

DEVELOPMENT OF INTERACTIVE MULTIMEDIA BASED ON EDUCATIONAL GAME APPLICATIONS IN INDONESIAN LANGUAGE LEARNING FOR GRADE V ELEMENTARY SCHOOL STUDENTS

^{*1}Zulfikar Amiluddin, ²Munirah, ³Muhammad Akhir

^{*1,2,3}Universitas Muhammadiyah Makassar

Email: ^{*1}amiluddinzulfikar@gmail.com, ²munirah@unismuh.ac.id,

³m.akhir@unismuh.ac.id

Abstract

This study aims to examine the prototype, validity, practicality, and effectiveness in the development of interactive multimedia based on educational game applications to improve Indonesian learning in grade V elementary school students. This research was carried out at UPTD SD Negeri 79 Barru with a trial involving 21 students. The method used is Research and Development (R&D) with the Alessi & Trollip development model. The results of this media development prototype research present material not only in the form of text, but also through learning videos, relevant videos, and equipped with interactive quizzes to test students' understanding, so that learning becomes more interesting and interactive. The results of media validation are in the very valid category based on the Gregory test, with a reliability value of 1, as well as materials that also obtain a reliability value of 1. This learning media is practically used in the learning process, based on the results of observations with an average score of 1.00 (implemented category), teacher response questionnaires with an average of 1.00 (implemented categories), and student response questionnaires with an average of 0.99 (implemented categories), so that the total average practicality reaches 0.99%. The effectiveness of the media can be seen from the results of the pretest and posttest scores on the test, where all students achieved learning completeness, proving that this media is effective. This shows that there is an improvement in Indonesian learning outcomes through the use of interactive multimedia based on educational game applications.

Keywords: Multimedia, Educational Game Application, Indonesian

Abstrak

Penelitian ini bertujuan untuk meneliti prototype, kevalidan, kepraktisan, dan keefektifan dalam pengembangan multimedia interaktif berbasis aplikasi game edukasi untuk meningkatkan pembelajaran Bahasa Indonesia pada siswa kelas V SD. Penelitian ini dilaksanakan di UPTD SD Negeri 79 Barru dengan uji coba yang melibatkan 21 siswa. Metode yang digunakan adalah Research and Development (R&D) dengan model pengembangan Alessi & Trollip. Hasil penelitian prototype pengembangan media ini menyajikan materi tidak hanya dalam bentuk teks, tetapi juga melalui video pembelajaran, video yang relevan, serta dilengkapi kuis interaktif untuk menguji pemahaman siswa agar pembelajaran menjadi lebih menarik dan interaktif. Hasil validasi media berada pada kategori sangat valid berdasarkan uji Gregory dengan nilai reliabilitas 1, demikian pula pada materi yang juga memperoleh nilai reliabilitas 1.

Media pembelajaran ini praktis digunakan dalam proses pembelajaran, berdasarkan hasil observasi dengan rata-rata skor 1,00 (kategori terlaksana), angket respon guru dengan rata-rata 1,00 (kategori terlaksana), dan angket respon siswa dengan rata-rata 0,99 (kategori terlaksana), sehingga total rerata kepraktisan mencapai 0,99%. Keefektifan media dapat dilihat dari hasil nilai pretest dan posttest pada uji coba, di mana seluruh siswa mencapai ketuntasan belajar, membuktikan bahwa media ini efektif. Hal ini menunjukkan adanya peningkatan hasil belajar Bahasa Indonesia melalui penggunaan multimedia interaktif berbasis aplikasi game edukasi
Kata kunci: Multimedia, Aplikasi Game edukasi, Bahasa Indonesia

INTRODUCTION

Indonesian is the main communication tool as well as a means of thinking and building students' reasoning. At the elementary school level, Indonesian learning is not only aimed at improving language skills, but also to instill national values and form the character of students who are capable of critical and creative thinking. Indonesian, as a core subject, has an important role in helping students express ideas, understand reading, and organize information logically and systematically. Following the Regulation of the Minister of National Education Number 20 of 2006, Indonesian language learning aims to ensure that students can communicate effectively and efficiently under applicable ethics, both orally and in writing. In addition, this learning is also expected to be able to foster appreciation for the nation's literary and cultural works, as well as make Indonesian a national identity. This requires teachers to implement learning strategies and media that are able to support the achievement of competencies as a whole.

