

# Designing Mobile Learning Media for Enhancing Creative Writing Skills

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## ABSTRACT

This study explores the practicality of mobile learning-based media in enhancing creative writing skills among junior high school students in Palembang City. The research aims to assess teachers' and students' perceptions of its practicality. This research represents the small group testing phase of a larger research and development project. Data were collected through questionnaires and interviews with teachers and students to gather qualitative and quantitative insights regarding the use of mobile learning media in creative writing instruction. The findings indicate that mobile learning-based media for creative writing is perceived as practical by both teachers and students. Assessments focused on material quality, language use, and media presentation aspects, all of which were rated highly feasible by participants. The results underscore the potential of this media to facilitate creative writing in junior high schools. The positive perceptions from small group testing suggest that mobile learning-based media provides an effective and user-friendly tool for improving creative writing skills. Teachers highlighted the relevance of the materials, while students appreciated the engaging and accessible format, supporting its integration into classroom practice. Mobile learning-based media demonstrates strong practicality in creative writing instruction for junior high schools in Palembang City. With its high feasibility ratings, it holds promise for broader implementation to support creative writing skills development. Future studies could explore its long-term impacts on student creativity and academic outcomes.

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## 1. INTRODUCTION

In today's digital era, technology has become an integral part of daily life, profoundly influencing the field of education. One prominent innovation in this area is mobile learning, which leverages mobile devices to facilitate learning (Aditia, 2021; Lestari & Arianto, 2017). Mobile learning involves the use of devices such as smartphones and tablets to access educational materials, interact with teachers, and complete assignments (Safitri et al., 2023; Mihail-Vaduva, 2019). At the secondary school level, mobile learning offers significant potential to enhance the effectiveness and efficiency of the teaching and learning process. With Millennials and Generation Z dominating the student population, this approach aligns well with their familiarity with technology and preference for engaging, digitally integrated learning experiences (Moya & Camacho, 2021; Cilliers, 2017; Oktarina, 2023).

In designing mobile-based learning media for creative writing learning, it is better to integrate the TPACK learning concept, namely learning that integrates three domains, namely Technological Pedagogical Knowledge, Technological Content Knowledge, and Pedagogical Content Knowledge (Shafie, Majid, & Ismail, 2019; Taopan, 2020). Second, constructivism learning, a learning approach that emphasizes that knowledge is built by students through experience, interaction, and reflection, not just passively received from teachers (Masgumelar & Mustafa, 2021). Third, experiential learning, namely the learning process in which students acquire knowledge, skills, and values through direct involvement in real experiences or simulations, which are then followed by reflection and analysis to connect these experiences with more abstract concepts (Gunadi, Prasetyo, Kurniasari, & Muhdiyati, 2023).

The integration of TPACK theory, constructivism, and experiential learning provides a strong framework for mobile learning in creative writing. TPACK provides the technical, pedagogical, and content foundations to create effective learning. Constructivism encourages students to be active, collaborative, and reflective in learning. Experiential learning connects theory with practice, giving students direct experience to improve their creative writing skills. Through this approach, mobile learning is not only relevant to the needs of the millennial generation but also significantly improves learning outcomes.

The positive impact of using technology in creative writing learning is that it can improve the quality of the learning process and outcomes. Research that has been conducted shows that the use of mobile learning technology in learning creative writing has proven to be effective in improving students' abilities. Various studies have found that students who engage in mobile learning are more motivated to write and show significant improvements in the quality of their writing (Jeanjaroonsri, 2023; Faqih, 2021; Oktarina, 2023). Digital apps and platforms allow students to express their creative ideas in a more interactive way, as well as give them access to a variety of resources that can inspire and enrich the writing process.

