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Systematic Literature Review: Interactive Learning Media Based on the ARSELTHK Model to Enhance Students' Mathematical Concept Understanding and Character Development

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Abstract

Although interactive learning media and character-based educational approaches have received increasing attention in prior studies, research explicitly integrating collaborative models, Social Emotional Learning (SEL), and Tri Hita Karana (THK) values within a unified framework such as ARSELTHK remains limited. This study aims to systematically examine the characteristics, effectiveness, and research gaps in interactive learning media designed to enhance mathematical concept understanding and student character development. A qualitative approach was employed using a Systematic Literature Review (SLR) design guided by the PRISMA protocol, involving 22 selected journal articles obtained through purposive sampling from Scopus and Google Scholar databases. Data were collected through document analysis and synthesized using descriptive and thematic analysis. The findings indicate that interactive learning media consistently improve students' conceptual understanding, particularly in topics such as simple and compound interest, while studies integrating THK and SEL demonstrate significant contributions to character formation, emotional

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regulation, and contextual learning. Collaborative models involving teachers, parents, and students also emerge as essential for strengthening student character. These results contribute to the theoretical development of culturally grounded, holistic learning frameworks and expand understanding of integrated character-based mathematics instruction. The study concludes that ARSELTHK-oriented interactive media play a crucial role in promoting both cognitive and character outcomes in mathematics education and recommends that educators and curriculum developers adopt integrated cultural–emotional–collaborative approaches when designing digital learning media. The implications include theoretical contributions to the literature on holistic mathematics learning and practical recommendations for schools to strengthen culturally responsive and character-oriented pedagogy, while highlighting opportunities for future research on long-term effectiveness, large-scale implementation, and empirical validation of ARSELTHK-based media.

Keywords: Interactive Learning Media; ARSELTHK Model; Mathematical Concept Understanding; Character Education; Tri Hita Karana; Social Emotional Learning

INTRODUCTION

Mathematics is a fundamental subject in the education system because it provides the foundation for developing logical, analytical, and systematic thinking skills. However, both international and national assessments indicate persistent challenges in students' mathematical performance. Internationally, the 2023 Programme for International Student Assessment (PISA) reported that Indonesian students' mathematical proficiency remains significantly below the OECD average, with only 18% of students achieving the minimum competency level (OECD, 2023). Nationally, the objectives of mathematics education stipulated in the Ministry of Education Regulation (Permendiknas) No. 22 of 2006 emphasize conceptual understanding, problem-solving abilities, and mathematical communication. Yet, empirical evidence shows that the abstract nature of mathematics often hinders students from developing deep conceptual understanding (Handayani & Wandini, 2023).

In response to these issues, scholars highlight the need for pedagogical innovations that foster active student engagement. Mayer (2009) argues that interactive learning media integrating verbal and visual representations strengthen knowledge construction and support conceptual comprehension. Consistent with this, recent studies have demonstrated that

interactive media significantly improve student motivation, persistence, and learning outcomes (Yusuf & Widyaningsih, 2023; Setiawan et al., 2022). These findings indicate that interactive learning media hold considerable potential for addressing students' low mathematical performance.

Nevertheless, a literature search using Publish or Perish revealed that studies on *interactive media for mathematics learning* remain limited, particularly within reputable databases such as Scopus. Existing studies predominantly focus on technical aspects of media development such as design features and short-term effectiveness while very few incorporate dimensions of student character development, cultural relevance, or multi-stakeholder collaboration (teachers, students, and parents). Moreover, research specifically addressing interactive media for the topic of simple and compound interest remains scarce, even though this topic is crucial and frequently associated with student misconceptions. This indicates a clear research gap where existing studies have not fully addressed the need for a holistic approach to mathematics learning.

To bridge this gap, learning media development must adopt collaborative models that integrate social, emotional, and cultural dimensions. The ARSELTHK model which combines ARDANA (teacher–parent–student collaboration), Social Emotional Learning (SEL), and the cultural values of Tri Hita Karana (THK) offers a comprehensive framework to address the limitations of previous approaches. According to CASEL (2020), SEL enhances academic achievement while fostering student resilience, independence, and responsibility. Similarly, studies on THK highlight its potential to instill ethical values, social harmony, and environmental awareness in learning processes (Sukarma, 2018; Mahendra & Suryaningsih, 2021). Together, these theoretical foundations support the development of interactive learning media that not only enhance mathematical conceptual understanding but also strengthen students' character.