In its implementation, Indonesian learning includes four aspects of language skills, namely listening, speaking, reading, and writing. These four skills must be taught in a balanced manner so that students are able to communicate comprehensively. However, in practice in many elementary schools, the learning process is still conventional and has minimal innovation, resulting in low active participation of students in teaching and learning activities. The development of information and communication technology has opened up great opportunities to modernize Indonesian language learning. The use of digital technology, such as interactive multimedia and educational games, is believed to increase students' motivation to learn and make the learning process more interesting and meaningful. Research by Choirunnisa et al., (2020) shows that game-based digital media can significantly increase student engagement and interest in learning, especially at the elementary school level.

Another study by Sulton et al., (2021) also proves that the application of educational game-based learning media in Indonesian learning in grade V elementary school can improve learning outcomes and students' understanding of the material as a whole. Educational games not only provide entertainment but also provide an active, contextual, and fun learning experience. Media like this is in accordance with the characteristics of the digital native generation, who tend to favor visual, interactive, and technology-based learning. On the other hand, conditions in the field show that Indonesian learning in several elementary schools, especially in the UPT SD Negeri 79 Barru area, still tends to

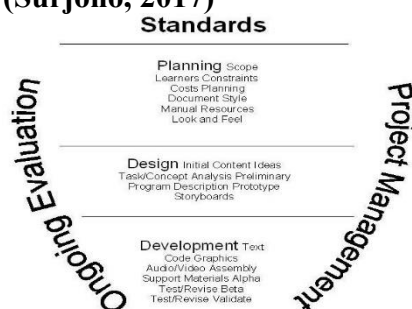
be monotonous and has not utilized digital media optimally. Teachers still rely on textbooks and worksheets as the main source, while students seem less enthusiastic about following lessons. This observation shows the need for the development of innovative learning media so that the learning process becomes more effective and in accordance with the times.

One potential approach to be applied is the development of interactive multimedia-based learning media in the form of educational games. According to Safira, (2023), interactive media that combine elements of text, sound, images, and animation are able to increase students' attention and accelerate the understanding of learning concepts. This approach also allows learning to take place independently, student-centered, and challenge-based. The development of educational games that are systematically designed with development models such as ADDIE or 4-D can produce valid, practical, and effective media. The results of Susanti's (2022) research show that educational games developed through the ADDIE model achieve a validity level of above 89% and learning effectiveness reaches more than 85%. This fact supports the importance of integrating technology in the Indonesian language learning curriculum in elementary schools. Based on this background, it is important to develop Indonesian learning media based on interactive educational games for grade V elementary school students. It is hoped that this media will not only be able to improve material understanding, but also form an active and creative learning attitude. This research is also expected to contribute to efforts to improve the quality of Indonesian learning in elementary schools that are relevant to the needs of the times and the characteristics of today's students.

METHOD

This research is a type of research and development (Research and Development or R&D) that aims to produce interactive learning media based on educational games on Indonesian content of suffix material (prefix) for grade V students of UPT SD Negeri 79 Barru. The development model used in this study is the Alessi & Trollip model, which is considered suitable for developing interactive multimedia because it has more practical stages, consisting of only three main stages, namely planning, design, and development. The model is also equipped with three supporting attributes in the form of standards, continuous evaluation, and project management that are integrated in each stage.

Figure 1. Alessi & Trollip Model. According to Alessi and Trollip (2001), Source : (Surjono, 2017)



The first stage in this development is the planning stage. At this stage, the scope of the material to be developed is identified, which focuses on students' ability to identify the type of suffix (prefix) and use it in sentences. In addition, student characteristics were also identified through observation to find out the initial conditions, learning styles, and problems that often arise in Indonesian language learning. The study also sets development boundaries based on the student's age range and initial ability, as well as prepares a planning document that includes the management of the necessary time, cost, and resources. Other steps at this stage include gathering relevant reference sources, determining initial hypotheses, preparing media display prototypes, and exploring user needs through initial data collection.

