

# Development of Android-Based Interactive Media Articulate Storyline 3 in IPAS Subjects Fourth Grade

Arlinta Ulfa Auvisena<sup>1\*</sup>, Moh. Faturrahman<sup>1</sup>

<sup>1</sup>Elementary School Teacher Education, Faculty of Education and Psychology, Semarang State University, Indonesia.

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Corresponding Author:

Arlinta Ulfa Auvisena

[arlinxena@students.unnes.ac.id](mailto:arlinxena@students.unnes.ac.id)

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**Abstract:** This study aims to develop educational materials using Articulate Storyline, an e-learning software known for its practicality in creating interactive learning materials. This program is very helpful because it has an intuitive and easy-to-operate interface, which allows teachers and curriculum creators to design materials without requiring special skills in programming or graphic design. The methodology used in this study is Research and Development (R&D), following the ADDIE model which includes analysis, design, development, implementation, and evaluation. Data collection involves both test and non-test methods, and data is analyzed through quantitative as well as qualitative approaches. The results showed that the use of Articulate Storyline is very effective in learning natural and social sciences for grade IV students. This is evident from the high assessment by material and media experts, respectively by 91% and 90%. A significant increase in test scores from 55 to 80 and an increase in students' n-gain of 0.57 demonstrate the effectiveness of this tool in the teaching and learning process. Thus, Articulate Storyline is considered an ideal and effective tool for interactive learning in grade IV science subjects.

**Keywords:** Articulate storyline; Interactive media; IPAS; Mobile learning

## Introduction

In the Merdeka Curriculum, Natural Sciences (known with IPA) and Social Sciences (known with IPS) are combined into one subject called Natural and Social Sciences (known with IPAS). According to Suhelayanti et al. (2023) This merger aims to create a more multidisciplinary, holistic, and contextual education. IPAS, which is an important part of the curriculum in primary schools, aims to improve and advance the quality of education.

IPAS integrates the study of organisms and their interactions with the environment as well as the universe. For example, human beings, who are social organisms, exhibit a need to interact with others. Therefore, IPAS is a synthesis of IPA and IPS in the context of education (Meylovvia et al., 2014).

Based on studies conducted by Susilowati et al. (2022), the difficulties experienced by learners in

understanding scientific and social science concepts can be categorized into two types, namely internal factors and external factors. Internal factors are problems that originate from within the students themselves, including difficulties in understanding material about socio-cultural diversity, the distribution of natural resources, and ethnic, religious, and cultural variations (Salsabila et al., 2020). On the other hand, external factors are problems that arise from external conditions during the learning process, which include lack of school facilities and infrastructure, lack of support from parents, and the use of ineffective teaching methods such as conventional lecture methods (Muliani et al., 2022; Nasril et al., 2023).

From observations and interviews held at SDN 03 Jatilawang, especially with grade IV teachers, several obstacles in the teaching and learning process have been identified. One of the main issues that emerged was that even though the Merdeka Curriculum had been

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implemented, learning activities were still teacher-centered, resulting in students becoming passive and less enthusiastic in following lessons. Students do not get the opportunity to actively engage and develop their knowledge independently. Although teachers use various media in teaching Natural and Social Sciences (IPAS), there are shortcomings in the variety of teaching methods that make the use of media, especially computer-based media, not optimal. As a result, this negatively affects student learning outcomes, especially in cognitive aspects, where students have difficulty absorbing information provided by the teacher.

From the analysis of learning outcomes in the End of Semester Assessment (PAS) of Natural and Social Sciences (IPAS) subjects in grade IV SD Negeri 3 Jatilawang, Banjarnegara Regency for semester 1 of the 2023/2024 academic year, a number of obstacles in science learning were identified. This evaluation data reveals that some students have not reached the standard of Learning Goal Attainment Criteria (KKTP) set by the school, which is at least 75. Of the total 35 students evaluated, only 11 students (31.42%) successfully fulfilled the KKTP, while the remaining 24 students (68.58%), were still below the established standards. This situation shows that the achievement of learning outcomes in the class has not reached its optimality, especially in science subjects, which show a low level of achievement.

