

USING INFOGRAPHICS TO ASSESS ESL READING COMPREHENSION AMONG MALAYSIAN TERTIARY-LEVEL LEARNERS

Aina Al Mardhia Binti Ismail

Universiti Islam Selangor

E-mail: ainaalmardhia@uis.edu.my

ABSTRACT

This study investigates the potential of using infographics as an alternative assessment tool for measuring English as a Second Language (ESL) reading comprehension among Malaysian tertiary-level learners. As education increasingly emphasises visual literacy alongside traditional text-based skills, the need for innovative, multimodal assessment approaches becomes more critical. Infographics, which integrate visual elements with concise textual information, offer a promising means of capturing students' understanding in a more holistic manner. This paper examines how infographics can actively engage learners, enhance cognitive processing, and foster deeper comprehension by requiring students to interpret, synthesise, and organise information visually. Current literature reveals that infographics not only support comprehension and retention but also promote critical thinking, creativity, and the development of 21st-century skills that are essential for academic and professional success. Furthermore, infographic-based assessments encourage learners to interact meaningfully with reading materials, moving beyond rote memorisation toward higher-order thinking processes. In the Malaysian tertiary education context, where English proficiency is crucial for academic achievement and career readiness, the adoption of infographics could address existing challenges in traditional reading comprehension assessments, such as student disengagement and surface-level understanding. The paper concludes by proposing future research directions, including empirical investigations into learner outcomes and best practices for integrating infographic creation into ESL curricula. Additionally, pedagogical recommendations are offered for instructors seeking to implement visual assessments effectively within Malaysian higher education institutions.

Keywords: ESL; reading comprehension; infographics; Malaysian tertiary learners; alternative assessment; visual literacy

1. INTRODUCTION

Reading comprehension is a fundamental skill in English as a Second Language (ESL) education. Traditional assessment methods, such as multiple-choice questions and written summaries, often fail to capture the multidimensional nature of reading comprehension. In the context of Malaysian tertiary education, where English is a critical academic language, innovative assessment strategies are necessary to enhance learners' engagement and cognitive processing. This paper proposes the use of infographics as an alternative method to assess ESL reading comprehension among Malaysian tertiary-level learners, reflecting broader educational shifts towards multimodal literacy.

Infographics, defined as visual representations that blend text, images, and design; serve to distill complex information into clear and accessible formats (Dupuy & Hashemi, 2025). As communication tools, they are valued for their ability to quickly convey large volumes of information, particularly in the current era of information overload (Yildirim & Dolgunsöz, 2023; Dupuy & Hashemi, 2025). Within educational contexts, infographics facilitate comprehension by simplifying discourse, clarifying concepts, and enhancing cognitive processing (Manoïlov, 2023). A growing body of research has highlighted the instructional value of infographics, especially in teaching and learning environments (Bicen & Beheshti, 2022). Their growing prominence reflects the increasing reliance on visual content in the 21st century and underscores the importance of visual literacy, which is the ability to interpret and produce visual messages effectively (Kuzmina et al., 2025).

Despite the integration of technology into language learning (Koroglu & Kimsesiz, 2023), there remains a gap in the literature regarding the impact of infographics on broader L2 or second language competencies, including vocabulary acquisition as part of the academic curriculum (Alwadei & Mohsen, 2023) and vocabulary retention in teaching and learning that integrates science, technology, engineering, and mathematics education contexts (Latif, 2024; Kuzmina et al., 2025). Empirical studies have shown that infographics can significantly enhance L2 vocabulary learning, with experimental groups outperforming control groups in vocabulary tests and oral assessments (Alwadei & Mohsen, 2023). Such findings reinforce the pedagogical potential of infographics in improving lexical acquisition and retention among language learners (Jadallah Abed Khasawneh & Khasawneh, 2023).

