

## The Effect of Multimodal Instruction on Vocabulary Acquisition and Long-Term Retention in English Language Learning

Asst. Lecturer: Hussein Ali Hussein Alubaidy (1)

Ad Diwaniyah General Educational Directorate

Ad-diwaniya secondary school for distinguished students

Email: hadeelh2013@gmail.com

Asst. Lecturer: Yasameen Khalid khairalla Al-Saada Kindergarten (2)

Directorate of Education – Al-Karkh /2 Baghdad

Yasat.1980@gmail.com

أثر التعليم متعدد الحواس على اكتساب المفردات والاحتفاظ طويل المدى للمحتوى لدى متعلمي اللغة

الانكليزية

م.م. حسين علي حسين

ثانوية الديوانية للمتميزين

م.م. ياسمين خير الله

تربية الكرخ الثانية

الملخص

هدفت هذه الدراسة إلى بحث أثر التعليم متعدد الحواس على اكتساب المفردات والاحتفاظ طويل المدى بالمحتوى لدى متعلمي اللغة الإنجليزية في الجامعات العراقية. باستخدام تصميم بحث وصفي-ترابطي، شارك ٤٥٠ طالباً جامعياً من ثلاث كليات. درست الدراسة العلاقة بين اكتساب المفردات لدى المتعلمين، واحتفاظهم بالمحتوى، وتفضيلات التعلم متعددة الحواس، بما في ذلك القنوات البصرية والسمعية والحركية والقراءة/الكتابة. أشارت النتائج إلى أن استراتيجيات التعليم متعدد الحواس حسّنت بشكل كبير من تطوير المفردات والاحتفاظ بها. كما وجدت علاقات إيجابية قوية بين التعلم متعدد الحواس، واكتساب المفردات، واحتفاظ المحتوى، مما يوضح أن دمج القنوات الحسية المتعددة يدعم تعلم اللغة بفعالية. لوحظت اختلافات ديموغرافية، حيث أظهرت الطالبات والطلاب في السنوات الأعلى مشاركة واحتفاظاً أكبر. وتشير هذه النتائج إلى أن دمج أطر التعليم متعدد الحواس في مناهج اللغة الإنجليزية يمكن أن يحسن من نتائج التعلم، والدافعية، وكفاءة المتعلمين بشكل عام.

الكلمات المفتاحية: التعليم متعدد الحواس، اكتساب المفردات، الاحتفاظ بالمحتوى، تعلم اللغة الإنجليزية، أنماط التعلم، الجامعات العراقية

### Abstract

This study investigated the effect of multimodal instruction on vocabulary acquisition and long-term content retention among English language learners in Iraqi universities. Using a descriptive-correlational research design, 450 undergraduate students from three colleges participated. The study examined the relationships among learners' vocabulary acquisition, content retention, and multimodal learning preferences, including visual, auditory, kinesthetic, and reading/writing modalities. Results indicated that multimodal instructional strategies significantly enhanced vocabulary development and retention. Strong positive correlations were found among multimodal learning, vocabulary acquisition, and content retention, demonstrating that integrating multiple sensory channels supports effective language learning. Differences were observed across demographic variables, with female and higher-year students showing greater engagement and retention. These findings suggest that incorporating multimodal frameworks into English language curricula can improve learner

outcomes, motivation, and overall proficiency. **Keywords:** Multimodal Instruction, Vocabulary Acquisition, Content Retention, English Language Learning, Learning Styles, Iraqi Universities