From the description of the problem that has been explained, the use of interesting and innovative learning media becomes very important, with the aim of arousing students' interest and active involvement in the learning process. This needs to be adapted to the stage of development of students in primary school who are in the concrete operational stage, where they more easily understand information in concrete or tangible form. Therefore, the selection of appropriate learning media is the main key in effective learning efforts (Juhaeni et al., 2021).

Interactive multimedia is a type of media designed to convey messages informatively and allow users to interact with the media (Ayudianti et al., 2023; Sugiarto et al., 2023). In the context of learning, teachers present information to students as users, while students have the freedom to interact with the media, making it an interactive multimedia (Daryanes et al., 2023; Utari et al., 2023). There are five main technological elements in interactive multimedia, namely text, graphics, audio, video, and animation. These five elements are combined and put together to create a medium that allows users to interact with that multimedia (Pangesti, 2019). This can encourage students to develop their attitudes, thinking, and potential further, as well as significantly increase their motivation (Prihartina et al., 2023; Rachmawati et al., 2023).

The application of Articulate Storyline-based media can be more effective and interesting, and has the potential to improve the quality of student learning (Dewi et al., 2021). If carefully planned, interactive media Articulate Storyline can motivate students and support their learning activities (Amiroh, 2019; Kurniawan et al., 2023). As an educational support tool, Articulate Storyline enable students to acquire the knowledge necessary to achieve their academic goals (Rafmana et al., 2018; Syafitriyani et al., 2023). The software serves as a communication or presentation tool, by providing template which can be customized or used directly, and allows character customization according to user needs (Pasa et al., 2023; Rizkiyah et al., 2023).

This research introduces a unique and innovative feature such as cultural calendar integrated within the application. This cultural calendar is designed to assist students in both remembering and preserving cultural heritage through the natural science content they study. By embedding cultural events and practices within the educational material, the application not only enhances students' understanding of natural science but also fosters a deeper connection to their cultural identity. This dual focus on academic and cultural education represents a novel approach, bridging the gap between modern technological learning tools and traditional cultural values, thereby enriching the overall educational experience for fourth-grade students.

Based on the context of the problems that have been submitted, researchers will conduct development research entitled "Development of Interactive Learning Media for Indonesian Heritage Based on Articulate Storyline in Science Learning in Grade IV SDN 3 Jatilawang". This research and development aims to create an interactive learning application that focuses on science subjects for the Android platform. In addition, this study will also evaluate the feasibility, effectiveness, and user response to the products that have been developed.

## Method

This research falls under the category of development research, also known as Research and Development (R&D). In education, researchers use research and development (R&D) methods as described by Borg & Gall to develop and test the validity of educational products, such as books, modules, learning aids, or software such as computer programs, applications, or games (Gustiani, 2019).

Research on the development of Articulate Storyline-based learning media was carried out in grade IV SD Negeri 3 Jatilawang located on Jalan Raya Wanayasa-Batur Km 4, Jatilawang, Wanayasa District, Banjarnegara Regency, Central Java Province. This

research was conducted during the even semester of the 2022/2023 academic year. The subjects of this learning media development research consisted of 2 expert validators, 1 teacher, and 35 grade IV students of SD Negeri 3 Jatilawang. Here are the 10 steps in development research using the R&D method shown in Figure 1.

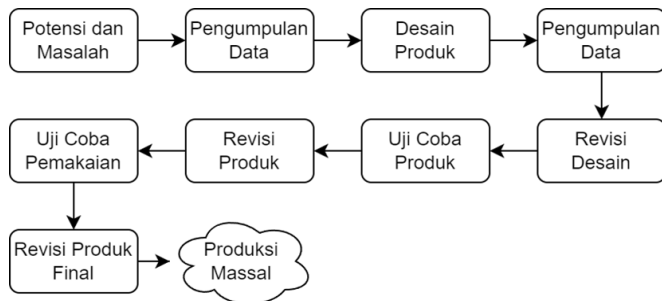


Figure 1. Step-by-step research and development (R&D) method

Researchers in the research and development of interactive learning media based on Articulate Storyline for IPAS content, limiting the stages to 8 steps only, adopting the model from Borg and Gall. This is adjusted to the needs and time limitations of research shown in Figure 2. Therefore, the steps applied by researchers are: (1) Identification of Potential and Problems, (2) Data Collection, (3) Product Design, (4) Design Validation, (5) Design Revision, (6) Small-Scale Trials, (7) Large-Scale Trials, and (8) Final Product Development.

