

Enhancing Letter Name and Sound Recognition Skills Through Gamified Intervention Among Kindergarten Learners

Roses A. Remolazo

Barat Elementary School

rosesandayaremolazo14@gmail.com

Article Details:

Received: 19 April 2026

Revised: 27 April 2026

Accepted: 2 May 2026

Published: 12 May 2026

Corresponding Email:

rosesandayaremolazo14@gmail.com

Recommended Citation:

Remolazo, R. A. (2026). Enhancing letter name and sound recognition skills through gamified intervention among kindergarten learners. *The International Review of Multidisciplinary Research*, 1 (5), 408-415.

<https://doi.org/10.5281/zenodo.20142937>

Index Terms:

early literacy, gamified intervention, kindergarten learners, letter recognition, phonics skills

Abstract. Early literacy development remains a critical concern in kindergarten education, particularly in the acquisition of letter name and sound recognition skills essential for reading readiness. This study aimed to determine the effectiveness of a structured gamified intervention, the Letter Hunt Game, in improving these foundational literacy skills among kindergarten learners, particularly those with limited prior preschool exposure. A quantitative quasi-experimental one-group pretest-posttest design was employed involving 30 kindergarten learners from three public elementary schools. A researcher-made test was administered before and after a five-week intervention, and data were analyzed using mean, standard deviation, and paired-samples t-test. Findings revealed a substantial improvement in learners' performance, with mean scores increasing from 2.03 (low) in the pretest to 4.03 (high) in the posttest. The results showed a statistically significant difference ($t = -41.71, p < .05$), indicating strong learning gains and more consistent performance across participants. The findings suggest that the gamified intervention was highly effective in enhancing letter name and sound recognition skills. The use of structured, interactive, and engaging learning strategies can significantly improve early literacy outcomes. These results highlight the potential of gamified instruction as a practical approach in kindergarten classrooms, particularly for learners needing additional support in foundational reading skills.

Introduction

Early literacy development in kindergarten serves as a critical foundation for later academic success. One of the essential competencies identified in the Kindergarten Curriculum Guide (DepEd, 2016) is learners' ability to recognize letter names and produce corresponding sounds. Mastery of these skills is strongly associated with reading fluency, decoding ability, and comprehension in higher grade levels, as alphabet knowledge is considered a strong predictor of reading success (Ehri, 2005; Majorano et al., 2021). Without sufficient mastery of letter-sound correspondence, learners often experience difficulties transitioning from emergent reading to independent reading stages.

However, despite its importance, many kindergarten learners continue to struggle with letter name and sound recognition, particularly those with limited preschool exposure. Studies emphasize that early gaps in alphabet knowledge significantly affect later reading performance (Nguyen & Lee, 2025). Observations from selected public schools also revealed that learners often have difficulty distinguishing letters and producing correct sounds, indicating persistent gaps in foundational literacy skills. These challenges are further reflected in broader educational concerns, including international assessments such as PISA 2022, which report low reading proficiency among Filipino learners.

Recent local studies support these observations by showing that learners who lack structured early literacy experiences often struggle in phonics-based tasks (Samson, 2024; Quileste et al., 2025). These findings highlight the need for engaging, developmentally appropriate, and structured interventions that strengthen alphabet knowledge during the kindergarten stage.

To address these concerns, gamified interventions such as Letter Hunt Games have been introduced to make learning more interactive and engaging. Literature consistently shows that gamification enhances learner motivation, participation, and retention by incorporating elements such as challenge, rewards, feedback, and interaction (Deterding et al., 2011; Sailer & Homner, 2020). Empirical studies further confirm that gamified literacy instruction significantly improves letter recognition and phonics skills among young learners (Ramirez & Quinto, 2025; Ungau et al., 2024).

Local evidence also supports the effectiveness of play-based and technology-assisted literacy interventions. For instance, Mancao (2025) found that digital tools significantly improved alphabet recognition, while Gonzales (2022) and Santos (2023) reported improved engagement and sound recognition through structured alphabet games. However, Ortiz and Dizon (2021) caution that gamification must be intentionally designed and aligned with instructional objectives to achieve meaningful learning outcomes.

Despite these positive findings, gaps remain in the literature, particularly in the limited number of localized studies focusing on specific literacy sub-skills such as letter name and sound recognition, the lack of structured gamified interventions in rural contexts, and insufficient use of longitudinal or intervention-based designs that measure learning progress over time. These gaps suggest the need for more targeted, structured, and context-specific approaches to early literacy instruction.

