ISSN: 3116-3475
International Journal
of Education, Research, and Innovation Perspectives
Volume 2 Issue 5 (May 2026)

Effectiveness of Digital Play on the Vocabulary Acquisition of Primary 1 Students in La-Orutis Demonstration School, Thailand: Basis for Technology Plan

Claribelle Depra Magno[1*] and Woodward Uy Villalino, Jr.[1,2]
[1]*Pangasinan State University - Open University System Lingayen, Pangasinan*
claribellemagno@gmail.com,[2]*woodyuy143@gmail.com*

Date Submitted:
March 15, 2026

Date Accepted:
April 27, 2026

Date Published:
May 19, 2026

DOI:
10.5281/zenodo.20301066

ABSTRACT

This study determined the effectiveness of integrating digital play in the teaching process on the vocabulary acquisition of Primary 1 students at La-Orutis Demonstration School in Thailand. Anchored on digital game-based learning, multimedia learning, and play-based language instruction, the study used a quasi-experimental non-equivalent control group design involving 51 Primary 1 learners divided into an experimental group (n = 26) and a control group (n = 25). The experimental group received vocabulary instruction using Blooket and Kahootopia/Kahoot, while the control group received traditional instruction. Data were gathered using a researcher-developed and validated phonics-based vocabulary achievement test and were analyzed using frequency, percentage, mean, standard deviation, paired-samples t-test, independent-samples t-test, Pearson correlation, Cohen's d, eta, and eta-square. Findings showed that both groups had a Very Good pretest vocabulary level, but the experimental group demonstrated a statistically significant improvement from pretest (M = 7.46, SD = 0.811) to posttest (M = 8.69, SD = 0.618), t (25) = -7.698, p < .001, d = 1.51. The control group showed a smaller, non-significant gain from pretest (M = 7.28, SD = 0.737) to posttest (M = 7.60, SD = 0.816), p = .088. Posttest comparison also favored the experimental group over the control group, t(24) = -5.939, p < .001, d = 1.188. Age, sex, and number of siblings were not significantly related to vocabulary acquisition; however, dominant language spoken was significantly associated with posttest performance. The study concludes that digital play is an effective, engaging, and inclusive approach for strengthening early vocabulary acquisition, provided that language-background differences are addressed through structured support and technology planning.

Keywords: *digital play, vocabulary acquisition, game-based learning, Primary 1 students, educational technology, technology plan*

INTRODUCTION

Early literacy development is increasingly shaped by the convergence of language learning and educational technology. UNESCO (2023) emphasizes that technology integration in education should promote both quality and equity, particularly when digital tools are used to enrich learning rather than replace sound pedagogy. Vocabulary acquisition is a foundational component of early literacy because it supports reading comprehension, oral language development, and later academic performance during the primary years (Neumann, 2020; Sun et al., 2023). For young English-as-a-foreign-language learners, vocabulary development is often challenging because learners must connect unfamiliar words with sound, meaning, and use. Digital play has

ISSN: 3116-3475
International Journal
of Education, Research, and Innovation Perspectives
Volume 2 Issue 5 (May 2026)

emerged as a promising instructional strategy because it combines interaction, repetition, feedback, visuals, and motivation in ways that are developmentally appropriate for children (Kervin et al., 2022; Zosh et al., 2022). Platforms such as Blooket, Kahoot, and Kahootopia allow teachers to transform vocabulary practice into structured game-based learning experiences that encourage participation and immediate recall.

In Thailand, national educational reforms and post-pandemic digital adoption have increased the availability of tablets, online learning platforms, and classroom-based educational applications (Krongboonying & Suksakulchai, 2021; Phothongsunan, 2023). However, despite the international evidence on digital game-based learning, there remains a need for localized classroom evidence on how digital play affects early vocabulary acquisition among Primary 1 learners. Many studies focus on older learners or general language outcomes, while fewer examine early phonics-based vocabulary learning in real classroom settings.