In the realm of reading comprehension skills, infographics contribute to discourse comprehension by supporting the visualisation of key ideas and narrative structures (Manoïlov, 2023). Research has demonstrated their efficacy in promoting reading comprehension, particularly when integrated with metacognitive strategies among preservice EFL teachers (Lasekan et al., 2024). Moreover, visual tools that resemble infographics, such as graphic organisers, have similarly been shown to facilitate reading skills development (Escobar Bermudez, 2022). These multimodal supports play a vital role in scaffolding students' understanding and engagement with texts.

In writing instruction, infographics have proven effective in enhancing both student outcomes and learner engagement. Studies report that infographic-enriched lessons lead to improved performance in writing assessments compared to traditional text-based instruction (Muayad Issa, 2024; Kara, 2024). The visual and concise presentation of information in infographics can inspire creativity, increase motivation, and support idea organisation in writing activities (Kong & Hailie, 2023; Kara, 2024). Additionally, their use has been linked to reduced writing anxiety, thereby contributing to improved writing performance among EFL students (Shaman, 2023).

The instructional effectiveness of infographics is contingent on their design quality. Effective infographics integrate textual and visual elements with a logical structure, narrative flow, and aesthetic appeal to maximise user comprehension and retention (Dupuy & Hashemi, 2025). However, several limitations in infographic-related research must be addressed. These include small sample sizes that hinder generalisability, lack of expert validation of the infographic tools used, and the narrow scope of skills evaluated (Yildirim & Dolgunsöz, 2023). To address these issues, future studies should utilise larger and more diverse participant groups, measure a comprehensive range of language skills, including Nation's (Nation, 2019) aspects of vocabulary knowledge, and explore the application of infographics in under-researched areas such as syntax, morphology, and literary analysis (Yildirim & Dolgunsöz, 2023). Furthermore, the availability of user-friendly digital platforms such as Canva has facilitated the integration of infographic design into EFL classrooms (Kong & Hailie, 2023), making them an increasingly viable tool for language pedagogy.

2. METHODOLOGY

This study employed a qualitative research design using discourse analysis to explore how first-semester Malaysian undergraduates visually represented their reading comprehension through infographic posters. Conducted within an English language proficiency course at a Malaysian private university, the research examined students' ability to summarise, annotate, and synthesise academic texts into multimodal artifacts. A total of 42 undergraduate students from various disciplines participated in this study, having completed at least 8 weeks of instruction in academic reading and

summarisation strategies. The assigned task required students to (1) select two to three academic or credible online articles related to a given theme, (2) annotate and summarise these readings using guided techniques, and (3) transfer the information into digital infographics using tools such as Canva or Vengage. Supporting materials included assignment rubrics, sample infographics, annotation guides, and reflection prompts, while short written reflections were collected to triangulate the analysis.

Data comprised the submitted infographic posters and accompanying student reflections. Each infographic was treated as a multimodal discourse artifact and analysed using a discourse analysis framework that focused on textual clarity, visual organisation, information synthesis, and reading comprehension indicators such as identifying main ideas and paraphrasing. While the study provides insight into how students integrate reading comprehension with visual communication, it is limited by its sample size, context-specific scope, and lack of longitudinal measurement. Future studies could benefit from incorporating interviews or think-aloud protocols to deepen understanding of students' cognitive and design processes.

3. RESULTS AND DISCUSSION

The analysis of student-created infographics revealed that most participants demonstrated a functional understanding of reading comprehension strategies. This was evident in their ability to extract and summarise key ideas from selected academic articles. After scaffolding and consultation sessions, main points were typically organised through bullet points, thematic headings, and short text blocks, reflecting their grasp of summarisation and information hierarchy. Reflection logs further indicated that after constructive feedback, students employed color-coded annotations and marginal notes to highlight essential terms, definitions, and cause-effect relationships, suggesting active engagement during the reading process. These findings support prior research asserting that visual tasks like infographic creation can aid in information retention and comprehension by encouraging selective reading and cognitive processing (Alwadei & Mohsen, 2023; Jadallah Abed Khasawneh & Khasawneh, 2023).

