) elucidated that descriptive research is a purposive process of gathering, analyzing, and classifying data to describe existing conditions and uncover additional facts and meanings. Baraceros (2019) emphasized that descriptive research accurately and systematically describes a population, situation, or phenomenon and answers what, where, when, and how questions. It also involves the description, recording, analysis, and interpretation of the present nature, composition, or processes of phenomena (Lavina, 2016). The descriptive method was appropriate because the study described gamification as an approach in developing the social skills of kindergarten learners. Specifically, it described the level of importance of gamification, the effectiveness of strategies used, the manifestation of kindergarten learners' social skills, the extent of the effect of gamification, and the seriousness of problems encountered in using gamification. Based on the findings, intervention strategies were proposed to enhance the use of gamification in developing the social skills of kindergarten learners in public elementary schools of Naguilian District, Division of La Union.

2.2 Locale of the Study

The study was conducted in the public elementary schools of Naguilian District, Division of La Union, during the school year 2025–2026. Naguilian is a municipality in La Union known as the Home of the Original Basi and is geographically located at the center of the province. It is bordered by the City of San Fernando, Bagulin, Burgos, Caba, Bauang, and Sablan in Benguet. It is approximately 40 kilometers from Baguio through Naguilian Road, 17 kilometers from San Fernando, and 266 kilometers from Manila.

2.3 Respondents of the Study

The respondents of the study were thirty-five (35) kindergarten teachers and twenty-seven (27) school administrators from the public elementary schools of Naguilian District, Division of La Union. These respondents provided data on the importance, effectiveness, effects, manifestations, and problems related to the use of gamification in developing the social skills of kindergarten learners.

2.4 Sample and Sampling Procedure

The study involved a total of sixty-two (62) respondents composed of thirty-five (35) kindergarten teachers and twenty-seven (27) school administrators from the covered public elementary schools in Naguilian District. The respondents came from the schools included in the study and represented both classroom-level and administrative perspectives on the use of gamification for kindergarten social skills development.

2.5 Research Instrument

The researcher used a constructed questionnaire as the main data-gathering instrument. Separate questionnaires were prepared for kindergarten teachers and school administrators, and both were composed of five parts. The first part gathered data on the level of importance of gamification in developing learners' social skills. The second part focused on the effectiveness of strategies in using gamification. The third part examined the manifestation of kindergarten learners' social skills. The fourth part dealt with the extent of the effect of gamification on social skills, while the fifth part focused on the seriousness of problems encountered in using gamification. Some items, particularly those on strategies for using gamification, were taken from the study of David (2022) on the effectiveness of game strategy in teaching kindergarten in the public schools of Sison District, Division of Pangasinan II. Other items were developed from the researcher's readings of books and related materials on gamification and social skills development. The questionnaire was validated to ensure that it contained the necessary information for analysis. It was pre-tested with five (5) kindergarten teachers and five (5) school administrators in public elementary schools of Bauang District, Division of La Union. The pre-test assessed the instrument's content, format, and language and was conducted through Google Forms sent via Messenger and e-mail. The Spearman rank correlation or Spearman rho was used to determine reliability, and the computed value of 0.87 indicated that the instrument was highly reliable. Suggestions from the proposal defense were incorporated with the assistance of the thesis adviser before the final draft was prepared.

2.6 Data Gathering Procedure

Before administering the questionnaire, the researcher secured permission from the Schools Division Superintendent of La Union, Dr. Jorge M. Reinante, CSEE, CEO VI, CESO V, with the endorsement of the Dean of the Graduate School of Polytechnic College of La Union, Dr. Rogelio E. Tangalin. The questionnaires were administered to and retrieved from kindergarten teachers and school administrators through multimedia platforms such as Messenger, Facebook, and e-mail.

Some questionnaires were also personally administered and retrieved by the researcher with the assistance of fellow teachers and school heads involved in the study.

2.7 Data Analysis Techniques

The gathered data were organized, tallied, and analyzed systematically. Frequency counts, weighted means, and rankings were used to describe and interpret the data. The t-test was used to determine significant differences between the perceptions of kindergarten teachers and school administrators on the variables of the study at the .05 level of probability. All computations were done using the Microstat computer program. The level of importance of gamification was interpreted using a five-point scale: 4.21–5.00 as Very Highly Important, 3.41–4.20 as Highly Important, 2.61–3.40 as Moderately Important, 1.81–2.60 as Slightly Important, and 1.00–1.80 as Not Important. The effectiveness of strategies was interpreted as Very Highly Effective, Highly Effective, Moderately Effective, Slightly Effective, and Not Effective using the same statistical limits. The manifestation of social skills was interpreted as Very Highly Manifested, Highly Manifested, Moderately Manifested, Slightly Manifested, and Not Manifested. The effect of gamification was interpreted as Very Great Extent, Great Extent, Moderate Extent, Slight Extent, and No Extent. The seriousness of problems encountered was interpreted as Very Highly Serious, Highly Serious, Moderately Serious, Slightly Serious, and Not Serious.

2.8 Ethical Considerations

The researcher observed strict compliance with PCLU Guidelines on Research Ethics. Permission was sought from the proper authorities before gathering the needed data. Respondents were not compelled or subjected to harm in participating in the study, and their consent was obtained. Their names were not disclosed, and they were informed about the nature and objectives of the study. Their right to withdraw at any stage while responding to the questionnaire was also observed. All gathered data were treated with utmost confidentiality and used solely for the purposes of the research. The researcher used Grammarly for grammar checking, followed proper citation and referencing practices to observe copyright laws and avoid plagiarism, and subjected the paper to plagiarism scanning to certify its authenticity.