This study addressed this gap by determining the effectiveness of digital play on the vocabulary acquisition of Primary 1 students at La-Orutis Demonstration School in Thailand. Specifically, it compared pretest and posttest vocabulary performance between an experimental group taught through Blooket and Kahootopia/Kahoot and a control group taught through the traditional method. The findings served as the basis for a technology plan intended to support sustainable and inclusive digital play integration in vocabulary instruction.

Conceptual Framework

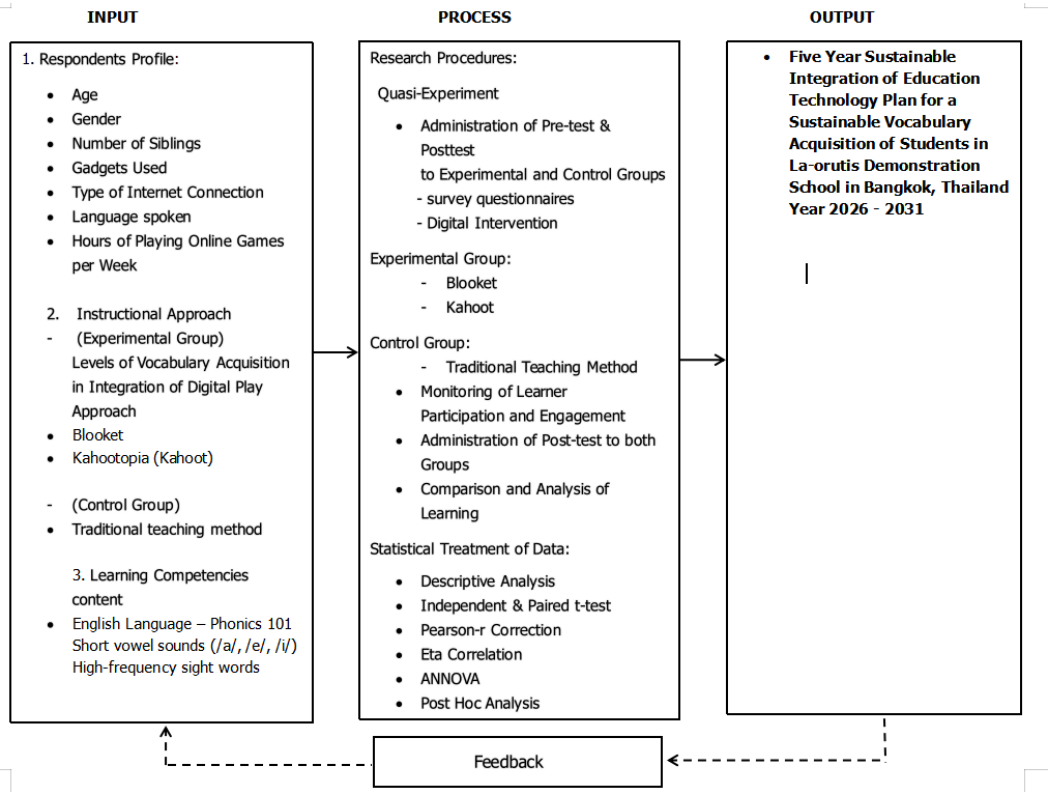

Figure 1. *Research Diagram of the Effectiveness of Digital Play on Vocabulary Acquisition of Primary 1 Students*

The framework highlights that digital play should not be treated as occasional entertainment but as a structured literacy strategy. It requires sustained infrastructure, teacher training, learning-resource development, parental engagement, and language-support mechanisms. This is consistent with literature emphasizing that technology-based learning becomes effective only when digital tools, pedagogy, learner needs, and institutional support are properly aligned (Chai et al., 2022; OECD, 2021; UNESCO, 2023).