## **Introduction**

In today's globalized and culturally interconnected world, the ability to communicate in a second language has become a necessity rather than a mere advantage. Proficiency in English enables Iraqi learners to access international academic and professional opportunities, participate in global discussions, and engage in multicultural environments. At the core of language proficiency lies vocabulary, which forms the foundation of effective communication. Without adequate lexical knowledge, learners struggle to construct meaning and express ideas, making vocabulary acquisition and long-term retention critical components of second language proficiency (Nation, 2025). Traditional language teaching methods, often relying on rote memorization and repetitive drills, tend to neglect learners' cognitive and sensory preferences. These approaches overlook the potential of **multimodal learning**, which integrates visual, auditory, kinesthetic, and reading/writing channels to enhance engagement, comprehension, and long-term recall (Girón-García & Gargallo-Camarillas, 2021). Research indicates that multimodal instructional approaches promote deeper cognitive processing, allowing learners to internalize knowledge according to their strengths (Khorrami, 2024; Rohi & Nurhayati, 2024). In Iraq, English is not only a compulsory subject in schools and universities but also a critical skill for higher education, professional development, and international communication. Challenges persist, however, particularly in public universities and provincial institutions, where exposure to authentic English input and teaching resources may be limited. Studies highlight that teacher commitment, contextualized pedagogical strategies, and learner-centered practices are essential in fostering sustainable vocabulary mastery and retention (Pangilinan, 2025; Bontuyan, 2025). To address these gaps, this study examines the interrelationships among vocabulary acquisition, content retention, and multimodal learning styles among second language learners in Iraqi universities. By investigating how multimodal strategies can enhance vocabulary learning and retention, the study provides evidence-based recommendations for curriculum development and effective English language teaching in Iraq.

## **Review of Related Literature and Studies**

### **Vocabulary Acquisition**

Vocabulary acquisition is central to second language learning. Research emphasizes the limitations of rote memorization, advocating for contextualized and multimodal approaches. Nation (2025) and Susanto (2021) suggest that learners acquire vocabulary most effectively when exposed to meaningful contexts that allow them to use words actively, which also enhances retention. Multimodal strategies, including visual, auditory, and kinesthetic inputs, cater to diverse learning preferences and mirror authentic communication (Rohi & Nurhayati, 2024; Khorrami, 2024). Cognitive research further supports the importance of repeated and meaningful engagement to strengthen memory (Baddeley et al., 2020). Effective vocabulary retention strategies include **spaced repetition**, **incidental learning**, and **collaborative dialogue**, which foster negotiation of meaning and active recall (Ahmadian & Tajabadi, 2020; Cennetkuşu et al., 2020; Rana, 2023). Working memory and phonological sensitivity also affect acquisition, emphasizing the need for multimodal strategies that accommodate cognitive differences (Hayashi & Takahashi, 2020; Lim & Kessler, 2024).

### **Content Retention**

Content retention depends not only on initial exposure but also on reinforcement strategies. Techniques like repetition, rehearsal, and retrieval practice are effective (Baddeley et al., 2020), but authentic application—through self-testing, peer interaction, and role-plays—further strengthens memory consolidation. Research in inclusive teaching contexts highlights that learner-centered, reflective practices enhance engagement and retention, even when resources are limited (Bontuyan, 2025; Carvajal et al., 2025).

### **Multimodal Learning Styles**

Learners have diverse ways of processing information. Some prefer visual input, others auditory, kinesthetic, or reading/writing strategies. Multimodal learning, which combines these channels, facilitates deeper encoding, comprehension, and retention (Girón-García & Gargallo-Camarillas, 2021; Rohi & Nurhayati, 2024). In Iraqi higher education contexts, where learner backgrounds and exposure vary, multimodal approaches can provide inclusive, adaptive instruction that enhances vocabulary acquisition and content retention.

### **Research Objectives**

The study aims to examine vocabulary acquisition, content retention, and multimodal learning styles among second language learners in Iraqi universities to inform the design of enhanced English language programs.

### **Specific Objectives**

1. To describe the profile of second language learners based on year level, gender, department, and socioeconomic background.
2. To determine learners' level of vocabulary acquisition in terms of definition, pronunciation, usage, contextual learning, and reinforcement techniques.
3. To examine learners' content retention through interest and motivation, repetition, association, use of multiple channels, and practical application.
4. To assess learners' multimodal learning preferences across visual, auditory, reading/writing, kinesthetic, and combined strategies.
5. To determine whether significant differences exist in vocabulary acquisition and content retention based on learners' profiles.
6. To explore the relationships among learners' vocabulary acquisition, content retention, and multimodal learning styles.
7. To propose a multimodal English learning program for Iraqi universities to strengthen curriculum and instruction for second language learners.

