

Development of student worksheets with digital literacy content to increase students' learning interest

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ABSTRACT

Worksheets are necessary as part of learning tools. This study aims to develop a digital literacy-based Student Worksheet for Indonesian language learning at the junior high school level and to test its validity, practicality, and effectiveness. The study uses a Research and Development (R&D) model with the ADDIE approach (analysis, design, development, implementation, and evaluation). The research subjects consisted of material experts, media experts, linguists, Indonesian language teachers, and 15 seventh-grade students. The object of this study was a digital-based worksheet product using a flipbook application. Data were collected through interviews for worksheet validation, student perception questionnaires, and observations of student activities and enthusiasm. The results showed that the developed worksheet was in the valid category based on the assessment of three validators, covering aspects of material suitability (point 4.4 valid category), media display, and language quality. The worksheet's attractiveness test through a student response questionnaire showed that the worksheet was easy to use, interesting, and relevant to the needs of digital-based students. Observations of student engagement also showed increased enthusiasm and sincerity in completing assignments. This worksheet also fills the gap in learning listening skills, so it can be used for classroom learning.



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INTRODUCTION

Indonesian language learning plays a strategic role in developing students' literacy skills, including those in junior high school (Nurgiyantoro et al, 2020). Language skills such as reading, listening, writing, and speaking form an important foundation for cross-subject learning (Sadiku, 2015). However, the reality on the ground shows that junior high school students' language skills are still below standard (Liu, 2023). Many students struggle to comprehend reading material, express ideas in writing, or express opinions verbally in a structured manner. This situation not only impacts Indonesian language learning outcomes but also impacts other subjects that require text comprehension (Nuryanti et al., 2023).

One of the causes of low student literacy skills is the lack of innovation and variety in the learning media used in the classroom (Lee, 2016). Student worksheets, which should be a tool in building student understanding and skills, are generally still compiled in a conventional format (Darmawan et al, 2024), namely containing materials and assignments that are packaged by students



to complete through writing, and are less interactive. Worksheets such as this are not fully able to meet the learning needs of students in the digital era, which is full of visual, audio, and interactive information (Kesumawardani et al., 2024).

In the midst of the increasingly rapid development of digital technology, the world of education is required to adapt to be able to create a generation that has academically intelligent thinking, but is also digitally "literate" (Akayoglu et al., 2020; Caton et al., 2025; Muchsini & Siswandari, 2020; Purwaningrum & Leksono, 2022; Harianto & Karjadi, 2024; Stefany, 2024). This challenge is particularly relevant in Indonesian language learning at the junior high school (SMP) level, where students need to be trained to understand and use the language effectively in various contexts, including digital contexts. One of the important challenges currently facing us is how to effectively utilize digital technology to improve students' language skills, including reading, listening, writing, and speaking. Speech skills (Lestari & Jusra, 2022).

On the other hand, junior high school students today live in a dynamic digital environment (Porat et al., 2018; Sutarni et al., 2021). They are familiar with technologies such as gadgets, social media, and various digital applications (Lai & White, 2012). Unfortunately, their familiarity with technology is not always accompanied by adequate digital literacy skills. Most use it only for entertainment, without being directed towards meaningful learning activities (Yun & Kim, 2025). The Indonesian language learning process in schools often still takes place conventionally (Kasim et al., 2026). Teachers tend to use printed textbooks and learning methods that do not or do not optimally engage students more actively in the learning process. This has an impact on limiting students' exploration space in developing language skills, including reading, writing, speaking, and listening.

However, outside the classroom, students are accustomed to using digital devices (such as cell phones) in their daily lives, although they do not necessarily utilize them optimally to support the learning process (Sutrisno, 2022). In fact, through these devices, students can obtain and access information and learn from a wider range of learning resources, improve critical thinking skills, and develop creativity in language. One of the hopes of teachers is to foster an interest in reading, listening, writing, and speaking through digital devices. This digital reading integration not only increases the accessibility of reading materials and media in schools, but can also make the learning process more varied, interactive, and interesting, thereby encouraging students to be more enthusiastic in developing their reading, listening, writing, and speaking skills.