ISSN: 3116-3475
International Journal
of Education, Research, and Innovation Perspectives
Volume 2 Issue 5 (May 2026)

Literature Review

Digital Play and Vocabulary Acquisition

Digital play refers to structured learning activities that use digital tools, game elements, and interactive media to support learning. Studies on gamification and game-based learning indicate that game elements such as points, feedback, progression, and challenges can increase motivation, engagement, and persistence in learning tasks (Deterding et al., 2020; Sailer & Homner, 2020; Zainuddin et al., 2020). In vocabulary instruction, these features provide repeated exposure to target words, which is important for retention and automatic word recognition (Nation, 2022; Ehri, 2020). Research on digital game-based language learning shows that interactive vocabulary games can enhance recall, learner engagement, and confidence by combining visual, auditory, and kinesthetic elements (Chen et al., 2023; Vnucko, 2023). In early primary classrooms, these benefits are particularly relevant because young learners often respond well to play-centered and multimodal activities. Digital flashcards, quizzes, screen-based challenges, and collaborative games provide an engaging alternative to paper-based repetition while still maintaining instructional focus.

Theoretical Anchors of Digital Play-Based Learning

The study is supported by several complementary learning theories. Multimedia Learning Theory explains that children learn more effectively when verbal and visual information are meaningfully combined, provided that cognitive overload is minimized (Mayer, 2020). Cognitive Load Theory similarly suggests that learning materials should be designed to reduce unnecessary mental burden and guide attention toward essential content (Sweller, 1988). In the context of digital play, images, sounds, and interactive cues can help young learners associate words with meanings more efficiently.

Levels of Processing Theory also supports the use of digital play because learners are more likely to retain vocabulary when they process words deeply through recognition, feedback, repeated practice, and meaningful application (Craik & Lockhart, 1972). Social constructivist perspectives emphasize interaction, scaffolding, and guided participation in learning (Vygotsky, 1978; Shabani et al., 2020). Digital games can therefore function not only as tools for individual practice but also as social spaces where learners collaborate, receive teacher guidance, and construct meaning together.

Self-Determination Theory further explains how digital play can promote intrinsic motivation when learners experience autonomy, competence, and relatedness (Ryan & Deci, 2020). When learners feel successful in answering vocabulary items and receive immediate feedback, their sense of competence increases. These motivational conditions are especially important for young EFL learners who may feel anxiety or hesitation in using English.

Technology Integration in Thai Primary Education

Thailand has increasingly adopted technology-enhanced learning in primary education, particularly through digital platforms, tablets, and classroom applications (Krongboonying & Suksakulchai, 2021; Phothongsunan, 2023). However, technology integration must be pedagogically intentional. The mere availability of iPads and internet connection does not guarantee improved learning; rather, teachers must align tools with competencies, learner readiness, classroom routines, and language backgrounds.

The literature also shows that language exposure at home can influence vocabulary development among Thai EFL learners. Matwangsaeng and Sukying (2024) emphasize that vocabulary knowledge among Thai primary school learners is shaped by exposure, practice, and language environment. This is important in interpreting the present study because learners who speak both English and Thai, or who have greater English exposure, may respond differently to digital play-based vocabulary activities.

ISSN: 3116-3475
International Journal
of Education, Research, and Innovation Perspectives
Volume 2 Issue 5 (May 2026)

METHODS

Research Design

The study employed a quasi-experimental non-equivalent control group design. Two intact Primary 1 sections were assigned as the experimental and control groups. This design was appropriate because random assignment of individual young learners was not feasible within the school setting. Pretest and posttest assessments were administered to examine within-group gains and between-group differences in vocabulary acquisition.

Research Locale

The study was conducted at La-Orutis Demonstration School in Thailand during the school year covered by the manuscript. The locale was appropriate because it had existing access to iPads, broadband Wi-Fi, and classroom-based digital learning tools that could support digital play implementation.

Participants and Sampling Technique

The participants were 51 Primary 1 learners from two intact sections. The experimental group consisted of 26 learners, while the control group consisted of 25 learners. Learners were included if they were officially enrolled, had regular class attendance, had parental or guardian consent, and provided assent. The assignment of intact sections to experimental and control conditions was done using a simple random method.

Table 1. *Distribution of the Respondents*

Group	N	%
Experimental	26	50.98
Control	25	49.02
Total	51	100.00

Research Instrument

The primary instrument was a researcher-developed Phonics Achievement Test focused on short vowel sounds /a/, /e/, and /i/. The test consisted of nine picture-supported CVC-word items designed for Primary 1 learners. Each correct answer was awarded one point, with a maximum possible score of nine. The instrument was content-validated by vocabulary teachers, a school head supervising vocabulary instruction, and a faculty member specializing in vocabulary education. It was pilot-tested among Primary 1 learners from a neighboring school, yielding a Cronbach's alpha coefficient of 0.891, which indicated acceptable reliability.

