

**THE CORRELATION BETWEEN MOBILE LEARNING
TECHNOLOGY USAGE AND STUDENTS' ENGLISH
LEARNING RESULTS AT SMA NEGERI 5 TUALANG**

THESIS

**Submitted to Fulfill
One of the Requirements
to Obtain a Degree of *Sarjana Pendidikan* (S.Pd)**



BY;

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ABSTRACT

Harmorin Sihotang, 2026 : The Correlation Between Mobile Learning Technology Usage and Students' English Learning Results At SMA Negeri 5 Tualang

Mobile learning technology has become increasingly common in secondary English classrooms because it offers flexibility, accessibility, and opportunities for independent learning. However, its contribution to students' academic achievement remains uncertain and requires empirical investigation. This study aimed to examine the correlation between students' use of mobile learning and their English learning outcomes at SMA Negeri 5 Tualang. The research employed a quantitative correlational design involving 65 twelfth-grade students selected through cluster random sampling. Data were collected through a questionnaire measuring mobile learning usage and documentation of students' English report card scores. Since the data were not normally distributed, Spearman's rank-order correlation test was used for analysis with SPSS. The results showed a significance value of 0.245 ($p > 0.05$) and a correlation coefficient of 0.146, indicating no significant relationship and only a very weak positive correlation. This finding may be influenced by the relatively homogeneous distribution of students' scores and the limited integration of mobile learning into structured instructional practices. In addition, the impact of mobile learning depends largely on teacher guidance, student motivation, and effective classroom implementation.

Keyword: *Correlational Study, Mobile Learning, English Learning Results, High School*

ABSTRAK

Harmorin Sihotang, 2026 : *Korelasi Antara Penggunaan Teknologi Pembelajaran Mobile dan Hasil Pembelajaran Bahasa Inggris Siswa di SMA Negeri 5 Tualang*

Teknologi pembelajaran mobile telah semakin umum digunakan di kelas bahasa Inggris tingkat menengah karena menawarkan fleksibilitas, aksesibilitas, dan peluang untuk pembelajaran mandiri. Namun, kontribusinya terhadap prestasi akademik siswa masih belum jelas dan memerlukan penelitian empiris. Studi ini bertujuan untuk menganalisis korelasi antara penggunaan teknologi pembelajaran mobile oleh siswa dan hasil belajar bahasa Inggris mereka di SMA Negeri 5 Tualang. Penelitian ini menggunakan desain korelasi kuantitatif yang melibatkan 65 siswa kelas XII yang dipilih melalui sampling acak berkluster. Data dikumpulkan melalui kuesioner yang mengukur penggunaan pembelajaran mobile dan dokumentasi nilai rapor bahasa Inggris siswa. Karena data tidak terdistribusi secara normal, uji korelasi peringkat Spearman digunakan untuk analisis dengan SPSS. Hasil menunjukkan nilai signifikansi 0,245 ($p > 0,05$) dan koefisien korelasi 0,146, menunjukkan tidak ada hubungan yang signifikan dan hanya korelasi positif yang sangat lemah. Temuan ini mungkin dipengaruhi oleh distribusi skor siswa yang relatif homogen dan integrasi pembelajaran mobile yang terbatas ke dalam praktik pengajaran terstruktur. Selain itu, dampak pembelajaran mobile sangat bergantung pada bimbingan guru, motivasi siswa, dan implementasi kelas yang efektif.

Keyword: *Studi Korelasi, Pembelajaran Mobile, Hasil Pembelajaran Bahasa Inggris, Sekolah Menengah Atas*

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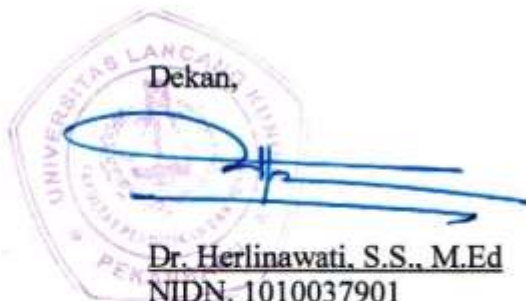
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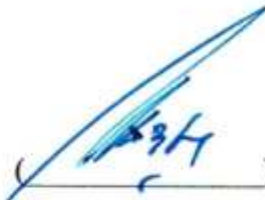
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PERNYATAAN KEASLIAN TULISAN

Dengan ini saya menyatakan bahwa:

- a. Karya tulis ini, dengan judul "*The Correlation Between Mobile Learning Technology Usage and Students' English Learning Results at SMA Negeri 5 Tualang*" adalah asli karya sendiri dan belum pernah diajukan untuk mendapatkan gelar Sarjana Pendidikan (S.Pd) di Program Studi Pendidikan Bahasa Inggris Fakultas Keguruan dan Vokasi Universitas Lancang Kuning Pekanbaru.
- b. Karya tulis ini tidak terdapat hasil karya atau pendapat yang telah ditulis atau dipublikasikan oleh orang lain kecuali dikutip secara tertulis dengan jelas sesuai dengan aturan pengutipan dan dicantumkan sebagai referensi pada halaman daftar pustaka.

