

Enhancing primary English writing with authentic learning in mobile cloud

Chin Da Bun Tiang¹, Mariam Mohamad², Mageswaran Sanmugam²

¹Baling District Education Office, Baling, Malaysia

²Centre for Instructional Technology and Multimedia, Universiti Sains Malaysia, Penang, Malaysia

Article Info

Article history:

Received Mar 28, 2024

Revised Jul 5, 2025

Accepted Jul 18, 2025

Keywords:

Authentic learning strategies
English writing experience
Environment
Mobile cloud computing
Primary schoolchildren
Technology integration

ABSTRACT

This qualitative study examines the English writing experiences of 12 primary schoolchildren (PSC) from a vernacular school in Malaysia, employing Herrington and Kervin's principles of authentic learning as its theoretical framework. Data were collected through in-depth one-on-one interviews, e-diaries, and unstructured non-participant observations, and analyzed using thematic analysis. The findings reveal that the participants effectively employed authentic learning strategies (AuLStr) in their writing activities, which included online reflective writing, collaborative online writing, and peer feedback. The use of AuLStr facilitated a collaborative environment where participants engaged in authentic writing tasks, benefiting from teacher scaffolding and peer assistance. Participants noted that reflecting on meaningful personal topics and engaging in creative writing through online collaboration significantly enhanced their writing fluency. The study highlights the impact of authentic learning practices on writing development and offers insights into the pedagogical and theoretical implications of integrating such strategies in primary education.

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Corresponding Author:

Mariam Mohamad

Centre for Instructional Technology and Multimedia, Universiti Sains Malaysia

11800 Penang, Malaysia

Email: mmohamad@usm.my

1. INTRODUCTION

Integrating writing with technology is essential, as it enhances motivation and fosters the development of the literacy skills required for primary schoolchildren (PSC) to effectively engage with technology in their daily lives. Furthermore, students of the 21st century exhibit a strong preference for digital literacy over traditional paper-based methods [1]. A growing body of research indicates that students often exhibit a lack of enthusiasm for writing tasks when these are perceived as being solely for grading or assessment purposes [2]–[4]. Conversely, Herrington and Kervin [5] assert that writing assignments with real-world relevance, particularly those grounded in collaborative, scaffolded, mentored, and reflective practices, have a significant positive impact on students' writing outcomes. Nevertheless, it is crucial to view technology not merely as a tool but as a cultural medium [5]. When integrating technology into writing instruction, the emphasis should be on enhancing writing knowledge, content, and processes, rather than merely teaching students how to operate mobile devices. Given that authenticity, collaboration, and reflection are fundamental principles in effective writing instruction, it is vital to understand how these elements influence the writing of PSC.

Herrington and Kervin [5] suggested that authentic learning presents a potent alternative strategy that is not only interesting for students but also gives them the chance to comprehend underlying concepts and practise thinking like an expert thoroughly. Authentic learning is, in a nutshell, "The notion of learning

knowledge and skills in contexts that reflect the way the knowledge will be useful in real life" [6]. The fundamentals of authentic learning have been extensively discussed by [5], [7].

Collaboration is another critical factor found in the earlier models of instructions for classroom practice that arose from the theory of situated learning [8]. Since this principle supports the collaborative essence of knowledge constructions, learners in a situated learning environment are encouraged to collaborate with their teachers and friends [9]. Writing is always collaborative and amounts to co-authorship according to the dispersed authorship notion. Online collaborative learning theory also sees the advantages of relocating collaborative writing tasks to the internet and extensive networked education [10]. In proposing the model of online collaborative learning, Harasim [11] argued that the three phases of knowledge construction (ideas generating, idea organizing and intellectual convergence) will only take place if students are encouraged to solve problems collaboratively with teachers facilitating the process. The importance of teachers' role in the online collaborative writing tasks was also one of the key findings in Picciano study [10]. The study examined online collaborative learning and other theories, which concentrated on the pedagogical dimensions of online learning, and discovered that online collaborative learning is best situated in smaller instructional environments due to the inseparable teacher factor from the learning process.