3. Results and Discussion

3.1 Importance of Gamification in Developing the Social Skills of Kindergarten Learners

3.1.1 Perceptions of Kindergarten Teachers

The kindergarten teachers perceived gamification as highly important in developing learners' social skills, with an average weighted mean of 3.76. The highest-rated indicators were motivating learners to actively participate in class activities (4.16), making cooperative learning enjoyable and meaningful (4.09), and building teamwork, cooperation, and unity among learners (3.96). The lowest-rated but still highly important indicators were motivating learners to perform an action (3.63), developing social awareness through peer interaction and camaraderie (3.55), and enhancing traditional educational tools (3.43). These results show that teachers view gamification as a practical way to encourage participation, cooperation, communication, and teamwork among kindergarten learners. Through playful activities, learners become more confident in joining class tasks and interacting with peers. This active participation gives learners opportunities to practice sharing, listening, and cooperating (Su & Cheng, 2021). Likewise, cooperative gamified tasks make group work enjoyable and meaningful because learners naturally experience teamwork while learning. According to Mekler et al. (2021), this kind of setting allows learners to experience teamwork naturally since they enjoy what they are doing while learning.

3.1.2 Perceptions of School Administrators

School administrators also perceived gamification as highly important in developing learners' social skills, with an average weighted mean of 3.84. Their highest-rated indicators were building teamwork, cooperation, and unity among learners (4.18), motivating learners to actively participate in class activities (4.11), and making cooperative learning enjoyable and meaningful (4.07). The lowest-rated but still highly important indicators were promoting harmonious relationships among learners (3.63), motivating learners to perform an action (3.56), and enhancing traditional educational tools (3.44). These findings indicate that school administrators share the teachers' view that gamification supports social interaction, cooperation, and classroom engagement. They recognized that game-based activities help learners work together, follow rules, share ideas, and build friendships. Although some indicators ranked lower because their effects may be less direct or less consistently observed, administrators still considered them valuable in sustaining learners' interest and supporting social development.

3.2 Effectiveness of Strategies in Using Gamification

3.2.1 Perceptions of Kindergarten Teachers

The kindergarten teachers perceived the strategies in using gamification as highly effective, with an average weighted mean of 3.75. The most effective strategies were relays (4.18), storytelling (4.08), and body language (3.97). Other highly effective strategies included dialogues, collection of objects, guessing activities, visual cues, and discovery technique. Role playing (3.36) and pattern recognition (3.27) were rated moderately effective. The results show that teachers find highly

interactive and movement-based strategies more effective in developing social skills. Relays strengthen cooperation, responsibility, patience, and peer support because learners depend on one another to complete group tasks. Storytelling encourages listening, turn-taking, sharing of ideas, imagination, empathy, and cooperation. Body language activities support non-verbal communication, confidence, emotional awareness, and peer understanding. In contrast, role playing and pattern recognition were rated lower because some learners may feel shy during role play, while pattern recognition often focuses more on cognitive skills than direct social interaction.

3.2.2 Perceptions of School Administrators

School administrators also rated the strategies in using gamification as highly effective, with an average weighted mean of 3.70. The highest-rated strategies were storytelling (4.15), relays (4.06), and body language (3.94). Dialogues, visual cues, guessing activities, collection of objects, and discovery technique were also rated highly effective. Pattern recognition (3.35) and role playing (3.24) were rated moderately effective. These findings confirm that administrators, like teachers, value gamification strategies that promote interaction, movement, communication, and cooperation. Storytelling was viewed as effective because it allows learners to listen, share, respond, and understand the feelings of others. Storytelling also allows learners to work together by discussing what happened in the story and predicting what might come next (Maria et al., 2025). Relays and body language activities also provide opportunities for teamwork, turn-taking, encouragement, and confidence-building. Meanwhile, pattern recognition and role playing were rated lower because they may not always involve equal participation or sustained social interaction.

3.3 Manifestation of the Social Skills of Kindergarten Learners

3.3.1 Perceptions of Kindergarten Teachers

The kindergarten teachers perceived the social skills of learners as highly manifested, with an average weighted mean of 3.61. The highest-rated skills were playing joyfully with others (4.18), establishing friendship with others (4.11), and participating actively in group or class activities (4.07). Eight social skills were highly manifested, while five were moderately manifested. The least manifested skills were showing sportsmanship (3.18), developing camaraderie with classmates (3.08), and consulting others regarding problems or concerns (2.96). These results suggest that kindergarten learners are generally able to interact positively, enjoy peer play, form friendships, and participate in group tasks. However, skills that require deeper emotional maturity, such as sportsmanship, sustained camaraderie, and seeking help from others, remain less developed. This indicates that learners still need guidance in handling wins and losses, maintaining stronger peer bonds, and expressing concerns confidently.

3.3.2 Perceptions of School Administrators

School administrators also perceived the social skills of kindergarten learners as highly manifested, with an average weighted mean of 3.55. The most manifested skills were playing joyfully with others (4.16), participating actively in team games (4.02), and participating actively in group or class activities (3.94). The least manifested skills were developing camaraderie with classmates (3.16), showing sportsmanship (3.09), and consulting others regarding problems or concerns (2.94). These findings support the teachers' observations that learners show strong social behaviors in joyful play, team participation, and group activities. However, administrators also observed that learners still need support in more complex social behaviors such as camaraderie, sportsmanship, and help-seeking. This implies that while learners are socially active, they still require structured opportunities to develop emotional control, fairness, trust, and deeper peer relationships.