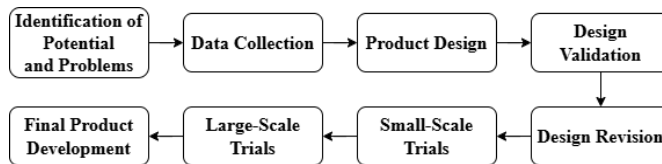


Figure 2. Research flowchart

The questionnaire data collection method applied involves the use of validation forms and response questionnaires given to students and teachers regarding the use of Articulate Storyline learning media. The validation form is given to two experts as validators to evaluate the validity of the learning media that has been developed by the researcher. Meanwhile, student and teacher response questionnaires are intended to assess the practicality of using learning media that have been made. To measure its effectiveness, researchers used the written test method by giving a collection of pretest and posttest questions to 35 grade IV students as research subjects. The questions given consist of 35 multiple-choice questions with 4 answer choices.

Validation of the feasibility of interactive learning media based on Articulate Storyline for science subjects in grade IV students is carried out through testing by an

expert validator. The evaluation is carried out using the eligibility questionnaire guidelines, and the feasibility of the media is evaluated based on the established formula.

Table 1. Media Percentage Result Classification (Purwanto, 2017; Widoyoko, 2015)

| Percentage (%) | Feasibility   |
|----------------|---------------|
| 76 - 100       | Very Worth It |
| 51 - 75        | Proper        |
| 26 - 50        | Pretty Decent |
| 0 - 25         | Less Decent   |

Data from media feasibility evaluation by expert validators is used to evaluate the product and determine whether improvements need to be made based on feedback provided by expert validators. After passing the validation process by a team of experts, interactive learning media will be forwarded by researchers and tested. Data analysis of learner response questionnaires using the Yes and No guttman scale (Sugiyono, 2016).

Table 2. Interpretation of Student Responses (Ayudianti et al., 2023)

| Percentage (%) | Interpretation |
|----------------|----------------|
| 81 - 100       | Excellent      |
| 61 - 80        | Good           |
| 41 - 60        | Enough         |
| 21 - 40        | Less           |
| 0 - 20         | Very Lacking   |

## Result and Discussion

### Design Phase

In the design phase or design phase, researchers prepare the structure of learning materials, including curriculum, teaching organization, and instructional approaches to be applied. In addition, researchers also arrange evaluation instruments to assess the performance of learning media. The results of this study are documented in every stage of the research conducted. Evaluation of the achievement of grade IV science learning objectives can be found in Table 3.

Table 3. Grade IV Elementary School Science Learning Outcomes

| Element                                   | Learning Outcomes  |
|---|--|
| Understanding Natural and Social Sciences | Students describe biodiversity, cultural diversity, local wisdom, and conservation efforts.  |
| Process Skills                            | <ol style="list-style-type: none"> <li>1. Observe</li> <li>2. Questioning and predicting</li> <li>3. Plan and conduct investigations</li> <li>4. Processing and analyzing data and information</li> <li>5. Evaluate and reflect</li> <li>6. Communicate results</li> </ol> |



Based on the information in Table 3, the basis for media design is learning achievement. The material presented in this media is about the richness of Indonesian culture. Articulate Storyline has 8 main menus, including learning achievements, material content, quizzes, games, glossary, activities, cultural calendar, developer information, instructions for use, and library references as seen in figure 3. To facilitate the learning process, researchers also develop learning modules that incorporate problem-based learning approaches. This approach leads students to understand problems, organize learning, support independent or group research, produce and present work, and analyze and evaluate problem-solving processes.