Furthermore, the development of creative writing learning media based on mobile learning has become an important focus in efforts to improve the quality of learning processes and outcomes (Kurniawati, Pairin, Indarti, & Madura, 2024; Kartini, Sunendar, & Yulianeta, 2023). Learning media specifically designed for mobile devices does not only facilitates more flexible learning access, but also enables the delivery of material in a more interesting and interactive manner. With features such as video tutorials, interactive writing prompts, and online collaboration, students can engage in a more dynamic learning process, which in turn can improve the quality of their writing and writing skills. However, behind this great potential and benefits, there are gaps that need serious attention. Not all teachers have sufficient ability or knowledge to design and develop mobile learning-based creative writing learning media (Moya & Camacho, 2021; Jeanjaroonsri, 2023). This gap can hinder the effective application of technology in the classroom and reduce the potential of mobile learning in developing students' creative writing skills (Samsinar, 2020). Many teachers still need training and support to master this technology and make optimal use of it in the learning process. This research is part of research and development. Previously, creative writing learning media based on mobile learning has been developed according to the needs of teachers and students for the use of this media, so a practical

test is needed. This paper aims to describe the practicality of creative writing learning media based on mobile learning.

## 2. METHODS

This research used research and development methods (Research and Development). These research and developer steps refer to the main steps of Borg and Gall (Gall, Meedith D, Gall, Joice P. & Borg, 2007). Meanwhile, detailed steps for developing multimedia learning refer to Lee and Owens (Lee, 2004). This research is part of development research, namely at the practicality test or small group test stage. The overall stages of research into the development of mobile learning-based learning media are as follows.

**Table 1.** The overall stages of research into the development of mobile learning-based learning media

Borg and Gall's Main Steps	Steps for Developing Mobile Learning-Based Learning Media for Creative Writing Learning
1. Research and information gathering	Identification of Needs a. Teacher needs b. Student needs
2. Planning	Design of Mobile Learning-Based Learning Media in Creative Writing Learning 1. Project Scheduling 2. Team Project 3. Media Specification 4. Content Structure 5. Configuration Control (Lee dan Owens)
3. Development of the initial form of the product	Development of Mobile Learning-Based Learning Media in Creative Writing Learning
4. Field Testing and Product Revision	1. Feasibility test from experts 2. Product revision after feasibility test from experts 3. <i>Small group test</i> 4. Product revision after small group test 5. Field test
Final Product Revision	Final Product Revision

At the small group testing stage, the data sources in this study were students and teachers at South Sumatra State High School, Palembang, totaling 8 students and 1 teacher. The data analyzed in this research were quantitative data and qualitative data. Quantitative data in the form of data from questionnaires and tests, while qualitative data comes from interviews. The test instrument is in the form of a creative writing ability test for students. The questionnaire instrument was developed to determine the practicality of this learning media in the teaching and learning process. Therefore, this instrument aims to determine the practicality of the materials used, the practicality of the presentation of learning media, and the practicality of the language in this media. Meanwhile, the non-test instrument, namely interviews, was developed to obtain the weaknesses and strengths of this learning media. Before being used, two experts validated this instrument to determine its feasibility. Interview data were analyzed qualitatively based on the themes used as indicators, namely materials, media presentation, and language used. Meanwhile, the results of the questionnaire and creative writing ability test were analyzed quantitatively. The questionnaire in the small group test used a Likert scale. The Likert scale used was a 4-point scale, namely very good (4), good (3), less good (2), and not good (1).

### 3. FINDINGS AND DISCUSSION

After the learning media was validated by experts and deemed feasible for use, the next step involved conducting a small group test to assess the practicality of the mobile learning-based media for teaching creative writing in middle schools in Palembang. This small group test was conducted at South Sumatra High School with eight students and one experienced teacher over two meetings.

To evaluate the practicality of the media from both student and teacher perspectives, a questionnaire was distributed via Google Forms following the test. The questionnaire comprised 25 multiple-choice questions and three open-ended essay questions, designed to assess the media in terms of material quality, language clarity, and media presentation. The detailed results of the questionnaire are presented below.

#### 3.1 In terms of material

Material is an important component in learning media. By using good material, learning objectives will be achieved optimally. Therefore, material is needed that suits the needs of students. In this designed media, the material is prepared based on an analysis of the needs of students, teachers, and literature review. The research results show students' and teachers' perceptions of mobile learning-based learning media as follows.