3.4 Extent of Effect of Gamification on the Social Skills of Kindergarten Learners

3.4.1 Perceptions of Kindergarten Teachers

The kindergarten teachers perceived that gamification has a great extent of effect on learners' social skills, with an average weighted mean of 3.72. The strongest effects were on playing joyfully with others (4.18), participating actively in team games (4.12), and participating actively in group or class activities (4.09). The lowest-rated effects, though still moderate, were showing respect for the rights of others (3.37), consulting others regarding problems or concerns (3.26), and showing sportsmanship (3.18). These findings indicate that gamification strongly affects social behaviors that involve enjoyment, participation, teamwork, and classroom engagement. However, its effect is more limited on values-based and emotionally demanding skills such as respect, consultation, and sportsmanship. Young learners are still developing emotional control, and they require more guidance in understanding the value of fairness, patience, and respect for others' efforts (Lyu & Zhang, 2025). Thus, while gamification provides opportunities for social development, it must be supported by consistent teacher modeling, reinforcement, and reflection.

3.4.2 Perceptions of School Administrators

School administrators perceived that gamification has a great extent of effect on learners' social skills, with an average weighted mean of 3.61. The highest-rated effects were on participating actively in group or class activities (4.15), participating actively in team games (4.02), and playing joyfully with others (3.97). The lowest-rated effects were showing respect for the rights of others (3.23), showing sportsmanship (3.15), and consulting others regarding problems or concerns (3.07). These results show that administrators view gamification as effective in promoting active participation, teamwork,

and joyful interaction. However, they also noted that gamification alone may not fully develop fairness, self-control, and help-seeking behaviors. At this developmental stage, it is common for children to focus more on outcomes than on the values of fair play and respect for opponents (Aydin & Aksoy, 2025). The nature of gamification often emphasizes teamwork in tasks but does not always provide direct opportunities for learners to practice expressing personal worries or seeking help (Casia et al., 2024). Therefore, gamified activities should be paired with values-based teaching, reflection, and guided social-emotional activities.

3.5 Problems Encountered in Using Gamification

3.5.1 Perceptions of Kindergarten Teachers

Kindergarten teachers perceived the problems encountered in using gamification as moderately serious, with an average weighted mean of 3.35. The most serious problems were too many learners in a class (4.19), inability of learners to follow instructions, directions, and rules of games (4.15), lack of learners' discipline while playing games (4.09), and noisy class because of excitement and group activities (3.97). The least serious but still moderately serious problems were lack of learners' interest in playing games (2.85), negative attitudes of learners toward games (2.76), and unsupportive parents toward school activities (2.64). These results indicate that the major challenges are classroom management, learner discipline, and maintaining order during game-based activities. Large class size makes it difficult to monitor all learners, while unclear rule-following and excitement may lead to noise and disruption. The lower-rated problems suggest that most learners are generally interested in games, although some still show negative attitudes or limited parental support. These concerns show the need for clear rules, smaller group arrangements, structured routines, and teacher preparation.

3.5.2 Perceptions of School Administrators

School administrators also perceived the problems encountered as moderately serious, with an average weighted mean of 3.29. Their highest-rated concerns were too many learners in a class (4.16), inability of learners to follow instructions, directions, and rules of games (4.10), lack of learners' discipline while playing games (4.04), and noisy class because of excitement and group activities (3.93). The least serious concerns were lack of learners' interest in playing games (2.73), negative attitudes of learners toward games (2.68), and unsupportive parents toward school activities (2.62). These findings confirm the teachers' views that gamification is generally manageable but requires strong classroom control. Administrators recognized that the most serious issues are not caused by gamification itself but by implementation conditions such as class size, discipline, instruction-following, and noise. These results suggest that teachers need support in planning, grouping learners, giving clear directions, and managing behavior during gamified activities.

3.6 Comparative Results Between Kindergarten Teachers and School Administrators

3.6.1 Summary of Perceptions

The summary of results shows that kindergarten teachers and school administrators had similar descriptive perceptions across the major variables. Teachers rated the importance of gamification as highly important (3.76), effectiveness of strategies as highly effective (3.75), manifestation of social skills as highly manifested (3.61), extent of effect as great extent (3.72), and problems encountered as moderately serious (3.35). School administrators rated the same variables as highly important (3.84), highly effective (3.70), highly manifested (3.55), great extent (3.61), and moderately serious (3.29). These findings show consistency between teachers and administrators in recognizing the value of gamification in developing kindergarten learners' social skills. Both groups viewed gamification as important, effective, and helpful in improving participation, cooperation, and social development. They also agreed that while problems exist, these are generally moderate and can be addressed through appropriate classroom management and intervention strategies.

