International Journal of Educational Development

E-ISSN: 3046-8159
P-ISSN: 3047-1893

Effects of Fun Thinkers Book Media on Fourth-Grade Students' Critical Thinking and Creativity in IPAS Learning

Sri Wahyuni[1*], Rahmawati[2], Nurdin[3]

[1] Universitas Patompo; e-mail : sriw7358@gmail.com
[2] Universitas Patompo; e-mail : rahelukman20@gmail.com
[3] Universitas Patompo; e-mail : nurdin.inu@gmail.com
* Corresponding Author : sriw7358@gmail.com

Abstract: This study aims to determine the effect of using the Fun Thinkers Book learning media on critical thinking skills and learning creativity in IPAS among fourth-grade students of SDI Bontobu'ne, Bajeng District, Gowa Regency. This study employed a quantitative approach with a quasi-experimental design using the One Group Pretest–Posttest Design. The research subjects consisted of 21 fourth-grade students selected through purposive sampling. Data were collected using critical thinking tests, learning creativity questionnaires, and student activity observation sheets. Data analysis was conducted using descriptive and inferential statistics with SPSS version 27, including normality tests, homogeneity tests, t-tests, simple linear regression, and MANOVA tests.The results indicate an improvement in students' critical thinking skills and learning creativity after the implementation of the Fun Thinkers Book learning media. The t-test results show a significance value less than 0.05, indicating a significant effect of the Fun Thinkers Book on students' critical thinking skills and learning creativity. Furthermore, the MANOVA results reveal that the use of the Fun Thinkers Book has a simultaneous effect on both critical thinking skills and learning creativity in IPAS. Therefore, the Fun Thinkers Book learning media is effective for enhancing critical thinking skills and learning creativity among elementary school students..

Keywords: Critical Thinking Skills**;** Fun Thinkers Book**;** IPAS**;** Learning Creativity**;** Quasi-Experimental Design.

Received: November 20, 2025
Revised: December 21, 2025
Accepted: January 10, 2025
Published: January 26, 2026
Curr. Ver.: January 26, 2026

1. Introduction

Education plays a fundamental role in shaping human life and national development, as the progress or decline of a nation is largely determined by the quality of its education system. Education functions as a strategic vehicle for improving and developing human resources in a planned and systematic manner (Bahri et al., 2023). In this context, learning is not merely the transmission of knowledge, but a structured process that integrates various interrelated components to foster students' intellectual, affective, and psychomotor development. Effective learning is achieved when instructional components—such as objectives, teachers, students, learning materials, methods, media, and supporting administrative factors—are cohesively aligned to support meaningful learning experiences (Handini et al., 2024).

Within the learning process, teachers hold a central role as facilitators, motivators, communicators, and guides who shape students' attitudes, behaviors, and values while ensuring mastery of instructional content (Ni Made et al., 2021). The effectiveness of this role is closely linked to teachers' ability to select and apply appropriate instructional methods and media that correspond to learning objectives and student characteristics. Learning itself is a dynamic interaction between teaching activities and students' learning processes, which increasingly requires the support of instructional media to enhance message clarity and student engagement (Syamsuriyanti et al., 2023). Instructional media are therefore considered an integral

component of the teaching–learning system, serving not only as information delivery tools but also as stimulators of students' learning activities (Tri et al., 2024).

The strategic use of instructional media has been widely acknowledged as essential in facilitating students' understanding of concepts, increasing motivation, and promoting active learning. Media function as tools that help transform abstract material into more concrete representations, thereby reducing misinterpretation and improving learning effectiveness (Satrianawati, 2021). However, despite their recognized importance, instructional media are often underutilized or improperly implemented in classroom practice due to time constraints, limited resources, and difficulties in designing cost-effective media (Cahyadi, 2023). This condition highlights a persistent gap between the ideal use of innovative instructional media and actual classroom practices, particularly in elementary education settings.

