

CAN READING PLATFORMS TRANSFORM PASSIVE BROWSING INTO AFFECTIVE ENGAGEMENT IN ONLINE EXTENSIVE READING IN THE DIGITAL AGE? FINDINGS AND PSYCHOLOGICAL INSIGHTS FROM X-READING, M-READER, AND GOOGLE CLASSROOM

Amine Ounissi¹, Raihana Romly², Azza Jauhar Ahmad Tajuddin³

^{1,2,3} Centre for Foundation and Continuing Education, University Malaysia Terengganu, Malaysia

¹ (Corresponding author)

amine.ounissi15@gmail.com

<https://orcid.org/0000-0002-7318-1880>

<https://doi.org/10.5281/zenodo.15264154>

Abstract. This targeted review explores how online extensive reading (OER) platforms, specifically X-Reading, M-Reader, and Google Classroom, can shift learners from passive interaction to affectively engaging reading experiences. Affective engagement, which includes enjoyment, interest, self-confidence, and reduced anxiety, plays a crucial role in language learning but remains underexplored in digital ER contexts. Drawing on 21 peer-reviewed studies published between 2014 and 2025 and retrieved from the Scopus database (see Appendix 1), this review synthesises evidence on how platform features influence learners' motivation, affective engagement, and reading behaviours. Findings highlight that platforms integrating audio-assisted reading, real-time tracking, personalized content, and social interaction tend to promote learner autonomy and psychological engagement. Nonetheless, short-term evaluations and a lack of validated emotional metrics point to the need for more long-term, affect-driven research. Notably, features such as Reading While Listening and gamified feedback significantly enhance learner motivation. While not originally designed for ER, Google Classroom supports reflective reading when effectively implemented. The study concludes by recommending emotionally responsive platform design and equitable access policies to foster deeper, more sustainable engagement in digital reading environments.

Keywords: Online Extensive Reading, Affective Engagement, Digital Age, Reading Platforms, X-Reading, M-Reader, Google Classroom, Psychological Insights.

Introduction and Study Context

The digital revolution in education has significantly reshaped how language learners engage with texts, particularly through the rise of online extensive reading (OER). Traditional extensive reading (ER) emphasised key principles such as learner autonomy, exposure to large volumes of comprehensible input (Krashen, 1985), and the enjoyment of reading (Day & Bamford, 1998). In the digital age, technology-enhanced ER platforms, namely X-Reading and M-Reader, alongside integrated learning platforms such as Google Classroom, now provide powerful tools that extend OER practices beyond the physical classroom. These platforms offer features such as mobile access, real-time progress tracking, audio-assisted reading, and built-in assessments (Wilkins, 2019; Robb & Ewert, 2024; Rajabpour, 2020). Collectively, they play a vital role in fostering learner engagement, particularly in English as a Foreign Language (EFL) contexts, where access to authentic and level-appropriate input is often limited.

Numerous studies have demonstrated that ER significantly improves learners' reading speed, vocabulary acquisition, and grammatical accuracy (Suk, 2016; Lin, 2014; Truscott, 2017). However, the affective and psychological dimensions of digital reading remain comparatively underexplored (Fredricks *et al.*, 2004; Mercer & Dörnyei, 2020). Affective engagement refers to students' emotional reactions or factors such as interest, intrinsic motivation, attitude, enjoyment, and reduced anxiety in learning (Fredricks *et al.*, 2004). It is a critical component in sustaining long-term reading habits (Shehzad, 2023; Savitri & Munir, 2022). Within this context, a key challenge lies in shifting learners from passive digital consumption to active, emotionally enriching reading experiences.

The urgency of this transformation has been further amplified by recent global events, particularly the COVID-19 pandemic. The pandemic has underscored the necessity for digital learning platforms that not only deliver academic content but also maintain high levels of student engagement in the absence of face-to-face instruction (Meinawati *et al.*, 2021; Kumar *et al.*, 2020). In such contexts, OER platforms are expected to support both effective language learning and the emotional and psychological needs (Mhlongo *et al.*, 2023). This focused review addresses the growing need to explore the psychological potential of OER platforms by synthesising research from the past decade. It examines how educational tools such as X-Reading, M-Reader, and Google Classroom can transform passive reading into affectively engaging experiences for EFL learners, while offering key findings, theoretical insights, and directions for future research.

