Smart Society : Community Service and Empowerment Journal
Volume 4, Issue 2, 81-90.
e_ISSN: 2807-5757
https://www.journal.foundae.com/index.php/smartsoc/index

Design and Evaluation of a 3D Pop-Up Textbook with Finger Puppets for Thematic Learning in 10-11 Year Olds

Ajie Pangestu Ganiansyah *
Universitas Islam Negeri Raden Intan Lampung, INDONESIA

Nurul Hidayah
Universitas Islam Negeri Raden Intan Lampung, INDONESIA

Antomi Saregar
Universitas Islam Negeri Raden Intan Lampung, INDONESIA

Article Info

Article history:

Received: September 30, 2024
Revised: November 28, 2024
Accepted: December 22, 2024

Keywords:

3D learning media;
finger puppets;
multisensory education;
pop-up book;
thematic learning.

Abstract

Thematic learning in elementary schools requires innovative instructional media to enhance student engagement and comprehension. However, the lack of interactive and engaging learning media often results in student disengagement and low participation. This study aims to develop, validate, and assess the practicality of a three-dimensional (3D) learning medium that integrates pop-up book features and finger puppets as visual and kinesthetic learning aids. The research employs the ADDIE development model, comprising five phases: Analysis, Design, Development, Implementation, and Evaluation. The participants included 10–11-year-old students from MIN 1 Bandar Lampung and SDN 1 Pajaresuk. Data collection was conducted through interviews, observations, questionnaires, and document analysis. Validation results indicated that the learning medium was highly feasible, with average scores of 93% from two content experts, 81% from two media experts, and 89% from two language experts. Practicality assessments by two educators yielded an average score of 98%, while small-scale and large-scale trials resulted in scores of 89% and 94%, respectively. These findings suggest that the developed 3D learning medium is both feasible and effective for thematic learning in elementary schools, offering a promising approach to enhancing student engagement and learning outcomes.

To cite this article: Ganiansyah, A. P., Hidayah, N., & Saregar, A. (2024). Design and Evaluation of a 3D Pop-Up Textbook with Finger Puppets for Thematic Learning in 10-11 Year Olds. *Smart Society : Community Service and Empowerment Journal, 4*(2), 81-90

INTRODUCTION

Thematic learning plays a crucial role in elementary education as it enables students to understand various concepts holistically by integrating multiple subjects under a single theme. This learning model is designed to enhance student engagement, enrich learning experiences, and develop critical and creative thinking skills. However, its implementation still faces various challenges (Larasati & Sukartono, 2022; Rahmi et al., 2023; Sukiniarti, 2014), particularly regarding the lack of innovative and interactive learning media. Most teachers still rely on lectures and conventional textbooks, which are less engaging for students (Julianti & Mawardi, 2018; Prameswara & Pius, 2023). As a result, students often experience boredom in the learning process, leading to decreased motivation and interest in learning (Haryadi et al., 2024; Olang & Soesanto, 2023; Susanti et al., 2024). The dominance of conventional methods is also less effective in providing meaningful learning experiences for elementary school students, who are still in the concrete operational stage of cognitive development (Piaget, 1952; Vygotsky, 1978). Therefore, more engaging learning media that align with children's developmental characteristics are needed.

* **Corresponding author:**
Ajie Pangestu Ganiansyah, Universitas Islam Negeri Raden Intan Lampung, INDONESIA. ✉ ajiepangestu567@gmail.com

Technological advancements have encouraged the use of learning media as a key element in enhancing the effectiveness of the learning process (Nurfadhillah et al., 2021; Widyawati & Sukadari, 2023). Learning media encompass various tools, such as books, audiovisual aids, and technology-based interactive tools (Wasiyah et al., 2023). Innovative media not only help reduce learning fatigue but also enhance students' imagination and enrich their learning experiences through a multisensory approach (Junilasari et al., 2017; Novela et al., 2024). Learning media serve as a means for delivering educational materials from teachers to students (Nurrita, 2018). Their use can spark new interest, increase motivation and engagement in learning activities, and even have psychological effects on children (Afnila et al., 2022). Interactive media can also boost student engagement and reinforce their memory of the material being taught (Munawir et al., 2024).