Students generally exhibited an emerging ability to synthesise content from multiple sources into coherent visual narratives. Thematic organisation was a recurring strength in the infographics, with several posters integrating subheadings such as "Benefits," "Advantages," and "Practice" to cluster ideas logically. Visual elements like icons, diagrams, and mindmaps were used purposefully to complement textual summaries. This integration of multimodal features reflects growing visual literacy skills, which are increasingly important in 21st-century communication (Yildirim & Dolgunsöz, 2023). Moreover, many students demonstrated an acceptable grasp of basic design principles, including balance, color coordination, and the use of white space, indicating that digital platforms such as Canva facilitated both aesthetic and cognitive engagement with the material (Dupuy & Hashemi, 2025).

Despite successful comprehension and synthesis, fewer students demonstrated deeper levels of interpretation or critical analysis in their infographics for their first draft. Only a limited number engaged in comparative commentary between sources or incorporated author perspectives in meaningful ways. This suggests that while the task supported surface-level reading outcomes, it did not sufficiently promote higher-order thinking unless such engagement was explicitly guided. These findings align with those of Kara (2024) and Manoïlov (2023), who observed that while infographics

are effective for summarising and presenting information, their potential to foster analytical reading skills depends on the inclusion of structured prompts or reflective questions during the design process.

Students generally accomplished the objective of translating academic reading into multimodal formats, with many infographics featuring paraphrased content, coherent visual structures, and appropriate source attributions. However, some instances of orthographic errors, inconsistent formatting and information overload suggest a need for more structured guidance on visual composition. While the creative format was well-received, as reflected in student feedback highlighting increased motivation and reduced reading fatigue, it also presented challenges in balancing content density and clarity. This observation is consistent with Koroglu and Kimsesiz (2023), who advocate for explicit instruction in visual grammar and design logic when infographics are used for language learning tasks.

The findings highlight the pedagogical value of integrating infographic tasks into reading instruction at the tertiary level. Beyond reinforcing comprehension and summarisation, such tasks cultivate skills in visual communication, digital design, and multimodal literacy. To optimise learning outcomes, educators should incorporate scaffolding strategies that gradually move students from basic summarisation to more complex synthesis and evaluative reflections. Embedding visual literacy into reading courses and facilitating peer feedback or class discussions on infographic content can also deepen learning. These recommendations are supported by Moser (2022) and Lasekan, Rojas, and Ubilla (2024), who emphasise the importance of combining visual tools with metacognitive strategies to enhance reading engagement and comprehension.

4. CONCLUSION

This study explored the potential of infographics as an alternative assessment tool for reading comprehension in Malaysian tertiary-level ESL classrooms. The findings reveal that infographic tasks effectively support students in summarising academic texts, synthesising information, and demonstrating basic visual literacy. Students engaged actively with the reading materials by annotating and organising content into multimodal visual formats, which reinforced comprehension and recall. These outcomes align with existing research that underscores the role of infographics in enhancing reading retention and learner motivation through active, and creative engagement (Alwadei & Mohsen, 2023; Jadallah Abed Khasawneh & Khasawneh, 2023; Yildirim & Dolgunsöz, 2023).

However, the study also identified areas for instructional improvement. While students displayed surface-level comprehension and aesthetic design, fewer demonstrated critical engagement or deeper interpretive depth. This highlights the need for explicit scaffolding and reflective prompts that encourage higher-order thinking, such as evaluating author viewpoints or making cross-textual comparisons (Kara, 2024; Manoïlov, 2023). Additionally, some infographics exhibited design inconsistencies and unnecessary content overload, indicating that further guidance on visual structure and cognitive load management is necessary to optimise learning outcomes (Koroglu & Kimsesiz, 2023). These findings emphasise the importance of integrating visual literacy instruction into ESL curricula to ensure that students not only represent content accurately but do so with clarity, coherence, and critical awareness.