Student Worksheets as part of learning media can be developed to bridge this need. This situation indicates an opportunity to integrate digital literacy skills into Indonesian language learning. One approach is to develop Student Worksheets that not only contain learning tasks but are also designed based on digital literacy and encourage students to access, understand, and produce information wisely. With this approach, learning will not only be more engaging and contextual, but also able to develop language skills that are appropriate to the demands of the digital era (Yulianti et al., 2024).

Based on the literature review and the problems that have been identified, this research is based on the idea that: (1) The literacy skills of junior high school students are still low, especially in the four Indonesian language skills; (2) Conventional Worksheet has not been able to answer the challenges of 21st century learning, due to the lack of interactive, visual elements, and connectedness to the digital context; (3) Integrating digital literacy into Worksheet can be a strategy to improve students' language skills, because students are invited to actively access, understand, and reflect on information through digital media; (4) The development of digital literacy-based Worksheet is expected to produce valid, practical, and effective learning media in improving the language skills of junior high school students.

Therefore, research on the development of digital literacy-based student worksheets is crucial (Razak et al, 2022). The goal is to design learning tools relevant to the characteristics of today's students (Choo & Taha, 2023), namely improving digital literacy while enhancing their overall Indonesian language skills. Meanwhile, Dr. Soetomo Junior High School students still use Worksheets from a publisher they collaborate with.

The objectives of this research are: (1) Developing a digital literacy-based Worksheet that suits the needs and literacy abilities of junior high school students in learning Indonesian; (2) Knowing the quality of a digital literacy-based Worksheet based on validity and attractiveness tests; (3) Analyzing the influence of using a digital literacy-based Worksheet on improving junior high school students' language skills.

The novelty of this research is the emphasis on improving students' digital literacy and improving junior high school students' language skills, which include reading, writing, listening, and speaking skills. This research is expected to contribute to the development of Indonesian language learning theory based on digital literacy, as well as enrich the literature on interactive learning media in the digital era. In practical benefits: (a) For Teachers: Providing alternative learning media that are innovative and relevant to current student needs; (b) For Students: Help students develop language skills through more engaging and contextual learning, as well as train their digital literacy skills; (c) For Schools: To be a reference in designing learning strategies integrated with information and communication technology; (d) For Further Researchers: Provide references and inspiration in developing digital based learning media in other subjects.

METHOD

This research is a research and development (Research and Development) that aims to produce a product in the form of a digital literacy-based Student Worksheet in Indonesian language learning for junior high school students, as well as to test the validity and attractiveness of the product (Prastowo, 2014; Sugiyono, 2019). The development model used is the ADDIE model (Analysis, Design, Development, Implementation, and Evaluation) (Yunita et al., 2024; Fitriyah et al., 2021; Saputra & Putra, 2021; Muslim et al., 2024), which is one of the systematic instructional development models commonly used in educational research.

The research subjects were seventh-grade students of Dr. Soetomo Surabaya Junior High School, Indonesian language teachers, and expert validators (media and language). The research objects were digital literacy-based worksheets developed and the language skills of seventh-grade junior high school students, aged 11-12. To find out students' perceptions about the attractiveness of the worksheets, they were distributed to 15 randomly selected junior high school students. This research object was chosen because seventh-grade students are expected to have mastered digital skills in QR scanning, data storage on drives, and file sharing activities from drives.

The instruments used in this study included: (a) worksheet validation sheets by experts. The experts, in this case, were Indonesian language teachers experienced in teaching Indonesian language courses, language experts, and learning media experts; (b) Student engagement observation sheets to observe student enthusiasm and commitment in completing the worksheet assignments; (c) Questionnaires on student and teacher responses to the worksheet. This was to determine perceptions of the appeal, benefits, and skill improvements gained after completing the worksheet. The validation sheet is given to teachers, language experts (Indonesian language lecturer who teaches Indonesian grammar), and learning media experts (lecturers in the learning technology study program who teach learning media) to assess the worksheet products. In the validation sheet, there is a column for filling in the assessment that must be filled in according to the question items.

The development of the Student Worksheet follows the five stages of the ADDIE model as follows Figure 1.