Based on classroom observations in fifth-grade classes at MIN 1 Bandar Lampung and SDN 1 Pajaresuk, various media such as thematic books, images, and videos have been used in the learning process. However, many students find thematic books uninteresting and quickly become bored. Meanwhile, fifth-grade students need instructional media that can enhance their reading interest and encourage active interaction between teachers and students. Learning media are designed to clarify the presentation of messages and information, thereby facilitating and improving the learning process and outcomes (Maisarah et al., 2022). Therefore, visually and kinesthetically based media are highly recommended in thematic learning to enhance student comprehension.

One promising innovation in thematic learning media for elementary schools is the development of three-dimensional (3D) instructional books featuring pop-up elements and finger puppets. A 3D instructional book functions not only as an information source but also as a visual and tactile aid that stimulates imagination and increases student engagement in the learning process (Lo & Wang, 2024). Research by Sutrisno et al. (2018) found that interactive 3D instructional books significantly improve students' reading interest and literacy skills. Pop-up books help students grasp material by providing engaging visual and tactile experiences (Putri et al., 2019; Setiyanigrum, 2020), while other relevant studies confirm that pop-up books effectively enhance student learning outcomes (Astriyanti et al., 2023; Nazhirah et al., 2024). In addition to pop-up books, the use of finger puppets also has a positive impact on learning. Finger puppets have been shown to effectively improve students' language skills (Azmi et al., 2023), speaking abilities (Widiyaningrum & Husnah, 2023), and student engagement (Agustin et al., 2022). Other studies have found that finger puppets encourage student participation in learning by fostering dynamic competition and instilling discipline (Anjeli & Latifah, 2021).

This research introduces the development of three-dimensional (3D) learning media that integrate pop-up book features and finger puppets as both visual and kinesthetic aids in thematic learning. While previous studies have explored the use of pop-up books and finger puppets separately, their combined application in thematic learning, particularly for children aged 10–11 years, remains largely unexplored. The integration of these two elements allows for a more engaging and interactive learning experience, where pop-up books provide concrete representations of abstract concepts, and finger puppets encourage active participation and deeper student interactions. By incorporating these elements, the proposed learning media offer a fresh approach to enhancing student engagement, improving conceptual understanding, and creating a more dynamic classroom environment compared to conventional teaching methods. This study, therefore, focuses on developing, validating, and assessing the practicality of 3D learning media featuring pop-up books and finger puppets in thematic learning for elementary school students..

METHOD

This study employs a Research and Development (R&D) approach, a research method used to create a product and assess its effectiveness (Sudaryono, 2018). The purpose of this study is to develop, modify, and evaluate the feasibility of the product in an educational setting. The development procedure follows the systematic ADDIE instructional design model (Analyze, Design, Development, Implementation, Evaluation) (Rayanto & Sugianti, 2020).

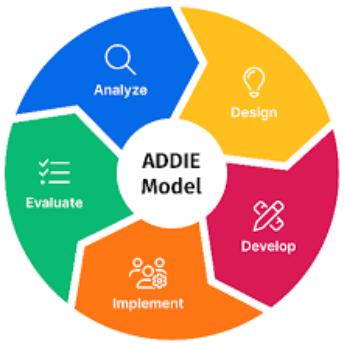

Figure 1. The ADDIE Model Development Steps

In this study, the developed media is a three-dimensional (3D) book-based learning material incorporating pop-up books and finger puppets for thematic learning in fifth-grade elementary school (SD/MI). The goal is to assess the feasibility of the learning media and to enhance students' motivation in engaging with the instructional material. This research and development process was conducted at MIN 1 Bandar Lampung and SDN 1 Pajaresuk. The study subjects included validators, teachers, and students, with two stages of trials: a small-scale trial and a large-scale trial. Data collection techniques included interviews, observations, questionnaires, and documentation. The questionnaire used was an expert validation questionnaire. The following are the development stages of the ADDIE model:

Analysis

The analysis phase aims to identify gaps in the use of instructional media, examine potential users, assess available resources, and determine potential systems for future media development. Based on interviews and classroom observations, it was found that students currently use learning media such as images and videos. However, these videos only present materials without direct interaction between teachers and students. Additionally, students require more engaging and interactive media to help them achieve learning objectives. To address these challenges, the researchers designed three-dimensional book-based instructional media featuring pop-up books and finger puppets to be used in thematic learning for fifth-grade students in elementary schools (SD/MI).