Figure 3. Cover

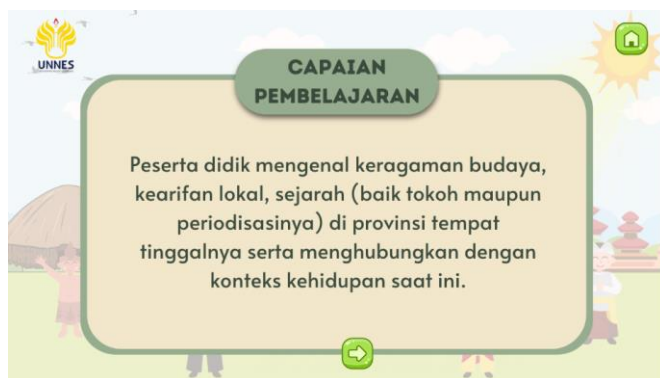


Figure 6. Learning outcomes



Figure 7. Material menu



Figure 4. Instructions for use



Figure 8. Quiz questions

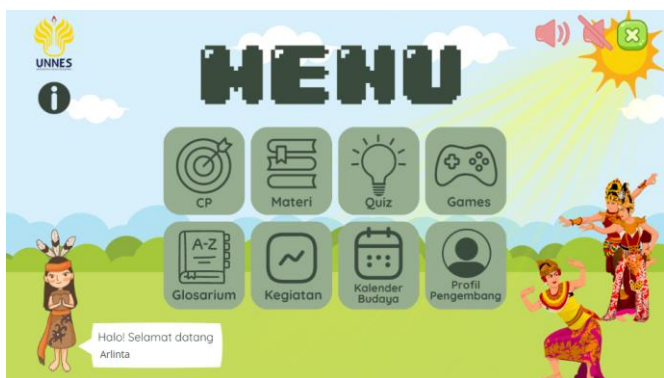


Figure 5. Menu



Figure 9. Quiz results feedback



Figure 10. Drag and drop games



Figure 11. Glossary

*Development Stage*

Subsequently, researchers produce content utilizing Articulate Storyline 3 software alongside Canva for graphical creation. The media created can be accessed through smartphone and computer devices, allowing students to learn flexibly without being bound by time and location. The content of the media is presented in APK and HTML5 format then integrated with the website through web hosting services. Before use, the developed media is evaluated by experts in the field of materials and media using validation questionnaires to assess their suitability. The evaluation results can be found in Table 4.

**Table 4.** Media Feasibility Test

| Respondents     | Percentage (%) | Feasibility     |
|-----------------|----------------|-----------------|
| Material Expert | 91             | Highly feasible |
| Media Expert    | 90             | Highly feasible |

The information in Table 4 reflects the results of evaluations conducted by experts in the field of materials and media. The material evaluation stage is only carried out once with the assessment results reaching 90%, which can be classified as "highly feasible". Assessment from material experts concluded that the content, relevance, and style of language in the Articulate Storyline media are very suitable for testing. The media evaluation process was also only carried out

once and received a score of 91% with the label "highly feasible".

*Implementation Phase*

The ensuing phase involves the implementation process, encompassing the examination of the efficacy and feasibility of the Articulate Storyline media. Evaluation procedures entail both pre-test and post-test analyses: the former executed antecedent to the integration of Articulate Storyline media within the educational framework, while the latter follows its application. Subsequently, the researchers discourse unveils the scholastic achievements of participants in an extensive trial comprising 35 fourth-grade pupils from SD Negeri 3 Jatilawang. Comprehensive data regarding the cognitive learning outcomes of the large group are meticulously delineated in Table 5.

**Table 5.** Large Group Cognitive Learning Outcomes

| Test Type | Average | Highest score | Lowest Value | Average Difference |
|-----------|---------|---------------|--------------|--------------------|
| Pre-test  | 55      | 75            | 35           | 24                 |
| Post-test | 80      | 95            | 60           |                    |

The tabulated data in Table 5 reveals a notable augmentation of 24 points in the mean score of student learning outcomes. Such findings signify a discernible shift from the antecedent to the subsequent phases of Articulate Storyline medium deployment within the educational context.