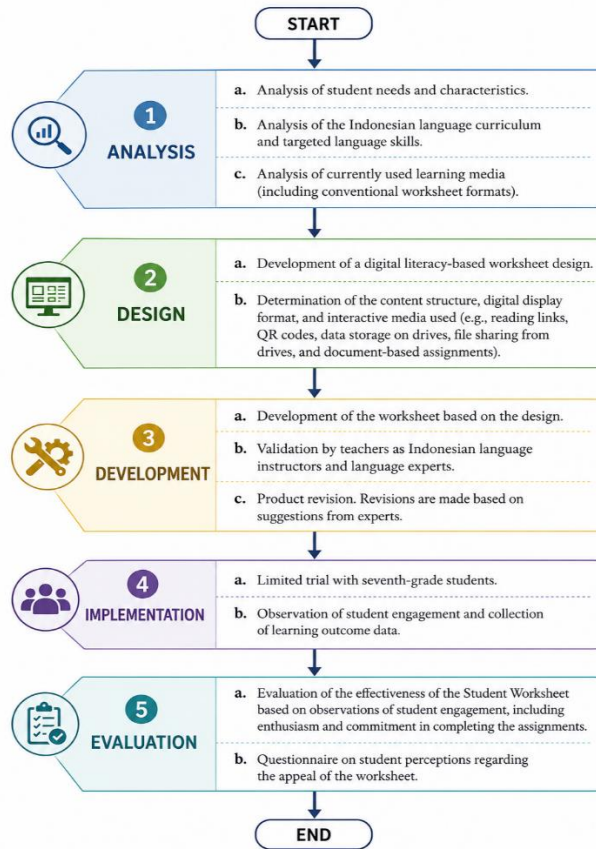


Figure 1. ADDIE Model

Data were collected through several techniques: (a) Observations of worksheet use in the classroom, (done when students work on the worksheet twice); (b) Interviews with experts (to explore expert opinions); (c) Questionnaires to determine appeal and responses to the product (given to students); (d) Expert validation to assess product quality in terms of content, media, and language. The data analysis techniques can be described as follows: (a) worksheet validity data is analyzed using interview techniques, then categorized into certain categories (very valid, valid, quite valid, invalid), (b) Interesting data is analyzed from student perception questionnaires, then the percentage of positive responses is calculated (with categories <49% respondents = not worthy, <50%<69% less worthy, <70%<85% = worthy, <86%<100% = very worthy), (c) Descriptive qualitative data from observations when students are working on assignments or interviews are analyzed descriptively to support quantitative findings.

RESULTS AND DISCUSSION

Results

Once the developed worksheet is complete, it needs to receive input from Indonesian language experts, learning media experts, and language experts. After that, it is tested on randomly selected students. This worksheet is available in both printed and digital (app-based) formats. The digital form can be accessed via students' mobile phones at <https://online.fliphtml5.com/nablahpbs/onui/>. The worksheet covers four language skills: reading, writing, listening, and speaking. For reading, the worksheet directs students to scan a barcode containing the full text. For listening, the worksheet includes a barcode that directs students to an MP3 recording of the conversation. For speaking, students are instructed to record their speaking skills, upload them to their drive, and share the link with the worksheet answers. An example of the appearance of the digital-based worksheet, which looks the same as the printed one, is shown in the cellphone screenshot in the collage Figure 2 below.



Figure 2. Collage Showing the Contents of the Developed Worksheet

The data obtained in this study came from three main sources, namely the results of expert validation of digital literacy-based worksheet products, questionnaire data on students' perceptions of worksheet use, as well as effectiveness data obtained through language skills tests before and after worksheet use. From the results of interviews with 3 experts, consisting of a junior high school Indonesian language teacher and two other experts, the results were obtained as in the following Tables 1, 2, and 3.