Demikianlah pernyataan ini saya buat, apabila ditentukan penyimpangan dan ketidakbenaran dari pernyataan ini, saya bersedia menerima sanksi akademik berupa pencabutan gelar yang telah saya peroleh, serta sanksi lainnya sesuai dengan norma dan ketentuan hukum yang berlaku.

Pekanbaru, 13 February, 2026

Saya yang menyatakan,



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Pekanbaru, 13 February, 2026
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CHAPTER I INTRODUCTION

A. Background of the Problem

In today's digital age, technological developments have brought about major changes in the world of education, including in the process of learning English in schools. Devices such as smartphones and tablets now serve not only as communication tools, but also as practical and flexible learning media. By using these devices, students can access various resources such as instructional videos and interactive exercises anytime and anywhere. This shows that learning is no longer limited to the classroom, but can be done independently with the support of technology. With this convenience, the question arises as to whether the use of mobile learning is really related to an improvement in students' English learning outcomes.

Although mobile learning has been implemented in various educational institutions, its use at the secondary school level is still not optimal. Many previous studies have focused on the context of higher education and show that the use of mobile devices has a positive impact on students' English language skills. Research conducted by Hongjin (2021) reveals that mobile learning can increase learning motivation and enrich the vocabulary of EFL students. Similar results were also reported by Alameir (2023), who showed that mobile-based learning can encourage independent learning and have a positive effect on learning outcomes. However, conditions at the secondary school level present their own challenges, such as limited access to technology, low levels of independence, and the need for greater support from teachers and the learning environment.

Based on initial observations at Tualang 5 Public High School, the majority of students already have smartphones, which have the potential to be used as effective learning media. However, the reality on the ground shows that these devices are more often used for communication and entertainment, so their educational function is not yet optimal. This condition also affects the variation in English learning achievement among students, which shows disparities in their

understanding and mastery of the subject matter. This indicates that digital technology as a learning medium has not been utilized to its full potential in high school environments, thus requiring appropriate strategies to encourage the integration of technology in the learning process in order to improve student motivation and overall learning outcomes.

These conditions indicate the need for in depth research on the contribution of mobile learning to English learning achievement in secondary schools. A study by Chen (2022) found that mobile applications improve student motivation and academic achievement in foreign languages. Anuyahong et al., (2023) revealed that mobile learning increases student engagement and supports effective independent learning. In Indonesia, Malik (2024) emphasized the potential of mobile learning to improve secondary school students' English learning outcomes, if supported by technological readiness and a conducive environment. Based on this evidence, it is expected that there will be a positive relationship between the implementation of mobile learning (measured by the “level of utilization of the English mobile learning system” perceptions of ease, usefulness, convenience, and intention to continue using) and English learning outcomes (measured by test scores and minimum passing grades).

In today's world of education, technology, including mobile learning, plays an important role in supporting the English language learning process. Mobile learning not only allows students to learn flexibly in terms of time and place, but also provides a more interactive learning experience through various applications such as Duolingo, Quizizz, and Google Classroom. Research conducted Ding & Zhu (2025) shows that the use of mobile applications can increase student engagement in second language learning. Furthermore, according to Hamid & Chrysty (2024), students who utilize mobile devices in language learning experience a significant improvement in their listening and speaking skills. However, the effectiveness of mobile learning is still influenced by a number of factors, such as teacher readiness, facility support, and students' ability to use the technology to its full potential.

Although mobile learning offers benefits, its implementation at SMA Negeri 5 Tualang faces obstacles. One of the main problems is unequal internet access among students, which limits the optimal use of mobile devices for learning activities. In addition, students' digital literacy skills vary, with not all students able to use learning applications effectively. Another contributing factor is the readiness of teachers to integrate technology into the learning process, which still requires further training and support. These obstacles have the potential to reduce the effectiveness of mobile learning in improving students' English learning outcomes.