*Evaluation Phase*

During or after implementation, researchers conduct formative evaluations to obtain feedback and input from participants, teachers, or educators. Evaluations conducted by educators involve media testing and n-gain value analysis. The n-gain results from using problem-based learning based on Articulate Storyline media are in Table 6.

**Table 6.** N-Gain Test Results

| Learning outcomes | Average | Average Difference | N-gain | Category          |
|-------------------|---------|--------------------|--------|-------------------|
| Pre-test          | 55      | 24                 | 0.57   | Adequately viable |
| Post-test         | 80      |                    |        |                   |

The effectiveness of Articulate Storyline learning media in enhancing student comprehension has been substantiated. In order to bolster the achievement of objectives in the evolution of this media, researchers have undertaken the collection of student feedback through response surveys during the product testing phase. As illustrated in table 7, the survey results reveal a favorable disposition among students towards the incorporation of Articulate Storyline media in IPAS

subjects, specifically focusing on the theme "Indonesiaku Kaya Budaya," with an impressive attainment of 92% out of a total score of 100%. These findings provide compelling evidence supporting the efficacy of Articulate Storyline media in the educational domain.

The development and implementation of the Articulate Storyline-based interactive media for fourth-grade IPAS subjects demonstrated significant success across multiple evaluation metrics. Expert evaluations rated the media as highly feasible, with scores of 91% for material and 90% for media. In the implementation phase, a study involving 35 fourth-grade students

revealed a substantial improvement in cognitive learning outcomes, with the average score increasing from 55 in the pre-test to 80 in the post-test, and an n-gain value of 0.57, categorizing it as adequately viable. Student feedback was overwhelmingly positive, with an overall satisfaction rate of 92%, highlighting the media's clarity, engagement, and effectiveness in enhancing comprehension and motivation. These results collectively underscore the media's potential as an effective educational tool that integrates cultural content within the natural sciences curriculum.

**Table 7.** Student Response Questionnaire Results

| Statement   | Percentage (%) |
|---|----------------|
| Media Articulate Storyline is compelling  | 94             |
| All components of the Articulate Storyline media are clearly visible  | 83             |
| The exploration of Articulate Storyline media is feasible within small group settings   | 91             |
| The readability of the font size and type utilized in Articulate Storyline media is adequate  | 94             |
| Articulate Storyline media serves as a catalyst for student motivation in the learning process  | 100            |
| Articulate Storyline fosters an enjoyable learning environment  | 89             |
| The content within Articulate Storyline media encompasses topics related to the Indonesiaku Kaya akan Budaya                                | 91             |
| The content presented in Articulate Storyline media is readily comprehensible   | 89             |
| The content featured in Articulate Storyline media contributes to enriching students' understanding and comprehension of the subject matter | 97             |
| <b>Total</b>  | <b>92</b>      |

Dahlan et al. (2021) evaluated interactive multimedia in cultural education, highlighting its role in preserving cultural heritage. The integration of cultural content within the natural sciences curriculum in the current study builds on this idea, emphasizing the importance of cultural preservation through education. Dewi et al. (2021) investigated the use of mobile learning applications in science education, finding that such tools enhanced students' learning motivation and achievement. The current study's results align with these findings, demonstrating that the Articulate Storyline media effectively motivates students and improves learning outcomes.

The strengths of this study include the innovative integration of Indonesian cultural content within the natural sciences curriculum, high feasibility and engagement ratings from experts and students, and a significant improvement in student learning outcomes, as evidenced by increased test scores and positive feedback. However, the study's limitations are its small sample size, single evaluation cycle, and lack of longitudinal data on knowledge retention and sustained impact, which may affect the generalizability and comprehensive assessment of the media's effectiveness.

**Conclusion**

Articulate Storyline learning media in IPAS subjects are generally considered appropriate and efficient for

use in the teaching and learning process after going through feasibility assessments by experts in the field of material and media and large group trials with grade IV students in elementary schools. Interactive and multimedia features in the Articulate Storyline platform can facilitate understanding and retention of subject matter for students. The use of visual, audio, and interactive elements can help in explaining complex concepts. Therefore, the utilization of Articulate Storyline is perceived as having the potential to enhance the educational and training standards through the provision of efficient resources for crafting interactive content, thereby fostering student-centered learning approaches.