Table 1. Indonesian Language Material Expert (by Junior High School Indonesian Language Teacher)

No.	Aspects Interviewed	Core Interview Results	Score	Category
1	Suitability of material with curriculum and learning outcomes	The material is in accordance with basic competencies/learning outcomes for class VII, with complete coverage	5	Very Valid
2	Accuracy of text selection	Relevant and representative text for learning purposes	4	Valid
3	Clarity of material	In summary: informative, but some things still need clarification.	4	Valid
4	Suitability of activities with learning objectives	Appropriate and constructivist-based activities	5	Very Valid
5	Quality of evaluation questions	The questions are clear, require understanding, and are varied.	4	Valid
Result of Material Worksheet			4.4	Valid

Table 2. Learning Media Expert (by Lecturer of the Master of Educational Technology Study Program)

No.	Aspects Interviewed	Core Interview Results	Score	Category
1	Appearance and neatness of design	Neat but still simple, not yet visually exploratory	4	Valid
2	Worksheet format consistency	Consistent structure (title, material, activities, reflection)	4	Valid
3	Integration of digital elements	There are QR codes, digital recordings, and digital posters, but they are not evenly distributed across all materials.	3	Quite Valid
4	Clarity of student work steps	Clear and systematic instructions	5	Very Valid
5	Suitability of worksheet with the characteristics of junior high school students	Appropriate, but the visual appearance needs strengthening	4	Valid
Quality Results of Worksheets as Learning Media			4	Valid

Table 3. Linguist (by Lecturer of Indonesian Language and Literature)

No.	Aspects Interviewed	Core Interview Results	Score	Category
1	Language standardization	Standard language, very few typos	5	Very Valid
2	Readability and clarity of sentences	Instructions are easy to understand; some sentences could be condensed	4	Valid
3	Uniformity of use of terms	Consistent terms, according to the learning domain	3	Quite Valid
4	Language suitability to the cognitive level of junior high school students	Already appropriate	4	Valid
Linguistic Quality Results			4	Valid

The digital literacy-based student worksheet validation process involved three validators: an Indonesian language subject matter expert (teacher), an instructional media expert (lecturer), and a language expert (lecturer). The three validators provided input, assessments, and recommendations for improvements to the quality of the student worksheet based on their respective areas of expertise. Validation data analysis showed that the developed student worksheet met the standards for content, presentation, language, and digital literacy integration required for Indonesian language learning at the junior high school level.

The core results of interviews with three experts indicate that this digital literacy-based worksheet is of good quality and is suitable for implementation in learning. The content aspect is considered accurate and relevant; the media aspect is considered to have met the principles of instructional design, although it needs visual reinforcement (due to the lack of illustrations, making it somewhat monotonous); and the language aspect is considered appropriate and communicative. The average overall assessment is in the category of "quite valid," "valid," or "very valid," indicating that the worksheet is ready for use in the limited trial stage after considering minor revisions from the experts.

Thus, the validation data analysis shows that the developed worksheet has met the criteria for the suitability of educational products, both in terms of material, media, and language. This product is not only in accordance with the demands of the curriculum, but also relevant to the needs of students in the digital era. Validation from the three experts provides a strong foundation for the implementation of the worksheet in Indonesian language learning, as well as opening up space for further development to improve the quality of digital literacy-based learning media.

Students' responses to the worksheets that have been tested on them, with a questionnaire containing questions with limited answers between agree and disagree, can be seen in the following [Table 4](#).

Table 4. Results of Student Responses to Digital Literacy-Based Worksheet (number of students = 15 people)

No.	Rated Aspect	Number of Students Who Agree	Percentage	Category
1	Worksheet is easy to understand, and the instructions are clear	13	86.6%	Very worthy
2	The appearance of the worksheet is neat and quite attractive	11	73.3%	Worthy
3	Using QR codes/links/videos helps learning	14	93.3%	Very worthy
4	The material is appropriate to your abilities and is not confusing.	12	80%	Worthy
5	Learning activities feel fun and not monotonous	13	86.6%	Very worthy
6	Worksheet increases motivation to learn Indonesian	12	80%	Worthy
7	Worksheet is easy to use via a gadget/cellphone	14	93.3%	Very worthy

The feasibility test for the worksheet was conducted by distributing questionnaires to 15 students who acted as direct users during the limited trial phase. The questionnaire aimed to determine students' perceptions regarding ease of use, attractiveness of the display, clarity of instructions, and the usefulness of the worksheet in helping them understand digital literacy-based Indonesian language learning. Overall, student responses indicated that the digital literacy-based worksheet provided a more interactive learning experience and was able to encourage student engagement more optimally than a conventional worksheet. These results support the finding that digital-based learning media can improve students' motivation and language competence in the technological era.