After the planning stage, this research continues with the design stage. This stage includes the development of initial ideas related to the form, main design, and flow of the media to be created. In this stage, a flowchart is compiled to visualize the program's workflow, as well as a storyboard to map the interface and the placement of important elements in the application. The design also includes the preparation of the script to be included in the media, including dialogues, narratives, and learning instructions. Thus, the design stage ensures that all ideas that have been developed can be poured out in a structured manner before entering the product manufacturing process. The third stage is the development stage, which begins with the creation of the product using the Articulate Storyline application. This application allows the integration of text, images, animations, sounds, and videos in one platform so as to support the goal of producing interactive and interesting learning media. After the initial product is completed, an alpha test is carried out involving material experts and media experts to assess the feasibility of the content and media design. Based on the results of the alpha test, product revisions were carried out following the suggestions and inputs obtained. Furthermore, a beta test was conducted on grade V students as media users to obtain direct responses regarding the understanding, interest, and benefits of media.

The data collection procedure in this study was carried out through several techniques, namely observation, interviews, and questionnaires. Observations were made to determine the condition of Indonesian learning in class V, including teachers' teaching patterns and the use of existing media. Interviews are used to delve deeper into student characteristics and teachers' constraints in the learning process. Meanwhile, the questionnaire is used in two forms, namely a product validation questionnaire given to material experts and media experts, and a questionnaire for student and teacher responses after product trials, to assess the feasibility of the developed media both in terms of content, design, and use in learning. The research instruments used include expert validation sheets to measure the level of product feasibility from pedagogical, technical, and cost aspects. In addition, student and teacher response questionnaires were used to assess the practicality and attractiveness of the media. These instruments have been designed to provide comprehensive data on the quality of educational game-based learning media developed. Through this research and development process, it is hoped

that a valid, practical, and effective learning media product can be produced to improve students' ability to understand supplementary material in Indonesian subjects.

RESULTS AND DISCUSSION

This research aims to develop learning media based on *Educational Game Applications* through Indonesian learning. This study examines the prototype, validity, practicality, and effectiveness of learning media developed using the Allesi & Trolip development model, which includes 3 main stages: definition, design, and development. To provide a complete understanding of the quality and effect of the use of the developed learning media, the results of the discussion are systematically described based on each of these elements.

1. Prototype of learning media development based on Educational Game Application in Indonesian Learning Class V Elementary School

In the first part of the research on the development of a prototype of learning media based on educational game applications for Indonesian learning in grade V elementary school, the process began with the planning stage, which was carried out in April 2025. This stage begins with the identification of student characteristics through preliminary studies and interviews. The results show that the majority of students aged 10-11 years have begun to be able to study independently, but some do not have their smartphones and still borrow from their parents. It was also found that students were very fond of animation, music, and bright colors, and almost all students had the same interest in games, so that these aspects are the main considerations in application development.

Furthermore, the scope of the material developed was selected based on the results of observations at UPT SD Negeri 79 Barru. It was found that students had difficulty understanding Indonesian lessons, especially in supplementary material, because the material was considered abstract, and the available learning facilities were still limited. Therefore, the material "Getting to Know Suffixes" was chosen as the focus of the application, with the aim that students can identify the type of suffix (prefix) and develop the suffix into the right sentence. The learning objectives to be achieved include students' ability to identify and develop the type of remuneration after reading the material, watching videos, and practicing through quizzes or games provided in the application.

In the planning process, several main obstacles were also identified, such as the limitations of development software that is generally paid, so the quality of graphics and application features must be adjusted to the available resources. Additionally, the process of gathering resources such as images, videos, animations, and audio is an important concern to ensure that the app remains engaging and interactive. Planning documents are also prepared systematically to control data and information that will be used in the next stage. The source of the subject matter is taken from the official books of the Ministry of Education, while the application development uses Articulate Storyline 3.0, with the support of Canva, Pinterest, Google Chrome, Savefrom.net.id, Youtube, Ytmp3.com, and Pixabay.com applications for image, video, and audio needs.