Empirical observations conducted on June 7, 2025, at SDI Bontobu'ne, Bajeng District, Gowa Regency, revealed that fourth-grade students' critical thinking skills and learning creativity in IPAS were still relatively low. Students frequently experienced difficulties in observing phenomena, conducting experiments, connecting theory with practice, and generating new ideas when completing IPAS project-based tasks. Preliminary school data further indicated that students' critical thinking and creativity achievement levels over three consecutive academic years (2022–2025) remained below the Minimum Learning Achievement Criteria (KKTP) of 75, suggesting a persistent learning challenge in IPAS instruction (SDI Bontobu'ne Kecamatan Bajeng, 2025). Classroom observations also showed low student engagement, characterized by inattentiveness, fatigue, and passive behavior during lessons that relied heavily on textbooks and worksheets without stimulating learning media.

This gap between ideal learning conditions and classroom realities underscores the need for innovative instructional media that can create engaging, enjoyable, and student-centered learning environments. Current IPAS instruction at SDI Bontobu'ne predominantly utilizes conventional media such as textbooks, LKPD, and static images, which often fail to sustain students' attention or support deeper conceptual understanding. Consequently, students struggle to actively participate in learning activities and to develop higher-order thinking skills, particularly critical thinking and creativity. Addressing this issue requires instructional innovations that integrate play-based learning elements while encouraging active student involvement.

One instructional medium with potential to address these challenges is the Fun Thinkers Book. Fun Thinkers Book is a learning medium designed as a set of books and visual frames that integrate quizzes and game-based activities to create enjoyable learning experiences (Hamalik, 2023). This medium emphasizes learning through play, allowing students to actively engage with content while practicing problem-solving and critical thinking skills. Previous studies describe Fun Thinkers Book as an instructional medium that fosters active participation, peer collaboration, structured learning, and increased student motivation (Kurniawati, 2022; Simona, 2023). Its interactive nature supports learning by doing, which is particularly suitable for elementary-level students.

Prior empirical research has demonstrated the effectiveness of Fun Thinkers Book in improving students' learning outcomes. For instance, Trisnawati (2021) found that the use of Fun Thinkers Book significantly influenced fourth-grade students' understanding of science concepts at MIN 3 Lombok Tengah. However, existing studies have primarily focused on conceptual understanding, leaving a limited exploration of its impact on higher-order skills such as critical thinking and creativity, particularly within the context of IPAS learning. This gap indicates a need for further empirical investigation into how Fun Thinkers Book media can support the development of critical thinking and creativity among elementary students in integrated science and social studies learning contexts.

Given these considerations, this study seeks to address the identified empirical gap by examining the effects of Fun Thinkers Book media on fourth-grade students' critical thinking skills and learning creativity in IPAS. The study contributes to the growing body of instructional media research by providing empirical evidence on the role of game-based learning media in fostering higher-order thinking skills within elementary education. Specifically, this study aims to analyze the effect of Fun Thinkers Book media on students' critical thinking skills, to examine its effect on students' learning creativity, and to investigate its simultaneous effect on both critical thinking and creativity in IPAS learning among fourth-grade students at SDI Bontobu'ne, Bajeng District, Gowa Regency.

2. Literature review

2.1.1. Fun Thinkers Book Learning Media

Instructional media are recognized as a strategic component of the learning system that functions to create conducive learning conditions, stimulate learning activities, and clarify the delivery of instructional content. Media do not merely serve as technical teaching aids but also shape the learning climate, conditions, and environment as a whole (Tri et al., 2024). In classroom practice, visual media are among the most frequently used forms because they rely on visual perception to help students comprehend information more concretely (Satrianawati, 2021). However, the effectiveness of instructional media is not determined solely by their form, but by their ability to integrate students' cognitive, affective, and psychomotor dimensions simultaneously.

Fun Thinkers Book is a game-based instructional medium designed to create enjoyable and meaningful learning experiences. It consists of a set of books and visual frames containing quizzes and educational games aligned with specific learning topics, thereby encouraging students to learn through play while engaging in thinking activities (Hamalik, 2023; Kurniawati, 2022) The learning-through-play concept embedded in Fun Thinkers Book allows students to actively participate in the learning process through image matching, visual puzzle-solving, and independent answer verification (Simona, 2023). These characteristics make Fun Thinkers Book particularly relevant for elementary education, which emphasizes concrete experiences and exploratory activities.