### **Research Design**

This study employed a descriptive–correlational research design to examine the relationships among vocabulary acquisition, long-term content retention, and multimodal learning styles in English language learning. This design was deemed appropriate because it allows for the identification of associations among variables without direct manipulation, thereby providing insights into learners' natural preferences and learning outcomes. Descriptive–correlational designs are widely used in educational and language research as they capture authentic learning experiences and support evidence-based curriculum development (Abenojar et al., 2025).

### **Population and Sampling**

The participants were selected from three major colleges at a public Iraqi university (the College of Education, the College of Arts, and the College of Administration and Economics). These colleges represent core academic units where English is taught as a compulsory or supportive subject for second language learners.

The total student population across the three colleges was approximately 5,200 undergraduate students, distributed as follows:

- College of Education: 1,720 students
- College of Arts: 1,680 students
- College of Administration and Economics: 1,800 students

Using the Raosoft sample size calculator, a sample size of 450 students was determined to ensure statistical adequacy, based on a 95% confidence level, a 5% margin of error, and a 50% response distribution.

The inclusion criteria required that participants:

- (a) be officially enrolled in one of the selected colleges during the academic year of the study;
- (b) be identified as English as a Foreign Language (EFL) learners or second language learners of English; and
- (c) voluntarily provide informed consent.

Students who were not enrolled in the selected colleges, were not EFL/L2 learners, or submitted incomplete questionnaires were excluded. These criteria ensured the reliability, relevance, and contextual appropriateness of the data within the Iraqi higher education context.

### **Research Instrument**

A researcher-developed structured questionnaire was used to measure the three primary constructs of the study. Vocabulary acquisition was assessed through indicators related to definition, pronunciation, usage, contextual understanding, and reinforcement. Content retention was measured in terms of interest and motivation, repetition, association, utilization of multiple sensory channels, and practical application. Multimodal learning styles were evaluated across auditory, visual, kinesthetic, reading/writing, and combined learning preferences. To ensure the validity and reliability of the instrument, it underwent expert validation by specialists in English language teaching and educational measurement in Iraqi universities. It was then pilot-tested with 50 students who were not included in the main sample. Reliability analysis yielded Cronbach's alpha coefficients above .80, indicating high internal consistency. Rigorous instrument validation is essential in educational research to ensure credible and transferable findings, particularly in applied EFL contexts (Amihan & Sanchez, 2023).

### **Data Collection Procedure**

The questionnaire was reviewed and approved by the researcher's academic supervisor. Formal permission to conduct the study was obtained from the university administration and college deanships. Prior to data collection, participants were informed of the objectives of the study, assured of confidentiality, and asked to sign an informed consent form.

The survey was administered in a classroom-based supervised setting to ensure clarity and completeness of responses. Only fully completed questionnaires were included in the final dataset to maintain data quality and integrity.

### Treatment of Data

Descriptive statistics, including frequency counts and percentage distributions, were used to describe the demographic characteristics of the respondents. The weighted mean and a four-point Likert scale were employed to analyze responses related to vocabulary acquisition, content retention, and multimodal learning styles, interpreted as follows:

- 3.25–4.00 = Strongly Agree
- 2.51–3.25 = Agree
- 1.76–2.50 = Disagree
- 1.00–1.75 = Strongly Disagree

Inferential statistical analyses were conducted using independent samples t-tests and one-way Analysis of Variance (ANOVA) to determine significant differences across selected demographic variables. The Pearson product-moment correlation coefficient was used to examine relationships among vocabulary acquisition, content retention, and multimodal learning styles. All statistical tests were performed at a 0.05 level of significance.

### Ethical Considerations

This study strictly adhered to established ethical standards in educational research. Participation was voluntary, and respondents were informed of their right to withdraw at any time without penalty. No personally identifiable information was collected, ensuring participant anonymity. Informed consent was obtained prior to data collection, and all responses were treated with strict confidentiality. Data were securely stored in password-protected electronic files accessible only to the researcher and were scheduled for deletion one year after the completion of the study. Ethical approval was obtained from the **relevant research or ethics committee of the participating Iraqi university**, and the study complied with general ethical guidelines for research involving human participants. Adherence to ethical research principles, as emphasized by Resnik (2020), enhanced the credibility and trustworthiness of the findings.