Based on these considerations, this study aims to identify, evaluate, and synthesize prior research on interactive learning media that integrate collaborative, character-based, and culturally grounded approaches. Therefore, this study is conducted as a Systematic Literature Review (SLR) to map existing types of interactive media, the learning models employed, and their effects on students' conceptual understanding in mathematics as well as the development of independent and creative character traits.

METHODS

Research Type and Approach

This study employs a Systematic Literature Review (SLR) as its primary research approach. An SLR is understood as a qualitative research method used to systematically identify, evaluate, and synthesize empirical findings from previous studies on a specific topic (Kitchenham, 2004; Snyder, 2019). Consistent with Creswell's (2014) characterization of qualitative inquiry, this approach was selected because the purpose of the present study is not to test hypotheses or generate numerical generalizations, but rather to interpret themes, patterns, and conceptual linkages across academic studies related to interactive learning media, mathematical concept understanding, and student character development. The qualitative, interpretive orientation of this SLR is appropriate for addressing the research objectives, as it enables the researchers to construct a comprehensive understanding of existing knowledge and research gaps within the field of mathematics education.

Research Design

The research design adopted in this study follows the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) framework, which provides a systematic, transparent, and replicable procedure for conducting literature reviews. The PRISMA design consists of four main stages identification, screening, eligibility, and inclusion and was chosen because it enhances methodological rigor compared to conventional narrative reviews. While many previous studies on interactive learning media relied on descriptive or narrative review techniques, the PRISMA-based design in this research offers a clearer and more accountable documentation of article search strategies, criteria for selection, and decision-making processes, thereby ensuring stronger methodological validity and greater replicability. This design is therefore considered suitable for examining the breadth of research on interactive learning media, mathematics conceptual understanding, and character development.

Population and Sample

The population of this SLR consists of all peer-reviewed journal articles discussing interactive learning media within the context of mathematics education, published in national and international journals and accessible online. From this population, the study employed purposive sampling to select articles that met specific relevance criteria. Purposive sampling is commonly used in systematic reviews because article selection must align with specific

research objectives, and this technique allows researchers to intentionally include studies that best represent the phenomena under investigation (Sugiyono, 2019). The inclusion criteria applied in this study were: articles published between 2015 and 2024; articles focusing on interactive learning media in mathematics education; and articles that discuss at least one of the following components: mathematical concept understanding, independent character, creative character, or the integration of cultural values such as Tri Hita Karana. Only peer-reviewed, full-text articles written in either Indonesian or English were considered. Articles that lacked direct relevance to mathematics education, focused solely on technical media development without connecting learning outcomes, or originated from non–peer-reviewed sources such as conference proceedings, theses, or unpublished reports were excluded from the final sample.

Data Collection Instruments and Techniques

Data were collected using a document analysis method, in which scientific articles were systematically reviewed based on predefined criteria. Article searches were conducted through online databases, including Google Scholar and Scopus, with assistance from the Publish or Perish software to manage citation data and facilitate the extraction of search results. The search process utilized combinations of relevant keywords in both English and Indonesian such as "interactive media mathematic learning," "interactive learning media in mathematics education," "media pembelajaran interaktif matematika," "mathematical concept understanding," "independent character," "creative character," and "Tri Hita Karana." Each selected article was analyzed using a structured data extraction form that served as the main instrument for data collection. This form captured essential information including publication year, research context, type of interactive media, learning model employed, learning outcomes, and the integration of social, emotional, or cultural values. The data collection procedure followed the PRISMA stages, beginning with identification of potential studies, followed by screening of titles and abstracts, evaluation of full-text eligibility, and final inclusion of studies that met all criteria. The overall process is summarized in the PRISMA flow diagram (Figure 1).