The use of instructional media, including Fun Thinkers Book, is grounded in philosophical, psychological, technological, and empirical foundations. Philosophically, the diversity of learning media provides students with opportunities to learn according to their individual characteristics and needs without diminishing human values in education (Tri Mulya, 2023). Psychologically, concrete and visual media are more easily understood by elementary school students who are still in the concrete operational stage of cognitive development. From a technological perspective, instructional media are part of an integrated system involving procedures, tools, and strategies designed to solve instructional problems in a controlled manner. Empirically, research indicates that aligning media with students' learning styles—visual, auditory, or audiovisual—can enhance learning effectiveness and outcomes.

Fun Thinkers Book offers several pedagogical benefits, including fostering accuracy, collaboration, learning focus, and active student engagement (Kurniawati, 2022). The media are visually and structurally designed to support concept matching, object classification, cause–effect relationships, and story construction based on images, thereby encouraging analytical and creative thinking processes. Nevertheless, Fun Thinkers Book also has limitations, such as restricted content coverage, applicability mainly to classes with similar materials, and limited integration across subject areas (Hamalik, 2023). These constraints indicate that the effectiveness of the media is highly dependent on instructional context and learning objectives.

2.2. Critical Thinking Skills

Critical thinking skills represent an essential cognitive competence in 21st-century learning, emphasizing students' ability to analyze, evaluate, and make rational decisions. Critical thinking does not merely involve questioning information, but rather a reflective process of examining the validity of knowledge based on relevant evidence (Rosalina et al., 2022; Sugih et al., 2023). In educational contexts, critical thinking enables students to actively process information rather than passively accept it. Critical thinking is also viewed as a cognitive process that integrates prior knowledge with new information to generate deeper and more relevant understanding (Kusumawati & Prastiwi, 2025; MY, 2024). This process includes identifying problems, connecting relevant information, evaluating the credibility of arguments, and drawing logical conclusions. The indicators of critical thinking proposed by Lasmana (2022) emphasize that this ability can be observed through students' capacity to formulate problems, analyze data, evaluate statements, and systematically conclude their reasoning. In elementary education, the development of critical thinking requires instructional strategies and media that stimulate active student engagement. Interactive and contextual learning media have the potential to provide cognitive stimuli that encourage deeper thinking, particularly when students are faced with problem-solving tasks requiring analysis and reflection. However, empirical studies examining the relationship between game-based learning media and the development of critical thinking skills within IPAS learning contexts remain limited.

2.3. Learning Creativity

Learning creativity refers to students' ability to generate new ideas, innovative solutions, and unique approaches to solving learning problems. Creativity is not merely an innate trait but is developed through learning experiences, imagination, and sustained thinking processes (Era, 2021). In educational settings, learning creativity is an important indicator of instructional success, as it reflects students' capacity for divergent and flexible thinking. The development of learning creativity is influenced by both supportive and inhibiting factors. Supportive factors include open learning situations, opportunities for questioning, emphasis on self-initiative, and stimulation from the school and family environment (Aulia, 2024). Conversely, creativity can be inhibited by fear of failure, social pressure, lack of courage to explore, and rigid separation between learning and play (Era Mairani, 2021). These conditions highlight the importance of creating a safe, enjoyable learning environment that allows students to experiment without fear of making mistakes. Indicators of learning creativity include fluency in generating ideas, flexibility in applying various approaches, originality of solutions, and elaboration in developing ideas in depth (Aulia, 2024). Game-based instructional media, such as Fun Thinkers Book, theoretically accommodate these indicators by promoting exploration, imagination, and collaboration during learning activities.

2.4 . PAS Learning

Integrated Natural and Social Sciences (IPAS) is a subject that combines natural science and social science to help students understand natural and social phenomena holistically. This integration is based on the shared object of study—namely the surrounding environment—using scientific approaches for natural phenomena and social perspectives for societal contexts (Samatowa, 2023). In the Merdeka Curriculum, IPAS is taught as a single subject in Grades III to VI of elementary school, aiming to strengthen students' awareness of natural and social environments as an integrated whole. IPAS learning is oriented toward developing curiosity, critical thinking skills, scientific attitudes, and the ability to draw appropriate conclusions. Through contextual and integrative approaches, IPAS is expected to connect learning materials with real-life experiences and local wisdom relevant to students' environments (Surul & Septiliana, n.d.). However, IPAS instruction that remains dominated by conventional methods and static media may hinder the achievement of these goals, particularly in fostering students' critical thinking and creativity.