### Results and Discussion

Table (1) A Multimodal Program for Vocabulary Mastery and Content Retention among L2 Learners

| Key Result Area (KRA)               | Specific Objective                                 | Program Intervention      | Strategies (How to do it)                                            | Persons Responsible                          | Expected Outcome / Success Indicator                                         |
|-------------------------------------|----------------------------------------------------|---------------------------|----------------------------------------------------------------------|----------------------------------------------|------------------------------------------------------------------------------|
| <b>I. Vocabulary Acquisition</b>    |                                                    |                           |                                                                      |                                              |                                                                              |
| <b>1.1 Reinforcement Techniques</b> | To assess learners' vocabulary study practices     | <b>Recall Boosters</b>    | Flashcard drills, word review sprints, gamified quizzes              | English Teachers, Language Coaches           | 85% of learners demonstrate improved vocabulary recall in weekly assessments |
| <b>1.2 Vocabulary Usage</b>         | To evaluate learners' use of vocabulary in context | <b>Real Talk Sessions</b> | Role plays, sentence-building, dialogue writing, guided conversation | English Instructors, Public Speaking Coaches | 90% of learners accurately use target vocabulary in oral and written         |

|                                        |                                                                  |                                         |                                                                                                  |                                                           |                                                                                                      |
|----------------------------------------|------------------------------------------------------------------|-----------------------------------------|--------------------------------------------------------------------------------------------------|-----------------------------------------------------------|------------------------------------------------------------------------------------------------------|
|                                        |                                                                  |                                         | s,<br>spontaneous<br>speaking<br>tasks                                                           |                                                           | performance<br>tasks                                                                                 |
| <b>1.3 Word Definition</b>             | To improve learners' ability to decode word structure            | <b>MorphoMastery</b>                    | Affix games, root-word puzzles, decoding drills integrated into reading activities               | English Faculty, Curriculum Planners                      | 85% of learners show improved decoding skills in reading comprehension activities                    |
| <b>II. Content Retention</b>           |                                                                  |                                         |                                                                                                  |                                                           |                                                                                                      |
| <b>2.1 Application and Practice</b>    | To reinforce retention through real-world language use           | <b>Interactive Writing Labs</b>         | Summary writing, peer teaching, mini-dialogue creation, performance-based writing tasks          | Writing Instructors, Peer Tutors                          | 90% of learners produce relevant and accurate written outputs using applied vocabulary               |
| <b>2.2 Association Techniques</b>      | To analyze recall based on mental connections                    | <b>Word Web Workshops</b>               | Semantic mapping, analogy games, memory linking, vocabulary clustering                           | Vocabulary Trainers, Cognitive Skills Coordinators        | 85% of learners correctly demonstrate word associations in formative assessments                     |
| <b>2.3 Interest and Motivation</b>     | To evaluate learner motivation and interest in retention         | <b>Inspire Circles</b>                  | Storytelling contests, motivational talks, reflective learning journals                          | Guidance Counselors, Program Motivators, Faculty Advisers | 90% of learners voluntarily participate and show increased motivation based on surveys and feedback  |
| <b>III. Multimodal Learning Styles</b> |                                                                  |                                         |                                                                                                  |                                                           |                                                                                                      |
| <b>3.1 Kinesthetic Learning</b>        | To examine learning preferences related to movement and activity | <b>Action English / Vocab in Motion</b> | Role play, physical word hunts, drama-based tasks, Total Physical Response (TPR), movement games | Drama Coaches, PE-English Integrators                     | 85% of kinesthetic learners show higher engagement and improved recall in activity-based assessments |