The design phase will be carried out from April to May 2025. At this stage, the main idea was developed that learning media would be in the form of applications that could be used on Android-based smartphones, tablets, and iPads in .apk formats, and could be operated offline without an internet connection. The main design of the "Get to Know Adjustments" app uses images from Canva, Pinterest, and Google Chrome, as well as audio from Pixabay. Before app development, a flowchart is created to determine the flow of the app from start to finish, followed by storyboard creation as a visual and narrative guide for app development.

The application development phase takes place from April to May 2025. At this stage, all components of the application are arranged, starting from text that uses five types of fonts (Calibri, Fredoka One, Canva Sans, Handy Casual, and Jua) with a predominance of brown and white colors, to the preparation of images in the form of backgrounds, animated characters, and supporting illustrations of the material which are all taken from legal online sources. Audio is used as a background to create a fun learning atmosphere, while video material is taken from YouTube. After all the components are collected, the "Getting to Know Adjustments" application is created using Articulate Storyline 3, with steps such as entering images, creating application intros, designing login menus and main menus, compiling sections about, materials, videos, mini games, affirmations for students, questions, final results of questions, and exits of the application. Audio/background is also added to enrich the student learning experience. Once the design is complete, the app is exported to HTML5 format and converted into an educational gaming app that can be installed on Android devices.

Overall, the development of this application prototype has paid attention to the characteristics, needs, and obstacles faced by students and teachers in the field. This is in line with the opinion Musfiroh, (2023); Rochmah et al., (2024) that interactive educational media is very diverse and includes interactive media with educational models, interactive media based on learning styles (interactive media combined with teaching), interactive media for Android, and interactive media with educational games. The development process is carried out systematically starting from planning, designing, to development, by utilizing various digital resources to create learning media that is interactive, interesting, and relevant to the needs of Indonesian learning in grade V of elementary school.

2. The validity of learning media based on Educational Game Applications in Indonesian learning in Class V Elementary School

The educational game application-based learning media developed has gone through a systematic validation process by two expert lecturers from the University of Muhammadiyah Makassar, namely Dr. Tarman A. Arif, S.Pd, M.Pd, and Dr. Andi Adam, M.Pd. This validation process includes two main aspects, namely the media aspect and the material aspect. In the media aspect, an assessment was carried out on the balance of image and text display, color and font selection, image resolution, clarity of instructions,

and ease of use. The validation results showed that all indicators were in the "D" category (excellent), with a high average score on each assessment item. This indicates that the learning media developed has met the feasibility standards in terms of visual appearance, benefits, and the use of language that is communicative and easy for students to understand. The Gregory reliability value obtained of 1 also confirms that the validity of the media is very high and feasible to be used in the learning process.

In the material aspect, validation is focused on the suitability of the content with the learning objectives, the correctness of the material, the completeness of information, the use of language, and the involvement of students in learning. All indicators in the material aspect also obtained a category of "D", with a Gregory reliability value of 1, which means that the learning material is declared valid and suitable for use. Nevertheless, the validators provided several recommendations for improving the media, including adjusting the typeface, changing the design of the material from text to video format to make it more attractive, and arranging the material with simple and easy-to-understand sentences. In addition, the validator also emphasized the importance of developing evaluation questions that are Higher Order Thinking Skills (HOTS), to encourage students to think critically and analytically.

Following up on suggestions and criticisms from validators, revisions were made to the learning media, especially in the evaluation question section. Before the revision, the questions presented were still relatively easy and less challenging for students. After the revision, the evaluation questions were arranged with reference to Bloom's taxonomy and with more emphasis on higher-order thinking abilities (HOTS). This revision is expected to improve the quality of media in honing students' analysis, synthesis, and evaluation skills. After the validation and revision process is completed, this educational game application-based learning media is tested in two stages, namely small-scale trials (trial I) and large-scale trials (trial II). In small-scale trials, the results of the pre-test and post-test showed a significant increase in scores in all students after using the educational game application. This increase indicates that the developed media is effective in increasing the mastery of Indonesian material. Meanwhile, in large-scale trials, the pattern of increasing post-test scores compared to pre-tests was also consistent in almost all participants, thus strengthening the finding that this educational game application was effectively applied more widely.