This study is anchored on Kolb's Experiential Learning Theory, Constructivism, and Sociocultural Learning Theory. Kolb's theory emphasizes learning through concrete experience and reflection, which aligns with game-based activities that allow learners to actively engage in letter recognition tasks. Constructivism supports the idea that learners construct knowledge through meaningful interaction with their environment, while Sociocultural Theory highlights the importance of guided participation and social interaction in learning development. Together, these frameworks support the use of structured, interactive, and socially mediated gamified instruction.

Guided by these theoretical foundations and supported by related literature, this study examined the effectiveness of a structured gamified intervention, specifically the Letter Hunt Game, in improving kindergarten learners' letter name and sound recognition skills.

However, despite these positive findings, several limitations persist. Some studies indicate that unstructured play alone does not lead to significant learning gains unless it is systematically aligned with instructional objectives. Additionally, much of the existing research focuses on general reading ability rather than specific foundational skills such as letter name and sound recognition. There is also limited localized research examining structured gamified interventions in public school contexts, particularly among learners with limited preschool exposure.

This gap highlights the need for targeted and structured interventions that directly address foundational literacy skills. Addressing this need has important implications for classroom practice, curriculum design, and early literacy policy, particularly in improving reading readiness among at-risk learners.

Given ongoing concerns about low reading proficiency and the demand for learner-centered instructional approaches, this study is both timely and necessary. It contributes to the growing body of evidence on gamified learning by focusing on specific literacy sub-skills within a local educational context.

This study sought to answer the following research questions:

- (1) What is the level of learners' letter name and sound recognition skills before the intervention?
- (2) What is the level of learners' letter name and sound recognition skills after the intervention?
- (3) Is there a significant difference in learners' performance before and after the intervention?

Accordingly, the primary objective of this study was to examine the effectiveness of the Letter Hunt Game in improving letter name and sound recognition skills among kindergarten learners. Specifically, it aimed to measure learners' performance before and after the intervention and to test whether the observed differences were statistically significant.

Methodology

This study employed a quantitative quasi-experimental one-group pretest-posttest design to examine the effectiveness of a gamified intervention on learners' letter name and sound recognition skills. This design was selected because random assignment and the use of a control group were not feasible in the natural classroom setting. Instead, intact classes were utilized to preserve instructional continuity. In this design, participants were assessed before and after the intervention, allowing for direct comparison of performance changes. The pretest served as the baseline measure, while the posttest measured learning gains following the intervention. No blinding procedures were applied due to the classroom-based nature of the study; however, standardized procedures were followed to ensure consistency in administration.

The participants consisted of 30 kindergarten learners from three public elementary schools in Bambang I District, Division of Nueva Vizcaya. Each school contributed ten (10) learners, ensuring equal representation. Participants were selected based on the following inclusion criteria: (1) currently enrolled in kindergarten, and (2) identified as non-daycare finishers (i.e., no formal preschool or daycare experience). Learners with prior formal daycare exposure were excluded to maintain consistency in baseline literacy experience.

A purposive sampling technique with equal allocation was employed to ensure that only learners meeting the study criteria were included, while maintaining balanced representation across schools. Within each group, simple random selection was conducted to minimize selection bias. Ethical approval was obtained from the District Supervisor and school heads. Parents or guardians were informed of the study's purpose, and confidentiality of learners' data was strictly maintained.

The study was conducted in three public elementary schools offering kindergarten programs within Bambang I District. These schools were selected due to their comparable instructional environments, adherence to the national kindergarten curriculum, and similar learner demographics. Conducting the study across multiple but comparable settings enhanced the external validity and generalizability of the findings within similar public school contexts.

The intervention consisted of a five-week structured gamified activity known as the Letter Hunt Game. This approach was chosen to increase learner engagement through active participation and repeated exposure. During each session, letter cards were strategically placed around the classroom. Learners were tasked to locate the letters, identify their names, and produce corresponding sounds. The teacher facilitated the activity by providing guidance, immediate feedback, and reinforcement. The intervention incorporated key gamification elements such as movement, challenge, repetition, and feedback, which have been shown to enhance motivation and learning retention. A structured format was maintained throughout the five weeks to ensure consistency and alignment with instructional objectives.