Design

In this phase, the development process begins by determining the final format and testing strategies. The researchers designed instructional media based on the findings from the analysis stage to align with students' needs. This stage includes planning the development process, structuring the media, and selecting themes that align with curriculum competencies and learning materials. Additionally, relevant references were collected to serve as a foundation for content development. The researchers also developed a media assessment instrument covering aspects such as content feasibility, language clarity, and media design. To support the media creation process, software such as Adobe Photoshop and Corel Draw was used.

Development

The development stage involves refining the designed media. The completed instructional media were then validated by subject matter experts, media experts, and language experts. Following this, data analysis was conducted based on the experts' evaluations to determine the validity of the media. If the developed media did not meet the expected criteria, revisions were made based on the experts' suggestions. Once the media met feasibility standards, a trial phase was conducted to assess its effectiveness in learning activities.

Implementation

The implementation phase was conducted in two selected schools, MIN 1 Bandar Lampung and SDN 1 Pajaresuk. In this stage, teachers carried out lessons using the developed instructional

media, while researchers acted as observers, recording various aspects on observation sheets for evaluation and improvement. After the learning sessions, students took a competency-based test to assess the effectiveness of the media. Additionally, questionnaires were distributed to both teachers and students to gather their feedback on the instructional media. The trials were conducted in two stages: a large-scale trial at MIN 1 Bandar Lampung with 32 students and a small-scale trial at SDN 1 Pajaresuk with a smaller student group within one class.

Evaluation

The evaluation phase involved analyzing data obtained from observations, user feedback, and field notes. Based on the responses collected from questionnaires and classroom observations, necessary revisions were made to refine the instructional media. This phase aimed to ensure that the developed media met the learning objectives and was suitable for broader implementation in elementary school classrooms.

RESULTS AND DISCUSSION

This development research resulted in the creation of pop-up book and finger puppet learning media for thematic learning in fifth-grade elementary school. The product was validated by subject matter experts, media experts, language experts, and educators. The validation results from media, language, and subject matter experts are presented in Table 1.

Table 1. Media Expert Assessment Results

Assessment Indicator	Validator	∑ Per Aspect	∑ Max	Score	Criteria
Media Efficiency	Validator 1	13	15	87%	Highly Feasible
	Validator 2	13	15		
Media Accuracy	Validator 1	8	10	80%	Highly Feasible
	Validator 2	8	10		
Graphic Aspects	Validator 1	13	15	84%	Highly Feasible
	Validator 2	12	15		
Media Durability	Validator 1	8	10	75%	Feasible
	Validator 2	7	10		
User Safety	Validator 1	4	5	80%	Highly Feasible
	Validator 2	4	5		
Product Effectiveness	Validator 1	12	15	80%	Highly Feasible
	Validator 2	12	15		
Average Score				**81%**	**Highly Feasible**

From Table 1, the percentage scores for each aspect were 87% for media efficiency, 80% for media accuracy, 84% for graphic aspects, 75% for media durability, 80% for user safety, and 80% for product effectiveness. Based on these results, the validation by media experts achieved an average score of 81%, placing it in the "Highly Feasible" category.

Table 2. Language Expert Assessment Results

Assessment Indicator	Validator	∑ Per Aspect	∑ Max	Score	Criteria
Clarity	Validator 1	12	15	87%	Highly Feasible
	Validator 2	14	15		
Communicativeness	Validator 1	9	10	95%	Highly Feasible
	Validator 2	10	10		
Dialogical and Interactive	Validator 1	14	15	97%	Highly Feasible
	Validator 2	15	15		
Suitability for Child Development	Validator 1	9	10	80%	Highly Feasible
	Validator 2	8	10		
Compliance with Language Rules	Validator 1	8	10	80%	Highly Feasible
	Validator 2	8	10		
Average Score				**89%**	**Highly Feasible**

From Table 2, the language expert assessment achieved an average score of 89%, categorizing it as "Highly Feasible". The highest score was in the dialogical and interactive aspect (97%), followed by communicativeness (95%), while the suitability for child development and compliance with language rules both scored 80%.