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**Author Contributions**

Arlinta Ulfa Auviseña contributed to the research by actively participating in its design, development, analysis, and manuscript preparation. Moh. Fathurrahman served as the



guiding mentor throughout the research process, providing support from conception to the drafting of this article to completion.

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#### Conflicts of Interest

The authors declare no conflict of interest.

#### References

- Amiroh. (2019). *Mahir Membuat Media Interaktif Articulate Storyline* (3rd ed.). Pustaka Ananda Srva.
- Ayudianti, Y. N., Andriana, E., Setiawan, S., & Yuliana, R. (2023). Pengembangan Media Pembelajaran Interaktif Articulate Storyline 3 Berbasis Model Pembelajaran Kontekstual Di Kelas Iv Sd. *VOX EDUKASI: Jurnal Ilmiah Ilmu Pendidikan*, 14(1), 131-141. <https://doi.org/10.31932/ve.v14i1.2007>
- Daryanes, F., Darmadi, D., Fikri, K., Sayuti, I., Rusandi, M. A., & Situmorang, D. D. B. (2023). The development of articulate storyline interactive learning media based on case methods to train student's problem-solving ability. *Heliyon*, 9(4), e15082. <https://doi.org/10.1016/j.heliyon.2023.e15082>
- Dewi, I. P., Sofya, R., & Huda, A. (2021). *Membuat Media Pembelajaran Inovatif dengan Aplikasi Articulate Storyline 3*. (1st ed.). UNP PRESS.
- Gustiani, S. (2019). Research and Development (R&D) Method as a Model Design in Educational Research and its Alternatives. *Holistics Journal*, 11(2), 12-22. Retrieved from <https://jurnal.polsri.ac.id/index.php/holistic/article/view/1849>
- Juhaeni, Safaruddin, & Salsabila, Z. P. (2021). Articulate Storyline Sebagai Media Pembelajaran Interaktif Untuk Peserta Didik Madrasah Ibtidaiyah. *AULADUNA: Jurnal Pendidikan Dasar Islam*, 8(2), 150. <https://doi.org/10.24252/auladuna.v8i2a3.2021>
- Kurniawan, A., & Khasanah, U. (2023). E-Modul Berbasis Articulate Storyline Sebagai Sumber Belajar Mata Kuliah Pengembangan Pembelajaran Ilmu Sosial Anak Usia Dini. *Jurnal Raudhah*, 11(1), 98-105. <https://doi.org/10.30829/raudhah.v11i1.2866>
- Meylovvia, D., & Julianto, A. (2014). Inovasi Pembelajaran IPAS pada Kurikulum Merdeka Belajar di SDN 25 Bengkulu Selatan. *Jurnal Pendidikan Islam*, 1(3), 327-346. Retrieved from <https://doaj.org/article/1e8aebf063e94d09a7eb93f04cf4b8fd>
- Muliani, R. D., & Arusman, A. (2022). Faktor - Faktor yang Mempengaruhi Minat Belajar Peserta Didik. *Jurnal Riset Dan Pengabdian Masyarakat*, 2(2), 133-139. <https://doi.org/10.22373/jrpm.v2i2.1684>
- Nasril, U., & Desyandri, D. (2023). Pengembangan Multimedia Interaktif Articulate Storyline 3 Berbasis Project Based Learning (PjBL) di Kelas IV Sekolah Dasar. *Journal of Practice Learning and Educational Development*, 3(1), 77-88. <https://doi.org/10.58737/jpled.v3i1.97>
- Pangesti, E. D. (2019). Pengembangan Multimedia Interaktif Sebagai Media Pembelajaran Materi Mengenal Tokoh Awal Kemerdekaan Untuk Siswa Kelas 9 Smp. *Journal of Chemical Information and Modeling*, 53(9), 1689-1699. Retrieved from <https://repositori.unsil.ac.id/801/>
- Pasa, I. Y., Sahria, Y., & Anggoro, C. (2023). Articulate Storyline sebagai Media Pembelajaran Interaktif bagi Guru SD Negeri Bedug. *Lentera Pengabdian*, 1(03), 338-346. <https://doi.org/10.59422/lp.v1i03.104>
- Prihartina, Y., Salirawati, D., & Wiyarsi, A. (2023). Measuring Student Learning Activities Through Articulate Storyline 3-Based Mobile Learning. *Jurnal Penelitian Pendidikan IPA*, 9(4), 2252-2258. <https://doi.org/10.29303/jppipa.v9i4.3113>
- Purwanto. (2017). *Evaluasi Hasil Belajar*. Pustaka Belajar.
- Rachmawati, D. N., Kurnia, I., & Laila, A. (2023). Multimedia Interaktif Berbasis Articulate Storyline 3 Sebagai Alternatif Media Pembelajaran Materi Karakteristik Geografis Indonesia di Sekolah Dasar. *Jurnal Pemikiran Dan Pengembangan Sekolah Dasar (JP2SD)*, 11(1), 106-121. <https://doi.org/10.22219/jp2sd.v11i1.22316>
- Rafmana, H., Chotimah, U., & Alfiandra. (2018). Pengembangan Multimedia Interaktif Berbasis Articulate Storyline untuk Meningkatkan Motivasi Belajar Siswa pada Mata Pelajaran PKN Kelas XI di SMA Srijaya Negara Palembang. *Jurnal Bhineka Tunggal Ika*, 5(1), 52-65. Retrieved from <https://ejournal.unsri.ac.id/index.php/jbti/article/view/7898/pdf>
- Rizkiyah, R., & Nuruddin, M. (2023). The Development Of Animation Interactive Media Based On Articulate Storyline To Improve Student Learning On IPS Materials. *IJPSE Indonesian Journal of Primary Science Education*, 4(1), 90-96. <https://doi.org/10.33752/ijpse.v4i1.2883>
- Salsabila, A., & Puspitasari. (2020). Faktor-Faktor Determinan Yang Mempengaruhi Prestasi Belajar Siswa di Sekolah Dasar. *Pandawa : Jurnal Pendidikan Dan Dakwah*, 2(2), 278-288. <https://doi.org/10.31851/jmksp.v5i2.3770>
- Sugiarto, C., Wahyudi, W., & Sahari, S. (2023). Development of Interactive Multimedia Based on Articulate Storyline on Ethnic and Cultural