Observations show that the use of digital literacy-based worksheets significantly increased student engagement. Students responded positively. Student enthusiasm was evident from the beginning of the activity, especially when they were asked to access materials via QR codes, open digital reading links, listen to dialogues stored in MP3 format that can be accessed by scanning the QR code, or produce digital work, namely recording student speaking practice. These technology-based activities provided a more engaging learning experience than using conventional worksheets. Conventional worksheets hindered the development of listening and speaking skills. Most students appeared curious and enthusiastic when directed to use digital devices. They actively scanned QR codes, discussed with peers, and attempted to solve the instructions provided. Enthusiasm was also evident in the way students explored the digital learning materials. Students appeared more focused and motivated when accessing materials through digital readings and recorded dialogues using digital devices. The interactive digital elements in the worksheets provided additional stimulus that made the learning atmosphere more dynamic and participatory.

Based on expert validation, student responses, and learning outcomes, it can be concluded that digital literacy-based student worksheets are of good quality as a medium for Indonesian language learning. These worksheets are feasible, practical, and effective because: 1) Content aspect: the material is aligned with the curriculum and is oriented towards strengthening the four language skills. 2) Media aspect: systematic flow and integration of digital technology support 21st-century learning. 3) Language aspect: instructions are clear, communicative, and appropriate to the students' developmental age. 4) Implementation aspect: the worksheet was received positively by students and significantly improved language skills.

Discussion

Research findings related to product validity confirm that the developed digital worksheet aligns with the concept of learning tool development (Falloon, 2020), which emphasizes content relevance, suitability to student characteristics, and linguistic quality. The three validators provided fairly consistent assessments, stating that the worksheet is suitable for use and meets the principles

of appropriateness of content, media, and language. This finding aligns with [Prastowo \(2014\)](#) theory, which states that good learning tools must meet systematic and communicative aspects and be aligned with learning objectives. Thus, the validity obtained strengthens the worksheet's position as a product that theoretically aligns with the framework for developing learning media.

In terms of appeal, student responses indicated that the digital literacy-based worksheets were positively received and easy to operate. The use of digitally-charged operations is also in line with [Spante et al., \(2018\)](#), which outlines the concept of digital literacy. Their high level of appeal led to students' enthusiasm and active participation in the worksheets. This also indicated that students did not encounter significant obstacles in accessing or completing digital-based assignments. This fact also demonstrates a match between the characteristics of Generation Z students, who are required to be familiar with devices, and the worksheet format that integrates QR codes, file uploads, and digital creation. These findings support research by [Sutrisno \(2022\)](#), which emphasizes that digital devices can increase learning engagement when pedagogically guided. In other words, technology is not only a tool but also a medium that conditions learning to be more interactive, collaborative, and contextual. From a pedagogical perspective, the results of this study demonstrate that a student-centered learning approach is more likely to be achieved when students engage in digital activities. The developed student worksheets provide space for creativity, opportunities for exploration, and independence in managing information. Therefore, these results support not only constructivist learning theory but also Indonesian language learning practices that integrate digital literacy as a holistic process for developing language competency.

This discussion also needs to consider the limitations of the study. The use of digital worksheets is highly dependent on the availability of devices and adequate internet access ([Claro et al., 2018](#)). Furthermore, teachers need to be digitally literate to optimally guide students. These factors indicate that the success of digital media implementation hinges not only on product quality but also on the readiness of its supporting ecosystem ([Bond et al., 2021](#)). This aspect provides a space for reflection for schools and further research to strengthen infrastructure support and technological competency for teachers. The emerging findings not only support previous research but also provide a new contribution in the form of integrated language skills with digital literacy. Therefore, this worksheet has the potential to be further developed as a cross-subject learning model that aligns with the dynamics of technology and the needs of today's students.

This research successfully developed a digital literacy-based student worksheet that meets the needs of Indonesian language learning in junior high schools. The resulting worksheet contains clear components, such as learning objectives, material summaries, digital reading materials, technology-based activities (QR codes, use of digital book applications, uploading digital files), and assignments that encourage students to actively construct knowledge. This worksheet meets the characteristics of digital-age students because it integrates activities relevant to the use of technology in students' daily lives.