Table 3. Subject Matter Expert Assessment Results

Media Evaluation Aspect	Validator	∑ Per Aspect	∑ Max	Score	Criteria
Content Relevance	Validator 1	13	15	94%	Highly Feasible
	Validator 2	15	15		
Content Accuracy	Validator 1	21	25	92%	Highly Feasible
	Validator 2	25	25		
Content Modernity	Validator 1	10	10	100%	Highly Feasible
	Validator 2	10	10		
Encouraging Curiosity	Validator 1	10	10	100%	Highly Feasible
	Validator 2	10	10		
Presentation Support	Validator 1	8	10	85%	Highly Feasible
	Validator 2	9	10		
Contextual Relevance	Validator 1	8	10	90%	Highly Feasible
	Validator 2	10	10		
Average Score				**93%**	**Highly Feasible**

Based on Table 3, the subject matter expert assessment produced an average score of 93%, placing it in the "Highly Feasible" category. The highest ratings were 100% for content modernity and encouraging curiosity, followed by 94% for content relevance and 92% for content accuracy.

Following expert validation, feasibility testing was conducted with educators from MIN 1 Bandar Lampung and SDN 1 Pajaresuk. The results are presented in Table 4 and Table 5.

Table 4. Educator 1 (MIN 1 Bandar Lampung) Feasibility Assessment

Assessment Indicator	∑ Per Aspect	∑Max	Score %	Category
Content Suitability	20	20	100%	Highly Feasible
Quality Aspect	14	15	93%	Highly Feasible
Effectiveness Aspect	10	10	100%	Highly Feasible
Presentation Aspect	15	15	100%	Highly Feasible
Average Score			**98%**	**Highly Feasible**

Table 5. Educator 2 (SDN 1 Pajaresuk) Feasibility Assessment

Assessment Indicator	∑ Per Aspect	∑Max	Score %	Category
Content Suitability	20	20	100%	Highly Feasible
Quality Aspect	15	15	100%	Highly Feasible
Effectiveness Aspect	9	10	90%	Highly Feasible
Presentation Aspect	15	15	100%	Highly Feasible
Average Score			**98%**	**Highly Feasible**

Based on the feasibility testing conducted with educators from MIN 1 Bandar Lampung and SDN 1 Pajaresuk, the average feasibility rating was 98%, placing it in the "Highly Feasible" category. Therefore, the overall assessment of the three-dimensional (3D) instructional book featuring pop-up books and finger puppets resulted in an average score of 98%, categorized as "Highly Feasible".

Following the educator feasibility tests, the researchers conducted small-scale and large-scale trials at SDN 1 Pajaresuk and MIN 1 Bandar Lampung. The results of these trials are presented in Tables 6 and 7.

Table 6. Student Response in Small-Scale Trial

Aspect	Percentage	Category
Technical Quality	89%	Highly Feasible
Content Suitability	88%	Highly Feasible
Media Presentation	90%	Highly Feasible
Average Score	**89%**	**Highly Feasible**

The small-scale trial results showed that the technical quality aspect scored 89%, the content suitability aspect scored 88%, and the media presentation aspect scored 90%. As a result, the overall average score for the small-scale trial was 89%, placing it in the "Highly Feasible" category.

Table 7. Student Response in Large-Scale Trial

Aspect	Percentage	Category
Technical Quality	94%	Highly Feasible
Content Suitability	94%	Highly Feasible
Media Presentation	93%	Highly Feasible
Average Score	**93.67%**	**Highly Feasible**

The large-scale trial results presented in Table 7 indicate that technical quality scored 94%, content suitability scored 94%, and media presentation scored 93% at MIN 1 Bandar Lampung, resulting in an average score of 94% in the "Highly Feasible" category.

The findings of this study indicate that three-dimensional (3D) instructional media incorporating pop-up books and finger puppets are highly feasible for use in thematic learning for fifth-grade elementary school students. The validation results from media, language, and subject matter experts categorized the media as "Highly Feasible," while feasibility tests with educators and students also yielded positive results, with an average score exceeding 89%. The feasibility of this media is supported by several key factors, including its alignment with the curriculum, visual and kinesthetic aspects (Surahman & Surjono, 2017), validation from experts, positive responses from educators and students (Arini & Estiastuti, 2022), and practicality in implementation(Bana et al., 2023). This instructional media was developed based on the thematic curriculum for fifth-grade elementary students, ensuring that its content is relevant to the required competencies. The integration of pop-up books and finger puppets provides multisensory stimulation that helps students better understand concepts, aligning with studies by Sitorus et al. (2024); Zulwati et al. (2022) dan Marwah (2022). Furthermore, validation by media, language, and subject matter experts confirms that the design, language usage, and content accuracy meet educational standards. The trial results also indicate that this media can enhance students' learning motivation and assist teachers in delivering instructional content. Its practicality is another advantage, as it is easy to use for both students and educators without requiring complex additional tools.