Reflection is promoted to allow for the formation of abstractions, and its significance in the educational phase has been emphasised in several existing studies [12]–[14]. In light of the significant of reflection in education, reflective journals have been found to augment language acquisition as this practice aids learners in becoming more conscious of their language proficiency [15], gives learners the chance to hone their writing skills in a less-threatening environment and also provides them with an opportunity to write for a real-world communicative purpose [14]. Dialogue journal writing, one of the approaches to journal writing in an educational context, could be a solution to this issue. Yurekli and Afacan [16] believed that dialogue journal writing has the potential to bridge the gap between traditional school writing and real-world writing since it requires students to interact with their teachers. Learning journals, learning logs, reflective diaries, or even simple online tools like word processors offer good space for students to focus on their learning experiences, which can also be achieved collaboratively [5].

Previous studies claimed that students favoured technology in their writing [1]–[4]. However, it is doubted that "one size fits all" [17] approach to leveraging technology because each circumstance necessitates a unique strategy for teaching writing to PSC. As such, this study concurs with Calkins [18], who professed, "*We cannot teach writing well unless we trust that there is a real, human reason to write.*" Accordingly, a paradigm shift is needed to rethink how to incorporate technology in the teaching of writing and make it authentic within the primary education. Within this context, guided by Herrington and Kervin [5] authentic learning principles, the following research question is formulated to pursue the study's goal: How do PSC use authentic learning strategies (AuLStr) in their writing activities?

2. METHOD

This study used a qualitative research approach. The study was carried out in a Malaysian primary school. This school, a Chinese national-type primary school in a district in the southeastern Kedah State, features a computer room and ten classrooms. Apart from English and Malay, all subjects are taught in Chinese. This particular school was chosen as the research location because it had a Chrome Lab, a mobile learning lab that supports cloud-based learning platforms, and it was situated in a rural area where a digital divide exists in terms of connectivity levels [19]. The 12 PSC and an English language teacher participated in this study.

An English language teacher conducted the writing activities using AuLStr. Henceforth, the writing class was referred to as AuLStr writing class. The AuLStr writing class was carried out for three months. The PSC completed the authentic writing tasks for one to 2 hours of English language class time per week, guided by an English language teacher. During the lesson, they collaborated in groups of three and wrote articles for their class e-magazine on Google Docs as noted in the research phase as shown in Figure 1. They wrote in the e-diary after each lesson.

Besides the interviews and observations, data were also collected through diary writing. All the PSC wrote in the e-diary (known as My eDiary) in the English language. However, the number of entries differs; proficient schoolchildren wrote more, while the less proficient ones wrote less. They were allowed to write freely and were not bound by topics. Further, they were not being marked for grammatical errors. The PSC could not edit the entries submitted in My eDiary, but a copy of their responses was sent to their email. In brief, the following research instruments were employed to collect data for this study: interview, unstructured non-participant observation and e-diary. The transcriptions together with the data gathered from the fieldnotes, written reflections, and the diary entries were subsequently analysed using NVivo12, a qualitative data analysis software.