The study utilized a researcher-developed test consisting of five (5) items designed to measure learners' letter name and letter sound recognition skills. The same instrument was administered as both pretest and posttest to ensure comparability. Content validity was established through expert evaluation by three validators: a kindergarten teacher, a master teacher, and a school head. They assessed the instrument for clarity, appropriateness, and alignment with the Kindergarten Curriculum Guide. Revisions were made based on their recommendations prior to administration. Given the small number of items (five), internal consistency reliability (e.g., Cronbach's alpha) was not computed, as such measures are less stable with very short tests. Instead, reliability was supported through consistent administration procedures and alignment with validated learning competencies.

Permission to conduct the study was secured from the appropriate educational authorities and school administrators. Parents were informed, and ethical standards were observed throughout the study. The data collection followed three phases: Pretest Administration – The validated instrument was administered to establish baseline performance under standardized classroom conditions. Intervention Implementation – The Letter Hunt Game was conducted over five weeks during regular class sessions, with consistent procedures and guided facilitation. Posttest Administration – The same test was administered after the intervention under conditions similar to the pretest to ensure fairness and comparability. All responses were recorded, tabulated, and prepared for statistical analysis.

Data were analyzed using both descriptive and inferential statistics.

The following statistical measures were applied: Mean (M) – to determine the average performance of learners; Standard Deviation (SD) – to assess the variability of scores; and Paired-Samples t-test – to determine whether there was a statistically significant difference between pretest and posttest scores. Assumptions for the paired t-test, including normality of difference scores, were considered prior to analysis. The level of significance was set at $p < 0.05$.

Results and Discussion

Primary Outcome: Letter Name and Sound Recognition Before the Intervention

The baseline assessment showed that learners had low proficiency in letter name and sound recognition. The mean pretest score was 2.03 ± 0.68 , indicating overall low performance. Most learners were distributed within the average and low categories, with no participants reaching the high or very high levels. These results establish that learners entered the study with limited mastery of the targeted literacy skills. The clustering of scores within a narrow range suggests a relatively uniform level of difficulty across participants, particularly in recognizing less frequently encountered letters. These findings are consistent with prior research indicating that early learners often demonstrate weak alphabet knowledge without structured instruction. Studies have shown that limited exposure and lack of guided practice contribute to poor phonics development. Similarly, local research has documented that kindergarten learners initially struggle with letter-

sound correspondence when instruction is not interactive or repetitive. From a theoretical perspective, the low baseline performance aligns with experiential and constructivist views of learning, which emphasize that knowledge develops through active engagement. The absence of structured, hands-on experiences prior to the intervention may explain the learners' initial difficulty.

Primary Outcome: Letter Name and Sound Recognition After the Intervention

Post-intervention results showed a substantial improvement in learners' performance. The mean posttest score increased to 4.03 ± 0.58 , indicating a high level of proficiency. Most learners were classified under high and very high levels, while no participants remained in the low or very low categories. These results suggest that the intervention led to strong and consistent learning gains across the group. The reduced variability in scores indicates that improvement was not limited to a subset of learners but was experienced broadly. This pattern supports previous findings that gamified and interactive instructional strategies enhance literacy development. Prior studies have demonstrated that structured play-based and game-oriented activities improve engagement, retention, and phonics skills. The present findings extend this evidence by showing that even less familiar letters can be effectively learned through structured gamified approaches. These results also align with theoretical frameworks emphasizing active learning. Through repeated interaction, guided feedback, and experiential engagement, learners were able to construct and reinforce their understanding of letter-sound relationships.

Primary Outcome: Difference Between Pretest and Posttest Scores

A paired-samples t-test revealed a statistically significant difference between pretest and posttest scores ($t = -41.71, p < 0.05$), indicating a substantial improvement in learners' performance following the intervention. The increase in mean scores from 2.03 to 4.03 reflects a strong positive effect of the gamified strategy. These results confirm that the intervention had a meaningful and measurable impact on learners' literacy skills. The consistent improvement across participants suggests that the structured nature of the intervention contributed to both effectiveness and equity in learning outcomes. This finding is consistent with meta-analytic and empirical studies showing that gamification improves academic performance through increased motivation and engagement. Compared to studies that reported moderate gains, the magnitude of improvement observed in this study may be attributed to the focused skill target, structured implementation, and repeated exposure within a short intervention period.

While the findings demonstrate strong positive effects, certain methodological considerations should be acknowledged. The use of a one-group pretest–posttest design limits causal inference, as the absence of a control group makes it difficult to rule out external influences. Additionally, the relatively small sample size and localized setting may limit generalizability to broader populations.

Despite these constraints, the results provide important contributions to both theory and practice. The findings support experiential and sociocultural learning theories by demonstrating that active, guided, and socially interactive learning environments enhance skill acquisition. The results also reinforce the role of structured gamification as an effective instructional approach in early literacy education.