Compared to conventional methods that rely solely on textbooks and lectures, the use of interactive media such as pop-up books and finger puppets offers greater engagement and student participation. 3D instructional books have been shown to significantly improve students' literacy skills (Tarigan et al., 2024). The multisensory approach employed in this media aligns with Piaget's cognitive development theory, which states that elementary school children are still in the concrete operational stage and therefore benefit from hands-on learning experiences (Piaget, 1952). Other studies that align with this media development also support the claim that pop-up books significantly enhance conceptual understanding through engaging visual representations (Kamila & Sukartono, 2023).

The main innovation of this study is the simultaneous integration of pop-up books and finger puppets as visual and kinesthetic learning aids. Previous studies have focused on only one type of media, such as developing pop-up books alone (Putri et al., 2019; Tarigan et al., 2024; Zulwati et al., 2022) or developing finger puppets separately (Anjeli & Latifah, 2021; Azmi et al., 2023). It is essential to develop more interactive learning media for elementary education. The integration of visual and kinesthetic elements in teaching materials can enhance learning effectiveness by making lessons more engaging and accessible to students (Fauziah et al., 2023). For future research, it is recommended to conduct long-term effectiveness studies on the use of this media across various learning subjects. Additionally, further research could explore the integration of digital technology into pop-up books to create a more interactive learning experience. The findings of this study have important implications for the development of more interactive instructional media in elementary schools. The integration of visual and kinesthetic elements in teaching materials can significantly enhance learning effectiveness by making lessons more engaging and easier for students to understand. For future research, it is recommended to conduct long-term effectiveness tests on the use of this media across different subjects and explore digital technology integration into pop-up books to further enhance interactive learning experiences.

LIMITATION

Although the findings of this study indicate that the developed media has a high feasibility level, several limitations should be considered. First, this research is limited to the feasibility testing stage and has not yet reached the actual implementation of the product in real classroom settings. Therefore, further research is needed to assess the effectiveness of this media in improving student learning outcomes. Second, the study was conducted on a limited scale, involving only two elementary schools, making it difficult to generalize the results to a broader population. Third, the developed media is still in printed format and has not yet integrated digital technology, which could enhance its interactivity and accessibility. For future research, it is recommended that trials be conducted on a larger scale, involving more schools and a more diverse sample. Additionally, the development of digital-based media could be explored to further enhance effectiveness and provide a more flexible learning experience for students. Evaluating the long-term impact of this media on learning outcomes is also necessary to strengthen the findings of this study.

Based on the research findings and comparisons with previous studies, the 3D instructional media developed in this study has proven to be highly feasible for thematic learning. The combination of pop-up books and finger puppets offers a more immersive and interactive learning experience, aligning with recent research emphasizing the importance of multisensory media in elementary education.

CONCLUSION

Based on the findings and discussion, the three-dimensional (3D) instructional media incorporating pop-up books and finger puppets for thematic learning of students aged 10–11 years (Theme 5, Subtheme 1, Lesson 2) has been deemed highly feasible for student use. The study results indicate that the media feasibility level received an average score of 81% from media experts, 89% from language experts, and 94% from subject matter experts, all categorized as "highly feasible”. Furthermore, evaluations conducted by educators yielded highly positive results, with both the first and second educators awarding an average score of 98%, also categorized as "highly feasible." Student responses to the three-dimensional instructional book featuring pop-up books and finger puppets were equally positive. In the small-scale trial involving 25 students, the media achieved an average score of 89%, classified as "highly feasible." Meanwhile, in the large-scale trial involving 32 students, the average score increased to 94%, maintaining the "highly feasible" classification.