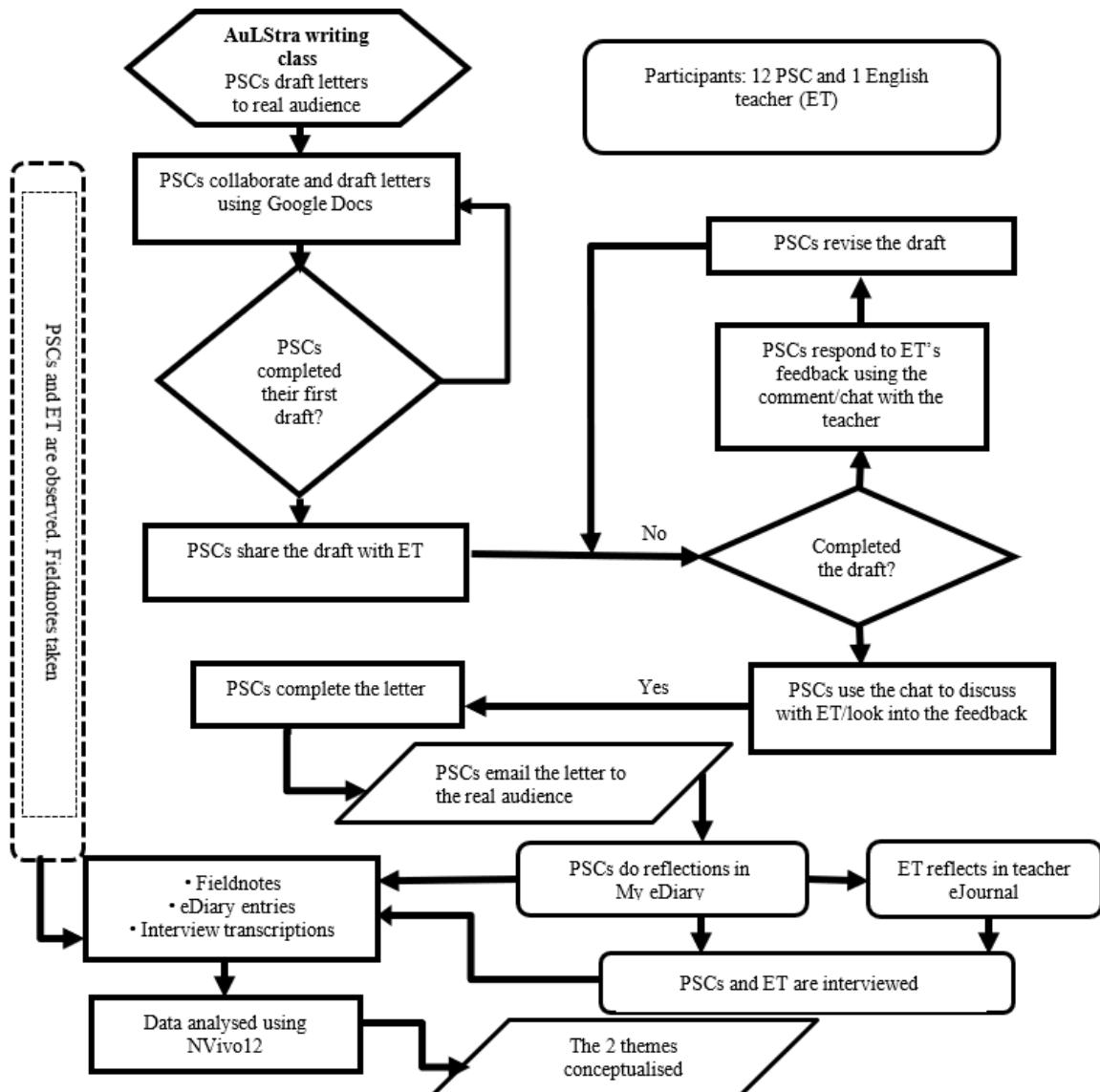


Figure 1. Research phase

3. RESULTS

In this study, statements about writing make-up stories, writing poems, and writing for e-magazines are coded as favourite writing tasks. PSC shared their favourite writing tasks when asked about the tasks they carried out in AuLStra writing class. The two themes are conceptualised based on the data and the research question, online collaborative writing, and online reflective writing. Favourite writing tasks, teacher scaffolding and peer support are coded under the theme online collaborative writing. Meanwhile, the choice of writing topics, reflecting on own feelings, reflecting on daily routines and occurrences, and reflecting on writing tasks are coded under the theme online reflective writing. The themes, codes and sub-codes were projected in Figure 2.

PSC10 stated imaginative stories as his favourite writing tasks, where he said he and his friends like to write make-up stories or about things that they are not going to do in real life. Besides writing imaginative stories, PSC10 also likes to write for e-magazine. He further attributed the flow of ideas to working in groups or writing collaboratively. Other participants cited writing poems (PSC7 and PSC3) and Gen Z (PSC4) as their favourite writing tasks. Teacher scaffolding is prevalent in AuLStra writing class. The PSC were scaffolded by the teacher throughout the writing process. The researcher noted this process in the fieldnotes.