From a practical standpoint, these findings suggest that integrating structured, game-based strategies into kindergarten instruction can significantly improve foundational literacy skills. Educators may adopt similar interventions to address learning gaps, particularly among learners with limited prior exposure to early literacy experiences. At the policy level, the results support the inclusion of gamified approaches in early childhood curriculum design and teacher training programs.

Future research may build on these findings by employing experimental designs with control groups to strengthen causal conclusions. Longitudinal studies could examine whether improvements in letter name and sound recognition translate into sustained reading proficiency over time. Additionally, further research may explore the effectiveness of gamified interventions across different literacy domains, learner profiles, and instructional contexts.

Overall, the results indicate that learners initially demonstrated low proficiency but achieved significant improvement after exposure to the structured gamified intervention. The consistent gains, supported by statistical evidence, highlight the effectiveness of the Letter Hunt Game in enhancing early literacy skills. These findings contribute to the growing body of evidence supporting gamified instruction and underscore the importance of engaging, structured, and learner-centered approaches in early childhood education.

Conclusion and Recommendations

This study examined the effectiveness of a structured gamified intervention in improving kindergarten learners' letter name and sound recognition skills. The findings indicate that learners initially demonstrated low proficiency in these

foundational literacy skills but showed substantial improvement following the implementation of the Letter Hunt Game. The results confirmed that there was a significant difference between pretest and posttest performance, indicating that the intervention effectively enhanced learners' ability to recognize letter names and produce corresponding sounds.

These findings directly address the research questions by demonstrating that learners' literacy skills improved from a low to a high level after exposure to the gamified intervention, and that the observed improvement was statistically significant. The results provide empirical support for the effectiveness of structured, game-based instructional strategies in early literacy development.

The findings contribute to existing knowledge by reinforcing key principles of experiential learning, constructivism, and sociocultural learning theory. The observed improvement supports the view that learners acquire knowledge more effectively through active engagement, guided interaction, and repeated practice.

This study advances the field by providing empirical evidence that structured gamification—rather than unstructured play—can serve as a meaningful mechanism for developing specific foundational literacy skills. It highlights how integrating game elements with clear instructional objectives can strengthen the connection between theory and classroom practice, particularly in early childhood education.

The results have important implications for educators, school administrators, and curriculum developers. For teachers, the findings suggest that incorporating structured gamified strategies into daily instruction can significantly enhance learner engagement and improve literacy outcomes. Activities similar to the Letter Hunt Game may be used to support learners who struggle with foundational skills, particularly those with limited preschool exposure.

For school administrators and policymakers, the study supports the integration of gamified instructional approaches into early literacy programs. This may include providing professional development for teachers, developing instructional materials aligned with gamification principles, and embedding interactive strategies within the kindergarten curriculum. Such initiatives can help address early literacy gaps and improve overall reading readiness among young learners.

While the study demonstrated positive outcomes, several limitations should be acknowledged. The use of a one-group pretest–posttest design without a control group limits the ability to attribute changes solely to the intervention. Additionally, the relatively small sample size and focus on a specific geographic area may restrict the generalizability of the findings.

These limitations, however, present opportunities for refinement in future research. Expanding the sample size, including diverse educational settings, and incorporating comparison groups can strengthen the validity and applicability of future studies.

Future research may build on these findings by employing experimental designs with control groups to establish stronger causal relationships. A possible hypothesis for further investigation is: learners exposed to structured gamified literacy instruction will demonstrate significantly higher retention and reading readiness compared to those receiving traditional instruction.

Longitudinal studies may also be conducted to examine whether improvements in letter name and sound recognition are sustained over time and translate into higher reading proficiency in later grade levels. Additionally, future studies may explore the effectiveness of gamified interventions across other literacy domains, such as word recognition, spelling, and reading comprehension.

Further research may also investigate variations in implementation, such as the use of digital gamification tools, differentiated instruction, or culturally responsive game-based strategies, to determine their impact on diverse learner populations.