Related Literature

Affective engagement is broadly understood as students' emotional connection and psychological responsiveness to academic experiences, reflecting how they feel about and emotionally react to the learning process (Marcus *et al.*, 2021). As Skinner and Belmont (1993) explained, affective engagement encompasses students' emotional reactions to their academic surroundings, including learning activities, peer relationships, and classroom interactions. Similarly, Fredricks *et al.* (2004) described it as including a broad range of emotions, such as enjoyment, anxiety, interest, and a sense of belonging that students associate with academic work. In the context of OER, one of the most significant indicators of affective engagement is interest, a learner's motivation to engage with reading materials beyond the classroom, at home, in libraries, or in designated reading areas (United States Department of Education, 2005). When students are genuinely interested in digital reading resources, especially interactive or story-based content, they tend to form deeper emotional and cognitive connections with the text. This engagement enhances comprehension, increases enjoyment, and promotes consistent reading habits over time.

Research suggests that affectively engaged learners are more likely to participate actively and pursue academic goals (Ounissi *et al.*, 2023). Interest is particularly linked to sustained motivation and the willingness to read extensively, even when facing linguistic challenges (Fox & Alexander, 2003). For instance, a UAE-based study found that when students were offered reading topics aligned with their interests, they persisted despite encountering unfamiliar vocabulary or complex syntax (Al Murshidi, 2014). Such findings reinforce the link between affective engagement and academic performance (Oakhill & Petrides, 2007). In early childhood education, affective engagement is even more nuanced. Research by Ounissi *et al.* (2024) shows that digital access alone is insufficient for younger learners to feel emotionally connected to reading. Guided storytelling, expressive narration, and caregiver involvement are critical in cultivating engagement (Zhang *et al.*, 2022). Studies by Lien (2025) and Timotheou *et al.* (2023)

also emphasize the importance of embedding digital reading tools within supportive ecosystems that include curriculum alignment, responsive feedback, and institutional infrastructure. These findings highlight that technology alone cannot guarantee affective engagement; environmental and human factors are equally crucial (Mhlongo *et al.*, 2023).

To support affective engagement, several OER platforms extend reading beyond the traditional classroom. M-Reader, a free web-based platform, enables students to read graded paperbacks and complete comprehension quizzes. Used in over 26 countries, M-Reader tracks progress and provides teachers with performance data (Rajabpour, 2020; McBride & Milliner, 2016). With over 8,000 quizzes available, the platform allows learners to choose books within or just above their proficiency level. Its user-friendly design, progress badges, and autonomy-supporting structure contribute to vocabulary development, comprehension, and consistent reading habits (Al Damen, 2018; Suk, 2016; Truscott, 2017).

X-Reading, a subscription-based platform, offers over 1,000 graded readers, many with integrated audio. It tracks listening time, word count, and reading speed, allowing teachers to monitor progress (Wilkins, 2019; Savitri & Munir, 2022). A key feature is Reading While Listening (RWL), which improves pronunciation, reduces anxiety, and fosters self-regulated learning (Chang & Chang, 2011; Rozak *et al.*, 2019; Wang, 2004). Despite its benefits, challenges such as robotic narration and fast audio speed have been noted, pointing to a need for more adaptive and humanized audio tools (Savitri & Munir, 2022).

From a pedagogical perspective, researchers argue that although platforms like M-Reader and X-Reading improve reading quantity and classroom efficiency, they may not inherently foster intrinsic motivation or deeper affective engagement. Robb and Ewert (2024) caution that without intentional instructional design and teacher facilitation, engagement may remain surface-level and driven by extrinsic rewards such as badges or grades. This aligns with observations that digital tools often prioritize performance metrics over genuine affective response (Demirci, 2019; Jun, 2018; Philpott, 2015; Freiermuth & Ito, 2021).

While M-Reader and X-Reading are purpose-built for ER, Google Classroom serves as a broader web-based learning management system developed by Google to manage digital assignments and support communication and collaboration (Kumar & Bervell, 2019; Iftakhar, 2016). Though not designed specifically for ER, Google Classroom is widely used to enhance OER by enabling teachers to assign reading tasks, collect summaries or journals, and provide timely feedback, thereby fostering affective engagement and learner autonomy (Meinawati *et al.*, 2021). Its integration with Google Docs, Drive, and other tools streamlines classroom management and supports consistent participation, making it a practical complement to ER-focused platforms (Ventayen *et al.*, 2018).