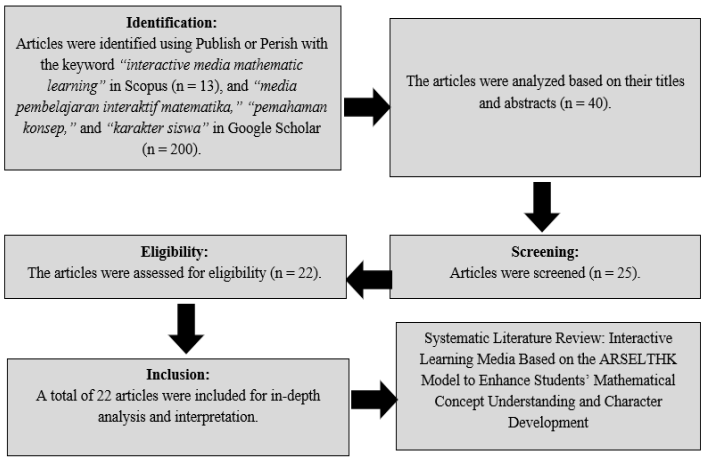


Figure 1. PRISMA flow diagram

Data Analysis

The data analysis procedure involved a combination of descriptive and thematic analysis. Descriptive analysis was first employed to map the distribution of the selected studies, including their publication trends, country and educational context, research designs, and the types of interactive media developed within mathematics education. Following this, thematic analysis was conducted to interpret conceptual patterns and categorize findings from the included studies. Through this analysis, themes were identified related to the characteristics of interactive learning media, their integration with specific learning models, and their influence on mathematical concept understanding and character development particularly independence and creativity. This analytical approach enabled the researchers to synthesize how prior studies have conceptualized and implemented interactive learning media and where research limitations still persist, especially concerning the integration of collaborative pedagogical frameworks and culturally grounded values such as SEL and Tri Hita Karana. The results of this thematic synthesis provide the foundation for articulating the research gap and positioning the novelty of the present study.

RESULTS

The results of this Systematic Literature Review were obtained from the analysis of 22 selected articles that met the inclusion criteria. The reviewed studies cover interactive learning media, cultural values such as Tri Hita Karana (THK), Social Emotional Learning (SEL), collaborative learning models, and character development in mathematics education. A summary of the relevant studies is presented in Table 1.

Table 1. Summary of Relevant Studies on Interactive Learning Media Oriented to the ARSELTHK Model for Enhancing Mathematical Concept Understanding and Student Character

Authors & Year	Title of Study	Method / Model / Media	Research Findings	Research Limitations
(Aningsih et al., 2022)	*How is the Education Character Implemented? The Case Study in Indonesian Elementary School*	Ethnographic approach on character education implementation	Student character values can be integrated through school culture and teacher modeling.	Limited to an elementary school in Jakarta.
(Anomeisa & Ernaningsih, 2020)	*Interactive Learning Media Using PowerPoint VBA on Grouped Data Presentation*	Interactive media using PowerPoint VBA	The media was valid, feasible to use, and increased students' interest and responses.	Long-term learning outcomes were not measured.
(Ardana, Ariawan, & Yudana, 2023)	*Student Character Development through Digital Materials Based on the KoGOPEQ Model*	KoGOPEQ Model (Teacher–Parent–Student Collaboration with EQ)	Successfully improved student character up to 99.2%.	Cognitive learning outcomes were not assessed.
(Ardana et al., 2024)	*Character Development Through Collaboration Between Teachers, Parents, and Students in Online Learning*	Teacher–Parent–Student Collaboration Model (MPbKGOP)	Valid and effective in improving character and mathematical conceptual understanding.	Conducted in only one elementary school.
(Buchori & Kholifah, 2022)	*Improving Senior High School Students' Cognitive Abilities in Interest and Tax Using Interactive Multimedia Design*	ADDIE model with Adobe Flash–based multimedia	Produced interactive multimedia with very good expert validation (media 89.6%, material 89.4%) and positive student responses (88%). Effective for improving motivation and cognitive ability.	Conducted in a single school; not compared with alternative methods.
(Bulukaya et al., 2020)	*Web-Based Learning Development on Simple and Compound Interest*	4D model; web-based media	Media was valid and effective with a validity value of 0.85 and positive responses (82%).	No large-scale implementation.