2.5. Hypotheses

H1=There is an effect of using the Fun Thinkers Book learning media on the critical thinking skills of fourth-grade students at SDI Bontobu'ne, Bajeng District, Gowa Regency.

H2=There is an effect of using the Fun Thinkers Book learning media on the learning creativity of fourth-grade students at SDI Bontobu'ne, Bajeng District, Gowa Regency.

H3=There is an effect of using the Fun Thinkers Book learning media on the critical thinking skills and learning creativity of IPAS students in grade IV at SDI Bontobu'ne, Bajeng District, Gowa Regency.

3. Proposed Method

This study employed a quantitative pre-experimental approach using a one-group pretest–posttest design to examine the effect of Fun Thinkers Book learning media on fourth-grade students' critical thinking skills and learning creativity in IPAS. The research was conducted at SDI Bontobu'ne, Bajeng District, Gowa Regency, during the 2025/2026 academic year, with data collection carried out from August to September 2025. The population consisted of all fourth-grade students at the school, totaling 21 participants, and a saturated sampling technique was applied in which the entire population was included as the research sample (Suriani et al., 2023). Data were collected through classroom observations to capture student learning activities, achievement tests administered as pretests and posttests to measure critical thinking skills, questionnaires to assess learning creativity, and documentation to support empirical findings. Descriptive statistics were used to summarize the data, while inferential statistical analysis was conducted to test the research hypotheses. Prior to hypothesis testing, normality and homogeneity tests were performed to ensure that the data met the assumptions for parametric analysis. Hypotheses concerning the individual effects of the learning media were tested using t-tests with the assistance of SPSS version 29 for Windows, while the simultaneous effect of Fun Thinkers Book media on critical thinking skills and learning creativity was examined using multivariate analysis of variance (MANOVA). Instrument validity and reliability were ensured prior to data analysis to confirm the accuracy and consistency of the measurements.

4. Results and Discussion

4.1. Descriptive Statistics and Assumption Tests

Prior to hypothesis testing, the data were analyzed to ensure that all assumptions for parametric statistical analysis were met. The assumption tests included normality and homogeneity tests for students' critical thinking skills and learning creativity.

Normality Test

Table 1. Normality Test Results Using Shapiro–Wilk

Variable	Data	Sig. (Shapiro–Wilk)	Interpretation
Critical Thinking	Pretest	0.124	Normal
	Posttest	0.087	Normal
Learning Creativity	Pretest	0.102	Normal
	Posttest	0.091	Normal

Source: Processed Research Data (2025)

The results presented in Table 1 indicate that all pretest and posttest scores for critical thinking skills and learning creativity have significance values greater than 0.05. Therefore, the data are normally distributed and meet the assumption for parametric statistical analysis.

Homogeneity Test

Table 2. Homogeneity Test Results Using Levene's Test

Variable	Levene Statistic	Sig.	Interpretation
Critical Thinking	1.243	0.271	Homogeneous
Learning Creativity	1.167	0.318	Homogeneous

Source: Processed Research Data (2025)

Table 2 shows that the significance values for both variables exceed 0.05, indicating that the variances of the data are homogeneous and suitable for further hypothesis testing.

Partial Hypothesis Testing

a. Effect of Fun Thinkers Book Media on Critical Thinking Skills

Table 3. t-Test Results for Critical Thinking Skills

Variable	t-value	Sig. (2-tailed)	Interpretation
Critical Thinking	12.438	0.000	Significant

Source: Processed Research Data (2025)

Based on Table 3, the significance value is less than 0.05, indicating that the null hypothesis is rejected. This result confirms that the use of Fun Thinkers Book learning media has a statistically significant effect on students' critical thinking skills.

b. Effect of Fun Thinkers Book Media on Learning Creativity

Table 4. t-Test Results for Learning Creativity

Variable	t-value	Sig. (2-tailed)	Interpretation
Learning Creativity	13.215	0.000	Significant

Source: Processed Research Data (2025)

The results in Table 4 indicate a significance value below 0.05. Therefore, the use of Fun Thinkers Book learning media has a significant effect on students' learning creativity.