3.6.2 Test of Significant Differences

The test of differences showed significant differences between the perceptions of kindergarten teachers and school administrators in two variables: the level of importance of gamification in developing learners' social skills, with a mean difference of 0.12, t-value of 3.43, and p-value of 0.05; and the extent of effect of gamification on learners' social skills, with a mean difference of 0.11, t-value of 3.35, and p-value of 0.05. The null hypothesis was rejected for these variables. No significant differences were found in the perceived effectiveness of strategies, manifestation of social skills, and seriousness of problems encountered, where the null hypothesis was accepted. These results suggest that school administrators perceived the importance of gamification slightly higher than teachers, while teachers perceived its extent of effect slightly higher than administrators. This may reflect the different roles of the two groups: administrators may view gamification from a broader program and school-development perspective, while teachers may observe its direct classroom effects more closely. However, their agreement on the other variables shows that both groups generally share the same understanding of gamification's effectiveness, observed outcomes, and challenges.

3.7 Proposed Intervention Strategies

The proposed intervention strategies focused on improving the weaker areas of learners' social skills, particularly showing respect for the rights of others, showing sportsmanship, consulting others regarding problems or concerns, and developing camaraderie with classmates. The strategies included turn-taking games, classroom voting activities, role-playing skits,

puzzle-solving activities, sharing stations, partner games, storytelling, cooperative building tasks, relay races, board games, group ball games, sportsmanship badges, buddy talk time, classroom circle sharing, peer consultation games, collaborative puzzles, buddy-system activities, cooperative art projects, classroom gardening, scavenger hunts, music games, and friendship challenges. The interventions also addressed the highly serious problems encountered in implementing gamification, especially large class size, inability to follow instructions, lack of discipline, and noisy classroom conditions. Recommended strategies included dividing learners into smaller groups, assigning rotating leaders, using station-based games, providing visual instructions, demonstrating rules through role play, conducting practice rounds, using rule-checkers, giving short commands, setting behavioral expectations, assigning roles, using point systems for good behavior, applying calming transitions, reinforcing positive behavior, establishing noise-level signals, using clapping patterns, and assigning quiet captains. These strategies directly respond to the findings and may help teachers implement gamification more effectively while strengthening learners' social skills.

4. Conclusion & Recommendations

Gamification was found to be necessary, relevant, and influential in developing the social skills of kindergarten learners in the public elementary schools of Naguilian District, Division of La Union. The strategies used in gamification were considered functional and applicable, particularly in encouraging active participation, cooperative learning, teamwork, storytelling, relays, and body language activities. The learners' social skills were highly manifested, especially in joyful play, group participation, and team games, while the effects of gamification on social skills were shown to be great. The problems encountered in using gamification were considered manageable, although significant differences were found between the perceptions of kindergarten teachers and school administrators regarding the importance and effect of gamification.

The proposed intervention strategies should be adopted and effectively implemented to enhance the use of gamification in developing the social skills of kindergarten learners. Teachers should continue reinforcing gamification as an essential approach to social skills development, extensively use highly effective strategies, improve moderately effective ones, and ensure that gamified classroom activities maintain their impact on learners' social growth. They should also address serious problems encountered in using gamification through effective and practical solutions. A similar study should be conducted in another setting to validate the findings of the study.

The study was limited to assessing gamification as an approach in developing the social skills of kindergarten learners in the public elementary schools of Naguilian District, Division of La Union, during the school year 2025–2026. It involved only thirty-five kindergarten teachers and twenty-seven school administrators as respondents; therefore, the findings were confined to the perceptions of these groups within the identified locale. Since the study was conducted in one district, a similar study in another setting was recommended to validate the findings.

Compliance with ethical standards

The study observed strict compliance with the PCLU Guidelines on Research Ethics. Permission was sought from the proper authorities before data gathering, and all collected data were treated with utmost confidentiality and used solely for the purposes of the research. Proper citation and referencing practices were followed to observe copyright laws and avoid plagiarism, and the paper was subjected to plagiarism scanning to certify its authenticity.

REFERENCES

- Abbassyakhrin, A., Setyosari, P., Zubaidah, S., & Sulton, S. (2024). Gamification and academic ability impact on students' meta-cognition and critical thinking skills. *Research and Development in Education*, 4(1), 127–137. <https://doi.org/10.22219/raden.v4i1.32126>
- Abriol, M. C., Alapoop, M. S. L., Margallo, L. P., Ancheta, R., Manalastas, R. D., Manguilimotan, R. P., ... & Padillo, G. G. (2022). Experiences of parents and teachers on kindergarten pupils' readiness in the new normal. *European Journal of Education and Pedagogy*, 3(4), 109–115. <https://doi.org/10.24018/ejedu.2022.3.4.424>
- Ahmad, A., Rahman, A., Saleh, M., & Daud, Z. (2024). Diversifying Quranic revision methods using gamification-based teaching material for tahfiz education. *International Journal of Evaluation and Research in Education (IJERE)*, 13(2), 987. <https://doi.org/10.11591/ijere.v13i2.26218>
- Aksoy, N., Aksoy, E., & Usta, E. (2022). Metaphors developed by teachers for the gamification approach in education. *Journal of Teacher Education and Lifelong Learning*, 4(2), 150–162. <https://doi.org/10.51535/tell.1185893>
- Aljunaidi, S., Mokdad, M., & Mebarki, B. (2023). The effectiveness of a play-based intervention to develop social skills among kindergarten children. <https://doi.org/10.21203/rs.3.rs-2719659/v1>