Data Gathering Procedure

After obtaining school approval, parental consent, and learner assent, the researcher administered the pretest to both groups under standardized classroom conditions. The experimental group then received a six-week vocabulary intervention using Blooket and Kahootopia/Kahoot, while the control group received traditional instruction. After the intervention, both groups took a parallel posttest. Attendance records, engagement logs, and teacher observations were maintained during implementation, and all data were encoded for statistical analysis.

Data Analysis

Frequency and percentage were used to describe learner profiles. Mean and standard deviation described vocabulary acquisition levels. Paired-samples t-tests determined pretest-posttest differences within groups, while independent-samples t-tests compared posttest performance between the experimental and control groups. Pearson correlation was used to test relationships between posttest vocabulary acquisition and selected profile variables. Cohen's d, eta, and eta-square were used to interpret effect size and strength of relationships.

Ethical Consideration

The study observed ethical procedures by securing approval from the school head, obtaining informed consent from parents or guardians, and securing assent from learners. Participation was voluntary, and respondents

ISSN: 3116-3475
International Journal
of Education, Research, and Innovation Perspectives
Volume 2 Issue 5 (May 2026)

were informed of the study's purpose, procedures, benefits, and right to withdraw. Learner identities were treated confidentially, and data were used only for academic research purposes.

RESULTS AND DISCUSSION

Profile of the Respondents

The participants were generally comparable in demographic and technological characteristics. The sample included 27 male learners (52.9%) and 24 female learners (47.1%). Most learners were seven years old (54.9%), followed by six years old (35.3%). All learners used iPads and broadband Wi-Fi, and all reported 30 minutes of online game-based digital play per week. In terms of dominant language spoken, 43.1% used English, 17.6% used Thai, and 39.2% used both English and Thai. These results suggest that the learners were developmentally appropriate for Primary 1 and had sufficient technological access for classroom-based digital play.

Table 2. *Demographic and Technology Profile of Primary 1 Students*

Variable	Categories	Frequency	Percent (%)
Sex	Male	27	52.9
Sex	Female	24	47.1
Age	6 Years Old	18	35.3
Age	7 Years Old	28	54.9
Age	8 Years Old	3	5.9
Age	9 Years Old	2	3.9
Number of Siblings	2	25	49.0
Number of Siblings	3	22	43.1
Number of Siblings	more	4	7.8
Gadgets Used	Tablet	0	0
Gadgets Used	IPad	51	100.0
Gadgets Used	Laptop	0	0
Type of Internet Connection	Hotspot	0	0
Type of Internet Connection	Broadband Wifi	51	100.0
Type of Internet Connection	Mobile Data	0	0
Dominant Language Spoken	English	22	43.1
Dominant Language Spoken	Thai Languages	9	17.6
Dominant Language Spoken	Both English and Thai Language	20	39.2
Hours of Digital Play Online Games per Week	30 minutes	51	100.0
Hours of Digital Play Online Games per Week	45 minutes	0	0
Hours of Digital Play Online Games per Week	50 minutes	0	0

Vocabulary Acquisition Before the Integration of Digital Play

Before the intervention, the overall vocabulary acquisition of learners was already within the Very Good level. None of the learners scored within the Poor or Fair categories. Forty-four learners (86.3%) scored within the Very Good range, six learners (11.8%) were in the good range, and one learner (2.0%) was in the Excellent range. This baseline indicates that both groups entered the intervention with an adequate level of vocabulary readiness.