**Table 2.** Student and teacher perceptions of learning media in terms of material

No	Statement	Assessment			
		Student		Teacher	
		Score	Category	Score	Category
1	Conformity of material and purpose	4.50	SB	5	SB
2	Completeness of material content	4.25	SB	5	SB
3	Truth of the material content	4.37	SB	5	SB
4	Clarity of the elaborated material	4.00	SB	4	B
5	Conformity of material content with the values	4.50	SB	4	B
6.	Growing the students' interaction	4.25	SB	4	B
	Average Score	4.31	SB	4.5	SB

**Description :**

N: Average Score

K: Category

SB : Excellent

Regarding the research results, students' perceptions of mobile learning-based creative writing learning media are categorized as very good, namely 4.31. The six question items in this questionnaire received very good perceptions from students. The students agreed that this media was very good in terms of suitability of the material to the objectives, completeness of the material content, correct substance of the material, clarity of the material described, suitability of the material content with values, and interaction with students. Based on the table above, it is known that teachers perceive the material in learning media as very good with an average score of 4.5. However, the assessment of each statement item was not the same. The teacher assesses that the suitability of the material and objectives, the completeness of the material content, the correctness of the substance of the material is very good with the same score of 5. Meanwhile, the teacher assesses the clarity of the material described, the suitability of the content of the material with the values, fostering good student interaction with a score of 4.

Dealing with the open question questionnaire, the following data was also obtained relating to the material in the media.

**Table 3.** Table of student answers regarding the material in the learning media

No.	Answer	Student
1.	In my opinion, the material in this learning media are good already and can ease understanding the lesson	S1
2.	The media in this learning are effective because they are discussed with details and by using language that is easy to understand	S2
3.	I am strongly assisted and I can quickly understand the material because the explanation is quite clear and right to the point of the material such as the poem is highly inspiring and innovating.	S3
4.	Very easy to access it and also the material is shorter in its explanation and not cumbersome making it easier to understand.	S4
5.	The given material is good already	S5
6.	The given material is very complete	S6
7.	The existed material in this learning media is quite good and the delivery is quite deep making the the students easy to understand the material delivered.	S7
8.	The material is shorter and clearer until easy to understand.	S8

**Table 4.** Table of Teacher Answers regarding Material in Learning Media  
In terms of language

No.	Answer	Teacher
1.	The material given is good already	G1

The data presented in Table 4 highlights the teacher's feedback on the material in the learning media, particularly in terms of language. The teacher's response indicates that the material provided is already of good quality. This positive evaluation reflects the appropriateness and clarity of the language used, which aligns with the needs of the students and supports effective learning. Such feedback is crucial in affirming the suitability of the media for enhancing creative writing skills and suggests that the language aspect contributes significantly to the overall practicality of the mobile learning-based media.

### 3.2 In terms of language

In designing learning media, the role of language is very important. Good and correct language is needed so that this media can be used practically. Media readability in text, clarity of information, completeness of information, conformity with Indonesian language rules, and accuracy in using language effectively and efficiently are linguistic components that must be present in a media. Based on the research results, the results of the small group test questionnaire in terms of language are presented as follows.

**Table 5.** Student and teacher perceptions of learning media in terms of language

No	Statement	Assessment			
		Student		Teacher	
		Score	Category	Score	Category
1	The clarity of text in the learning media	4.75	SB	5	SB
2	The clarity of information	4.25	SB	5	SB
3	The completeness of information	4.25	SB	5	SB
4	The conformity with Indonesian language grammar	4.25	SB	5	SB
5	The accuracy of language usage effectively and efficiently	4.25	SB	5	SB
	Average Score	4.35	SB	5	SB

**Description :**

N: Average Score

K: Category

SB: Excellent

The findings indicate that students perceive the language used in this learning media as highly effective, with an average score of 4.35, categorized as very good. Specifically, students rated the media highly for text readability (4.75), clarity of information (4.25), completeness of information (4.25), adherence to Indonesian language rules (4.25), and the effective and efficient use of language (4.25). Notably, none of the students provided additional feedback in the open-ended questions regarding the language used in the learning media.