Therefore, it can be concluded that the use of mobile learning has great potential in improving students' English learning achievements. The researchers feel that there are still various challenges that need to be overcome so that the use of mobile learning can be optimally utilized at the secondary school level, especially at SMA Negeri 5 Tualang. In connection with the above issues, the researchers are interested in taking the title **“The Correlation Between Mobile Learning Technology Usage and Students’ English Learning Results at SMA Negeri 5 Tualang”**.

B. Identification of the Problem

Based on the background of the problem above, it can be identified that the relationship between students’ mobile learning technology usage and their English learning results at SMA Negeri 5 Tualang has not yet been empirically examined

C. Limitation of the Problem

In this study, mobile learning technology usage is limited to students’ perceptions of convenience, ease of use, usefulness, attitude toward using, and continuance intention in using English mobile learning systems or applications. English learning results are limited to students’ English report card scores in the current semester.

D. Formulation of the Problem

The formulation of this research can be formulated as follows: “Is there any correlation between students’ mobile learning technology usage and their English learning results at SMA Negeri 5 Tualang?”

E. Purpose of the Research

Related to the research formulation above, the purpose of the research is: To find out the correlation between mobile learning technology usage and students’ English learning results at SMA Negeri 5 Tualang.

F. Significance of the Research

There are several significances expected from the results of this research:

1. Theoretical Contribution
 - a) Providing empirical evidence on the correlation between mobile learning and students’ English learning outcomes.
 - b) Enriching the existing literature on mobile learning application in secondary school English education.
2. Practical Contribution
 - a) Offering useful insights for teachers and school management in optimizing the use of mobile learning to improve students’ English achievement.
 - b) Serving as a reference for developing effective mobile learning strategies that suit the needs and characteristics of students at SMA Negeri 5 Tualang

G. Definition of Key Terms

There are several key terms that need to be clearly defined to avoid misunderstanding. The definitions are as follows:

- a) Mobile Learning (M-Learning):

Mobile learning refers to a form of education where learners use mobile devices such as smartphones, tablets, or laptops to access learning materials and engage in educational activities anytime and

anywhere. (Curum & Khedo, 2019), mobile learning enables flexible, personalized, and context aware learning experiences, enhancing learner autonomy and engagement.

b) English Learning Reasults:

These are the measurable results or achievements of students in mastering the English language, including aspects such as listening, speaking, reading, writing, grammar, and vocabulary. According to (2025, n.d.), learning outcomes serve as indicators of how well students have achieved the learning objectives set by the curriculum.

c) Students' Engagement:

This term refers to the degree of attention, curiosity, interest, optimism, and passion that students show when they are learning or being taught. As defined by (Dan & Pengukuran, 2020), student engagement includes behavioral, emotional, and cognitive components essential for effective learning.

d) Digital Literacy:

Digital literacy is the ability to effectively and critically use digital technologies for communication, collaboration, and learning. (Erkam et al., 2022) emphasizes that digital literacy encompasses skills beyond basic computer use, including critical thinking and information evaluation.

CHAPTER V

CONCLUSION AND SUGGESTION

A. Conclusion

Based on the results of the study, it can be concluded that there is no significant relationship between the use of mobile learning and the English learning outcomes of students at SMA Negeri 5 Tualang. The results of Spearman's rho correlation analysis show a Sig. (2-tailed) value of 0.245, which is greater than 0.05, with a correlation coefficient of 0.146, which is in the very weak category. This means that the frequency or intensity of mobile learning use does not have a statistically significant relationship with students' English academic achievement. Thus, learning success is not only determined by the use of technology, but also influenced by other factors such as learning methods, student engagement, learning motivation, and self-management skills in the learning process. Therefore, the use of mobile learning needs to be designed and integrated in a more structured manner in order to contribute more optimally to improving student learning outcomes.

B. Suggestion

Based on the findings of this study, several suggestions are proposed for further research development:

- a. Future researchers are encouraged to examine more deeply how mobile learning influences students' cognitive processes and engagement in English classes. Since this study focused on identifying the statistical relationship between variables, it did not explore in detail how students interact with mobile technology during the learning process. Therefore, further studies may apply qualitative methods such as interviews, observations, or case studies to gain more comprehensive insights into students' actual learning experiences. This approach can help clarify whether mobile applications genuinely support understanding or instead contribute to digital distractions.