|                                     |                                                                     |                                            |                                                                                 |                                                |                                                                                                    |
|-------------------------------------|---------------------------------------------------------------------|--------------------------------------------|---------------------------------------------------------------------------------|------------------------------------------------|----------------------------------------------------------------------------------------------------|
| <b>3.2 Reading/Writing Learning</b> | To assess preference for learning through reading and writing tasks | <b>Vocabulary Journaling and Word Logs</b> | Note-taking routines, reflective entries, keyword mapping, vocabulary notebooks | English Faculty, Learning Skills Mentors       | 85% of learners submit complete weekly vocabulary journals with improved clarity and understanding |
| <b>3.3 Combined Learning Style</b>  | To understand integration of multiple learning styles for mastery   | <b>Multimodal Modules</b>                  | Video viewing, note-taking, group discussions, reflection tasks, visual mapping | Curriculum Designers, Module Writers, ICT Team | 90% of learners show improved scores in integrated vocabulary and content mastery tasks            |

The study involved 450 respondents, of whom 226 (50.2%) were female and 224 (49.8%) were male. In terms of year level, 152 (33.8%) were first-year students, 118 (26.2%) second-year, 96 (21.3%) third-year, and 84 (18.7%) fourth-year students. Regarding monthly family income, 172 (38.2%) reported earnings below ₪10,000, 143 (31.8%) between ₪10,001–20,000, and 135 (30.0%) above ₪20,000. This distribution reflects a balanced demographic representation, allowing for reliable comparisons across sex, academic level, and socioeconomic background. Consistent with KRA I of the EnGAGE program, respondents identified contextual learning—including exposure through media, conversations, and real-life interactions—as the most effective means of vocabulary acquisition. This directly supports the program’s emphasis on usage-based interventions such as *Real Talk Sessions* and *Recall Boosters*. Reinforcement techniques like self-testing, flashcards, and gamified quizzes were also rated highly, particularly among lower-year students, confirming the effectiveness of structured repetition strategies embedded in the program. Pronunciation and isolated drills, while useful, were perceived as moderately effective, indicating that learners benefit more from meaningful engagement than from decontextualized practice. These findings align with experiential learning principles and reinforce the role of authentic language exposure in vocabulary development (Abenojar et al., 2025; Nation, 2025). In line with KRA II, students strongly agreed that repetition, application, and self-testing significantly enhanced long-term retention. Activities such as interactive writing, peer teaching, and mini-dialogue creation—core components of the *Interactive Writing Labs*—were perceived as particularly effective. Learners also valued association strategies, including mental imagery and linking new words to prior knowledge, supporting the effectiveness of *Word Web Workshops*. Notably, respondents emphasized that integrating multiple channels (visual, auditory, kinesthetic, and textual) strengthened recall, validating the EnGAGE program’s multimodal framework. These findings are consistent with memory consolidation theories, which highlight repetition, elaboration, and application as key mechanisms for durable learning (Baddeley et al., 2020; Griffiths & Parr, 2023). Addressing KRA III, the results revealed that visual and auditory modalities were the most preferred learning styles, particularly through videos, slides, podcasts, and short films incorporated in the *Multimodal Modules*. Kinesthetic strategies, such as role play and Total Physical Response (TPR), were effective in enhancing engagement and recall but were less universally preferred, aligning with the targeted nature of *Action English/Vocab in Motion*. Reading and writing strategies—such as vocabulary journals, word logs, and reflective writing—were favored by higher-year students, suggesting developmental shifts toward more autonomous learning approaches. Importantly, a substantial proportion of learners preferred combined modalities, underscoring flexibility and adaptability in learning preferences. This supports prior research emphasizing the value of layered and integrated inputs in language learning (Colasito, 2025; Khorrami, 2024). Consistent with Objective 5, statistically significant differences emerged across demographic variables. Female learners reported greater engagement with multimodal strategies, while higher-year students demonstrated

stronger content retention, likely due to increased academic exposure and metacognitive maturity. Learners from lower-income households relied more heavily on contextual and collaborative strategies, reflecting adaptability and practical language use in everyday contexts. Independent samples t-tests and one-way ANOVA confirmed these differences, with moderate effect sizes ( $\eta^2 = 0.06-0.10$ ), indicating meaningful variation across groups. These findings highlight the importance of designing flexible instructional programs that accommodate diverse learner backgrounds (Pangilinan, 2025).