Most of the PSC (90%) acknowledged that their teacher scaffolded their writing by suggesting new words, pinpointing errors, and commenting on the writing. This process helped them with their writing

difficulties, and it was confirmed by the PSC:

“She typed out beside the mistakes that we made and commented on the mistakes.” (PSC5-interview)

Besides the teacher's scaffolding, the PSC also talked about peer support during the online collaborative process. Most of the PSC (85%) confirmed that the support was provided in terms of sentence structures, spelling and word choice, and new ideas. PSC8 said suggestions from friends helped him write, while PSC2 mentioned support in the forms of the unknown word when they wrote together. Other participant's response included the:

“When I discuss with my friends, I get more knowledge about ... about writing. ... when I discuss with friends, I get more idea.” (PSC3-interview)

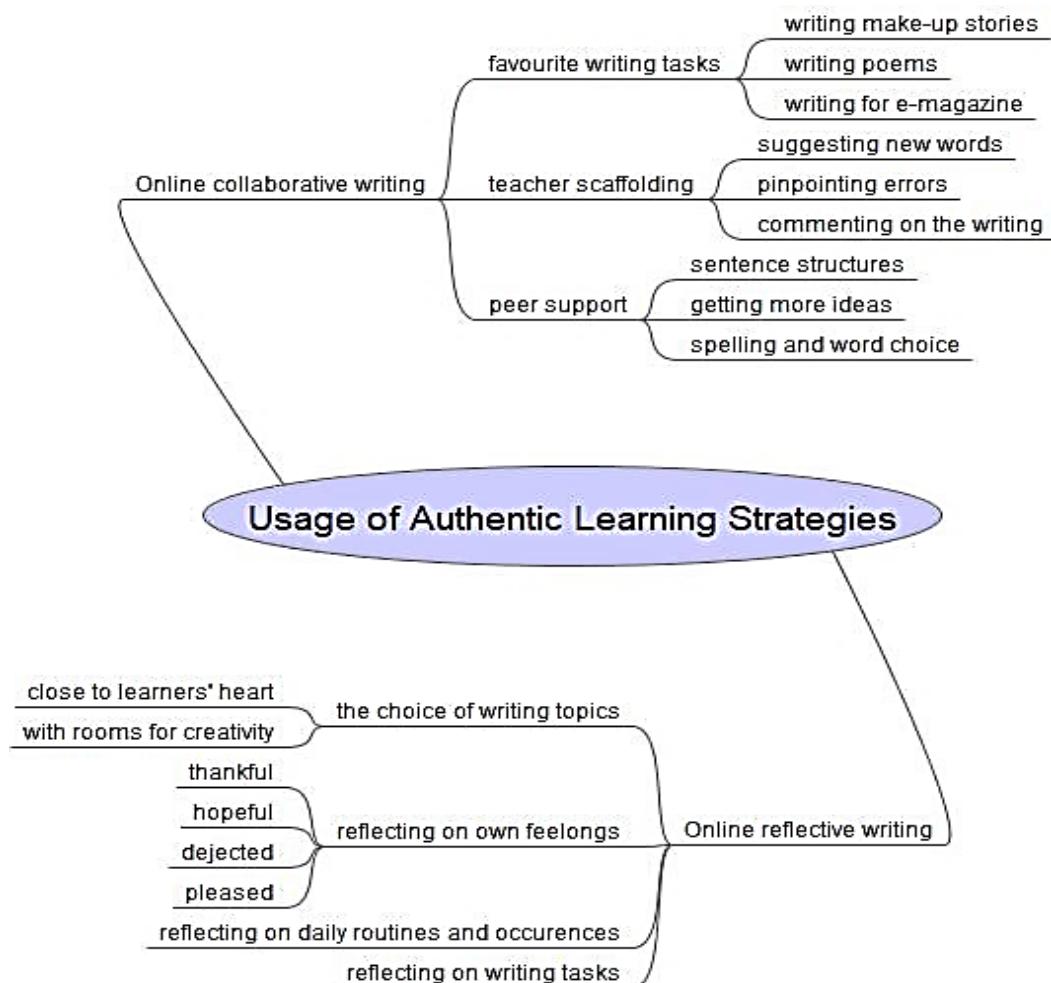


Figure 2. Themes emerging from participants' responses, with codes and sub-codes for online collaborative and reflective writing