In conclusion, infographics offer a promising multimodal approach to ESL reading assessment that aligns with 21st-century literacy demands. They support diverse skills, ranging from comprehension

and synthesis to visual design. This can increase student engagement and reduce cognitive fatigue. For wider and more impactful implementation, educators should embed infographic design within a framework of progressive learning objectives, reflective strategies, and peer collaboration. Future research should expand the scope by exploring longitudinal effects, examining diverse language skills such as vocabulary depth and syntax, and incorporating larger, more varied participant samples (Yildirim & Dolgunsöz, 2023; Kuzmina et al., 2025). By doing so, the field can better understand how visual tools like infographics shape L2 literacy development in evolving educational landscapes.

5. REFERENCES

- Alwadei, A. M., & Mohsen, M. A. (2023). Investigation of the use of infographics to aid second language vocabulary learning. *Humanities and Social Sciences Communications*, 10(1), 1-11.
- Bicen, H., & Beheshti, M. (2022). Assessing perceptions and evaluating achievements of ESL students with the usage of infographics in a flipped classroom learning environment. *Interactive Learning Environments*, 30(3), 498-526.
- Dupuy, B., & Hashemi, T. (2025). 4 Infographics by Design. *Multiliteracies, Multimodality, and Learning by Design in Second Language Learning and Teacher Education*, 67.
- Escobar Bermudez, L. A. (2022). *The Impact of Reading Strategies Based on Online Graphic Organizers on the Reading Comprehension of 7th Graders in a Public School* (Doctoral dissertation, Facultad de Artes y Humanidades).
- Jadallah Abed Khasawneh, Y., & Khasawneh, M. A. S. (2023). The effectiveness of using infographics on the academic achievement of elementary students. *Migration Letters*, 20(5), 1258-1271.
- Kara, S. (2024). Enhancing students' writing competence and 21st-century skills simultaneously via infographics. *Australian Journal of Applied Linguistics*, 7(3), 2044-2044.
- Kong, J. E., & Hailie, C. (2023). Korean EFL Learners' Perspectives on Creating Infographics through Paraphrasing to Promote English Reading and Writing Skills. *Studies in English Education*, 28(1), 25-49.
- Koroglu, Z. C., & Kimsesiz, F. (2023). 'New tricks to old dogs' the use of infographic for teaching grammar to EFL learners-a case study. *Research in Pedagogy*, 13(2), 278-287.
- Kuzmina, N. N., Elsakova, R. Z., & Kochkina, D. V. (2025). Implementation of infographics in master students' professional education. *Bulletin of the South Ural State University. Ser. Education*, 17(1), 36-46.
- Lasekan, O. A., Rojas, V., & Ubilla, L. (2024). Boosting preservice EFL teachers' reading skills via visual media. *International Research Journal of Multidisciplinary Scope*, 5(03), 987-1004.
- Latif, D. O. L. I. A. (2024). Using Infographics to Enhance STEM Students' Vocabulary Retention and Visual Literacy. *Journal of Research in Curriculum Instruction and Educational Technology*, 10(2), 169-222.
- Manoïlov, P. (2023). Can visual representations facilitate EFL information processing and learning?. *Recherche et pratiques pédagogiques en langues. Cahiers de l'Aplut*, 42(1).
- Moser, J. (2022). A Case for Using Authentic Infographics as Language Tasks. *Journal of Asia TEFL*, 19(1), 237.
- Muayad Issa, F. (2024). Using infographics as an educational technology tool in EFL writing: university of Baghdad case study. *Arab World English Journals*, 15(1).
- Nation, P. (2019). The different aspects of vocabulary knowledge. In *The Routledge handbook of vocabulary studies* (pp. 15-29). Routledge.

- Shaman, S. N. H. (2023). The impact of using infographics on developing EFL learners' writing skills and reducing writing anxiety. *Educational Sciences Journal- April 2023 –No2 –part 3*
- Yildirim, G., & Dolgunsöz, E. (2023). A brief introduction to infographics use in ELT research and practice. *Researches in Education*, 1.