- b. It is also recommended that future research investigate other factors that may influence students' English learning outcomes. Academic achievement is shaped by multiple variables beyond the frequency of mobile learning usage. Factors such as digital self-efficacy, intrinsic motivation, learning discipline, teaching strategies, and the quality of teacher guidance may have a more substantial impact on students' performance. Examining these variables through more comprehensive research designs may provide clearer explanations regarding the absence of a significant correlation between mobile learning and learning outcomes.

Overall, it is expected that subsequent research can broaden and deepen the understanding of technology integration in English language learning by considering additional influencing factors and employing more varied methodological approaches.

REFERENCES

- Ahmed, M., El-Sabagh, H., & Elbourhamy, S. (2025). Effect of a gamified mobile cloud-based learning management system on student engagement and academic achievement. *International Journal of Educational Technology in Higher Education*, 22(1), Article 41. <https://doi.org/10.1186/s41239-025-00541-1>
- Ali, M. M., Alaa, A. M., & Shahnaz, A. (2024). The impact of mobile learning in English language classrooms in Pakistan. *Asian-Pacific Journal of Second and Foreign Language Education*, 0. <https://doi.org/10.1186/s40862-024-00274-0>
- Chang, C. (2012). *Perceived convenience in an extended technology acceptance model: Mobile technology and English learning for college students*. 28(5), 809–826.
- Chen, M. (2022). The Impact of Mobile Learning on the Effectiveness of English Teaching and Learning — A Meta-Analysis. *IEEE Access*, 10, 38324–38334. <https://doi.org/10.1109/ACCESS.2022.3165017>
- Chiu, T. K. F., Lin, T. J., & Lonka, K. (2021). Motivating online learning: The engagement roles of self-determination theory and self-regulated learning. *British Journal of Educational Technology*, 52(5), 1867–1882. <https://doi.org/10.1111/bjet.13032>
- Clark, R. E. (1994). Media will never influence learning. *Educational Technology Research and Development*, 42(2), 21–29. <https://doi.org/10.1007/BF02299088>
- Ding, Y., & Zhu, J. (2025). Mobile based peer feedback in EFL speaking: learners' motivation, behavioral engagement in feedback provision, and achievement. *Asian-Pacific Journal of Second and Foreign Language Education*. <https://doi.org/10.1186/s40862-024-00314-9>
- Erkam, S., Çetinkaya, S., & Şükrü, A. (2022). *Examination of the Relationship between Digital Literacy and Lifelong Learning Tendencies of Primary School Teachers*. 7(2), 235–249. <https://doi.org/10.53850/joltida.1040323>
- Fetaji, B., Ebibi, M., & Fetaji, M. (2022). *Assessing Effectiveness in Mobile Learning by Devising MLUAT (Mobile Learning Usability Attribute Testing) Methodology*. 5(3), 178–187.
- Garzón, J., Burgos, D., Kinshuk, & Tlili, A. (2025). Mobile learning significantly enhances student learning gains: A meta-analysis and research synthesis. *Computers & Education*, 238, 105415. <https://doi.org/10.1016/j.compedu.2025.105415>

- Haleem, A., Javaid, M., Qadri, M. A., & Suman, R. (2022). Understanding the role of digital technologies in education: A review. *Sustainable Operations and Computers*, 3, 275–285. <https://doi.org/10.1016/j.susoc.2022.05.004>
- Hamid, A., & Chrysty, W. (2024). *The Effect of the Use of Mobile Learning Applications on Students ' Listening Skills*. 1(5), 99–108.
- Hapni. (2023). Effects of Mobile Learning in English Language Learning : *Educatif Journal of Education Research*.
- Hongjin, Z. (2021). *A Review of Empirical Studies of Effectiveness of Mobile Apps on EFL Vocabulary Learning Data Sources and Search Process*. 1(Csedu), 557–570. <https://doi.org/10.5220/0010485205570570>
- Li, X., Xia, Q., Kai, S., Chu, W., & Yang, Y. (2022). *Using Gamification to Facilitate Students ' Self-Regulation in E-Learning : A Case Study on Students ' L2 English Learning*. 1–16.
- Liu, N., Chen, Y., Yang, L., Shi, Q., Guo, H., Lu, Y., Li, D., Ma, W., Gan, W., Guo, H., Li, D., Ma, W., & Gan, W. (2022). *Both SUMOylation and ubiquitination of TFE3 fusion protein regulated by androgen receptor are the potential target in the therapy of Xp11 . 2 translocation renal cell carcinoma Both SUMOylation and ubiquitination of TFE3 fusion protein regulated by androgen receptor are the potential target in the therapy of Xp11 . 2 translocation renal cell carcinoma*. September 2021. <https://doi.org/10.1002/ctm2.797>
- Luo, X., Li, Y., & Zhang, M. (2025). Digital technology use and its impact on students' affective and cognitive learning outcomes. *Computers & Education*, 241, 105001. <https://doi.org/10.1016/j.compedu.2025.105001>
- Malik, U. (2024). *Unlocking Potential: The Role of Mobile Learning in Enhancing English Achievement Among Secondary School Students*. 30(4), 9293–9297. <https://doi.org/10.53555/kuey.v30i4.3555>
- Maskhuliah, P., Syufiawati, U. A., Sulhair, A. Z., Kulsum, U., & Inayanti, S. (2025). *Jurnal Ilmu Manajemen Dan Pendidikan Pentingnya Simpanan Baku Dan Varians Dalam Manajemen Pendidikan Jurnal Ilmu Manajemen Dan Pendidikan*. 02(02), 700–703.
- McCoy, B. R. (2016). Digital distractions in the classroom phase II: Student classroom use of digital devices for non-class related purposes. *Journal of Media Education*, 7(1), 5–32. <https://digitalcommons.unl.edu/journalismfacpub/90>
- Nguyen, L. T., Tuamsuk, K., & Zhao, L. (2022). INFORMATION & COMMUNICATIONS TECHNOLOGY IN EDUCATION | Digital learning ecosystem at educational institutions: A content analysis of