Table 3. *Level of Vocabulary Acquisition Before the Integration of Digital Play*

Score Ranges	Frequency	%
0 – 2 (Poor)	0	0
3 – 4 (Fair)	0	0

ISSN: 3116-3475
International Journal
of Education, Research, and Innovation Perspectives
Volume 2 Issue 5 (May 2026)

5 – 6 (Good)	6	11.8
7 – 8 (Very Good)	44	86.3
9 – 10 (Excellent)	1	2.0

Vocabulary Acquisition After the Integration of Digital Play

After the intervention, the distribution of scores improved. Twenty-one learners (41.2%) reached the Excellent level, while 28 learners (54.9%) remained in the Very Good level and two learners (3.9%) were in the good level. The increase in the number of learners in the Excellent category suggests that the digital play intervention supported greater vocabulary mastery, especially among learners exposed to repeated, interactive, and multimodal vocabulary practice.

Table 4. *Level of Vocabulary Acquisition After the Integration of Digital Play*

Score Ranges	Frequency	%
0 – 2 (Poor)	0	0
3 – 4 (Fair)	0	0
5 – 6 (Good)	2	3.9
7 – 8 (Very Good)	28	54.9
9 – 10 (Excellent)	21	41.2

Pretest and Posttest Difference in the Experimental Group

The experimental group showed a statistically significant improvement in vocabulary acquisition. The mean score increased from 7.46 (SD = 0.811) in the pretest to 8.69 (SD = 0.618) in the posttest. The paired-samples t-test result, $t(25) = -7.698$, $p < .001$, confirmed that the gain was significant. Cohen's d of 1.51 indicated a large effect size, demonstrating that digital play had a strong instructional impact on vocabulary acquisition. The decline in the standard deviation also suggests that learners became more consistent in performance after the intervention.

Table 5. *Difference Between Pretest and Posttest Vocabulary Scores of the Experimental Group*

	Compared Categories	N	Mean	SD	Mean Diff.	t-value	df	Sig.	Cohen's d
Vocabulary Acquisition Scores	Pretest	26	7.46	.811	-1.231	-7.698**	25	.000	1.51
Vocabulary Acquisition Scores	Post-Test	26	8.69	.618	-1.231	-7.698**	25	.000	1.51

Note. **Significant at the 0.01 level.

Pretest and Posttest Difference in the Control Group

The control group showed a smaller increase from pretest (M = 7.28, SD = 0.737) to posttest (M = 7.60, SD = 0.816), but the difference was not statistically significant, $t(24) = -1.778$, $p = .088$. This indicates that traditional instruction helped maintain learning but produced less measurable improvement than the digital play-based approach. The result supports the claim that play-based digital platforms can strengthen vocabulary learning beyond conventional classroom methods when they are aligned with instructional objectives.

Table 6. *Difference Between Pretest and Posttest Vocabulary Scores of the Control Group*

	Compared Categories	N	Mean	SD	Mean Diff.	t-value	df	Sig.
Vocabulary Acquisition Scores	Pretest	25	7.28	.737	-.320	-1.778	24	.088

ISSN: 3116-3475
International Journal
of Education, Research, and Innovation Perspectives
Volume 2 Issue 5 (May 2026)

Vocabulary Acquisition Scores	Post-Test	25	7.60	.816	-.320	-1.778	24	.088

Posttest Difference Between the Control and Experimental Groups

The posttest comparison showed a significant advantage for the experimental group. The control group obtained a posttest mean of 7.60 (SD = 0.816), while the experimental group obtained a mean of 8.68 (SD = 0.627). The independent-samples t-test showed a significant difference, $t(24) = -5.939$, $p < .001$, with a large effect size (Cohen's $d = 1.188$). This result confirms that learners exposed to digital play performed better in vocabulary acquisition than those taught through the traditional method.

Table 7. *Posttest Vocabulary Scores Between the Control and Experimental Groups*

	Compared Categories	N	Mean	SD	Mean Diff.	t-value	df	Sig.	Cohen's d
Post Test Scores	Control Group	25	7.60	.816	-1.08	-5.939*	24	.000	1.188
Post Test Scores	Experimental Group	26	8.68	.627	-1.08	-5.939*	24	.000	1.188

Note. *Significant at the 0.05 level

Relationship Between Learner Profile and Vocabulary Acquisition

Pearson correlation results showed that sex, age, and number of siblings were not significantly related to posttest vocabulary acquisition. However, dominant language spoken had a significant negative correlation with posttest performance ($r = -.307$, $p = .028$). This means that language background was a meaningful factor in vocabulary learning outcomes. The eta analysis further showed that sex had only a very weak or small effect (eta square = .0346), while dominant language spoken had a strong or large effect (eta = .627; eta square = .393), suggesting that about 39.3% of the variance in vocabulary performance was associated with home or dominant language exposure. These results indicate that digital play is broadly inclusive across sex and age, but additional support is needed for learners with less exposure to the target language.