The following codes: the choice of writing topics, reflecting on own feelings, reflecting on daily routines and occurrences, and reflecting on writing tasks made up the theme-online reflective writing. In their reflective diary, about 60% of the PSC chose to write about topics close to their heart, such as poems on food (PSC2, PSC4, and PSC8), and matters that offer room for creativity, like designing an e-magazine (PSC8, PSC1, PSC5, and PSC10). Reflecting on one's own feelings and daily occurrences contributed to a huge portion of the responses shared. Most of the PSC (92%), expressed their feelings of being thankful (PSC1, PSC2, PSC3, PSC8, and PSC12), pleased (PSC3, PSC6, PSC7, and PSC11), hopeful (PSC5 and PSC8), and also dejected (PSC10). These feelings were mainly related to the tasks and happenings in AuLStra writing class.

The PSC also did reflect on daily routines and occurrences which happened outside the boundary of AuLstra writing class (PSC10 and PSC2). It shows that PSC were interested to write when they were given freedom and were not being controlled. Teacher1 clarified why the reflections were inclined towards those matters in the interview:

"About the reflection part, some kids are still writing the 'routine'. It seems they didn't get my instructions or maybe they were too engrossed with their collaboration." (T1-interview)

Nonetheless, after being repeatedly reminded of the focus of My eDiary, the PSC did reflect on the writing tasks. When reflecting on writing tasks, they included the designing of the e-magazine (PSC6) and poem writings (PSC2, PSC5, and PSC8). One of the responses included:

"Today we learn how to write a clerihew poem style. This poem style is to write about a people. From all the poem style we wrote this is the number 2 easiest poem style. Although poem is very hard to write, but I am enjoying writing poem in every class." (PSC8-My eDiary)

PSC2 and PSC5 remarked about the poem writing and how online collaborative writing helped them with their English writing. They learned how to make perfect sentences together with their friends.

The findings of this study revealed that PSC can easily write using technology (e.g., Google Docs and Google Form) resulting in improved writing production. The findings also offered insights into the provision of mobile cloud computing environment where PSC shared their articles in the e-magazine and when their teacher and peers scaffolded their composing process which was attributed to writing productivity. It is suggested that choice of topics to be given through consideration when doing authentic writing tasks. Topics that are close to their heart and offered rooms for creativity provides more freedom in their writing, and eventually enhancing their writing motivation.

4. DISCUSSION

This study explored how PSC engaged in writing tasks through online collaborative and reflective writing strategies within the AuLstra writing class. By employing AuLstra, scaffolded by teachers and supported by peers, the study illuminated how these approaches shaped students' writing experiences and outcomes in an L2 context. The integration of mobile cloud computing environments provided students with a platform to collaborate and reflect on their writing, offering valuable insights into adapting authentic learning practices for younger learners.

The results revealed that students favoured creative and imaginative writing tasks, such as composing stories, poems, and e-magazine articles. These tasks allowed students to exercise creativity, collaborate, and improve their writing skills, demonstrating the potential of authentic learning approaches to enhance engagement. Collaborative writing activities supported idea generation, refinement of sentence structures, and resolution of writing challenges through teacher and peer interaction. These findings align with Jonassen [20] and Blas [21], who emphasize the importance of real-world relevance and professional approaches in authentic learning to encourage deep engagement and ambiguity management.

The study also corroborates Marden and Herrington [9] and Ornella *et al.* [22] assertion that the complexity and vagueness inherent in authentic tasks foster problem-solving skills. Additionally, it addresses Hertz [23] concerns regarding young learners' aversion to writing due to frustration by showing how technology and creative, authentic tasks can mitigate negative attitudes. The enthusiasm observed for collaborative environments mirrors Alkhalaif [24] findings on the benefits of group writing tasks. However, challenges noted in previous studies, such as time management and behavioural issues, were less pronounced here due to structured teacher scaffolding and technological integration.