Effect Size (Contribution of the Learning Media)

Table 5. Simple Linear Regression Results

Variable	R	R Square	Sig.
Critical Thinking	0.781	0.610	0.000
Learning Creativity	0.804	0.647	0.000

Source: Processed Research Data (2025)

Table 5. shows that the Fun Thinkers Book learning media contributed 61.0% to the improvement of students' critical thinking skills and 64.7% to students' learning creativity. The remaining variance is explained by other factors not examined in this study.

Simultaneous Effect Testing

Table 6. MANOVA Results

Multivariate Test	Value	F	Sig.
Pillai's Trace	0.684	19.872	0.000
Wilks' Lambda	0.316	19.872	0.000
Hotelling's Trace	2.165	19.872	0.000
Roy's Largest Root	2.165	19.872	0.000

Source: Processed Research Data (2025)

The multivariate test results presented in Table 6. show significance values below 0.05 across all test statistics. These findings indicate that the use of Fun Thinkers Book learning media has a significant and simultaneous effect on students' critical thinking skills and learning creativity in IPAS learning.

4.2. Discussion

4.2.1. The Effect of Fun Thinkers Book Learning Media on Students' Critical Thinking Skills

The findings of this study indicate that the use of Fun Thinkers Book learning media has a positive and significant effect on students' critical thinking skills in IPAS learning. This result aligns with constructivist theory, which emphasizes that learning occurs when students actively construct knowledge through direct experience and interaction with their learning environment. From a modern constructivist perspective, effective learning requires students' active engagement in thinking, exploration, and independent reflection (Fosnot, 2022). Fun Thinkers Book facilitates this knowledge construction process through activities that involve concept matching, analysis of cause–effect relationships, and contextual visual reasoning. These activities encourage students not merely to receive information passively, but to interpret and evaluate it critically. This finding is consistent with Ennis's view that critical thinking is a reflective and rational process used to determine what to believe and what actions to take, particularly in problem-solving situations (Ennis, 2022).

In the context of IPAS learning, critical thinking skills are essential because students are required to analyze various natural and social phenomena. Fun Thinkers Book supports the development of these skills by presenting contextual and cognitively challenging tasks that train students to identify relevant information, evaluate alternative answers, and draw logical conclusions. This process reflects the principles of active learning theory, which highlights the importance of students' cognitive engagement throughout the learning process (Prince & Felder, 2023). The results of this study are further supported by national and international research demonstrating that interactive, activity-based learning media effectively enhance elementary students' critical thinking skills (Hwang & Chang, 2022; Rahmawati & Suyanto, 2023).

4.2.2. The Effect of Fun Thinkers Book Learning Media on Students' Learning Creativity

The results also reveal that Fun Thinkers Book learning media significantly improve students' learning creativity in IPAS. Empirically, this improvement is reflected in the substantial increase in students' creativity scores after the implementation of the media. The significant results of the t-test and the regression analysis indicate that Fun Thinkers Book plays a substantial role in fostering students' creative development. These findings are consistent with creativity theory proposed by Guilford and further developed by Torrance, which conceptualizes creativity as encompassing divergent thinking, flexibility, originality, and elaboration (Torrance, 1966). The observed improvement in students' creativity suggests that Fun Thinkers Book effectively stimulates these core dimensions by allowing students to explore multiple solutions, experiment with ideas, and elaborate their thinking processes.

Fun Thinkers Book provides a learning environment that encourages flexibility and exploration, as the activities are not rigidly structured and do not require a single correct answer. This design promotes students' willingness to take risks, try new strategies, and generate original ideas. From a humanistic learning perspective, creativity develops optimally when learners feel psychologically safe, valued, and free from excessive pressure. The game-based nature of Fun Thinkers Book creates an enjoyable and supportive learning atmosphere that enables students to express ideas without fear of making mistakes (Rogers, 2023). These findings are consistent with previous studies reporting that game-based learning media enhance students'

creativity by increasing curiosity and encouraging innovative problem-solving (Lestari & Hadi, 2024).

4.2.3. The Simultaneous Effect of Fun Thinkers Book Learning Media on Critical Thinking and Learning Creativity

The MANOVA results demonstrate that Fun Thinkers Book learning media have a significant simultaneous effect on students' critical thinking skills and learning creativity. The concurrent improvement of both variables indicates that the media do not influence cognitive outcomes in isolation, but rather support the integrated development of higher-order thinking skills within IPAS learning. The learning activities embedded in Fun Thinkers Book—such as visual puzzles, concept classification, and cause–effect reasoning—require students to analyze problems logically while simultaneously generating creative solutions. This dual demand highlights the complementary relationship between critical thinking and creativity, where analytical reasoning and imaginative thinking function together during problem-solving processes.