In addition to quantitative data, the results of observations and questionnaires given to teachers and students also show that this learning medium is practical, easy to use, and able to increase learning motivation. Teachers consider that media are following the needs and characteristics of students, and help the learning process to be more effective and fun. Based on the results of the validation, revision, and trials that have been carried out, it can be concluded that the educational game application-based learning media developed is very feasible and effective for use in Indonesian learning in grade V of elementary school. This media is not only valid in substance and technical aspects, but also practical and effective in improving students' mastery of material, and can encourage students to

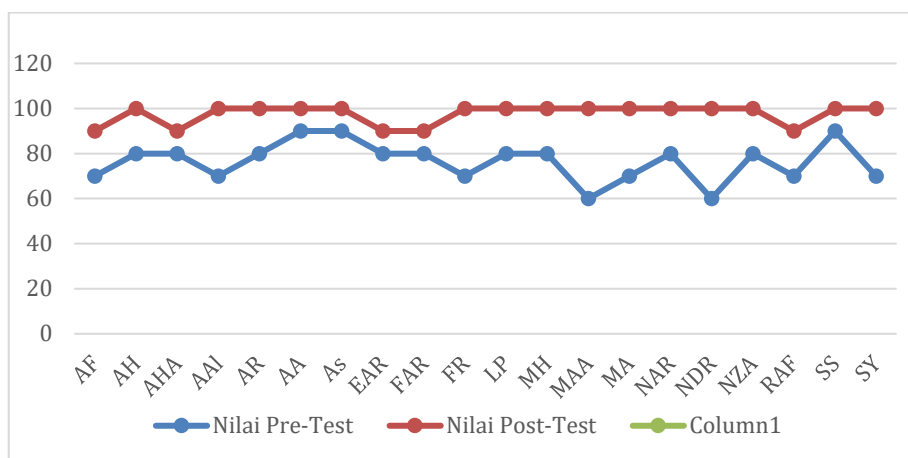
think critically through evaluation questions that are HOTS. Subroto et al., (2024) Stated that the use of game-based learning media can increase students' interest in participating in learning. Strengthened by the research conducted Shi et al., (2022) also shows that online learning media based on educational games on the theme "The Beauty of Togetherness" for grade IV students of SD Negeri 58 has proven to be valid, practical, and suitable for use by teachers. This media makes it easier to achieve learning goals by creating a fun and active learning process. The advantage lies in its ability to encourage students' cognitive development from the C2 to C5 domains, thanks to the use of technology that is close to students and interesting and complete materials (Subarkah et al., 2019; Suwati, 2024).

3. The practicality of learning media based on Educational Game Applications in Indonesian learning in Class V Elementary School

The practicality of educational game-based learning media in Indonesian language learning in grade V elementary school is based on the results of trials that have been carried out in two stages, namely small-scale trials (trial I) and large-scale trials (trial II). In the first trial stage, the practicality of the media was measured through the researchers' observations, teacher responses, and students' responses to the implementation of media in the learning process. The results of observations showed that the implementation of learning using educational game applications obtained an average score of 0.75, which was included in the "implemented" category. This indicates that the media developed can be implemented well in daily learning activities. In addition, the teacher's response to the use of this media was also very positive, with an average score of 0.7 in the "implemented" category.

The teacher assessed that the material presented in the application was following the basic competencies, student needs, teaching materials, and characteristics of the students. Media is also considered easy to use, able to increase learning motivation, and make learning more interesting and fun. This finding was strengthened by the students' response, which showed an average implementation of 0.87, also in the "implemented" category. Students feel that learning media based on educational game applications makes the learning process more interesting, fun, and motivates them to be more active in participating in learning. The accumulation of practicality data obtained from observations, teacher questionnaires, and student questionnaires resulted in an average total practicality of 3.25, which is classified as "overall practical". These results show that educational game application-based learning media is very practical to be used in Indonesian learning in grade V of elementary school, both from the perspective of teachers and students. Based on the results of small-scale trials, revisions were made to the media, especially to visual aspects such as background adjustments to better suit the class theme, so that the media becomes more interesting and relevant to the student learning environment.