Table 8. *Relationship Between Profile Variables and Posttest Vocabulary Acquisition*

Profile of Students	Post Test	Post Test
Profile of Students	Correlation Coefficicent ()	Sig.
Sex	.186	.191
Age	.022	.878
Number of Siblings	-.198	.163
Dominant Language Spoken	-.307*	.028

Table 9. *Strength of Relationship Between Selected Profile Variables and Vocabulary Acquisition*

Vocabulary Acquisition	Profile of Students	Eta ()	Eta Square (2)	Strength of Relationship
Scores	Sex	.186	.0346	Very Weak / Small Effect
Scores	Dominant Language Spoken	.627	.393	Strong / Large Effect

Instructional Framework for Sustainable Digital Play Integration

The proposed instructional framework follows an input-process-output model. Inputs include learner profile, instructional approach, available technologies, and learning competencies. The process includes administration of pretest and posttest, digital intervention through Blooket and Kahootopia/Kahoot, traditional instruction for the control group, monitoring of participation and engagement, and statistical analysis. The output is a five-year sustainable education technology integration plan for vocabulary acquisition at La-Orutis Demonstration School from 2026 to 2031.

CONCLUSION

The study concludes that digital play is an effective instructional approach for improving vocabulary acquisition among Primary 1 learners at La-Orutis Demonstration School in Thailand. While both groups began with Very Good vocabulary levels, the experimental group exposed to Blooket and Kahootopia/Kahoot demonstrated a statistically significant improvement and a large effect size, whereas the control group showed only a small and non-significant gain.

The findings further show that digital play supports inclusive vocabulary learning because sex, age, and number of siblings were not significantly related to vocabulary outcomes. However, dominant language spoken was significantly associated with posttest performance, indicating that language exposure remains an important factor in early vocabulary development. Thus, digital play can enhance learning, motivation, and consistency, but it should be supplemented by language-support strategies for learners with limited English exposure.

Overall, the study contributes evidence that technology-assisted, game-based vocabulary instruction can be developmentally appropriate, engaging, and pedagogically effective in early primary education when implemented with clear objectives, validated assessment, teacher guidance, and institutional technology planning.

Recommendations

- English teachers should integrate digital play platforms such as Blooket and Kahootopia/Kahoot into regular vocabulary instruction, particularly for phonics, short-vowel sounds, and high-frequency sight words. These tools should be used as structured learning strategies rather than as unrelated recreational activities.
- School administrators should support the sustainability of digital play integration by ensuring adequate iPads or tablets, stable broadband Wi-Fi, platform access, and technical support. A long-term plan may include movement toward a one-to-one device ratio for early primary learners.
- Curriculum developers should institutionalize game-based vocabulary activities in early language learning guides and align digital play with English literacy competencies, assessment standards, and learner readiness.
- Teachers should receive continuing professional development on digital pedagogy, game-based assessment, classroom management during digital play, and strategies for supporting learners with limited English exposure.
- Parents and guardians should be oriented on the educational value of guided digital play so that vocabulary practice can continue at home in a supervised, language-rich, and age-appropriate manner.
- Future researchers should conduct longitudinal and multi-school studies with larger samples to determine the long-term effect of digital play on vocabulary retention, reading fluency, learner motivation, and English language confidence.

References

Chai, C. S., Jong, M. S. Y., & Yan, Z. (2022). Digital pedagogy and technology integration in Asian classrooms. Educational Technology Research and Development, 70(4), 1785-1802.

Chen, Z., Chen, M., & Lin, T. (2023). Effects of digital game-based learning on vocabulary acquisition among young learners: A meta-analysis. Educational Technology Research and Development, 71(2), 845-862.