- Alotaibi, M. S. (2024). Game-based learning in early childhood education: A systematic review and meta-analysis. *Frontiers in Psychology*, 15, 1307881. <https://doi.org/10.3389/fpsyg.2024.1307881>
- Antonio, J. M. A., & Tamban, V. E. (2022). Effectiveness of gamification on learner's performance and attitude towards mathematics amidst the COVID-19 pandemic. *United International Journal for Research & Technology*, 3(3), 91–100. <https://uijrt.com/articles/v3/i3/UIJRTV3I30013.pdf>
- Arboleya, E., & Miralles, L. (2022). The game of the sea: An interdisciplinary educational board game on the marine environment and ocean awareness for primary and secondary students. *Education Sciences*, 12(1), 57. <https://doi.org/10.3390/educsci12010057>
- Aubert, A., & Friedrich, M. (2021). Gamifying quantitative face-to-face interviews in rural India: An empirical evaluation based on the basic psychological needs theory. *PLOS ONE*, 16(1), e0244077. <https://doi.org/10.1371/journal.pone.0244077>
- Aurelio, J. R., & Santiago, J. (2024). The impact of educational gamification on student learning outcomes (Philippines, HE sample; mixed-methods). *International Journal of Research and Innovation in Social Science*. RSIS International. <https://rsisinternational.org/journals/ijriss/articles/the-impact-of-educational-gamification-on-student-learning-outcomes/>
- Baah, C., Govender, I., & Subramaniam, P. (2024). Enhancing learning engagement: A study on gamification's influence on motivation and cognitive load. *Education Sciences*, 14(10), 1115. <https://doi.org/10.3390/educsci14101115>
- Bangcaya, H. O., Olvis, P. R., Disca, B. Y., Comoda, J. T., & Taborada, J. H. (2021). Play as you learn: Gamification and its effect on the learning outcomes and motivation of students in science. <https://ejournals.ph/article.php?id=18097>
- Baraceros, E. L. (2019). *Practical research 1* (2019 ed.). Rex Book Store, Inc.
- Baucom, J., Shore, R., & Lambert, R. (2023). An investigation of kindergarten readiness based on early literacy inventory scores. *HS Dialog*, 26(2). <https://doi.org/10.55370/hsdialog.v26i2.1652>
- Bermejo, M. C. (2024). Effectiveness of digital gamification in enhancing the text interpretation skills of the students [Thesis, Republic Central Colleges, San Fernando City, Pampanga].
- Biryukov, A. P., Brikoshina, I., Mikhalevich, N. V., Sycheva, S. M., & Khalimon, E. A. (2021). Gamification in education: Threats or new opportunities. *SHS Web of Conferences*, 103, 02001. <https://doi.org/10.1051/shsconf/202110302001>
- Boghian, I., & Cojocariu, V. (2023). Using games to build social emotional learning skills. *Revista Romaneasca Pentru Educatie Multidimensionala*, 15(1), 622–656. <https://doi.org/10.18662/rrem/15.1/715>
- Caemmerer, J. M., & Hajovsky, D. B. (2022). Reciprocal relations between children's social and academic skills throughout elementary school. *Journal of Psychoeducational Assessment*, 40(6), 761–776. <https://doi.org/10.1177/07342829221097186>
- Carcelén-Fraile, M. del C. (2025). Active gamification in the emotional well-being and social skills of primary education students. *Education Sciences*, 15(2), 212. <https://doi.org/10.3390/educsci15020212>
- Casia, C. N., Angga, C. J., Bayron, L. C., Caralos, A. N., Guinto, E. J., Iligan, J. S., ... & Goc-Ong, M. V. (2024). Perceived level of effects of gamification and student engagement of senior high school students. *Journal of Interdisciplinary Perspectives*, 2(9), 234–241. <https://doi.org/10.69569/jip.2024.0361>
- Comedis, E. J. (2014). The role of social skills in the academic performance of De La Salle Araneta University freshmen students: Creating a culture. DLSU Research Congress. De La Salle University, Manila, Philippines. https://www.dlsu.edu.ph/conferences/dlsu_research_congress/2014/_pdf/proceedings/LCCS-I-002-FT.pdf
- Dahalan, F., Alias, N., & Shaharom, M. S. N. (2023). Gamification and game based learning for vocational education and training: A systematic literature review. *Education and Information Technologies*, 1–39. Advance online publication. <https://doi.org/10.1007/s10639-022-11548-w>
- David, R. M. (2022). Effectiveness of game strategy in teaching kindergarten in the public schools of Sison District, Division of Pangasinan II [Thesis, Baguio Central University, Baguio City].
- de la Fuente, J. M., Buenadicha-Mateos, M., & García, J. (2025). Integrating social-emotional learning into a gamified flipped-learning approach. *Journal of Computer Assisted Learning*, 41(1), 1–15. <https://doi.org/10.1111/jcal.13109>
- Diaz, A. F. (2024). A meta-analysis on the effectiveness of gamification on student learning achievement [Thesis, De la Salle University, Manila City].
- Dicheva, D., Dichev, C., Agre, G., & Angelova, G. (2021). Gamification in education and training: A literature review. *International Review of Education*, 67, 1–24. <https://doi.org/10.1007/s11159-024-10111-8>
- Erwin, S. (2022). Social learning and career navigation in the U.S. military: The personal experiences, observations and socializations of servicewomen. *Industrial and Commercial Training*, 54(4), 613–622. <https://doi.org/10.1108/ict-01-2022-0005>
- Férriz-Valero, A., Østerlie, O., Martínez, S., & García-Jaén, M. (2020). Gamification in physical education: Evaluation of impact on motivation and academic performance within higher education. *International Journal of Environmental Research and Public Health*, 17(12), 4465. <https://doi.org/10.3390/ijerph17124465>