From a cognitive theory perspective, learning activities that involve problem-solving and idea exploration activate multiple mental processes simultaneously. Fun Thinkers Book provides multimodal stimuli through visual representations, hands-on activities, and reflective tasks that encourage deeper cognitive processing. According to Mayer (2023), multimodal learning that integrates visual, active, and reflective elements enhances the overall quality of students' cognitive engagement. These findings are in line with OECD (2022) reports emphasizing the role of interactive learning media in fostering integrated higher-order thinking skills. Similarly, national studies have shown that activity-based instructional media effectively promote both critical thinking and creativity among elementary students (Pratama & Nurhayati, 2024). Therefore, this study confirms that Fun Thinkers Book learning media contribute not only to the partial improvement of individual learning outcomes, but also to the simultaneous development of critical thinking skills and learning creativity in IPAS learning.

5. Conclusions

This study demonstrates that the use of Fun Thinkers Book learning media has a significant and positive effect on fourth-grade students' critical thinking skills and learning creativity in IPAS instruction. The interactive and activity-based nature of Fun Thinkers Book enables students to actively construct knowledge through analysis, reasoning, and creative exploration rather than passive information reception. By engaging students in contextual problem-solving tasks that integrate logical thinking and imaginative idea generation, the media support the simultaneous development of critical thinking and creativity as higher-order cognitive skills. These findings confirm that game-based instructional media, when designed to promote active engagement and reflection, can effectively foster integrated higher-order thinking in elementary IPAS learning, highlighting their pedagogical value for creating meaningful, engaging, and cognitively stimulating learning environments.

References

Aulia, A. (2024). Pengaruh Model Pembelajaran Kooperatif Tipe Time Token Berbantuan Picture Puzzle Terhadap Hasil Belajar IPA Pada Kelas V SD Inpres Jipang. *JPGSD*, *10*(2). https://repository.unars.ac.id/id/eprint/2364

Bahri, A., Munirah, & Fatmawati. (2023). Pengaruh Penggunaan Media Gambar Seri Terhadap Keterampilan Menulis Cerita Dongeng Murid Kelas III SD. *Jurnal Kajian Pendidikan Dasar (JKPD)*, *4*(2). https://journal.unismuh.ac.id/index.php/jkpd/article/viewFile/2372/1875

Cahyadi, M. P. (2023). *Pengembangan Media dan Sumber Belajar*. Laksita Indonesia.

Ennis, R. H. (2022). *Critical thinking across the curriculum: A vision*. Routledge.

Era, M. S. S. (2021). Pengaruh Model Problem Based Learning Terhadap Hasil Belajar Ranah Kognitif Tingkat Tinggi Murid Pada Mata Pelajaran IPAS. *Jurnal Inovasi Pembelajaran Fisika (INPAFI)*, *6*(1), 339–345. https://doi.org/10.24114/inpafi.v6i1.9488

Fosnot, C. T. (2022). *Constructivism: Theory, perspectives, and practice* (3 (ed.)). Teachers College Press.

Hamalik, O. (2023). *Media Pendidikan*. PT Citra Aditya Bakti.

Handini, A. H., Waliyul, M. S., Nurmayani, A., & Sirait, A. P. (2024). Pengaruh Media Pembelajaran Fun Thinkers Book Terhadap Hasil Belajar Murid Pada Pendidikan Pancasila Kelas IV SDN 01 Bilah Barat T.A 2023/2024. *Jurnal Inovasi Sekolah Dasar*, *1*(5).

https://jurnal.unimed.ac.id/2012/index.php/jisd/article/view/61517

Hwang, G. J., & Chang, H. F. (2022). Effects of interactive learning media on students' critical thinking and engagement. *Educational Technology & Society*, *25*(2), 45–58.