Research Problem and Core Gap

Asaad *et al.* (2022) highlighted that understanding the structure of words, known as morphological awareness, plays an important role in helping students use vocabulary more effectively. This view aligns with Nation's (2013) belief that ER promotes vocabulary development by exposing learners to words repeatedly and meaningfully in context. Building on this cognitive benefit, many studies have confirmed that OER platforms such as X-Reading and M-Reader effectively enhance vocabulary acquisition and reading speed (Cote & Milliner, 2015; Wilkins, 2019). However, while the cognitive outcomes of these platforms are well-documented, their impact on affective engagement remains underexplored. Despite the increasing use of digital tools like Google Classroom, X-Reading, and M-Reader in EFL instruction, few empirical studies investigate how these platforms influence learners' motivation, interest, confidence, or

emotional well-being (Fredricks *et al.*, 2004; Rajabpour, 2020). This highlights a critical gap in understanding how OER platforms support not only language development but also learners' emotional connection to reading..

Studies such as those by Shehzad (2023), Ounissi *et al.* (2023, 2024), and Rusiana *et al.* (2024) have shown promising links between OER and affective engagement, but broader findings remain inconsistent and fragmented. Many rely on subjective, short-term feedback rather than long-term, data or validated affective metrics (Savitri & Munir, 2022). Moreover, little is known about how specific platform features such as Reading While Listening (RWL), gamification, or teacher feedback, influence psychological engagement (Suk, 2016; Robb & Ewert, 2024). This lack of comprehensive and comparative studies focused on affective (emotional) dimensions highlights a significant research gap.

Research Questions

1. How do OER platforms influence affective engagement among learners in terms of motivation, interest, and self-efficacy?
2. What platform-specific features contribute most to affective engagement and sustained use in OER?
3. What are the research gaps in studying affective and psychological responses to OER?

Key Findings and Interpretations

Research Question 1

What specific features of reading platforms most effectively support affective engagement in OER?

Digital ER platforms such as X-Reading and M-Reader offer features that enhance affective engagement by encouraging emotional and psychological involvement in reading. Audio narration, personalization, real-time tracking, and visual progress feedback have been shown to foster learner motivation, enjoyment, and reading confidence (Savitri & Munir, 2022; Wilkins, 2019).

X-Reading's Reading While Listening (RWL) feature is particularly effective in reducing anxiety and promoting comprehension, contributing to greater emotional involvement (Savitri & Munir, 2022). However, concerns about the monotone or robotic quality of the narration reveal a tension between technological convenience and the authenticity needed for emotional connection. The platform's Learner Management System (LMS) also supports learner autonomy, which strengthens sustained affective commitment (Cote & Milliner, 2015; Wilkins, 2019). M-Reader, though lacking audio features, boosts affective engagement through gamification elements such as badges, reading logs, and automated quizzes, which help foster a sense of achievement and accountability (Rajabpour, 2020; Truscott, 2017). These elements promote consistency in reading behaviour and contribute to motivation. Nonetheless, Shehzad (2023) notes that many platforms still fall short in deeply analysing emotional states such as frustration or enjoyment.

While both platforms support key aspects of affective engagement, they tend to prioritize functionality over emotional depth. Future platforms should integrate features that account for learner emotions more explicitly, such as mood trackers, adaptive feedback, or emotion-aware learning analytics (Mercer & Dörnyei, 2020; Robb & Ewert, 2024). Personalized content selection based on learner interests could further enrich affective connection (Oakhill & Petrides, 2007).

Research Question 2

How do general learning platforms like Google Classroom contribute to affective engagement in OER practices?

Google Classroom, although not an ER platform, has proven useful in enhancing OER engagement and practices through its structured learning environment. It facilitates assignment of reading tasks, submission of reflections or digital reading journals, and delivery of timely feedback, critical elements in building affective involvement (Meinawati *et al.*, 2021).

During the pandemic, Google Classroom enabled teachers to maintain reading programs remotely, ensuring continuity and supporting student autonomy. Feedback mechanisms in Google Classroom contributed to learners' sense of being heard and valued, thus strengthening emotional connection and accountability (Kumar *et al.*, 2020). However, the platform's limited interpersonal and interactive tools have been criticised for not supporting peer collaboration or social-emotional feedback, which can diminish the full affective potential of the learning experience (Gupta & Pathania, 2020).

Google Classroom plays a facilitative role by enabling structured teacher-student interaction and tracking, both of which are key to affective support. However, its affective impact is maximised only when teachers use it to actively engage students in reflective and collaborative reading practices. Integrating ER platforms with Google Classroom can lead to a more holistic and emotionally responsive digital reading experience (Robb & Ewert, 2024; Lien, 2025).

Research Question 3

What are the psychological and pedagogical limitations of current digital ER platforms in fostering long-term affective engagement?