Cohen, J. (1988). Statistical power analysis for the behavioral sciences (2nd ed.). Lawrence Erlbaum Associates.

Craik, F. I., & Lockhart, R. S. (1972). Levels of processing: A framework for memory research. Journal of Verbal Learning and Verbal Behavior, 11(6), 671-684.

Creswell, J. W., & Creswell, J. D. (2021). Research design: Qualitative, quantitative, and mixed methods approaches (5th ed.). SAGE Publications.

Deterding, S., Dixon, D., Khaled, R., & Nacke, L. (2020). From game design elements to gamefulness: Defining gamification. Human-Computer Interaction, 35(5-6), 1-38.

Dichev, C., & Dicheva, D. (2020). Gamifying education: What is known, what is believed, and what remains uncertain. International Journal of Educational Technology in Higher Education, 17(1), 1-36.

Ehri, L. C. (2020). Orthographic mapping and sight word reading. Reading Research Quarterly, 55(S1), S7-S19.

Fraenkel, J. R., Wallen, N. E., & Hyun, H. H. (2022). How to design and evaluate research in education (11th ed.). McGraw-Hill Education.
Kervin, L., Verenikina, I., & Rivera, M. C. (2022). Digital play and early literacy learning. Australasian Journal of Early Childhood, 47(2), 155-168.
Krongboonying, K., & Suksakulchai, S. (2021). Technology integration in Thai primary education. Journal of Education and Learning, 10(4), 112-121.
Matwangsaeng, M., & Sukying, A. (2024). The nature of English vocabulary knowledge: Insights from Thai primary school learners. Journal of Asia TEFL, 21(1), 45-62.
Mayer, R. E. (2020). Multimedia learning (3rd ed.). Cambridge University Press.
Nation, I. S. P. (2022). Learning vocabulary in another language (2nd ed.). Cambridge University Press.
Neumann, M. M. (2020). Digital learning and early literacy. Early Childhood Research Quarterly, 52, 23-36.
OECD. (2021). 21st-century readers: Developing literacy skills in a digital world. OECD Publishing.
Phothongsunan, S. (2023). Digital transformation in Thai basic education. Asia-Pacific Education Review, 24(2), 301-314.
Ryan, R. M., & Deci, E. L. (2020). Intrinsic and extrinsic motivation: The self-determination theory perspective. Academic Press.
Sailer, M., & Homner, L. (2020). The gamification of learning: A meta-analysis. Educational Psychology Review, 32(1), 77- 112.
Shabani, K., Khatib, M., & Ebadi, S. (2020). Vygotsky's ZPD and scaffolding. English Language Teaching, 13(2), 60-71.
Sun, Z., Lin, C. H., Wu, M., Zhou, J., & Luo, L. (2023). Effects of multimedia learning environments on vocabulary acquisition. Computers & Education, 187, 104556.
Sweller, J. (1988). Cognitive load during problem solving: Effects on learning. Journal of Cognitive Science, 12(2), 257-285.
Tokac, U., Novak, E., & Thompson, C. G. (2021). Effects of game-based learning on students' mathematics achievement: A meta-analysis. Journal of Computer Assisted Learning, 37(2), 459-472.
UNESCO. (2023). Global education monitoring report 2023: Technology in education-A tool on whose terms? UNESCO Publishing.
Vnucko, M. (2023). Exploring the potential of digital game-based vocabulary learning: A systematic review. Systems, 11(2), 57.
Vygotsky, L. S. (1978). Mind in society: The development of higher psychological processes. Harvard University Press.
Wang, A. I., & Tahir, R. (2020). The effect of using Kahoot! for learning. Computers & Education, 149, 103818.
Zainuddin, Z., Chu, S. K. W., Shujahat, M., & Perera, C. J. (2020). Gamification in education: A review. Educational Technology & Society, 23(2), 119-134.
Zosh, J. M., Hirsh-Pasek, K., Golinkoff, R. M., & Dickinson, D. K. (2022). Learning through play: A review of the evidence. LEGO Foundation Report.