Acknowledgement

Due to the invaluable assistance and contributions of the researcher's mentors, family, and friends throughout his graduate studies, this study was materialized. The researcher would like to express his profound gratitude to the following:

WILFREDO A. DUMALE JR., PhD, president, for his commitment and dedication in strengthening academic programs for national growth and betterment of the institution;

ELMA P. APOSTOL, EdD, vice president for academic affairs, for her visionary leadership and administrative support to the university president in carrying out all educational policies, implementing all programs and projects of the institution, and supervising all instructional services in support of the quality delivery of education of the college departments;

GERALD L. PEREZ, campus administrator, for his unwavering support and guidance to the College of Teacher Education's programs and the university's aim for high-quality education;

The oral examination committee, JENIFER RAYMOND R. TALLUNGAN, PhD, the dean of College of Teacher Education and chair of the oral examination committee, WILHELMINA C. BULLECER, PhD, program chair of MAEd/MAT and a member of the oral examination committee, EVANGELINE H. CASTRO, PhD, a member oral examination committee, DOLORES C. ANDAG, MAEd, school head of Barat Elementary School and external panel oral examination committee, who manifested their knowledge and expertise that contributed very much to the accomplishment and refinement of this study;

ARNEL A. AGUSTIN, EdD, the researcher's adviser, for his invaluable time and tireless effort in reviewing drafts, providing expert methodological guidance on statistical analysis and research design, offering constructive feedback during revisions, and instilling confidence through his desire, passion, and unwavering trust in my ability to succeed;

ORLANDO E. MANUEL, PhD, CESO V, schools division superintendent of the Department of Education, division of Nueva Vizcaya, for allowing the researcher to conduct and administering the questionnaire to the target respondent;

MA. OLIVIA M. BRAZIL, principal III, district in-charge of Bambang I District, for her inspiring leadership, trust, kindness and support in the conduct of this research;

JOEY A. ESTEVES, principal II of Bambang West Elementary School, Buag Bambang Nueva Vizcaya for his understanding, encouragement and moral Support to the researcher,

CATHERINE C. TACTAY, EdD, principal II of Salinas Elementary School, Salinas Bambang Nueva Vizcaya for her guidance and sharing knowledge and wisdom

LUCENA A. REMOLAZO, teacher III of Bambang Central School Integrated SPED Center, the Instructional Expert of Bambang I District, for her guidance and sharing her knowledge and expertise in the development of the instructional material.

KINDERGARTEN LEARNERS, as respondents of this study, for their enthusiasm and participation which significantly helped fulfill this research;

KINDERGARTEN TEACHERS of Bambang I District who served as respondents of the study , for sharing time and experts, for their valuable contributions that made this study possible., the respondents, for their enthusiasm and participation, which were essential to this research

FRIENDS AND RELATIVES, for their support, care and prayers that helped the researcher to be confident and motivated to pursue her graduate study;

JOSEPH, researcher's husband, who is always supportive and understanding; JHOROSS MARK, MATT JHARED and JEREMIAH, researcher's children, who are her precious gems and lifetime inspiration; and AVELINA AND VILLAMOR ANDAYA, researcher's parents and her SIBLINGS, and IN-LAWS for their unending love, support, and guidance.

The FAMILY of the researcher, who gave unwavering strength, boundless inspiration, constant motivation, wise guidance, and endless love, which sustained the researcher through every challenge and fueled persistence in pursuing his goals and dreams.

And above all, to the ALMIGHTY GOD, for bestowing the gifts of wisdom, perseverance, and resilience that carried this work to completion.

Funding

This research received no external funding from any public, commercial, or not-for-profit funding agency, and no organization provided financial support for the conduct of the study, authorship, or publication of this article.

Competing Interests Statement

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this article.

Data Availability Statement

Data sharing is not applicable to this article as no new data were created or analyzed in this study; all data used were obtained from previously published sources as cited in the reference list.