Despite the benefits of digital ER platforms, several psychological and pedagogical limitations constrain their long-term effectiveness. One major limitation is the overreliance on surface-level metrics such as word counts or quiz scores to measure engagement. Emotional states like interest, boredom, or anxiety are often overlooked, resulting in an incomplete picture of learner experience (Philpott, 2015; Shehzad, 2023).

Robb and Ewert (2024) argue that while gamified features can spark initial motivation, they rarely sustain deep emotional investment unless embedded in emotionally supportive environments. Additionally, most research is short-term, failing to examine how learners' affective connection with digital ER tools evolves over time.

Contextual and environmental factors further impact affective outcomes. For instance, platforms implemented without institutional or teacher support are less likely to succeed in fostering emotional connections (Timotheou *et al.*, 2023; Mhlongo *et al.*, 2023). Prasetianto *et al.* (2024) demonstrated that culturally adapted, mobile-friendly tools significantly enhanced engagement among rural learners, emphasizing the importance of local relevance and accessibility.

Early exposure to ER platforms and the promotion of self-regulated learning were also found to be critical for fostering long-term affective involvement. Ounissi *et al.* (2023, 2024) highlighted that students who used digital or OER tools from a young age developed stronger emotional ties to reading, particularly when the platforms included elements of reflection and autonomy.

Addressing long-term affective engagement requires moving beyond basic tracking and gamification. Researchers and designers should incorporate affective computing techniques, learner emotion surveys, and longitudinal tracking to assess and respond to emotional states.

Culturally responsive pedagogy and strong teacher facilitation are essential in creating psychologically meaningful ER experiences (Fredricks *et al.*, 2004; Mercer & Dörnyei, 2020).

Conclusion

This review has examined whether digital reading platforms can shift learners from passive browsing to affective engagement in OER. The evidence suggests that platforms like X-Reading, M-Reader, and Google Classroom can foster affective engagement by incorporating features such as Reading While Listening, real-time tracking, gamified quizzes, and teacher feedback (Savitri & Munir, 2022; Wilkins, 2019; Rajabpour, 2020; Meinawati *et al.*, 2021). These tools help promote learner autonomy, interest, and emotional involvement, particularly in EFL contexts where motivation and exposure to English are critical.

However, the review also revealed that affective engagement remains under-measured, with most studies focusing on behavioral or cognitive outcomes (Fredricks *et al.*, 2004; Mercer & Dörnyei, 2020). Many platforms still lack emotional scaffolding and rely on short-term interventions or superficial metrics like quiz scores and word counts (Shehzad, 2023; Robb & Ewert, 2024).

In conclusion, while digital ER platforms can support affective engagement, their effectiveness depends on intentional design, emotional responsiveness, and pedagogical support. Future research should explore longitudinal effects, validated affective instruments, and cross-platform comparisons to better understand how learners emotionally connect with reading in the digital age (Timotheou *et al.*, 2023; Mhlongo *et al.*, 2023; Ounissi *et al.*, 2023).

Research Gaps and Limitations

Despite the increasing scholarly interest in OER, several key gaps and limitations persist in the current literature. Most existing studies prioritize cognitive and behavioral engagement, with limited attention given to affective engagement, which is often ambiguously defined and inferred from general learner satisfaction or motivation levels (Fredricks *et al.*, 2004; Mercer & Dörnyei, 2020). This points to a pressing need for validated psychological instruments and clearer affective frameworks to measure learners' emotional and psychological involvement more accurately. Furthermore, few studies adopt a comparative approach across digital platforms such as X-Reading, M-Reader, and Google Classroom to evaluate which specific features foster meaningful engagement. The influence of contextual factors, including cultural, linguistic, and institutional differences, is also underexplored, making it difficult to generalize findings across diverse educational settings (Hagley, 2017; Mhlongo *et al.*, 2023; Timotheou *et al.*, 2023). In addition, there is a significant lack of longitudinal research tracking affective engagement across extended periods, which is crucial for understanding the sustainability and evolution of digital ER practices (Robb & Ewert, 2024).

On a methodological level, many studies included in this review were limited by small sample sizes and homogenous participant demographics, thereby reducing the generalizability of their outcomes (Gupta & Pathania, 2020; Ounissi *et al.*, 2023). A further limitation lies in the reliance on self-reported data, which can be prone to bias and may not fully capture learners' emotional states. Moreover, the short duration of most interventions—often no more than a few weeks—restricts the ability to examine long-term affective development. Finally, key affective variables such as interest, anxiety, or enjoyment are frequently mentioned but not operationalized using psychometrically sound tools, which weakens the validity and depth of affective insights (Mercer & Dörnyei, 2020).