Reflective writing emerged as a significant element, with students frequently exploring topics close to their hearts, such as personal feelings, daily routines, and creative endeavours like designing e-magazines. Consistent with prior research on reflective journals' role in reducing writing anxiety and developing skills [25]–[27], this study extends the discourse by demonstrating the effectiveness of online reflective writing in primary education, a relatively underexplored context. Tools like My eDiary facilitated stress-free writing, enabling students to write continuously without stringent adherence to grammatical rules, supporting Kuyyogsuy [28] and Yavarian *et al.* [29] findings on the benefits of journaling for learner autonomy and grammar improvement.

AuLstra proved instrumental in fostering collaboration and bridging proficiency gaps among students. Less-proficient learners gained confidence and skills through collaboration with more-proficient peers, while high-proficiency students honed their abilities by assisting others, affirming Azodi *et al.* [30] and Storch [31].

Heterogeneous grouping strategies played a vital role in ensuring equitable participation and reducing anxiety. These strategies also allowed students to benefit from working with more knowledgeable others (MKOs), which is central to sociocultural learning theories.

The findings highlight the value of integrating authentic, collaborative, and reflective strategies into primary education. Teachers were critical in modelling effective practices, facilitating discussions, and providing structured feedback. Peer feedback sessions encouraged constructive critique but also underscored the need for scaffolding to improve language-focused feedback quality. This supports prior work advocating for collaborative discussions to enhance peer evaluation skills [32], [33].

By encouraging topic autonomy and task relevance, the study demonstrated how authentic tasks aligned with students' interests enhance motivation and creativity. Reflective tasks, while initially challenging, showed potential for growth with consistent practice and teacher guidance. To build on these insights, educators should incorporate diverse, real-world writing opportunities into curricula while ensuring scaffolding to address young learners' linguistic and developmental challenges.

Future research should explore longitudinal effects of these approaches on writing proficiency, creativity, and learner autonomy, especially in under-researched contexts like primary education. Additionally, dialogic teacher-student interactions, as recommended by Alghasab *et al.* [34] could be further studied for their role in promoting critical thinking and collaborative skills in young learners. The use of digital tools to facilitate authentic writing tasks should also be expanded, ensuring they are accessible and adaptable for primary-level education.

5. CONCLUSION

This study highlights the potential of integrating authentic, collaborative, and reflective writing strategies into primary education, particularly in L2 contexts. By leveraging technology and real-world tasks, young learners demonstrated increased motivation, creativity, and engagement in writing activities. The findings reveal that authentic writing tasks, such as composing letters to frontline workers or contributing to e-magazines, provided students with meaningful contexts that enhanced their sense of purpose and ownership. Collaborative tools like AuLStra empowered students of varying proficiency levels to support one another, bridging skill gaps while fostering a sense of community and mutual learning. Reflective writing practices further encouraged students to explore personal topics, develop their voice, and reduce writing anxiety.

The implications of these results are significant for educators and policymakers. First, incorporating authentic tasks into the curriculum can make learning more relevant and engaging for PSC, helping to improve their writing skills and overall language acquisition. Second, providing students with opportunities for collaborative and reflective writing, supported by digital tools, can enhance not only their linguistic abilities but also their interpersonal and critical thinking skills. Third, scaffolding strategies from teachers and the inclusion of peer feedback mechanisms can address the challenges young learners face in navigating complex writing tasks.

Despite its contributions, the study has limitations. The focus on a single group of PSC limits the generalizability of the findings to other contexts or age groups. The study's reliance on specific technological tools, such as AuLStra and My eDiary, may also pose challenges for replication in environments with limited access to similar resources. Additionally, while the study explored diverse writing activities, the long-term effects on writing proficiency and creativity were not examined.