Based on these results, it can be concluded that the three-dimensional instructional book with pop-up books and finger puppets is suitable for thematic learning among students aged 10–11 years. This media is expected to serve as a reference for developing more innovative and engaging learning approaches. Further development can be pursued by expanding the scope of the material and adapting it to a broader range of learning needs, thereby enhancing students’ understanding and knowledge more effectively.

REFERENCES

Afnila, Y. G., Khairuddin, K., Musril, H. A., & Okra, R. (2022). Pengaruh Media Pembelajaran Interaktif Terhadap Hasil Belajar Siswa Dalam Pembelajaran Bimbingan Teknologi Informasi dan Komunikasi Kelas X di SMAN 1 Tigo Nagari. *Indonesian Research Journal On Education*, *3*(1), 544–551. https://doi.org/10.31004/irje.v3i1.321

Agustin, N., Yuliana, I., & Amelia Andayani, R. (2022). Penerapan Role Playing Berbantu Media Boneka Jari dalam Meningkatkan Aktivitas dan Perkembangan Sosial Peralihan Anak Dari TK ke SD. *Abata : Jurnal Pendidikan Islam Anak Usia Dini*, *2*(1), 104–116. https://doi.org/10.32665/abata.v2i1.308

Anjeli, Y. N., & Latifah, N. (2021). Pengembangan Media Boneka Jari Terhadap Keterampilan Berbicara Siswa Kelas IV SDN Saga VI Kabupaten Tangerang. *WACANA AKADEMIKA: Majalah Ilmiah Kependidikan*, *5*(1), 1. https://doi.org/10.30738/wa.v5i1.8444

Arini, J., & Estiastuti, A. (2022). Pengembangan media "proksina" berbasis articulate storyline dengan model TGT mapel IPS kelas V. *Joyful Learning Journal*, *11*(4), 167–173. https://doi.org/10.15294/jlj.v11i4.63623

Astriyanti, E. W., Rayid, M., & Hakim, A. (2023). Efektivitas Media Pop Up Book dalam Meningkatkan Hasil Belajar pada Pelajaran PAI. *Jurnal Riset Pendidikan Agama Islam*, 143–148. https://doi.org/10.29313/jrpai.v3i2.3058

Azmi, R., Astini, B. N., Rachmayani, I., & Fahruddin, F. (2023). Pengembangan Media Boneka Jari Untuk Meningkatkan Kemampuan Bahasa Ekspresif Anak Usia Dini. *Jurnal Ilmiah Profesi Pendidikan*, *8*(4), 2557–2565. https://doi.org/10.29303/jipp.v8i4.1795

Bana, R. E., Ekowati, C. K., & Blegur, I. K. S. (2023). *Pengembangan Media Pembelajaran Matematika Berbasis Android dan Ispring pada Materi Barisan dan Deret*. *5*.

Fauziah, I. N. N., Saputri, S. A., & Rustini, T. (2023). Penggunaan Media Audio Visual Dalam Meningkatkan Hasil Belajar Pada Pelajaran Ilmu Pengetahuan Sosial Siswa Sekolah Dasar. *Dirasah : Jurnal Studi Ilmu dan Manajemen Pendidikan Islam*, *6*(1), 125–135. https://doi.org/10.58401/dirasah.v6i1.789

Haryadi, J., Maria, H. T., & Karolina, V. (2024). *Pengaruh Pengunaan Metode Pembelajaran Ceramah dan Card Sort pada Mata Pelajaran Sejarah Kebudayaan Islam Materi Prestasi-prestasi Khulafaur Rasyidin*. https://doi.org/10.5281/ZENODO.12527237

Julianti, I. A. R., & Mawardi, M. (2018). Penerapan Desain Pembelajaran Tematik Integratif Alternatif Berbasis Sub-subtema untuk Meningkatkan Kebermaknaan dan Hasil Belajar. *Publikasi Pendidikan*, *8*(3), 206. https://doi.org/10.26858/publikan.v8i3.6598

Junilasari, R., Nuryani, P., & Riyadi, A. R. (2017). *Penerapan Model Pembelajaran Multisensori untuk Meningkatkan Kecerdasan Naturalis Siswa Sekolah Dasar*.