Figure 1. Trial Pretest and Posttest Curve II (Large Scale)



In the trial stage II (large-scale), the revised media were tested on more students. The results of the researcher's observations showed that all aspects of learning implementation were declared to be carried out well, with an average score of 1, which means that all implementation indicators were achieved optimally. Teachers consistently prepare learning tools, open lessons with perception and motivation, explain objectives and materials clearly, and use educational game applications according to the learning scenario. Students also actively participate in learning activities, and the interaction between teachers and students is effective, with teachers actively guiding and providing feedback during the learning process. In the core activity, students do exercises and practice using educational game applications, which help them master the material better. At the end of the lesson, the teacher reflects, draws conclusions, and closes the learning systematically (Ahmar et al., 2020).

Overall, the results of trial II strengthen the findings in trial I that educational game application-based learning media are very practical and effective in learning Indonesian in grade V of elementary school. This media not only makes it easier for teachers to deliver material, but also able to increases the motivation and active involvement of students in the learning process. In line with the opinion Kurniawan, (2022) Educational games not only provide a pleasant learning experience for students, but can also make it easier for students to understand the material. Thus, it can be concluded that the educational game application-based learning media developed in this study has met the practicality aspects and is feasible to be implemented more widely in Indonesian learning at the elementary school level.

4. The Effectiveness of Educational Game Application-based Learning Media in Indonesian Language Learning in Grade V Elementary School

The effectiveness of educational game application-based learning media in improving the learning outcomes of grade V elementary school students was measured through the analysis of pre-test and post-test data on the material on remuneration. This measurement

was carried out in two stages of the trial, namely a small-scale trial (trial I) and a large-scale trial (trial II).

a) Trial I (Small Scale)

In a small-scale trial, educational game application-based learning media were implemented to seven elementary school grade V students. The results of data analysis in Table 4.15 show a significant increase in scores after students use learning media. In general, a student's pre-test score ranges from 70 to 90, while a post-test score increases to 90 to 100. This increase in value indicates that educational game application-based learning media is effective in helping students improve their understanding and mastery of the material regarding suffixes. In more detail, students with AA codes experienced an increase in scores from 70 to 90, while AF students managed to achieve a score of 100 from an initial score of 80. This increase in scores did not only occur in some students, but was seen consistently in all trial participants. The curve depicting the comparison of pre-test and post-test scores also shows a positive and significant upward trend.

b) Trial II (Large-Scale)

To test the effectiveness of the media more broadly, a second trial was conducted involving 21 elementary school grade V students. The results of the data analysis presented in Table 4.16 show that the majority of students experienced a significant increase in grades after using educational game application-based learning media. Students' pre-test scores vary between 60 to 90, while post-test scores increase to 90 to 100. For example, students with MH codes who previously obtained a score of 60 on the pre-test managed to achieve a perfect score of 100 on the post-test. Likewise, students coded NAR and SY also experienced a significant increase in scores after using learning media. The comparison curve of pre-test and post-test scores in trial II showed a positive and consistent improvement trend among the participants. Overall, the results of trial I and trial II show that educational game application-based learning media are effective in improving the learning outcomes of grade V elementary school students in material about remuneration. The significant increase in pre-test and post-test scores indicates that this medium is not only interesting and fun, but also able to help students understand and master the subject matter better. The effectiveness of this media is also supported by practical data that shows that the media is easy to use by teachers and students, and can increase learning motivation. Thus, it can be concluded that this educational game application-based learning media is suitable for use as an alternative in learning Indonesian in grade V of elementary school.

CONCLUSION

Referring to the results of research and discussion on the development of interactive multimedia based on educational game applications in Indonesian learning for grade V elementary school students, several important conclusions can be drawn. First, an interactive multimedia prototype based on an educational game application was developed using the Alessi and Trollip development models, which included the

planning, designing, and development stages. The resulting prototype presents the material "Getting to Know Remuneration" in an attractive and interactive visual form, following the learning characteristics of grade V elementary school students. Second, the results of validation tests by media experts and material experts show that the interactive multimedia developed has met the validity criteria. This is strengthened by the reliability results of Gregory 1, which indicate that there is a perfect agreement between validators on product quality. Third, the practicality of the media was also proven through field trials, which showed an increase in the implementation score from 3.25 in the first trial to 3.98 in the second trial. This indicates that the application is easy to use and well-received by teachers and students.