- Diversity Material in Indonesia Class Iv Sdn 1 Lengkong Nganjuk District. *Jurnal Eduscience*, 10(3), 723-733.  
<https://doi.org/10.36987/jes.v10i3.4746>
- Sugiyono. (2016). *Metode Penelitian Pendidikan*. Bandung: Alfabeta.
- Suhelayanti, Z, S., & Rahmawati, I. (2023). *Pembelajaran Ilmu Pengetahuan Alam Sosial (IPAS)*. Penerbit Yayasan Kita Menulis.
- Susilowati, A. (2022). Kesulitan belajar IPS pada siswa sekolah dasar. *Jipsindo (Jurnal Pendidikan Ilmu Pengetahuan Sosial Indonesia)*, 9(1), 31-43. Retrieved from  
<https://journal.uny.ac.id/index.php/jipsindo/article/view/47123>
- Syafitriyani, D., Komariah, K., & Wahyuningsih, Y. (2023). Rancang Bangun Media Pembelajaran Interaktif Articulate Storyline Pada Mata Pelajaran Ips Jenis-Jenis Pekerjaan Di Sekolah Dasar. *Jurnal Ilmiah PENDAS: Primary Educational Journal*, 4(2), 105-118.  
<https://doi.org/10.29303/pendas.v4i2.1509>
- Utari, D. R., & Ramadan, Z. H. (2023). Media Pembelajaran Interaktif Berbasis Articulate Storyline 3 Untuk Siswa SD Kelas IV. *Jurnal Educatio FKIP UNMA*, 9(4), 1810-1817.  
<https://doi.org/10.31949/educatio.v9i4.6262>
- Widoyoko, E. P. (2015). *Teknik Penyusunan Instrumen Penelitian*. Pustaka Pelajar.