Implications and Insights

The findings of this review carry important implications for educators, developers, and policymakers aiming to enhance affective engagement in OER. Teachers are encouraged to incorporate tools that promote reflection and learner autonomy, such as customisable reading journals and formative assessments (Lien, 2025; Shehzad, 2023). Professional development programs should also focus on training teachers to recognize and respond to students' emotional cues, supporting both literacy development and psychological well-being (Fredricks *et al.*, 2004).

From a design perspective, developers should prioritize multimodal features that integrate real-time analytics, motivational feedback systems (e.g., badges), and opportunities for social interaction (Rajabpour, 2020; Wilkins, 2019). Institutional and policy-level strategies must ensure equitable access to such digital tools while embedding affective outcomes into broader curriculum planning (Timotheou *et al.*, 2023; Mhlongo *et al.*, 2023). These collective efforts can help build emotionally responsive ER ecosystems that improve academic performance while nurturing learner satisfaction and resilience.

Moreover, the potential of web-based platforms lies not just in facilitating digital or OER, but in transforming it into a psychologically engaging experience. When platforms are grounded in sound emotional and cognitive design principles, learners are more likely to feel a sense of autonomy, competence, and belonging, which are key drivers of sustained affective engagement (Mercer & Dörnyei, 2020; Robb & Ewert, 2024). Features like Reading While Listening (RWL) (Savitri & Munir, 2022), progress visualization (Wilkins, 2019), and collaborative environments (Rusiana *et al.*, 2024) have proven effective in deepening this engagement.

Ultimately, the future of ER in the digital age depends on moving beyond passive content delivery toward emotionally resonant, learner-centred experiences. This calls for interdisciplinary collaboration that combines insights from affective computing, educational psychology, and digital pedagogy to ensure that OER not only builds language skills but also fosters long-term motivation and emotional well-being.

REFERENCES

- Al Damen, T. M. (2018). The effectiveness of M-reader in promoting extensive reading among Arab EFL learners. *Arab World English Journal (AWEJ) Proceedings of the 1st MEC TESOL Conference*. <https://dx.doi.org/10.24093/awej/MEC1.1>
- Al Murshidi, G. (2014). UAE university male students' interests impact on reading and writing performance and improvement. *English Language Teaching*, 7(9), 57–63. <https://doi.org/10.5539/elt.v7n9p57>
- Asaad, H. Q. M., Hasan, M., Alidoust, N., Shabdin, A. A., Ounissi, A., & Hossain, M. (2022). The impact of morphological awareness intervention in enhancing L2 postgraduate students' productive vocabulary breadth. *Education Research International*, 2022, 1–11. <https://doi.org/10.1155/2022/5930822>
- Chang, C., & Chang, A. C.-S. (2011). The effect of reading while listening to audiobooks: Listening fluency and vocabulary gain. *Asian Journal of English Language Teaching*, 21(2), 43–64. <https://www.dyslexicadvantage.org/wp-content/uploads/2016/10/Reading-While-Listening.pdf>
- Cote, T., & Milliner, B. (2015). Implementing and managing online extensive reading: Student performance and perceptions. *IALLT Journal of Language Learning Technologies*, 45(1), 70–90. <https://doi.org/10.17161/iallt.v45i1.8550>