Authors & Year	Title of Study	Method / Model / Media	Research Findings	Research Limitations
(Darnanta et al., 2020)	*Development of Mathematics Interactive Learning Media with Gamification Concept for Mentally Disabled Students*	Gamification-based interactive media	Increased concentration and interest of mentally disabled students (91.1%).	Limited to one school; cognitive aspects not measured.
(Dewi et al., 2023)	*Interactive Differentiated Learning Media to Improve Students' Mathematics Learning Outcomes*	Differentiated Interactive Media (Plomp Model)	Valid, practical, and effective in improving learning outcomes.	Only tested in one school and specific competencies.
(Dikta, 2020)	*Tri Hita Karana–Based Learning as an Effort to Strengthen Primary Education Quality in the 21st Century*	Tri Hita Karana–based learning model	Strengthens character, collaboration, and 21st-century skills.	Conceptual article; lacks empirical testing.
(Gimbert et al., 2023)	*Social Emotional Learning in Schools: The Importance of Educator Competence*	Teacher-competency-based SEL model	Teachers' social-emotional competence improves student well-being and learning outcomes.	Limited empirical research across cultures.
(Kaur, 2024)	*Empowering the Future of Elementary Education: The Role of Parents in Strengthening Home–School Connections*	School–parent collaboration	Parental involvement improves academic and social student outcomes.	Conceptual study; lacks empirical data.
(Kamara et al., 2023)	*Exploration of Factors Inhibiting Students' Mathematical Creative Thinking*	Qualitative case study	Identified 7 factors inhibiting mathematical creative thinking: negative perception of math, low intrinsic motivation, weak conceptual understanding, learning loss, low self-efficacy, weak procedural knowledge, inadequate teacher competence.	Document analysis not systematic; lacked intercoder reliability; context-specific.

Authors & Year	Title of Study	Method / Model / Media	Research Findings	Research Limitations
(Marten et al., 2024)	*Development of Interactive Learning Media on Simple Interest, Compound Interest, and Annuities for Vocational Students*	ADDIE model	Media achieved high material validity (82.95%) and media validity (88%). Practicality scores: teachers 87.83%, students 83.43%. Improved student motivation and conceptual understanding; included animation, audio feedback, quizzes.	Limited field testing; long-term effects not measured.
(Pujiastuti et al., 2020)	*Development of Interactive Mathematics Learning Media Based on Local Wisdom and 21st Century Skills*	ADDIE model; Android-based "AndroMath" application	Media was highly valid (>90%) and effective in improving 21st-century skills.	Tested in only one secondary school.
(Putri et al., 2024)	*Development of THK-Based Interactive Multimedia to Improve Mathematical Concept Understanding and Student Character*	Tri Hita Karana–based Interactive Multimedia (4D Model)	Valid (0.84), practical (3.52), and effective in improving conceptual understanding and character.	Development only reached the "Develop" stage.
(Rusmini et al., 2019)	*Effect of Local-Wisdom Tri Hita Karana–Based Contextual Learning on Motivation and Learning Outcomes*	THK-based contextual learning model	Significant differences in motivation and learning outcomes between experimental and control groups; THK values enhanced religious, social, and environmental character.	Post-test only design; learning process not observed.
(Syafruddin et al., 2024)	*Development of Instagram-Based Learning Media to Increase Students' Interest in Acid–Base Materials*	Instagram-based media (ADDIE Model)	Valid, feasible, and improved learning interest (gain 0.40).	Did not measure significant learning outcome improvements.

Authors & Year	Title of Study	Method / Model / Media	Research Findings	Research Limitations
(Sari et al, 2024)	*Applying Tri Hita Karana in Mathematics Learning to Develop Students' Contextual Understanding*	Qualitative case study with THK approach	THK integration strengthened students' contextual mathematical understanding.	Limited to one study program and no quantitative testing.
(Suryawan et al., 2022)	*Tri Hita Karana as Local Wisdom in Character Education Development*	SLR on THK-based character education	THK develops harmonious character with God, people, and nature.	Literature-based; lacks empirical implementation.
(Suarsana et al., 2019)	*The Effect of Interactive Mathematics Learning Media on Conceptual Understanding for Hearing-Impaired Students*	Interactive media; post-test only	Effective in improving probability conceptual understanding among hearing-impaired students.	Small sample; only one topic tested.
(Sudira, 2011)	*The Praxis of Tri Hita Karana Ideology in Vocational Character Education*	Ethnographic study	THK shapes vocational school culture and character education in Bali.	Bali-specific; not tested outside Bali.
(Huang et al., 2024)	*What Matters for Students' Learning? The Roles of Social and Emotional Skills*	OECD SSES survey; CFA analysis	Social-emotional skills significantly affect student well-being and achievement.	Focused on China; lacks cross-cultural analysis.