The validation results from three validators, namely material experts, media experts, and language experts, indicate that the Student Worksheet is valid and suitable for use in learning. The material aspect is assessed as being in accordance with the curriculum and the scope of language skills. The media aspect shows that the worksheet display is systematic, easy to use, and quite effective in facilitating digital learning. The language aspect shows that the worksheet uses standard language, is communicative, and is appropriate for students' cognitive development levels. The worksheet is easy to understand, engaging, and supports digital-based learning. The quality of the worksheet meets the criteria for good learning media in three aspects: content, media, and language.

Digital literacy-based student worksheets have proven effective in improving students' language skills, including reading, listening, writing, and speaking. While conventional worksheets struggle to improve listening skills, digital-based worksheets eliminate this barrier in Indonesian language learning. These worksheets bridge students' language and digital literacy needs, making learning more interactive, contextual, and responsive to the challenges of education in the digital era. However, digital skills need to be developed from an early age, in line with the opinion of ([van Laar et al., 2020](#)). These worksheets not only enrich teachers' teaching tools but also contribute to the development of digital literacy-based learning theory and practice in schools.

CONCLUSION

The research findings on the development of digital literacy-based student worksheets for Indonesian language learning at the junior high school level have several important implications for education, both at the pedagogical and institutional levels, and for academic development. The worksheet products, which have been proven valid, practical, and effective, demonstrate that integrating digital literacy into learning tools can be a comprehensive strategy for improving language skills while simultaneously facilitating the learning needs of digital-generation students. These worksheets can be used by seventh-grade Indonesian language teachers to complement their learning tools. For further research, it is possible to develop student worksheets in other models and in other fields of study.

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REFERENCES

- Afiati, L. N., Rianto, R., Damaianti, V. S., & Mulyaningsih, I. (2025). Multimedia system for integrated reading acceleration and assistance (SMAART) in literacy learning in high school. *LITERA*, 24(2), 112–124. <https://doi.org/10.21831/ltr.v24i2.85875>
- Akayoglu, S., Satar, H. M., Dikilitas, K., Cirit, N. C., & Korkmazgil, S. (2020). Digital literacy practices of Turkish pre-service EFL teachers. *Australasian Journal of Educational Technology*, 36(1), 85-97. <https://doi.org/10.14742/ajet.4711>
- Bond, M., Bedenlier, S., Marín, V. I., & Händel, M. (2021). Emergency remote teaching in higher education: Mapping the first global online semester. *International Journal of Educational Technology in Higher Education*, 18(50), 1-24. <https://doi.org/10.1186/s41239-021-00282-x>
- Caton, A., Kinshuk, & Savenye, W. (2025). Dependencies of digital literacy domains for improved college readiness in higher education: A systematic literature review. *Technology, Knowledge and Learning*. 1-20. <https://doi.org/10.1007/s10758-025-09872-4>
- Choo, S. Y., & Taha, H. (2023). Embracing gen-z's learning styles with a mobile enthalpy game application (MEGA) for thermochemical equation. *Jurnal Cakrawala Pendidikan*, 42(1), 64–76. <https://doi.org/10.21831/cp.v42i1.35394>
- Claro, M., Salinas, Á., Cabello-Hutt, T., San Martín, E., Preiss, D. D., Valenzuela, S., & Jara, I. (2018). Teaching in a digital environment (TIDE): Defining and measuring teachers' capacity to develop students' digital information and communication skills. *Computers & Education*, 121, 162–174. <https://doi.org/10.1016/j.compedu.2018.03.001>
- Darmawan, T. H., Charlina, C., & Septyanti, E. (2024). Development of students' worksheet-based AR video and QR-timer test on biographical text materials Class X Senior High School 1 Pelalawan. *Jurnal Inovasi Teknologi Pendidikan*, 11(3), 310–320. <https://doi.org/10.21831/jitp.v11i3.67633>
- Falloon, G. (2020). From digital literacy to digital competence: The teacher digital competency framework. *Educational Technology Research and Development*, 68, 2449–2472. <https://doi.org/10.1007/s11423-020-09767-4>