Kamila, U. S. & Sukartono. (2023). Penerapan Media Pop Up Book Pada Pembelajaran IPAS Materi Ayo Berkenalan Dengan Bumi Kita Pada Siswa Kelas 5 SD Negeri 2 Kalirejo. *Jurnal Elementaria Edukasia*, *6*(4), 1872–1882. https://doi.org/10.31949/jee.v6i4.7610

Larasati, A., & Sukartono, S. (2022). Problematika Guru dalam Pembelajaran Tematik di Sekolah Dasar. *Jurnal Basicedu*, *6*(3), 4517–4523. https://doi.org/10.31004/basicedu.v6i3.2866

Lo, H.-C., & Wang, T.-H. (2024). A Study on the Design of Embedded Visual Image Teaching Aids to Assist Young Children's Cognitive and Fine Motor Development. *Journal of Intelligence*, *12*(10), 102. https://doi.org/10.3390/jintelligence12100102

Maisarah, M., Lestari, T. A., & Sakulpimolrat, S. (2022). Urgensi Pengembangan Media berbasis Digital Pada Pembelajaran Bahasa Indonesia. *EUNOIA (Jurnal Pendidikan Bahasa Indonesia)*, *2*(1), 65. https://doi.org/10.30821/eunoia.v2i1.1348

Marwah, M. (2022). Stimulasi Kemampuan Bercerita Anak Usia Dini Melalui Media Boneka Tangan. *Murhum : Jurnal Pendidikan Anak Usia Dini*, *3*(1), 34–42. https://doi.org/10.37985/murhum.v3i1.76

Munawir, M., Rofiqoh, A., & Khairani, I. (2024). *Peran Media Interaktif Dalam Meningkatkan Motivasi Belajar Siswa pada Mata Pelajaran SKI di Madrasah Ibtidaiyah*. *9*(1).

Nazhirah, N., Israwati, I., & Tursinawati, T. (2024). Pengaruh Media Pop-Up Book Terhadap Hasil Belajar Siswa pada Materi Ekosistem di Kelas V SD Negeri 1 Beureunuen. *Jurnal Tunas Bangsa*, *11*(1), 44–56. https://doi.org/10.46244/tunasbangsa.v11i1.2600

Novela, D., Ari Suriani, & Sahrun Nisa. (2024). Implementasi Pembelajaran Inovatif melalui Media Digital di Sekolah Dasar. *Journal of Practice Learning and Educational Development*, *4*(2), 100–105. https://doi.org/10.58737/jpled.v4i2.283

Nurfadhillah, S., Ningsih, D. A., Ramadhania, P. R., & Sifa, U. N. (2021). *Peranan Media Pembelajaran dalam Meningkatkan Minat Belajar Siswa SD Negeri Kohod III*. *3*.

Nurrita, T. (2018). Pengembangan Media Pembelajaran untuk Meningkatkan Hasil Belajar Siswa. *MISYKAT: Jurnal Ilmu-ilmu Al-Quran, Hadist, Syari'ah dan Tarbiyah*, *3*(1), 171. https://doi.org/10.33511/misykat.v3n1.171

Olang, J. B., & Soesanto, R. H. (2023). Upaya Guru dalam Mengatasi Kebingungan Siswa Menggunakan Metode Ceramah Plus Tanya Jawab Dalam Pembelajaran Daring. *Didaktika : Jurnal Kependidikan*, *16*(2), 114–128. https://doi.org/10.30863/didaktika.v16i2.1960

Piaget, J. (1952). *The origins of intelligence in children.* (M. Cook, Trans.). W W Norton & Co. https://doi.org/10.1037/11494-000

Prameswara, A. Y., & Pius X, I. (2023). Upaya Meningkatkan Keaktifan dan hasil Belajar Siswa Kelas 4 SDK Wignya Mandala Melalui Pembelajaran Kooperatif: Indonesia. *SAPA - Jurnal Kateketik dan Pastoral*, *8*(1), 1–9. https://doi.org/10.53544/sapa.v8i1.327

Putri, Q. K., Pratjojo, P., & Wijayanti, A. (2019). Pengembangan Media Buku Pop-Up untuk Meningkatkan Kemampuan Menyimak Tema Menyayangi Tumbuhan dan Hewan di Sekitar. *Jurnal Pedagogi dan Pembelajaran*, *2*(2), 169. https://doi.org/10.23887/jp2.v2i2.17905

Rahmi, R., Adila, M., Sari, R. N., & Armanusa, S. (2023). Hambatan Guru dalam Pelaksanaan Pembelajaran Tematik di MIN 11 Aceh Barat. *Awwaliyah: Jurnal Pendidikan Guru Madrasah Ibtidaiyah*, *6*(1), 42–50. https://doi.org/10.58518/awwaliyah.v6i1.1712

Rayanto, Y. H., & Sugianti, S. (2020). *Penelitian Pengambangan Model ADDIE dan R2D2: Teori & Praktek*. Lembaga Academic & Research Institute.