Based on Table 1, the review shows that research on interactive learning media in mathematics education has increased significantly in the last decade. Most studies adopted development models such as ADDIE and 4D, which were frequently reported as effective for producing valid and practical learning media. Several studies demonstrated positive outcomes in improving students' conceptual understanding, particularly in topics such as simple interest, compound interest, and annuities. Other studies also highlighted the integration of cultural and character-based values, especially Tri Hita Karana, which contributed to strengthening students' moral, social, and environmental awareness. Additionally, research related to Social Emotional Learning (SEL) and collaborative learning

models indicated that emotional, social, and family involvement plays an essential role in shaping student character and improving learning engagement.

Overall, the results show diverse approaches and media types used in mathematics education research and provide a comprehensive mapping of the characteristics, outcomes, and limitations of previous studies. These findings serve as the empirical foundation for further discussion and the identification of research gaps, which are elaborated in the subsequent section.

DISCUSSION

The findings of this SLR reveal several important implications for the development of ARSELTHK-oriented interactive learning media. First, the consistent effectiveness of interactive media across the reviewed studies suggests that digital learning tools when designed with clear instructional strategies can significantly enhance students' understanding of mathematical concepts. This is particularly relevant for vocational school contexts, where mathematics topics such as simple and compound interest closely relate to real-life financial applications. The convergence of findings from Buchori and Kholifah (2022), Marten et al. (2024), and Bulukaya et al. (2020) supports the argument that interactive media offers multisensory learning experiences that promote deeper conceptual comprehension and engagement.

However, although these studies demonstrate positive impacts on learning outcomes, most were limited to single institutions, did not measure long-term learning retention, and often relied on narrow technological platforms such as Adobe Flash. These limitations highlight the need for more robust development and evaluation processes, particularly for media that will be implemented across diverse learning environments.

The review further demonstrates the importance of embedding cultural values specifically Tri Hita Karana into mathematics learning. The consistent findings from Putri et al. (2024), Sari et al. (2024), and Sudira (2011) affirm that THK-based learning helps students connect mathematical ideas to ethical, social, and environmental contexts, making learning more meaningful. This aligns with the ARSELTHK model, which places THK as a core component of character development and learning identity formation.

In parallel, the role of Social Emotional Learning (SEL) is evident across multiple studies. SEL supports students in developing emotional resilience, empathy, and social competencies, all of which are essential for handling the cognitive challenges of mathematics. Evidence from Gimbert et al. (2023), Zins et al. (2004), and Huang et al. (2024) confirms that integrating SEL into learning environments enhances both academic and non-academic outcomes. The ARSELTHK model's incorporation of SEL thus aligns with global educational recommendations and research-backed practices.

Another key discussion point emerges from studies on collaborative learning. Findings from Ardana et al. (2023) and related works underscore that involving teachers, parents, and students creates a supportive learning ecosystem that strengthens student motivation, behavior, and character. This collaborative dimension is crucial for the ARSELTHK framework, which emphasizes shared responsibility and holistic student development.

Taken together, the reviewed studies point to a clear research gap: while interactive media, cultural values, SEL, and collaborative models have each been studied independently, very few studies integrate all these components into a single unified model such as ARSELTHK. This gap highlights the need for the present study, which aims to develop and evaluate interactive learning media that are not only technically sound but also culturally grounded, emotionally supportive, and collaboratively structured.

In conclusion, the findings of this SLR support the theoretical and practical basis for developing ARSELTHK-based interactive learning media as an innovative approach to strengthen conceptual understanding and character development. Such a model responds directly to the limitations found in previous research and aligns with the educational needs of 21st-century mathematics learning, especially for vocational students who require both cognitive competence and strong personal character.