References

- Abdon, M. M., & Barrios, A. (2022). Phonological awareness intervention in mother tongue among Filipino kindergarten learners. *Indonesian Journal of Applied Linguistics*, 12(2), 399-411. <https://doi.org/10.17509/ijal.v12i2.45802>
- Abellana, A. P. (2025). Readiness of graduate school students on the implementation of differentiated instruction. *International Journal of Research in Innovative Approaches*, 10(10), 6-42. <https://rsisinternational.org/journals/ijrias/>
- Alghamdi, A. (2024). The application of interactive games in enhancing kindergarteners' letter recognition. *Cognizance Journal*. <https://cognizancejournal.com/vol4issue12/V4I1259.pdf>
- All About Learning Press. (2025). Go on a letter hunt!. <https://www.allaboutlearningpress.com/letter-hunt>
- Brown, T., & Lee, K. (2019). The effectiveness of play-based activities combined with phonics instruction for improving phonemic awareness. *Journal of Early Literacy*, 50(2), 142-158.
- Caballero, L. E., Ferrer, M. M., & Tiria, R. A. (2022). The role of gamification in the academic performance of students in language subjects. *International Journal of Scientific Research in Multidisciplinary Studies*, 8(3), 1-4.
- Caballo, J. T. T., Castor, H. A., Lazatin, H. M., & Tabafa, L. J. (2025). Enhancing kindergarten letter recognition through play-based learning. *International Journal of Innovative Science and Research Technology*. <https://eprint.ijisrt.org/id/eprint/1384/>
- Cabug, V. M. E., & Hatague, K. V. (2023). Play based learning: Intervention in improving letter sound recognition of kindergarten learners. *Cognizance Journal of Multidisciplinary Studies*, 3(8), 1074-1086. <https://cognizancejournal.com/vol3issue8/V3I832.pdf>
- Campbell, L. (2023). Letter recognition: Activities for mastering letter names and letter sounds. *Campbell Creates Readers*. <https://www.campbellcreatesreaders.com>
- Carr, R. C., Bratsch-Hines, M., Varghese, C., & Vernon-Feagans, L. (2020). Latent class growth trajectories of letter name knowledge during pre-kindergarten and kindergarten. *Journal of Applied Developmental Psychology*, 69, Article 101141. <https://doi.org/10.1016/j.appdev.2020.101141>
- Chin, A., Meridor, N., Sincero, J., Sombise, M. & Siat, G. (2024). The Application of Interactive Games in Enhancing Kindergarten's Level of Letter Recognition. *Cognizance Journal of Multidisciplinary Studies*, Vol.4, Issue.12, pg. 634-647. DOI: 10.47760/cognizance.2024.v04i12.058
- Colendra, R. C., & Carada, I. G. (2023). Gamification tools in teaching Filipino subject and reading comprehension. *EPR International Journal of Multidisciplinary Research*, 9(8).
- Cooper, M. (2017). Basic Literacy Skills Learned in Kindergarten. <https://classroom.synonym.com/basic-literary-skills-learnedkindergarten-3538.html>
- Cornito, C. M. (2023). The effectiveness of contextualized digital game-based learning resource in Improving kindergarten pupil's alphabet knowledge level. *International Journal on Studies in Education (IJonSE)*, 5(2), 130-140. <https://doi.org/10.46328/ijonse.103>
- Dag, C. (2020). Children's Only Profession: Playing with Toys. *Northern Clinics of Istanbul*. <https://doi.org/10.14744>
- DeStefano, H. H. (2019). Helping kindergartners focus on letters and sounds. *Young Children*. National Association for the Education of Young Children. <https://www.naeyc.org/resources/pubs/yc/nov2019/>
- Dichev, C., Dicheva, D., & Irwin, K. (2020). Gamifying education: What is known, what is believed and what remains uncertain: A critical review. *International Journal of Educational Technology in Higher Education*, 17(1), 1-36. <https://doi.org/10.1186/s41239-020-00231-0>
- Escarlos, J. M. (2025). Enhancing kindergarten letter recognition through play-based learning. *International Journal of Innovative Science and Research Technology*. <https://www.ijisrt.com/enhancing-kindergarten-letter-recognition-through-playbased-learning>
- Fletcher, A., & Warren, L. (2021). Play-based learning and structured phonemic awareness programs: A complementary approach to early literacy development. *International Journal of Educational Research*, 72, 98-110.
- Gaonkar, S., Khan, D., Manisha, & Singh, A. (2022). Impact of gamification on learning and development. *Journal of Advances in Education and Philosophy*, 6(2), 63-70.

- Giugni, C. C. (2015). Pre kindergarten students increased letter recognition through tablet computer use [Master's thesis, Dominican University]. ScholarWorks. <https://scholar.dominican.edu/cgi/viewcontent.cgi?>
- Gordon, S. P. (2022). Integrating the experiential learning cycle with educational supervision. *Journal of Educational Supervision*, 5(3), 1-34. <https://doi.org/10.31045/jes.5.3.1>
- Harris, M., Smith, J., & Walker, R. (2022). Multisensory techniques and playful learning environments: Improving letter recognition and letter sounding in early literacy education. *Early Childhood Education Review*, 38(1), 122-135.
- Haruna, H., Okoye, K., Zainuddin, Z., Hu, X., Chu, S., & Hosseini, S. (2021). Gamifying sexual education for adolescents in a low-tech setting: A quasi-experimental design study. *JMIR Serious Games*, 9(4), e19614. <https://doi.org/10.2196/19614>

Appendices

No appendices are attached to this study.