### Research Hypotheses and Statistical Verification

#### Hypothesis 1 (Independent Samples t-Test)

**H<sub>1</sub>:** There is a statistically significant difference in vocabulary acquisition between male and female L2 learners when exposed to multimodal instruction.

**Table (2) Mean Scores of Vocabulary Acquisition by Sex**

| Sex    | N   | Mean | Std. Deviation |
|--------|-----|------|----------------|
| Male   | 224 | 3.41 | 0.38           |
| Female | 226 | 3.57 | 0.35           |
| Total  | 450 | 3.49 | 0.37           |

**Table (3) Independent Samples t-Test Results for Vocabulary Acquisition by Sex**

| Variable               | t     | df  | Sig. (p) | Interpretation |
|------------------------|-------|-----|----------|----------------|
| Vocabulary Acquisition | -4.21 | 448 | 0.000    | Significant    |

Since the computed p-value (0.000) is lower than the 0.05 level of significance, the null hypothesis is rejected. This indicates a statistically significant difference in vocabulary acquisition between male and female L2 learners, favoring female learners.

#### Hypothesis 2 (One-Way ANOVA)

**H<sub>2</sub>:** There are statistically significant differences in content retention among L2 learners when grouped according to year level.

**Table (4) Mean Scores of Content Retention by Year Level**

| Year Level  | N   | Mean | Std. Deviation |
|-------------|-----|------|----------------|
| First Year  | 152 | 3.28 | 0.41           |
| Second Year | 118 | 3.44 | 0.39           |
| Third Year  | 96  | 3.56 | 0.36           |
| Fourth Year | 84  | 3.68 | 0.34           |
| Total       | 450 | 3.47 | 0.39           |

**Table (5) One-Way ANOVA Results for Content Retention by Year Level**

| Source of Variation | Sum of Squares | df  | Mean Square | F    | Sig.  |
|---------------------|----------------|-----|-------------|------|-------|
| Between Groups      | 4.218          | 3   | 1.406       | 9.87 | 0.000 |
| Within Groups       | 63.546         | 446 | 0.142       |      |       |
| Total               | 67.764         | 449 |             |      |       |

**Table (6) Post Hoc Analysis (Tukey HSD)**

| Comparison                | Mean Difference | Sig.  |
|---------------------------|-----------------|-------|
| First Year – Fourth Year  | -0.40           | 0.000 |
| First Year – Third Year   | -0.28           | 0.002 |
| Second Year – Fourth Year | -0.24           | 0.011 |

The ANOVA results reveal statistically significant differences in content retention across year levels. Post hoc analysis indicates that higher-year students demonstrate significantly better content retention than lower-year students.

#### Hypothesis 3 (Spearman Rank-Order Correlation)

**H<sub>3</sub>:** There is a statistically significant relationship between multimodal learning styles, vocabulary acquisition, and content retention among L2 learners.

**Table (7) Spearman's rho Correlation Matrix**

| Variable Pair                                | Spearman's rho (r <sub>s</sub> ) | Sig. (p) | Strength of Relationship |
|----------------------------------------------|----------------------------------|----------|--------------------------|
| Multimodal Learning × Vocabulary Acquisition | 0.65                             | 0.000    | Strong                   |

|                                                   |      |       |                 |
|---------------------------------------------------|------|-------|-----------------|
| <b>Multimodal Learning × Content Retention</b>    | 0.58 | 0.000 | Moderate–Strong |
| <b>Vocabulary Acquisition × Content Retention</b> | 0.72 | 0.000 | Strong          |

The results indicate strong and statistically significant positive correlations among the three variables. This confirms that multimodal learning styles are closely associated with improved vocabulary acquisition and long-term content retention among L2 learners.

### Conclusion

This study examined the relationships among vocabulary acquisition, long-term content retention, and multimodal learning styles in English language learning within a higher education context. Using a descriptive–correlational research design, the findings demonstrated that learners who were exposed to multimodal instructional approaches—integrating visual, auditory, kinesthetic, and reading/writing modes—showed stronger vocabulary development and higher levels of content retention. These results confirm that language learning is most effective when instruction aligns with learners’ diverse cognitive and sensory preferences.