Similarly, the teacher's perception of the language in the learning media is overwhelmingly positive. Based on the table above, all questionnaire items received a perfect score of 5, signifying that the language is very good across all evaluated aspects. These include text readability, clarity and completeness of information, adherence to language rules, and the accuracy and efficiency of language use. Additionally, the teacher did not offer any comments in the open-ended questions, further affirming the language's adequacy and effectiveness in meeting educational objectives.

**3.3 In terms of Learning Media Presentation**

The presentation of learning media is very important. This media packages material so that the information conveyed can be well received by students. The presentation of learning media should be packaged as attractively as possible so that students are motivated to learn. This also greatly influences the achievement of learning objectives. This creative writing learning media has tried to present learning media to the maximum. In this small group test, students are asked to assess the presentation of this learning media. The research results show the following things.

**Table 6.** Student and teacher perceptions of Learning Media in Terms of Material Presentation

No	Statement	Assessment			
		Student		Teacher	
		Score	Category	Score	Category
1	The conformity of material presentation order with the learning media	4.75	SB	5	SB
2	The learning media can give learning motivation to students	4.25	SB	5	SB
3	The learning media can increase the students' understanding	4.13	B	5	SB
4	The learning media can increase the students' interest.	4.25	SB	5	SB
5	The accuracy of font type and font size usage	4.25	SB	5	SB
6	Creativity and innovation of the learning media	4.50	SB	5	SB
7	Clear documentation of the learning media	4.25	SB	5	SB
8	There is display continuance	4.25	SB	4	B
9	Conformity with the students' characteristics	4.25	SB	5	SB
10	Ease in operating the media	4.25	SB	5	SB
11	The text quality is clear	4.25	SB	5	SB
12	The audio can be heard well	4.13	B	5	B
13	The video runs smoothly	4.25	SB	5	SB
14	All navigation tools function well	4.25	SB	5	SB
	Average	4.28	SB	4.9	SB

**Description :**

B : Good

SB : Excellent

Based on the table above, the presentation of creative writing learning media based on mobile learning is perceived as very good, with an average score of 4.28. The ratings show minor variations across the items, though the differences are minimal. Thirteen items were rated as very good, with an average score of 4.25. These include assessments of the sequence of material presentation, the ability of the media to motivate learning, increase student engagement, use accurate font types and sizes, demonstrate creativity and innovation, provide clear documentation, maintain continuity of appearance, align with student characteristics, enable ease of operation, present clear text quality, and ensure videos and navigation tools function properly. Conversely, two items were rated slightly lower, at 4.13 (good category): the ability of the media to enhance student understanding and the smooth operation of audio.

The teacher's perception of the media presentation is similarly positive, with an overall score of 4.9, indicating very good quality. The teacher rated most aspects, including material sequencing, learning motivation, improvement in student understanding and attractiveness, font accuracy, creativity, clear documentation, alignment with student needs, ease of use, clear text, smooth audio and video, and functional navigation tools, as very good (score of 5). However, the continuity of the display received a slightly lower score of 4 (good). Despite this small difference, the teacher's overall assessment affirms the presentation of the learning media as very good.

Apart from a multiple-choice questionnaire, researchers also collected Student and teacher perceptions through open questions. The results are as follows.