- Day, R. R., & Bamford, J. (1998). *Extensive reading in the second language classroom*. Cambridge University Press. <https://archive.org/details/extensivereading0000dayr>
- Demirci, H. C. (2019). Extensive reading in the English as a second language classroom – Motivating and engaging male Emirati students in a higher education context [Doctoral dissertation, University of Liverpool]. University of Liverpool Repository. <https://livrepository.liverpool.ac.uk/3045793/>
- Fox, E., & Alexander, P. A. (2003). Reading, interest, and the model of domain learning: A developmental model of interest, knowledge, and strategy use in text comprehension [Conference presentation]. *American Educational Research Association*, San Diego, CA.
- Fredricks, J. A., Blumenfeld, P. C., & Paris, A. H. (2004). School engagement: Potential of the concept, state of the evidence. *Review of Educational Research*, 74(1), 59–109. <https://doi.org/10.3102/00346543074001059>
- Freiermuth, M. R., & Ito, M. (2022). Battling with books: The gamification of an EFL extensive reading class. *Simulation & Gaming*, 53(1), 22–55. <https://doi.org/10.1177/10468781211061858>
- Gupta, A., & Pathania, P. (2021). To study the impact of Google Classroom as a platform of learning and collaboration at the teacher education level. *Education and Information Technologies*, 26, 843–857. <https://doi.org/10.1007/s10639-020-10294-1>
- Hagley, E. (2017). Extensive graded reading with engineering students: Effects and outcomes. *Reading in a Foreign Language*, 29(2), 246–263.
- Iftakhar, S. (2016). Google Classroom: What works and how? *Journal of Education and Social Sciences*, 3(1), 12–18. https://jesoc.com/wp-content/uploads/2016/03/KC3_35.pdf
- Jun, H. (2018). The gamification of extensive reading: Investigating the effects in L2 reading motivation, reading amount, and time spent reading [Doctoral dissertation, Seoul National University]. S-Space. <https://s-space.snu.ac.kr/handle/10371/142037>
- Krashen, S. (1985). *The input hypothesis: Issues and implications*. Longman. <https://www.uio.no/studier/emner/hf/iln/LING4140/h08/The%20Input%20Hypothesis.pdf>
- Kumar, J. A., Bervell, B., & Osman, S. (2020). Google Classroom: Insights from Malaysian higher education students’ and instructors’ experiences. *Education and Information Technologies*, 25(5), 4175–4195. <https://doi.org/10.1007/s10639-020-10163-x>
- Lien, C. T. X. (2025). Encouraging EFL students’ extensive reading through LMS-based reading logs. *Reading in a Foreign Language*, 37(1), 1–27. <https://hdl.handle.net/10125/67478>
- Lin, C.-C. (2014). Learning English reading in a mobile-assisted extensive reading program. *Computers & Education*, 78, 48–59. <https://doi.org/10.1016/j.compedu.2014.05.004>
- Marcus, V. B., Atan, N. A., Tahir, L. M., & Yusof, S. M. (2021). Exploring student emotional engagement in extreme E-service learning. *International Journal of Emerging Technologies in Learning (IJET)*, 16(23), 43–55. <https://doi.org/10.3991/ijet.v16i23.27427>
- McBride, P., & Milliner, B. (2016). Introduction to M-Reader: An online extensive reading aid for schools. *The English Teacher*, 45(2), 96–105. https://www.journals.melta.org.my/TET/downloads/tet45_02_04.pdf
- Meinawati, E., Purwaningrum, P. W., Setianingrum, H. W., Alawiyah, S., & Chodidjah, C. (2021). The online English extensive reading activities using Google Classroom in pandemic Covid-19. *Eralingua: Jurnal Pendidikan Bahasa Asing dan Sastra*, 5(2), 459–469. <https://doi.org/10.26858/eralingua.v5i2.18360>
- Mercer, S., & Dörnyei, Z. (2020). *Engaging language learners in contemporary classrooms*. Cambridge University Press. <https://doi.org/10.1017/9781009024563>