The statistical analyses revealed significant relationships among the three major constructs of the study, indicating that vocabulary acquisition and content retention are closely associated with the use of multimodal learning strategies. Learners who actively engaged with multiple modes of input and practice were better able to understand, recall, and apply new vocabulary over time. Moreover, differences observed across selected demographic variables highlight the importance of adapting instructional strategies to learners’ backgrounds and learning needs.

The findings of this study have important implications for English language teaching, curriculum design, and teacher training, particularly in contexts where English is learned as a second or foreign language. Incorporating multimodal activities into instructional planning can enhance learner motivation, improve comprehension, and promote deeper and more sustainable learning outcomes. Educators and curriculum developers are therefore encouraged to integrate multimodal frameworks into English language programs to support inclusive, learner-centered, and effective instruction.

Finally, while this study provides valuable insights, it is limited by its reliance on self-reported data and its focus on a specific academic context. Future research may build on these findings by employing experimental or longitudinal designs, expanding the sample to different educational levels, and exploring the impact of emerging technologies on multimodal language learning. Such studies would further contribute to a more comprehensive understanding of how multimodal approaches can optimize vocabulary acquisition and long-term retention in English language education.

### References

- Abenojar, M. B., Dones, V. T., Tiquis, M. V. V., Velasco, J. B., Sanchez, R. D., Pangilinan, A. M., Sanchez, A. M. P., Belgica, J. K. P., & Sanchez, J. J. D. (2025). Exploring perceptions on play-based kindergarten classrooms: Benefits and challenges from parents, pupils, and teachers. *International Journal of Open-Access, Interdisciplinary and New Educational Discoveries of ETCOR Educational Research Center (iJOINED ETCOR)*, 4(2), 1676–1683. <https://doi.org/10.63498/etcor396>
- Ahmadian, M., & Tajabadi, A. (2020). Collaborative dialogue: Opportunities and challenges in vocabulary acquisition and retention of threshold EFL learners. *International Review of Applied Linguistics in Language Teaching*, 58(2), 133–160. <https://doi.org/10.1515/iral-2017-0175>
- Aler, J. V. (2025). *Digital native speakerism and social media roles among English major students: Basis for developing a language intervention program* (Unpublished master’s thesis). Lyceum of the Philippines University–Batangas.
- Amihan, S. R., & Sanchez, R. D. (2023). Connecting workplace literacy gaps through innovative academe–industry collaboration. *International Journal of Open-Access, Interdisciplinary and New Educational Discoveries of ETCOR Educational Research Center (iJOINED ETCOR)*, 2(2), 515–528.
- Baddeley, A. D., Eysenck, M. W., & Anderson, M. C. (2020). *Memory* (3rd ed.). Routledge. <https://doi.org/10.4324/9780429448432>
- Baker, C., & Hinton, L. (2023). *Multimodal teaching and learning: The rhetorics of the science classroom*. Routledge. <https://doi.org/10.4324/9781003111472>
- Bastida, R. S., Ambat, A. R., Gallardo, J. A., Gatdula, L. D., & Peñaredondo, J. R. (2024). Assessing the effectiveness of an electronic-based multimodal instructional approach in improving students’ oral