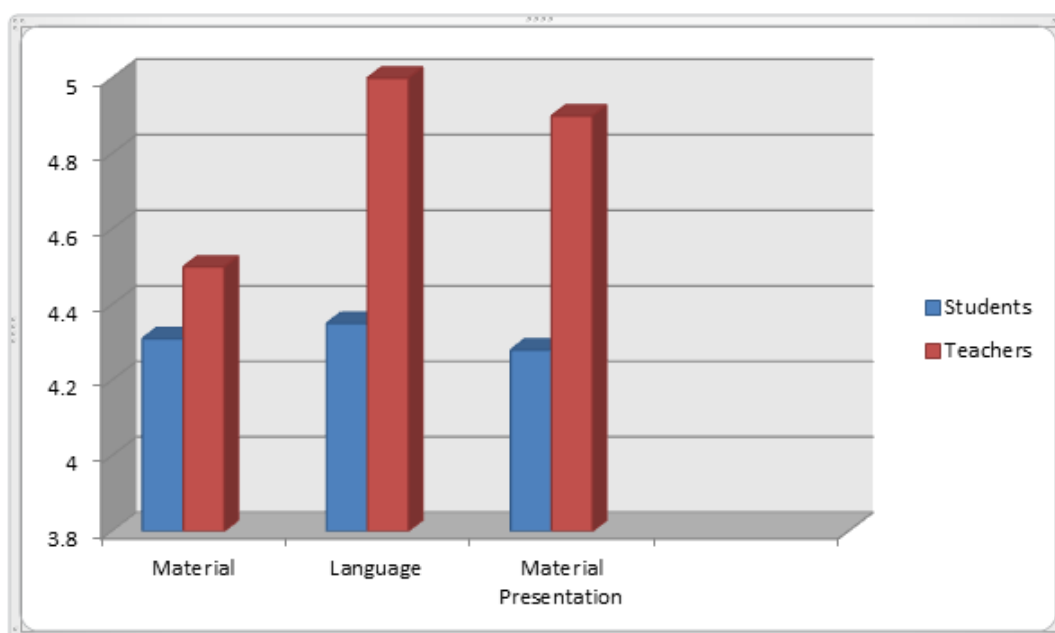
**Table 7.** Student Answers Regarding the Presentation of Learning Media

No.	Answer	Student
1.	In my opinion, the presentation in this learning media is quite good and clear but probably needs to be improved again in the font part and the size of the media	S1
2.	The presentation in this learning media is very easy to understand and clear	S2
3.	I like the learning media which has many animation and also in the form of video because it increases my learning spirit	S3
4.	The learning presentation is interesting and can be played offline which ease the learning process	S4
5.	The presentation in this learning media is very easy to understand and clear as well	S5
6.	Excellent, all explained materials are very beneficial to make the literature work for beginner or expert.	S6
7.	In my opinion it is excellent because through the presence of this learning media, the students can understand certain material easier and can learn with varied method.	S7
8.	The learning media presentation is delivered well with supporting quality of the video, audio, and creativity.	S8

**Table 9.** Table of Student Answers Regarding the Presentation of Learning Media

No.	Answer	Student
1.	In my opinion, this learning media is good laready and probably the font quality and the text size should be improved.	S1

Overall, the results of students' and teachers' perceptions of creative writing learning media based on mobile learning can be seen in the following chart.



**Figure 1.** Student and teacher perceptions of Learning Media in Terms of material, language, and Material Presentation

After conducting a small group test, the research results revealed that mobile learning-based media for creative writing instruction is highly practical and effective. This conclusion is supported by the questionnaires distributed to both students and teachers. Students rated the practicality of this media very highly, with average scores of 4.31 (very good) for material quality, 4.35 (very good) for language use, and 4.28 (very good) for media presentation. Similarly, teachers' perceptions mirrored these positive evaluations, with average scores of 4.5 (very good) for material, 5.0 (very good) for language, and 4.9 (very good) for media presentation.

The research also indicated that students were enthusiastic about using this technology-based learning media, actively exploring its features. This aligns with the digital literacy and technology engagement expected of students in today's era, as reported in multiple studies (Ghani et al., 2022; Bourbour, 2023; Moya & Camacho, 2021). Goggin's perspective, cited in Bidin & Ziden (2013), highlights that the integration of IT in education fosters enjoyment and improves computer literacy among students. The study further underscores that the use of technology in learning is not merely a trend but a necessity, as students inherently seek to engage with and understand technological tools, social media, and digital networks (Zhang & Chen, 2022; Mauricio & Genuino, 2020).

To address these needs, teachers must develop strong digital competencies, as emphasized by Guillén-Gómez et al. (2019), and understand the factors contributing to successful ICT integration in education. Similarly, students must possess adequate digital literacy to fully benefit from technology-enhanced learning. Thus, the development of mobile learning-based media for creative writing instruction represents a crucial step toward fostering digital competence among both teachers and students. Such media not only enhance creative writing skills but also prepare learners for the demands of the digital age.