Setiyanigrum, R. (2020). *Media Pop-Up Book sebagai Media Pembelajaran Pascapandemi Covid-19*.

Sitorus, M., Nasution, A., Sunya, A. S., & Lubis, M. S. (2024). Implementasi pop up book dalam meningkatkan kecerdasan linguistik pada anak usia dini. *Childhood Education : Jurnal Pendidikan Anak Usia Dini*, *5*(2), 300–309.

Sudaryono, S. (2018). *Metodologi Penelitian*. Raja Grafindo.

Sukiniarti, S. (2014). Kendala penerapan pembelajaran tematik di kelas rendah sekolah dasar. *Perspektif Ilmu Pendidikan*, *28*(2), 120–128. https://doi.org/10.21009/PIP.282.6

Surahman, E., & Surjono, H. D. (2017). Pengembangan adaptive mobile learning pada mata pelajaran biologi SMA sebagai upaya mendukung proses blended learning. *Jurnal Inovasi Teknologi Pendidikan*, *4*(1), 26. https://doi.org/10.21831/jitp.v4i1.9723

Susanti, S., Aminah, F., Assa'idah, I. M., Aulia, M. W., & Angelika, T. (2024). *Dampak Negatif Metode Pengajaran Monoton Terhadap Motivasi Belajar Siswa*. *2*(2).

Sutrisno, S., Prasetyowati, D., & Kartinah, K. (2018). Efektivitas Buku Ajar Matematika SMP Berbasis 3-D untuk Meningkatkan Kemampuan Komunikasi Matematis Siswa. *JURNAL SILOGISME : Kajian Ilmu Matematika Dan Pembelajarannya*, *3*(1), 8. https://doi.org/10.24269/js.v3i1.825

Tarigan, N. A. Br., Mailani, E., Simanjuntak, E. B., Simbolon, N., & Faisal, F. (2024). Pengembangan media pembelajaran pop-up book untuk meningkatkan hasil belajar peserta didik pada pembelajaran tematik kelas V tema 2 subtema 1 SD negeri 106809 Kolam T.A 2022/2023. *Jurnal Handayani*, *14*(2).

Vygotsky, L. S. (1978). *Mind in Society: The Development of Higher Psychological Processes*. MA: Harvard University Press.

Wasiyah, Mariati, Fitriana, Y., & Bakara, T. (2023). Efektivitas Penggunaan Media Pembelajaran Terhadap Aktivitas Mengajar Guru di Kelas. *EDUKASIA: Jurnal Pendidikan dan Pembelajaran*, *4*(1), 205–212. https://doi.org/10.62775/edukasia.v4i1.227

Widiyaningrum, N., & Husnah, A. (2023). Meningkatkan Keterampilan Berbicara pada Anak Usia Dini melalui Media Boneka Jari di Lingkungan Sekolah. *JIEEC (Journal of Islamic Education for Early Childhood)*, *5*(2), 91. https://doi.org/10.30587/jieec.v5i2.6141

Widyawati, E. R., & Sukadari, S. (2023). Pemanfaatan Media Pembelajaran Berbasis Teknologi sebagai Alat Pembelajaran Kekinian bagi Guru Profesional IPS dalam Penerapan Pendidikan Karakter Menyongsong Era Society 5.0. *Proceedings Series on Social Sciences & Humanities*, *10*, 215–225.

Zulwati, P. R., Fatmawati, F. A., & Agustina, R. (2022). *Pengembangan Media Pembelajaran Pop Up Book Untuk Meningkatkan Perkembangan Kognitif Anak Usia 5- 6 Tahun Di Tk Aba 42 GBA*. *6*(2), 635–647.