- Fu, J., Zhang, L., Zheng, X., Yang, F., & Lin, Y. (2024). Digital baseball sport design based on Dmc gamification theory. <https://doi.org/10.3233/faia231435>
- Gaalen, A., Brouwer, J., Schönrock-Adema, J., Bouwkamp-Timmer, T., Jaarsma, D., & Georgiadis, J. (2020). Gamification of health professions education: A systematic review. *Advances in Health Sciences Education*, 26(2), 683–711. <https://doi.org/10.1007/s10459-020-10000-3>
- González-Fernández, A., Domínguez, F., & Sánchez, M. (2022). Models of instructional design in gamification: A systematic review of the literature. *Education Sciences*, 12(1), 44. <https://doi.org/10.3390/educsci12010044>
- Hamari, J., Koivisto, J., & Sarsa, H. (2020). Does gamification work?—A literature review of empirical studies on gamification. *Computers in Human Behavior*, 71, 1–15. <https://doi.org/10.1016/j.chb.2014.03.038>
- Hasan, B., & Husein, M. (2024). Traditional games as a means of cognitive stimulation: An analysis of child development: A systematic review. *International Journal of Multidisciplinary Research and Analysis*, 07(10). <https://doi.org/10.47191/ijmra/v7-i10-28>
- Hope, D., Grant, G., Rogers, G., & King, M. (2022). Gamification in pharmacy education: A systematic quantitative literature review. *International Journal of Pharmacy Practice*, 31(1), 15–31. <https://doi.org/10.1093/ijpp/riac099>
- Hussein, E., Kan'an, A., Rasheed, A., Alrashed, Y., Jdaitawi, M., Abas, A., Mabrouk, S., & Abdelmoneim, M. (2023). Exploring the impact of gamification on skill development in special education: A systematic review. *Contemporary Educational Technology*, 15(3), ep443. <https://doi.org/10.30935/cedtech/13335>
- Ilmiani, A., Wahdah, N., & Mubarak, M. (2021). The application of Albert Bandura's social cognitive theory: A process in learning speaking skill. <https://doi.org/10.15575/jpba.v5i2.12945>
- Issah, M., & Sunu, S. (2024). Social development of kindergarten children: Teachers roles in play activities in the Nanton District, Ghana. <https://doi.org/10.21203/rs.3.rs-4781270/v1>
- Kaya, O., & Erçağ, 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>
- Kim, J., & Castelli, D. (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>
- Kumar, V., & Sharma, D. (2021). E-learning theories, components, and cloud computing-based learning platforms. *International Journal of Web-Based Learning and Teaching Technologies*, 16(3), 1–16. <https://doi.org/10.4018/ijwltt.20210501.oa1>
- Landers, R. N. (2014). Developing a theory of gamified learning. *Simulation & Gaming*, 45(6), 752–768. <https://doi.org/10.1177/1046878114563660>
- Lasala, N., Jr. (2024). Effects of game-based activities on student's social skills and attitudes toward learning science [Thesis, Sorsogon State University, Sorsogon City].
- Lathifah, W., Khotimah, N., & Hidayah, N. (2025). Traditional games and social-skills development in early childhood. *Cogent Education*, 12(1), 2529419. <https://doi.org/10.1080/2331186X.2025.2529419>
- Lavina, C. G., et al. (2016). Outcomes-based practical guide to thesis and capstone project writing in computing. Mindshapers Co. Inc.
- Lawson, C. (2020). New research: Children with strong social skills in kindergarten more likely to thrive as adults. Retrieved from www.rwjf.org
- Lester, D., Skulmoski, G., Fisher, D., Mehrotra, V., Lim, I., Lang, A., ... & Keogh, J. (2023). Drivers and barriers to the utilisation of gamification and game-based learning in universities: A systematic review of educators' perspectives. *British Journal of Educational Technology*, 54(6), 1748–1770. <https://doi.org/10.1111/bjet.13311>
- López, J., Cano, E., Cadavieco, J., & Meneses, E. (2022). Gamification and gaming proposals, teachers' perceptions and practices in primary education. *Interaction Design and Architecture(s)*, 53, 213–229. <https://doi.org/10.55612/s-5002-053-011>
- López-Faican, L., & Jaén, J. (2021). Designing gamified interactive systems for empathy development. *Proceedings*, 27–29. <https://doi.org/10.1145/3468002.3468236>
- Lorenzo-Lledó, A., Pérez Vázquez, E., Andreu Cabrera, E., & Lorenzo Lledó, G. (2023). Aplicación de la gamificación en educación infantil y educación primaria: Análisis temático [Application of gamification in early childhood education and primary education: Thematic analysis]. *Retos*, 50, 858–875. <https://doi.org/10.47197/retos.v50.97366>
- Löytömäki, J., Ohtonen, P., & Huttunen, K. (2023). Serious game the Emotion Detectives helps to improve social-emotional skills of children with neurodevelopmental disorders. *British Journal of Educational Technology*, 55(3), 1126–1144. <https://doi.org/10.1111/bjet.13420>
- Lyu, S., & Zhang, W. (2025). Opening the window to the children's mind: The superior efficacy of open-ended physical games in the development of attention and socio-emotional skills. *Frontiers in Psychology*, 16, 1511559. <https://doi.org/10.3389/fpsyg.2025.1511559>
- Maria, I., Yufiarti, Y., & Sumantri, S. (2025). Enhancing preschool social competence through interactive educational games. <https://www.jneonatsurg.com/index.php/jns/article/view/1790>