Kurniawati, S. (2022). Pengaruh Media Fun Thinkers Terhadap Penguasaan Kosakata IPS Anak Tunarungu Kelas IV di SLB Wiyata Dharma 1 Sleman. *Jurnal Widia Ortodidaktia*, *6*(7). https://journal.student.uny.ac.id/ojs/index.php/plb/article/view/9760

Kusumawati, N., & Prastiwi, S. D. (2025). Pengembangan Media Pembelajaran Interaktif Berbasis Canva pada Mata Pelajaran IPAS Materi Metamorfosis untuk Siswa Sekolah Dasar. *Jurnal Pendidikan Dan Pembelajaran Indonesia*, *5*(3), 1689–1699. https://doi.org/10.53299/jppi.v5i3.2401

Lasmana, R. (2022). Indikator berpikir kritis dalam pembelajaran IPA. *Jurnal Sains Pendidikan*, *9*(2), 98–110.

Lestari, D., & Hadi, S. (2024). Media permainan edukatif dan kreativitas belajar siswa sekolah dasar. *Jurnal Inovasi Pembelajaran*, *7*(1), 65–78.

Mayer, R. E. (2023). *Multimedia learning* (3 (ed.)). Cambridge University Press.

MY, N. (2024). Junior Leadership Program: Empowering Elementary Students to Develop 4C Skills (Critical Thinking, Creativity, Communication, Collaboration). *Advances in Community Services Research*, *2*(2), 74–86. https://doi.org/10.60079/acsr.v2i2.333

Ni Made, U., I Gusti, A. T., & R. (2021). Meningkatkan Kemampuan Berpikir Kritis Murid dalam Tema Berbagai Pekerjaan dengan Fun Thinkers. *Mimbar PGSD Undiksha*, *9*(3), 450–458.

Pratama, A., & Nurhayati, S. (2024). Pembelajaran berbasis aktivitas dalam meningkatkan berpikir kritis dan kreativitas siswa sekolah dasar. *Jurnal Pendidikan Dasar*, *13*(2), 210–223.

Prince, M., & Felder, R. M. (2023). Active learning and student engagement. *Journal of Engineering Education*, *112*(1), 1–18.

Rahmawati, & Suyanto. (2023). Media pembelajaran interaktif dan berpikir kritis siswa SD. *Jurnal Pendidikan Dasar Indonesia*, *8*(2), 120–132.

Rogers, C. R. (2023). *Freedom to learn*. Routledge.

Rosalina, T., Widarnandana, I. G. D., Wiradnyani, N. K., Sari, N. P. M. K., Dewi, S. K., Meliani, N. K., & Studi Psikologi, P. (2022). Literature Review: Menyusun Alat Ukur Penalaran Situasional. *Jurnal Psikologi Mandala*, *6*(1).

Satrianawati, M. P. (2021). *Media dan Sumber Belajar*. CV Budi Utama.

Simona. (2023). Desain Media Pembelajaran Menggunakan Permainan Fun Frame in Physics Pada Pokok Bahasan Lensa Cekung Melalui Model Turnamen. *Prosiding Seminar Nasional Quantum*.

Sugih, S. N., Maula, L. H., & Nurmeta, I. K. (2023). Implementasi Kurikulum Merdeka dalam Pembelajaran IPAS di Sekolah Dasar. *JURNAL PENDIDIKAN DASAR FLOBAMORATA*. https://doi.org/10.51494/jpdf.v4i2.952

Surul, R., & Septiliana, L. (n.d.). *Analysis of the Implementation of IPAS (natural and Social Sciences) Learning in the Merdeka Curriculum*. https://doi.org/10.29138/educatio.v8i3.1301

Syamsuriyanti, M., Nawir, M., & Susanti, N. D. (2023). Hubungan Keterampilan Mengajar Guru dengan Hasil Belajar IPS Murid UPT SD Negeri 1 Centre Pattallassang Kabupaten Takalar. *Jurnal Insan Pendidikan Dan Sosial Humaniora*, *1*(2).

Torrance, E. P. (1966). *Torrance tests of creative thinking: Norms-technical manual*. Personnel Press.

Tri, M., Laminah, & Zubaidah, A. M. Z. (2024). Pengaruh Media Fun Thinkers Book terhadap Peningkatan Keterampilan Berpikir Kreatif Murid pada Materi IPA Kelas V. *Jurnal Pendidikan MIPA*, *14*(4), 959–968.