- Fatimah, E. N., Agustina, E. S., & Prayogi, R. (2021). Pengembangan lembar kerja peserta didik (LKPD) Bahasa Indonesia pada teks narasi berbasis discovery learning untuk siswa kelas VII SMP. *Jurnal Kata (Bahasa, Sastra, dan Pembelajarannya)*, 9(2), 78-84. <https://doi.org/10.23960/Kata.v9.i2.202101>
- Fitriyah, I., Wiyokusumo, I., & Leksono, I. P. (2021). Pengembangan media pembelajaran Prezi dengan model ADDIE simulasi dan komunikasi digital. *Jurnal Inovasi Teknologi Pendidikan*, 8(1), 84–97. <https://doi.org/10.21831/jitp.v8i1.42221>
- Harianto, B., & Karjadi, M. (2024). Kreatifitas dosen pada pembelajaran elektronika di era digital 5.0. *EDUKASIA: Jurnal Pendidikan dan Pembelajaran*, 5(1), 633–640. <https://doi.org/10.62775/edukasia.v5i1.818>
- Indriani, S., Nurlina, N., & Basri, M. (2023). Pengembangan lembar kerja peserta didik berbasis digital untuk meningkatkan hasil belajar IPA siswa sekolah dasar. *Jurnal Basicedu*, 7(1), 363–375. <https://doi.org/10.31004/basicedu.v7i1.4488>
- Kasim, S., Yusrina, Y., & Kusumaningtyas, A. (2026). Implementation of the flipped classroom–based blended learning model in Indonesian language and literature learning in higher education. *KEMBARA: Jurnal Keilmuan Bahasa, Sastra, dan Pengajarannya*, 12(1), 128-142. <https://doi.org/10.22219/kembara.v12i1.42497>
- Kesumawardani, A. D., Yani, R. G., Haka, N. B., & Oktafiani, R. (2024). Pengembangan media pembelajaran mini book digital berbasis web Google Sites pada mata pelajaran IPA biologi. *Pendas: Jurnal Ilmiah Pendidikan Dasar*, 9(3), 221-233. <https://journal.unpas.ac.id/index.php/pendas/article/view/19508>
- Lai, K., & White, T. (2012). Exploring quadrilaterals in a small group computing environment. *Computers & Education*, 59(3), 963–973. <https://doi.org/10.1016/j.compedu.2012.04.006>
- Lee, A. Y. L. (2016). Media education in the School 2.0 era: Teaching media literacy through laptop computers and iPads. *Global Media and China*, 1(4), 435–449. <https://doi.org/10.1177/2059436416667129>
- Lestari, P. D. A., & Jusra, H. (2022). Pengembangan worksheets interaktif berbasis web dengan video pada materi pecahan. *Jurnal Inovasi Teknologi Pendidikan*, 9(2), 194–203. <https://doi.org/10.21831/jitp.v9i2.51318>
- Liu, L. (2023). Writing and speaking difficulties of students in One Chinese Middle School. *Journal of Education and Educational Research*, 6(3), 119–130. <https://doi.org/10.54097/brkwr514>
- Muchsini, B., & Siswandari, S. (2020). Class culture and the academic stress of digital natives generations. *Jurnal Cakrawala Pendidikan*, 39(1), 102–110. <https://doi.org/10.21831/cp.v39i1.26910>
- Muslim, M., Kuo, H.-C., Setiawan, D., Fernandez, D., Putra, R., Derisman, A., & Zikri, Z. (2024). Evaluation of the practicality of project-based learning implementation plan in light vehicle engine maintenance using ADDIE approach. *Jurnal Inovasi Teknologi Pendidikan*, 11(4), 454–467. <https://doi.org/10.21831/jitp.v11i4.71122>
- Nurgiyantoro, B., Lestyarini, B., & Rahayu, D. H. (2020). Konstruk asesmen literasi fungsional untuk siswa sekolah menengah pertama. *LITERA*, 19(2), 210–227. <https://doi.org/10.21831/ltr.v19i2.32977>
- Nuryanti, T., Pursitasari, I. D., & Rubini, B. (2023). Science Literacy Profile of Junior High School Students on Climate Change Material. *Jurnal Penelitian Pendidikan IPA*, 9(10), 8390–8395. <https://doi.org/10.29303/jppipa.v9i10.5218>
- Perdana, R., Jumadi, J., Rosana, D., & Riwayani, R. (2020). The online laboratory simulation with concept mapping and problem based learning (Ols-Cmpbl): Is it effective in improving