- scholarly discourse. *Cogent Education*, 9(1), 1–17.
<https://doi.org/10.1080/2331186X.2022.2111033>
- Özkan, Y. (2024). *A Systematic Review of AI-Based Mobile Learning Environments: Unveiling Trends and Future Directions* Tarık Kışla. 3(June), 1–24.
- Pedraja-Rejas, L., Muñoz-Fritis, C., Rodríguez-Ponce, E., & Laroze, D. (2024). Mobile learning and its effect on learning outcomes and critical thinking: A systematic review. *Applied Sciences*, 14(19), 9105.
<https://doi.org/10.3390/app14199105>
- Rahmani, A., Asadi, V., & Xodabande, I. (2022). *Using Mobile Devices for Vocabulary Learning Outside the Classroom: Improving the English as Foreign Language Learners' Knowledge of High-Frequency Words*. 13(June), 1–7. <https://doi.org/10.3389/fpsyg.2022.899885>
- Sayidaturrahmah, S. S., Baron, P., & Salim, A. Y. (2024). *The Potential of Mobile Learning in Improving Students' Intention and Learning Readiness in Higher Education: A Systematic Literature Review Using PRISMA*. 27(3), 481–492. <https://doi.org/10.20961/paedagogia.v27i3.96714>
- Series, C. (2020). *Learning Management System (LMS) Based On Moodle To Improve Students Learning Activity Learning Management System (LMS) Based On Moodle To Improve Students Learning Activity*. <https://doi.org/10.1088/1742-6596/1462/1/012067>
- Sisouvong, V., & Pasanchay, K. (2024). *Mobile Learning: Enhancing Self-Directed Education through Technology, Wireless Networks, and the Internet Anytime, Anywhere*. 1(April), 39–50.
- Stroupe, R. (n.d.). *ENGAGING INDONESIA: Critical Dialogues on Culture and Society Applied Linguistics in the Indonesian Context*.
- Sung, Y. T., Chang, K. E., & Liu, T. C. (2016). The effects of integrating mobile devices with teaching and learning on students' learning performance: A meta-analysis and research synthesis. *Computers & Education*, 94, 252–275. <https://doi.org/10.1016/j.compedu.2015.11.008>
- Syahidi, A. A., Tolle, H., Supianto, A. A., Hirashima, T., & Arai, K. (2020). *Interactive M-Learning Media Technology to Enhance the Learning Process of Basic Logic Gate Topics in Vocational School and Engineering Education*. 2(December), 50–63.
- Tan, K. H. (2021). *Generic Digital Equity Model in Education: Mobile-Assisted Personalized Learning (MAPL) through e-Modules*.
- Tiantian, Y., Razali, A. B., Zulkifli, N. N., & Jeyaraj, J. J. (2024). *The effects of collaborative mobile learning approach on academic performance: The*

mediating role of social interaction , and learning motivation. 8(3), 209–229.

Yaman, İ. (2019). *Exploring the extent to which ELT students utilise smartphones for language learning purposes.* 35(4), 1–9.
<https://doi.org/10.15700/saje.v35n4a1198>