Fourth, the effectiveness of media in improving student learning outcomes is evident in the results of pre- and post-tests. In small-scale trials, students' pre-test scores ranging from 70 to 90 increased to 90 to 100 on post-tests. A similar trend was also found in large-scale trials, where pre-test scores that were initially between 60 to 90 increased significantly to 90 to 100 after the use of the app. Almost all students experienced a significant increase in learning outcomes, including students with low initial scores. Thus, it can be concluded that this interactive multimedia-based educational game application is not only valid and practical, but also effective in helping to improve Indonesian learning outcomes, especially in the Getting to Know Remuneration material. This media has been proven to be able to attract students' interest in learning, facilitate understanding of concepts, and provide a fun and meaningful learning experience.

REFERENCES

- Ahmar, H., Budi, P., Ahmad, M., Mushawwir, A., & Khaidir, Z. (2020). Penerapan Model Pembelajaran Problem Based Learning: Literature Review. *Jurnal Keperawatan Muhammadiyah*. <https://doi.org/10.30651/jkm.v5i2.3949>
- Choirunnisa, S. C., Wirasti, M. K., & Hidayat, D. R. (2020). Strategi pengembangan soft skill siswa SMK melalui media video. *TERAPUTIK Jurnal Bimbingan dan Konseling*, 3(3).
- Kurniawan, D. H. (2022). *PENINGKATAN KEMAMPUAN BERPIKIR KRITIS SISWA MELALUI METODE PEMBELAJARAN GAME-BASED LEARNING BERBANTUAN MEDIA GAMECARD DI KELAS V SD NEGERI 2 KEDUNGSARIMULYO* [Undergraduate, Universitas Islam Sultan Agung]. <https://repository.unissula.ac.id/27155/>
- Musfiroh, K. (2023). *PENGEMBANGAN MEDIA PEMBELAJARAN INTERAKTIF BERBASIS CHATBOT WEBSITE PADA MATERI JARINGAN TUMBUHAN* [Sarjana, Universitas Siliwangi]. <https://doi.org/10.10.%20BAB%20V.pdf>
- Rochmah, N. L., Martono, S., & Yurisma, D. Y. (2024). Perancangan Media Interaktif Berbasis Augmented Reality Sejarah Trowulan Untuk Anak Sekolah. *CandraRupa* :

Journal of Art, Design, and Media, 3(1), Article 1.
<https://doi.org/10.37802/candrarupa.v3i1.664>

Safira, A. A. (2023). *Pengembangan Multimedia Interaktif Berbasis Model Problem Based Learning untuk Memfasilitasi Kemampuan Pemecahan Masalah Siswa* [bachelorThesis, Jakarta: FITK UIN Syarif Hidayatullah jakarta].
<https://repository.uinjkt.ac.id/dspace/handle/123456789/73787>

Shi, Y., Peng, F., & Sun, F. (2022). A Blended Learning Model Based on Smart Learning Environment to Improve College Students' Information Literacy. *IEEE Access*, 10, 89485–89498. IEEE Access. <https://doi.org/10.1109/ACCESS.2022.3201105>

Subroto, D. E., Bartoszeck, A., & Arsyad, M. (2024). UNLOCKING THE POTENTIAL OF GAME BASED LEARNING EDUCATION IN JUNIOR HIGH SCHOOL INDONESIA. *Jurnal Kajian Pendidikan Dan Psikologi*, 1(3 April), Article 3 April.
<https://doi.org/10.61397/jkpp.v1i3.121>

Sulton, S., Utami, P. S., & Wulansari, B. Y. (2021). *Learning Video Based on Local Culture of “Wayang Golek” Reyog Ponorogo in the Early Childhood Education Curriculum on the Theme of My Homeland*. 163–169.
<https://doi.org/10.2991/assehr.k.211126.054>

Surjono, D. H. (2017). *Multimedia Pembelajaran Iteraktif: Konsep dan Pengembangan*. Yogyakarta: UNY Press. UNY Press.