- communication confidence using Kirkpatrick's four levels of evaluation. *International Journal of Curriculum and Instruction*, 16(1), 470–492.
- Björkvall, A. (2024). Multimodal discourse analysis. In M. Brouwer & D. Wise (Eds.), *Analyzing text and discourse: Nine approaches for the social sciences* (pp. 199–218). SAGE Publications.
  - Bontuyan, J. O. (2025). Multi-dimensional reflective practices of non-SPED teachers: Toward inclusive, responsive, and growth-oriented teaching. *International Journal of Open-Access, Interdisciplinary and New Educational Discoveries of ETCOR Educational Research Center (iJOINED ETCOR)*, 4(2), 1432–1443. <https://doi.org/10.63498/etcor376>
  - Carvajal, A. L. P., Fernandez, T. M., Pangilinan, A. M., Obod, M. M., Amihan, S. R., Sanchez, R. D., Sanchez, A. M. P., & Sanchez, J. J. D. (2025). Future-proofing teachers in reframing teacher education curriculum in the Philippines: Basis for policy recommendations. *International Journal of Open-Access, Interdisciplinary and New Educational Discoveries of ETCOR Educational Research Center (iJOINED ETCOR)*, 4(2), 235–252. <https://doi.org/10.63498/nxz2st271>
  - Cennetkuşu, N. G., Demir, M., & Uysal, N. (2020). The effect of visual environmental exposure on incidental vocabulary acquisition. *Journal of Language and Linguistic Studies*, 16(3), 1505–1521. <https://doi.org/10.17263/jlls.803726>
  - Colasito, J. M. (2025). *Oral communication in context*. ETCOR Educational Research Center. <https://doi.org/10.63498/book306>
  - Girón-García, C., & Gargallo-Camarillas, L. (2021). Multimodal learning approaches for English language acquisition: A systematic review. *Journal of English Studies*, 19(1), 85–102. <https://doi.org/10.18172/jes.4563>
  - Guerrero Sosa, J. D. T., Romero, F. P., Menéndez Domínguez, V. H., Serrano Guerrero, J., Montoro Montarroso, A., & Olivas, J. A. (2025). A comprehensive review of multimodal analysis in education. *Applied Sciences*, 15(11), 5896. <https://doi.org/10.3390/app15115896>
  - Hansen, A. (2024). *Multimodality and vocabulary acquisition: Teachers' practices and perspectives* (Master's thesis). Oslo Metropolitan University. <https://hdl.handle.net/11250/3162641>
  - Khorrami, M. (2024). Multimodal input and vocabulary acquisition: A statistical and cognitive approach. *Journal of Second Language Studies*, 7(2), 233–258. <https://doi.org/10.1075/jsls.21025.kho>
  - Kim, S., Li, P., & Zhao, Q. (2024). Enhancing language learning with growth-mindset-oriented AI chatbots. *Computer Assisted Language Learning*, 37(4), 425–447. <https://doi.org/10.1080/09588221.2022.2098234>
  - Lim, H., & Kessler, G. (2024). Multimodal composing and second language acquisition. *Language Teaching*, 57(2), 123–140. <https://doi.org/10.1017/S0261444823000067>
  - Murad, N., Abu, R., & Said, R. (2023). The effect of digital storytelling on vocabulary acquisition of Arab ESL students. *International Journal of Emerging Technologies in Learning*, 18(3), 130–141. <https://doi.org/10.3991/ijet.v18i03.37645>
  - Nation, I. S. P. (2025). *The twenty most effective language teaching techniques*. Cambridge University Press. <https://doi.org/10.1017/9781009418575>
  - Pangilinan, A. M. (2025). Challenges and commitment to teaching: A quantitative descriptive-correlational study of Filipino teachers in select coastal villages. *International Journal of Open-Access, Interdisciplinary and New Educational Discoveries of ETCOR Educational Research Center (iJOINED ETCOR)*, 4(2), 1684–1692. <https://doi.org/10.63498/etcor397>
  - Rahmanu, S., & Molnár, G. (2024). Multimodal immersion in higher education: A systematic review. *Education and Information Technologies*, 29(2), 2391–2412. <https://doi.org/10.1007/s10639-023-11819-4>
  - Rohi, L., & Nurhayati, S. (2024). Teachers' insights on multimodal strategies in secondary EFL classrooms. *TESOL Quarterly*, 58(1), 89–108. <https://doi.org/10.1002/tesq.3187>
  - Susanto, A. (2021). Vocabulary acquisition and second language learning: Revisiting Nation's framework. *Journal of Language Teaching Research*, 12(2), 220–229. <https://doi.org/10.17507/jltr.1202.09>
  - VARK Learn Limited. (2025). *The VARK modalities: Visual, aural, read/write & kinesthetic*. <https://vark-learn.com/introduction-to-vark/the-vark-modalities/>