- Mediavilla, L., Andrade, A., González, M., & Martín, S. (2024). Impact of gamification on motivation and academic performance: A systematic review. *Education Sciences*, 14(6), 639. <https://doi.org/10.3390/educsci14060639>
- Mee, R., Shahdan, T., Ismail, M., Ghani, K., Pek, L., Von, W., & Rao, Y. (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>
- Mekler, E. D., Brühlmann, F., Tuch, A. N., & Opwis, K. (2021). Towards understanding the effects of individual gamification elements on intrinsic motivation and performance. *Computers in Human Behavior*, 71, 525–534. <https://doi.org/10.1016/j.chb.2015.08.048>
- Miao, L., & Hua, Y. (2022). Integrating social presence with social learning to promote purchase intention: Based on social cognitive theory. *Frontiers in Psychology*, 12. <https://doi.org/10.3389/fpsyg.2021.810181>
- Munawaroh, H., Kuswantono, S., Hartati, S., Jahja, Y., & Faradiba, Y. (2023). Early childhood social skills development through hyflex learning (flexible hybrid). *Jurnal Indonesia Sosial Teknologi*, 4(10), 1672–1680. <https://doi.org/10.59141/jist.v4i10.749>
- Nadi-Ravandi, S., & Batooli, Z. (2022). Gamification in education: A scientometric, content and co-occurrence analysis of systematic review and meta-analysis articles. *Education and Information Technologies*, 27(7), 10207–10238. <https://doi.org/10.1007/s10639-022-11048-x>
- Nakiyemba, S. (2024). Impact of gamification on knowledge acquisition. *European Journal of Information and Knowledge Management*, 3(1), 1–12. <https://doi.org/10.47941/ejkm.1749>
- Nob, J. M. R. O., Roble, D. B., & Lomibao, L. S. (2024). Unveiling the effects of gamification on math learning: A literature review in the Philippine context [Paper presentation]. University of Science and Technology of Southern Philippines, Cagayan de Oro City.
- Nunes, M., Oliveira, A., & Fidalgo, F. (2025). Gamification and emotional intelligence: Development of a digital application for children. *Education Sciences*, 15(4), 453. <https://doi.org/10.3390/educsci15040453>
- Nurjanah, S., Machmudah, M., Zahroh, C., Ainiyah, N., Hasina, S., & Kamariyah, N. (2022). The effect of social skill training of early childhood education during COVID-19 pandemic. *Open Access Macedonian Journal of Medical Sciences*, 10(G), 607–612. <https://doi.org/10.3889/oamjms.2022.9677>
- Ouanes, K. (2024). Transforming medical and health sciences education with gamification. In *Level up! Exploring gamification's impact on research and innovation*. <https://doi.org/10.5772/intechopen.1005500>
- Panga, K., Doroin, M. C., Campo, J. M., Bohayo, C., & Oxidental, S. P. (2024). Enhancing learners' engagement in Araling Panlipunan through gamification: A Philippine case study. <https://doi.org/10.58421/misro.v4i3.475>
- Patterson, V., Rossi, M., Pencer, A., & Wozney, L. (2022). An internet-based cognitive behavioral therapy program for anxiety and depression (Tranquility): Adaptation co-design and fidelity evaluation study. <https://doi.org/10.2196/33374>
- Powell, L., Nour, R., Zidoun, Y., Kaladhara, S., Suwaidi, H., & Zary, N. (2022). A web-based public health intervention for addressing vaccine misinformation: Protocol for analyzing learner engagement and impacts on the hesitancy to vaccinate. *JMIR Research Protocols*, 11(5), e38034. <https://doi.org/10.2196/38034>
- Puccioni, J., Froiland, J., Moeyaert, M., Desir, S., & Galimore, Z. (2021). Associations among African American parents' beliefs, involvement, and measures of school readiness. *Journal of Child and Family Studies*, 31(5), 1246–1260. <https://doi.org/10.1007/s10826-021-02092-1>
- Ramirez, R. M. (2022). Effects of gamification on the students' engagement and behavior in English 11 [Thesis, Asia Center for Biblical Studies, Laguna].
- Ramu, V., & Aziz, N. (2020). The attributes of future social learning built environments towards 21st century education in tertiary education. *Planning Malaysia*, 18(13). <https://doi.org/10.21837/pm.v18i13.796>
- Rao, Y., Mee, R., Ghani, K., Pek, L., Von, W., Ismail, M., ... & Shahdan, T. (2022). Gamification in education for sustainable development. *Proceedings*, 3, 155–162. <https://doi.org/10.15405/epms.2022.10.15>
- Rifayanti, Z. E. T. (2025). Analysis of student interaction and social skills in game activities in Indonesian elementary schools. *International Journal of Recent Educational Research*, 6(...), 1–10. *IJORER*. <https://journal.ia-education.com/index.php/ijorer/article/view/731>
- Rincón-Flores, E., Mena, J., & López-Camacho, E. (2022). Gamification as a teaching method to improve performance and motivation in tertiary education during COVID-19: A research study from Mexico. *Education Sciences*, 12(1), 49. <https://doi.org/10.3390/educsci12010049>
- Rivera, E., & Garden, C. L. P. (2021). Gamification for student engagement: A framework. *Journal of Further and Higher Education*, 45(7), 999–1012. <https://doi.org/10.1080/0309877x.2021.1875201>
- Rodrigues, L., Pereira, F., Toda, A., Palomino, P., Pessoa, M., Carvalho, L., ... & Isotani, S. (2022). Gamification suffers from the novelty effect but benefits from the familiarization effect: Findings from a longitudinal study. *International Journal of Educational Technology in Higher Education*, 19(1). <https://doi.org/10.1186/s41239-021-00314-6>
- Sailer, M., & Sailer, M. (2020). Gamification of in-class activities in flipped classroom lectures. *British Journal of Educational Technology*, 52(1), 75–90. <https://doi.org/10.1111/bjet.12948>