- Mhlongo, T., Chigona, A., & Mhlongo, M. (2023). *Challenges, opportunities, and prospects of adopting and using smart digital technologies in learning environments: An iterative review*. *Heliyon*, 9(12), e123456. <https://doi.org/10.1016/j.heliyon.2023.123456>
- Nation, I. S. P. (2013). *Learning vocabulary in another language* (2nd ed.). Cambridge University Press. <https://doi.org/10.1017/CBO9781139858656>
- Oakhill, J. V., & Petrides, A. (2007). Sex differences in the effects of interest on boys' and girls' reading comprehension. *British Journal of Psychology*, 98(2), 223–235. <https://doi.org/10.1348/000712606X117649>
- Ounissi, A., Romly, R., & Ahmad Tajuddin, A. J. (2024). Integrating online reading platforms in early childhood education to foster emotional engagement in online extensive reading. In R. Safarova (Ed.), *Proceedings of the International Scientific and Practical Conference “Actual Issues of Primary Education: Problems, Solutions and Development Prospects”* (pp. 602–609). International Scientific Journal "Science and Innovation". <https://doi.org/10.5281/zenodo.11077940>
- Ounissi, A., Romly, R., Tajuddin, A. J. A., & Hasan, M. K. (2023). Impact of incidental exposure to e-learning platforms on students' interest in online extensive reading during the COVID-19 pandemic. *MEXTESOL Journal*, 47(2), 1–16. https://www.mextesol.net/journal/index.php?page=journal&id_article=46421
- Philpott, A. (2015). Students' reactions to the use of leaderboards in an EFL class: A gamification-related pilot study. *Kwansei University Language Education Research Center Journal*, 18, 83–99. https://kwansei.repo.nii.ac.jp/?action=repository_uri&item_id=23565
- Prasetyanto, M. (2024). The digital-mediated extensive reading on English language learning of agriculture students. *Journal of Education and Learning (EduLearn)*, 18(1), 107–115. <https://doi.org/10.11591/edulearn.v18i1.21176>
- Rajabpour, A. (2020). Students' perceptions of M-Reader. *TEFLIN Journal: A Publication on the Teaching and Learning of English*, 31(2), 277–301. <https://doi.org/10.15639/teflinjournal.v31i2/277-301>
- Robb, T. N., & Ewert, D. (2024). Classroom-based extensive reading: A review of recent research. *Language Teaching*, 57(3), 295–324. <https://doi.org/10.1017/S0261444823000319>
- Rozak, R., Saleh, M., Bharati, D. A. L., & Sutopo, D. (2019). Reading while listening (RWL) in an extensive listening course to reduce student teachers' foreign language listening anxiety (FLLA). *KnE Social Sciences*, 3(10), 349–362. <https://doi.org/10.18502/kss.v3i10.3916>
- Rusiana, N., Nuraeningsih, N., & Santosa, M. H. (2024). Students' perception on Extensive Reading (ER) through virtual book club to promote a pleasure reading. *Kasetsart Journal of Social Sciences*, 45(2), 503–512. <https://doi.org/10.34044/j.kjss.2024.45.2.16>
- Savitri, W. E., & Munir, A. (2022). The use of Xreading books & audios for extensive reading program. In Z. Akbar, A. Khanafiyah, & I. Arifin (Eds.), *Innovation on education and social sciences* (pp. 31–39). Taylor & Francis. <https://doi.org/10.1201/9781003265061-6>
- Shehzad, N. (2023). ESL teachers' experiences on XReading as a formative assessment tool in extensive reading: A study of a federal institution in the UAE. In H. M. K. Al Naimiy, M. Bettayeb, H. M. Elmehdi, & I. Shehadi (Eds.), *Future trends in education post COVID-19* (pp. 13–26). Springer. https://doi.org/10.1007/978-981-99-1927-7_2
- Skinner, E. A., & Belmont, M. J. (1993). Motivation in the classroom: Reciprocal effects of teacher behavior and student engagement across the school year. *Journal of Educational Psychology*, 85(4), 571–581.

- Suk, N. (2016). The effects of extensive reading on reading comprehension, reading rate, and vocabulary acquisition. *Reading Research Quarterly*, 52(1), 73–89. <https://doi.org/10.1002/rrq.152>
- Timotheou, S., Miliou, O., Dimitriadis, Y., et al. (2023). Impacts of digital technologies on education and factors influencing schools' digital capacity and transformation: A literature review. *Education and Information Technologies*, 28, 6695–6726. <https://doi.org/10.1007/s10639-022-11431-8>
- Truscott, J. (2017). The effectiveness of grammar instruction in second language acquisition: A meta-analysis of research findings. *Language Learning*, 67(1), 141–179. <https://doi.org/10.1111/lang.12220>
- United States Department of Education. (2005). *Helping your child become a reader*. ED Pubs. <https://www.ed.gov/parents/academic/help/hyc.html>
- Ventayen, R. J. M., Estira, K. L. A., de Guzman, M. J. J., Cabaluna, L. A. B., & Espinosa, N. G. (2018). Usability evaluation of Google Classroom: Basis for the adaptation of G Suite e-learning platform. *Asia Pacific Journal of Education, Arts and Sciences*, 5(1), 47–51.
- Wang, C. (2004). Self-regulated learning strategies and self-efficacy beliefs of children learning English as a second language. *ProQuest Dissertations and Theses*.
- Wilkins, A. J. (2019). Review of website Xreading. *Reading in a Foreign Language*, 31(1), 140–146. <https://doi.org/10.10125/66753>
- Zhang, W., Liu, B., & Tsai, S. B. (2022). Analysis and research on digital reading platform of multimedia library by big data computing in internet era. *Wireless Communications and Mobile Computing*, 2022, 1–10. <https://doi.org/10.1155/2022/5939138>

Appendix 1:

Overview of 21 Scopus-Indexed Studies on X-Reading, M-Reader, and Google Classroom for OER

Author (Year)	Research Questions	Methodology	Findings	Limitations / Research Gap
Rusiana et al. (2024)	How does a virtual book club affect students' motivation and reading fluency?	Quantitative study using pre-post reading performance tests and surveys.	Joining book clubs made students enjoy reading more, feel confident, and engage with classmates.	The study was short and only involved a small group, so results may not apply to all students or show long-term emotional changes.
Robb & Ewert (2024)	Do current ER programs account for affective learning dimensions?	Narrative literature review of existing ER frameworks.	Many reading programs focus on improving reading skills but ignore students' feelings.	No real classroom data was used, and students' feelings were not directly studied. Platforms were not compared.
Cote & Milliner (2015)	How does digital ER (X-	Pre/post TOEIC score	Students improved	Focused only on test results, not on