Research on mobile learning media development significantly contributes to educational innovation by enabling more flexible, personalized, and inclusive learning experiences. To maximize these benefits, a collaborative effort is needed among technology developers, curriculum designers, teacher training programs, and educational policymakers.

However, this study has limitations, as it was tested in only one school. Expanding future research to include multiple schools would yield more comprehensive findings. It is hoped that subsequent

studies will continue to develop and evaluate technological learning media to further enhance students' creative writing skills and address broader educational challenges.

#### 4. CONCLUSION

Based on the research findings, it can be concluded that mobile learning-based media for creative writing is perceived as highly practical by both teachers and students. Teachers and students rated the media positively in terms of material presentation, language clarity, and media design. These findings highlight the potential of mobile learning media to enhance creative writing skills and support literacy development in Indonesia. However, the study's limitation lies in its scope, as it was tested only in a small group setting at one school. Future research should expand the testing to larger and more diverse populations to evaluate the media's broader effectiveness. This research implies that integrating mobile learning into classrooms can foster student engagement and literacy, providing a foundation for its application across other subjects. Further studies are encouraged to explore the development and implementation of mobile learning-based media in various educational contexts, ensuring continuous innovation and improvement in digital learning tools.

#### REFERENCES

- Adams, M., Rodriguez, S., & Ramirez, K. (2023). Creating a digital culture of care: COVID-19 and digital teaching. *Cogent Education*, 10(1). <https://doi.org/10.1080/2331186X.2023.2208941>
- Aditia, S. (2021). Inovasi Pembelajaran Berbasis Aplikasi Mobile. *OSF Preprint*. Retrieved from <https://doi.org/10.31219/osf.io/wjm5k>
- Bidin, S., & Ziden, A. A. (2013). Adoption and Application of Mobile Learning in the Education Industry. *Procedia - Social and Behavioral Sciences*, 90(InCULT 2012), 720–729. <https://doi.org/10.1016/j.sbspro.2013.07.145>
- Bourbour, M. (2023). Using digital technology in early education teaching: learning from teachers' teaching practice with interactive whiteboard. *International Journal of Early Years Education*, 31(1), 269–286. <https://doi.org/10.1080/09669760.2020.1848523>
- Cilliers, E. J. (2017). The Challenge Of Teaching Generation Z. *People: International Journal of Social Sciences*, 3(1), 188–198. <https://doi.org/10.20319/pijss.2017.31.188198>
- Fälth, L., & Selenius, H. (2022). Primary school teachers' use and perception of digital technology in early reading and writing education in inclusive settings. *Disability and Rehabilitation: Assistive Technology*, 0(0), 1–10. <https://doi.org/10.1080/17483107.2022.2125089>
- Faqih, M. (2021). Efektivitas Penggunaan Media Pembelajaran Mobile Learning Berbasis Android Dalam Pembelajaran Puisi. *Konfiks Jurnal Bahasa Dan Sastra Indonesia*, 7(2), 27–34. <https://doi.org/10.26618/konfiks.v7i2.4556>
- Gall, Meedith D, Gall, Joice P. & Borg, W. E. (2007). *Educational Research (Introduction)*. USA: Pearson Education, Inc.
- Ghani, M. T. A., Hamzah, M., Daud, W. A. A. W., & Romli, T. R. M. (2022). The Impact of Mobile Digital Game in Learning Arabic Language at Tertiary Level. *Contemporary Educational Technology*, 14(1), 1–18. <https://doi.org/10.30935/cedtech/11480>
- Guillén-Gámez, F. D., Lugones, A., Mayorga-Fernández, M. J., & Wang, S. (2019). ICT use by pre-service foreign languages teachers according to gender, age and motivation. *Cogent Education*, 6(1). <https://doi.org/10.1080/2331186X.2019.1574693>
- Gunadi, G., Prasetyo, T., Kurniasari, D., & Muhdiyati, I. (2023). Peningkatan Keterampilan Menulis Puisi Bebas dengan Metode Experiential Learning pada Siswa Sekolah Dasar. *Jurnal Studi Guru Dan Pembelajaran*, 6(1), 35–43. <https://doi.org/10.30605/jsgp.6.1.2023.2351>
- Jeanjaroonsri, R. (2023). Thai EFL Learners' Use and Perceptions of Mobile Technologies for Writing. *LEARN Journal: Language Education and Acquisition Research Network*, 16(1), 169–193.