Future research should address these limitations by exploring similar interventions across a variety of educational contexts and age groups to better understand the adaptability and effectiveness of authentic, collaborative, and reflective writing strategies. It would also be beneficial to examine the long-term impact of these strategies on students' writing development, particularly focusing on their sustained engagement, skill acquisition, and transferability of learned behaviours over time. Additionally, investigating a broader range of digital tools and technologies that can further support these writing approaches is essential. Such tools could offer new ways to enhance collaboration, foster creativity, and encourage reflection in diverse classroom settings. These efforts will not only provide a deeper understanding of how these strategies can be refined but also contribute to the development of scalable, evidence-based practices that can be implemented in primary education to promote more effective writing instruction and learning outcomes. Further studies should also consider the role of teacher professional development in effectively integrating these strategies into everyday teaching practices, ensuring teachers are adequately equipped to facilitate and guide such innovative writing tasks.

ACKNOLEDGEMENTS

We express our deepest gratitudes to the the PSC and the English language teacher who participated in the study and anonymous reviewers. We received no specific funding for this work.

FUNDING INFORMATION

There was no specific grant or external funding received for the conduct of this research.

AUTHOR CONTRIBUTIONS STATEMENT

This journal uses the Contributor Roles Taxonomy (CRediT) to recognize individual author contributions, reduce authorship disputes, and facilitate collaboration.

| Name of Author | C | M | So | Va | Fo | I | R | D | O | E | Vi | Su | P | Fu |
|-------------------|---|---|----|----|----|---|---|---|---|---|----|----|---|----|
| Chin Da Bun Tiang | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | ✓ | |
| Mariam Mohamad | | ✓ | | | | ✓ | | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ |
| Mageswaran | ✓ | | ✓ | ✓ | | | ✓ | | | ✓ | ✓ | ✓ | ✓ | |
| Sanmugam | | | | | | | | | | | | | | |

C : Conceptualization
 M : Methodology
 So : Software
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I : Investigation
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 O : Writing - Original Draft
 E : Writing - Review & Editing

Vi : Visualization
 Su : Supervision
 P : Project administration
 Fu : Funding acquisition

CONFLICT OF INTEREST STATEMENT

The authors declare that they have no known financial, personal, or professional conflicts of interest that could have influenced the work reported in this paper. Authors state no conflict of interest.

INFORMED CONSENT

The authors confirm that informed consent was obtained from all individuals included in this study, in accordance with ethical research standards and the protection of personal privacy.

ETHICAL APPROVAL

The research involving human participants was conducted in accordance with all relevant national regulations and institutional policies, consistent with the principles of the Helsinki Declaration. The study protocol was reviewed and approved by the authors' institutional review board or an equivalent ethics committee.

DATA AVAILABILITY

The data that support the findings of this study are available on request from the corresponding author, [MM]. The data, which contain information that could compromise the privacy of research participants, are not publicly available due to certain restrictions.

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BIOGRAPHIES OF AUTHORS



Chin Da Bun Tiang     is currently serving as a school improvement specialist coaches plus at the Baling District Education Office, Kedah, Malaysia. She holds a PhD from Universiti Sains Malaysia, where her research concentrated on the development of English writing skills in young learners through authentic learning strategies. Her expertise extends to optimizing teaching methodologies for young learners and providing support to non-English educators in refining their instructional approaches. She can be contacted at email: chinda@moe.gov.my.



Mariam Mohamad     is a senior lecturer at Universiti Sains Malaysia. She specializes in mobile learning and mobile assistive technology, with a focus on developing and implementing tools that enhance the educational experience. Her research is dedicated to advancing mobile technologies to support diverse learning needs. She is passionate about integrating technology into education to create inclusive and effective learning environments. She can be contacted at email: mmohamad@usm.my.



Mageswaran Sanmugam     is a senior lecturer at Universiti Sains Malaysia. His research interests lie in educational technology and game-based learning, focusing on how digital tools and games can be utilized to improve educational outcomes. He is committed to exploring innovative educational strategies that engage and motivate learners. He can be contacted at email: mageswaran@usm.my.