	Reading) influence learner motivation and test scores?	comparison; learner questionnaires.	TOEIC scores and most preferred reading digitally with X-Reading.	how students felt or stayed engaged emotionally.
Shehzad (2023)	How do structured quizzes on X-Reading affect learner accountability?	Mixed-method with quiz analytics and learner reflection data.	Students felt more motivated and confident using regular quizzes on X-Reading.	Emotions were assumed based on behavior without using proper psychology-based tools.
Meinawati et al. (2021)	How effective is Google Classroom for ER during the pandemic?	Descriptive study based on learner and teacher feedback.	Students felt more motivated and found Google Classroom easy to use during online learning.	The study did not measure how students felt emotionally and didn't check if the benefits lasted after the pandemic.
Wilkins (2019)	How does learner tracking impact engagement on X-Reading?	Platform usage analysis and user feedback.	Tracking features boosted learner motivation and time-on-task.	Focus on user behavior, not affective outcomes; lacks emotional scale validation.
Kumar et al. (2020)	What are user perceptions of Google Classroom?	Qualitative survey and thematic analysis.	Interface praised for usability; increased student submission consistency.	Lacked features to measure emotional or social engagement.
Prasetianto et al. (2024)	What is the impact of mobile ER tools on rural learners' engagement?	Case study of rural university students using digital ER.	Improved comprehension, reading consistency, and motivation.	Limited to rural sample; no standardized emotional instruments used.
Savitri & Munir (2022)	Does Reading While Listening reduce anxiety and enhance learning?	Experimental design with RWL intervention group.	RWL improved listening and reduced anxiety in most learners.	Emotion measurement was self-reported; mixed responses to digital audio quality.
Rajabpour (2020)	How does M-Reader support	User activity logs and	Autonomy and progress	Did not compare different emotional

	autonomy and motivation?	teacher interviews.	visibility improved learner consistency.	profiles or provide affective scales.
Lien (2025)	Can digital reading logs help track emotional engagement?	Longitudinal diary-based qualitative analysis.	Reading logs promoted self-awareness and emotional reflection.	Subjective interpretation; no standardized emotional coding scheme used.
Al Damen (2018)	What is the effect of M-Reader on reading habits?	Survey and teacher commentary on student performance.	Reading motivation and satisfaction improved with consistent use.	Emotion reported only through teacher feedback, not learners.
Lin (2014)	How effective is mobile-assisted ER in learner engagement?	Experimental design using mobile ER tools.	Improved focus, reduced resistance to reading.	Early study with limited emotional focus; small sample size.
Hagley (2017)	How do learner attitudes affect digital reading tool adoption?	Conceptual analysis and learner surveys.	Emotional readiness essential for digital learning success.	Theoretical rather than data-driven; lacks platform-specific focus.
Truscott (2017)	How do badges and visuals influence learner motivation?	Observational platform usage study on M-Reader.	Gamification increased consistency and satisfaction.	No control group or long-term retention metrics.
Mhlongo et al. (2023)	How does digital transformation impact emotional engagement?	Iterative review of digital ecosystems in education.	Platforms must embed emotional and social scaffolding.	Not EFL-specific; broad educational focus.
Gupta & Pathania (2020)	What are postgraduate student attitudes toward Google Classroom?	Survey-based feedback analysis.	Improved collaboration and satisfaction.	No data on emotional metrics or classroom dynamics.
Timotheou et al. (2023)	How does digital capacity affect learning outcomes?	Cross-sectional institutional survey across EU.	Schools with strong digital culture had better learner	Institution-level data; no learner-specific emotional analysis.

			outcomes.	
Ounissi et al. (2023)	Can mobile ER tools support student motivation during disruption?	Short-term intervention study during COVID-19.	Increased reading frequency and student interest.	Crisis context; limited follow-up and emotional depth.
Ounissi et al. (2024)	How does digital ER work in early childhood education?	Case study with kindergarten learners.	Improved early literacy and interest in books.	Focused on cognitive outcomes; no affective engagement measures.
Naureen Shehzad (2023)	What is the role of quizzes in promoting learner confidence?	Learner interviews and analytics data.	Formative assessment led to higher confidence and consistency.	Confidence inferred rather than measured; emotional dynamics unexplored.