- Kartini, A., Sunendar, D., & Yulianeta, Y. (2023). Application Development Poetry Creation as a Learning Media for Writing Poetry (Analisis Kebutuhan Desain Pengembangan Aplikasi Mobile Cipta Puisi sebagai Media Pembelajaran Menulis Puisi). *KEMBARA: Jurnal Keilmuan Bahasa, Sastra, Dan Pengajarannya*, 9(2), 351–362. Retrieved from <http://ejournal.umm.ac.id/index.php/kembara>
- Kurniawati, E., Pairin, U., Indarti, T., & Madura, I. (2024). *Journal of Educational Technology : Digital Literacy Assisted by Mobile Learning Based on Articulate Storyline in Learning to Understand Poetry* *Journal of Educational Technology* : 9(3), 402–410.
- Lee, W. W. dan D. L. O. (2004). *Multimedia-Based Instructional Design*. San Francisco: Pfeiffer.
- Lestari, N. E., & Arianto, F. (2017). Mobile Learning Materi Teks Editorial/Opini Pada Mata Pelajaran Bahasa Indonesia Untuk Siswa Kelas XII SMA Negeri 19 Surabaya. *Jurnal Mahasiswa Teknologi Pendidikan*, 11(3), 1–8.
- Masgumelar, N. K., & Mustafa, P. S. (2021). Teori Belajar Konstruktivisme dan Implikasinya dalam Pendidikan. *GHAITSA: Islamic Education Journal*, 2(1), 49–57. <https://doi.org/10.62159/ghaitsa.v2i1.188>
- Mauricio, M. C., & Genuino, C. F. (2020). Writing performance and attitude of ESL learners engaged in smartphone assisted collaborative activity. *LEARN Journal: Language Education and Acquisition Research Network*, 13(2), 445–468.
- MIHAIL-VADUVA, D. (2019). Quality Characteristics of Mobile Learning Applications. *Informatica Economica*, 23(4/2019), 72–88. <https://doi.org/10.12948/issn14531305/23.4.2019.07>
- Moya, S., & Camacho, M. (2021). Developing a Framework for Mobile Learning Adoption and Sustainable Development. *Technology, Knowledge and Learning*, (0123456789). <https://doi.org/10.1007/s10758-021-09537-y>
- Oktarina, S. (2023). *Mobile Learning Based-Creative Writing In Senior High*. 6(2), 299–307.
- Safitri, S., Abidin, N. F., Oktaviani, R. R., & Zarro, M. (2023). *Developing Mobile Learning Activity Based on Multiple Learning Objects for the South Sumatra Local Wisdom Course*. 19(1), 12–27.
- Samsinar, S. (2020). Mobile learning: Inovasi pembelajaran di masa pandemi COVID-19. *Al-Gurfah : Journal of Primary Education*, 1(1), 41–57.
- Shafie, H., Majid, F. A., & Ismail, I. S. (2019). Technological pedagogical content knowledge (TPACK) in teaching 21st century skills in the 21st century classroom. *Asian Journal of University Education*, 15(3), 24–33. <https://doi.org/10.24191/ajue.v15i3.7818>
- Taopan, L. L. (2020). Tpack Framework: Challenges and Opportunities in Efl Classrooms. *Research and Innovation in Language Learning*, 3(1), 1–22. <https://doi.org/10.33603/rill.v3i1.2763>
- Zamili, U. (2020). Pembentukan Kepribadian Mental Spiritual Generasi Milenial di Zaman Digital Ditengah Pandemi Covid 19. *Prosiding Seminar Nasional Multidisiplin Ilmu Universitas Asahan Ke-4 Tahun 2020*, 53(9), 326–333.
- Zhang, M., & Chen, S. (2022). Modeling dichotomous technology use among university EFL teachers in China: The roles of TPACK, affective and evaluative attitudes towards technology. *Cogent Education*, 9(1). <https://doi.org/10.1080/2331186X.2021.2013396>