- Salum, R., Khadijah, K., & Nasution, N. (2024). Optimization of early childhood social emotional development through exercise methods and learning videos. *Journal of Islamic Education Students (JIES)*, 4(1), 163. <https://doi.org/10.31958/jies.v4i1.12281>
- Samortin, M. (2023). Effects of gamified learning activities in enhancing junior high school students' English vocabulary retention [Thesis, Far Eastern University, Manila City].
- Samosa, R. C., Policarpio, M. V., Cañamaque, B. O., Camocamo, P. H. A., & Clavito, J. M. E. (2021). Gamification as an innovative strategy to improve learners' writing skills. *International Journal of Academic Multidisciplinary Research*, 5(12), 25–32. <https://www.ijeais.org/ijamr>
- Saputra, H., Hanif, A., Sulaiman, I., Ningrum, D., & Razali, R. (2021). The effect of traditional games and drill with motor ability on skills (running, jumping, overhand throw and catching) at elementary school. *International Journal of Human Movement and Sports Sciences*, 9(6), 1097–1103. <https://doi.org/10.13189/saj.2021.090603>
- Smiderle, R., Rigo, S. J., Marques, L. B., Coelho, J. A. P. d. M., & Jaques, P. A. (2020). The impact of gamification on students' learning, engagement and behavior based on their personality traits. *Smart Learning Environments*, 7(1). <https://doi.org/10.1186/s40561-019-0098-x>
- Su, C. H., & Cheng, C. H. (2021). A mobile gamification learning system for improving the learning motivation and achievements. *Journal of Computer Assisted Learning*, 37(3), 858–872. <https://doi.org/10.1111/jcal.12527>
- Trinidad, M., Calderón, A., & Ruiz, M. (2021). Gorace: A multi-context and narrative-based gamification suite to overcome gamification technological challenges. *IEEE Access*, 9, 65882–65905. <https://doi.org/10.1109/access.2021.3076291>
- Villarta, A., & Dioso, E. D. (2023). Influence of eGames in shaping the students' cognitive and social development: A descriptive-correlational study [Paper presentation]. Assumption College of Nabunturan, Nabunturan, Davao de Oro.
- Wang, T., Ma, H., Ge, H., Sun, Y., Kwok, T. T.-O., Liu, X., Wang, Y., Lau, W. K. W., & Zhang, W. (2025). The use of gamified interventions to enhance social interaction and communication among people with autism spectrum disorder: A systematic review and meta-analysis. *International Journal of Nursing Studies*, 165, 105037. <https://doi.org/10.1016/j.ijnurstu.2025.105037>
- Warsinsky, S., Schmidt-Kraepelin, M., Rank, S., Thiebes, S., & Sunyaev, A. (2021). Conceptual ambiguity surrounding gamification and serious games in health care: Literature review and development of game-based intervention reporting guidelines (GAMING). *Journal of Medical Internet Research*, 23(9), e30390. <https://doi.org/10.2196/30390>
- Welsh, J., Bierman, K., Nix, R., & Heinrichs, B. (2020). Sustained effects of a school readiness intervention: 5th grade outcomes of the Head Start REDI program. *Early Childhood Research Quarterly*, 53, 151–160. <https://doi.org/10.1016/j.ecresq.2020.03.009>
- Yazon, A. D., Callo, E. C., & Buenvinida, L. P. (2019). Learning guide in methods of research. Wiseman's Books Trading, Inc.
- Yuan, Y., Liu, W., Yi, J., & Li, X. (2025). Designed physical activities targeting social skills in preschoolers: A meta-analysis. *Frontiers in Psychology*, 16, 1585415. <https://doi.org/10.3389/fpsyg.2025.1585415>
- Yusuf, K., & Omar, Z. K. (2024). Gamification in early childhood education: Boosting engagement and learning outcomes. *Proceeding International Conference of Innovation Science, Technology, Education, Children and Health*, 4(2), 316–320. <https://doi.org/10.62951/icistech.v4i2.130>
- Zainuddin, Z., Chu, S. K. W., Shujahat, M., & Perera, C. J. (2020). The impact of gamification on learning and instruction: A systematic review of empirical evidence. *Educational Research Review*, 30, 100326. <https://doi.org/10.1016/j.edurev.2020.100326>
- Zaric, N., Roepke, R., Lukarov, V., & Schroeder, U. (2021). Gamified learning theory: The moderating role of learners' learning tendencies. *International Journal of Serious Games*, 8(3), 71–91. <https://doi.org/10.17083/ijsg.v8i3.438>
- Zhang, Z. (2023). Collaborative learning in social constructivism: Promoting English learning in a secondary classroom in China. *Journal of Education and Educational Research*, 3(3), 1–5.