- students' digital literacy skills?. *Jurnal Cakrawala Pendidikan*, 39(2), 382–394. <https://doi.org/10.21831/cp.v39i2.31491>
- Porat, E., Blau, I., & Barak, A. (2018). Measuring digital literacies: Junior high-school students' perceived competencies versus actual performance. *Computers & Education*, 126, 23–36. <https://doi.org/10.1016/j.compedu.2018.06.030>
- Prastowo. (2014). *Mengenal, membuat, dan menyusun lembar kerja peserta didik (LKPD)*. DivaPress.
- Purwaningrum, W., & Leksono, P. (2022). Pengembangan lembar kerja peserta didik berbasis digital sebagai inovasi pembelajaran daring. *JUPI*, 7(1), 129–137. <https://doi.org/https://doi.org/10.29100/jupi.v7i1>
- Sadiku, L. M. (2015). The importance of four skills reading, speaking, writing, listening in a lesson hour. *European Journal of Language and Literature*, 1(1), 29–31. <https://doi.org/10.26417/ejls.v1i1.p29-31>
- Saputra, H., & Putra, A. M. A. (2021). Pengembangan framework pembelajaran kolaboratif untuk institusi pemerintah menggunakan ADDIE dan ISO 20000. *Jurnal Inovasi Teknologi Pendidikan*, 8(1), 41–54. <https://doi.org/10.21831/jitp.v8i1.36054>
- Spante, M., Hashemi, S. S., Lundin, M., & Algers, A. (2018). Digital competence and digital literacy in higher education research: Systematic review of concept use. *Cogent Education*, 5(1), 1–21. <https://doi.org/10.1080/2331186X.2018.1519143>
- Stefany, S., & Helmi, J. (2024). Digital literacy and online course design: Study of Indonesian educators. *Jurnal Cakrawala Pendidikan*, 43(3), 723–736. <https://doi.org/10.21831/cp.v43i3.71403>
- Sugiyono. (2019). *Metode penelitian pendidikan (kuantitatif, kualitatif, kombinasi, r&d dan penelitian pendidikan)*. Alfabeta.
- Sutarni, N., Ramdhany, M. A., Hufad, A., & Kurniawan, E. (2021). Self-regulated learning and digital learning environment: Its' effect on academic achievement during the pandemic. *Jurnal Cakrawala Pendidikan*, 40(2), 374–388. <https://doi.org/10.21831/cp.v40i2.40718>
- Sutrisno, T. (2022). *Kompetensi digital dalam pembelajaran*. Alfabeta.
- Razak, H. M., Abdul Razak, N., & Krish, P. (2022). Enhancing students' digital literacy at EFL classroom: Strategies of teachers and school administrators. *Jurnal Cakrawala Pendidikan*, 41(3), 653–664. <https://doi.org/10.21831/cp.v41i3.43107>
- Van Laar, E., van Deursen, A. J. A. M., van Dijk, J. A. G. M., & de Haan, J. (2020). Determinants of 21st-century skills and digital skills for workers: A systematic literature review. *Sage Open*, 1–14. <https://doi.org/10.1177/2158244019900176>
- Yulianti, E., Marlina, L., Rayhan, M., Yapis Dompou, S., & Kunci, K. (2024). Penggunaan media pembelajaran digital terhadap peningkatan kemampuan literasi Bahasa Indonesia siswa SMP. *Edusociata*, 7(2), 41–50. <https://doi.org/10.33627/es.v7i2.2746>
- Yun, G., & Kim, S. (2025). Analysis of high school students' use of digital devices: Focus on learning and instruction elements. *Cogent Education*, 12(1), 1–14. <https://doi.org/10.1080/2331186X.2025.2468008>
- Yunita, V., Sujinah., & Yarno (2024). Pengembangan modul ajar berdiferensiasi Berbasis ADDIE pada mata pelajaran Bahasa Indonesia di SMK Negeri 2 Bojonegoro. *Jurnal Pendidikan Madrasah*, 9(1), 115–122. <https://doi.org/10.14421/jpm.2024.115-122>