CONCLUSION

This Systematic Literature Review analyzed 22 studies related to the development and implementation of interactive learning media, cultural and character-based educational approaches, Social Emotional Learning (SEL), and collaborative learning models within the context of mathematics education. The review reveals that interactive learning media particularly those developed using systematic instructional design models such as ADDIE

and 4D consistently demonstrate high levels of validity, practicality, and effectiveness in improving students' mathematical conceptual understanding. These findings are especially evident in topics such as simple and compound interest, where digital interactive tools support both comprehension and independent learning.

The review also highlights the significant role of cultural and character-based values, particularly the Tri Hita Karana (THK) philosophy, in enriching mathematics learning. THK-based media and instructional approaches were found to strengthen students' moral, social, and environmental awareness, while enhancing their conceptual understanding. Likewise, Social Emotional Learning (SEL) approaches contributed to improving students' emotional regulation, social skills, and academic engagement. Research on collaborative models involving teachers, parents, and students further emphasizes that a supportive learning ecosystem is crucial for developing strong student character and learning outcomes.

Despite the positive findings, previous studies exhibit several limitations, including narrow research contexts, limited field testing, a lack of long-term effectiveness measures, and minimal integration of cultural, emotional, and collaborative components within a single unified model. These gaps underscore the need for an integrative approach to mathematics learning media.

Therefore, this SLR concludes that the ARSELTHK-oriented interactive learning media integrating collaboration, SEL, and THK values holds strong potential as an innovative framework for enhancing students' mathematical conceptual understanding while simultaneously fostering independent, creative, and responsible character development. Future research should focus on evaluating the long-term effectiveness of such integrated learning media, implementing them across diverse educational settings, and measuring both cognitive and character-related outcomes to provide more comprehensive empirical evidence.

REFERENCES

Aningsih, Zulela, M. S., Neolaka, A., Iasha, V., & Setiawan, B. (2022). How Is the Education Character Implemented? The Case Study in Indonesian Elementary School. *Journal of Educational and Social Research*, *12*(1), 371–380. https://doi.org/10.36941/jesr-2022-0029

Anomeisa, A. B., & Ernaningsih, D. (2020). Media Pembelajaran Interaktif Menggunakan PowerPoint VBA Pada Penyajian Data Berkelompok. *Jurnal Pendidikan Matematika Raflesia*, *05*(01), 17–31.

Ardana, I. M., Ariawan, I. P. W., & Sugandini, W. (2023). Character Development Through Collaboration Between Teachers , Parents , and Students in Online Learning. *Jurnal Edutech Undiksha*, *11*(1), 11–19. https://doi.org/10.23887/jeu.v11i1.62680

Ardana, I. M., Ariawan, I. P. W., & Yudana, I. M. (2023). Pengembangan Karakter Peserta Didik melalui Materi Digital Berbasis Model Kogopeq. *Proceeding Senadimas Undiksha*, *8*(November), 463–471.

Buchori, A., & Kholifah, S. (2022). Meningkatkan Kemampuan Kognitif Siswa SMA dalam Materi Bunga Tabungan dan Pajak Menggunakan Desain Multimedia Interaktif. *Jurnal Derivat: Jurnal Matematika dan Pendidikan Matematika*, *9*(2), 174–181. https://doi.org/10.31316/jderivat.v9i2.4196

Bulukaya, S. K., Ismail, Y., & Zakiyah, S. (2020). Pengembangan Pembelajaran Berbasis Web pada Materi Tingkat Bunga Sederhana dan Tingkat Bunga Majemuk. *Euler : Jurnal Ilmiah Matematika, Sains dan Teknologi*, *8*(2), 70–82. https://doi.org/10.34312/euler.v8i2.10426

Darnanta, I. W., Pradnyana, I. M. A., & Agustini, K. (2020). Development of Mathematics Interactive Learning Media with Gamification Concept for Mentally Disabled Students. *Journal of Physics: Conference Series*, *1516*(1). https://doi.org/10.1088/1742-6596/1516/1/012043

Dewi, N. M. A. S., Ardana, I. M., & Sudiarta, P. I. G. P. (2023). Pengembangan Media Pembelajaran Interaktif Berdiferensiasi untuk Meningkatkan Hasil Belajar Matematika Peserta Didik. *EDUKASIA: Jurnal Pendidikan Dan Pembelajaran*, *4*(1), 547–560. https://doi.org/10.62775/edukasia.v4i1.302

Dikta. (2020). Pembelajaran Berorientasi Tri Hita Karana Sebagai Upaya Penguatan Kualitas Pendidikan Dasar pada Abad ke 21. *Pendasi: Jurnal Pendidikan Dasar Indonesia*, *4*(1), 126–136.

Gimbert, B. G., Miller, D., Herman, E., Breedlove, M., & Molina, C. E. (2023). Social Emotional Learning in Schools: The Importance of Educator Competence. In *Journal of Research on Leadership Education* (Vol. 18, Issue 1). https://doi.org/10.1177/19427751211014920

Huang, Z., Zhang, J., & Yuan, Z. (2024). What Matters for Students' Learning? The Roles of Social and Emotional Skills and the Factors Affecting These Skills. In *ECNU Review of Education*. https://doi.org/10.1177/20965311241227453

Kamara, J. G., Simamora, R. E., & Rahayu, S. W. (2023). Eksplorasi Faktor Penghambat Berpikir Kreatif Matematis Siswa Menengah Pertama. *Mathematics Education and Application Journal (META)*, *5*(1), 18–30. https://doi.org/10.35334/meta.v5i1.4070

Kaur, H. (2024). Empowering the Future of Elementary Education: The Role of Parents in Strengthening Home-School Connections. *Transformative Leadership and Change Initiative Implementation for P-12 and Higher Education*, 85–108. https://doi.org/10.4018/978-1-6684-9904-7.ch006

Marten, D., Delyana, H., & Edriati, S. (2024). Pengembangan Media Pembelajaran Interaktif pada Materi Bunga Tunggal Majemuk dan Anuitas Siswa Kelas Xi Kuliner Smk Negeri 6 Padang. *Pedagogy: Jurnal Pendidikan Matematika*, *9*(1), 130–146. https://doi.org/10.30605/pedagogy.v9i1.3784

Pujiastuti, H., Utami, R. R., & Haryadi, R. (2020). The Development of Interactive Mathematics Learning Media Based on Local Wisdom and 21st Century Skills: Social Arithmetic Concept. *Journal of Physics: Conference Series*, *1521*(3). https://doi.org/10.1088/1742-6596/1521/3/032019

Putri, M., Ardana, I., Kunci, K., & Konsep, P. (2024). Pengembangan Multimedia Interaktif Berbasis Tri Hita Karana untuk Meningkatkan Pemahaman Konsep Matematika dan

Penanaman Nilai Karakter Siswa. *Jurnal Pendidikan dan Pembelajaran Matematika Indonesia*, *13*(1).

Rusmini, A. A. K., Sriartha, I. P., & Suastika, I. N. (2019). Pengaruh Model Pembelajaran Kontekstual Berbasis Kearifan Lokal Konsep Tri Hita Karana terhadap Motivasi dan Hasil Belajar IPS. *Jurnal Pendidikan dan Pembelajaran Ipa*, *9*(2), 72–79. https://doi.org/10.23887/pips.v8i2.3732

Suarsana, I. M., Mahayukti, G. A., Sudarma, I. K., & Pujawan, A. A. G. S. (2019). The Effect of Interactive Mathematics Learning Media Toward Mathematical Conceptual Understanding on Probability of Hearing-Impaired Students. *Journal of Physics: Conference Series*, *1165*(1). https://doi.org/10.1088/1742-6596/1165/1/012021

Sudira, P. (2011). Praksis Ideologi Tri Hita Karana dalam Struktur dan Kultur Pendidikan Karakter Kejuruan pada Smk di Bali. *Jurnal Pendidikan Karakter*, *1*(1). https://doi.org/10.21831/jpk.v1i1.1313

Suryawan, I. P. P., Sutajaya, I. M., & Suja, I. W. (2022). *Tri Hita Karana Sebagai Kearifan Lokal dalam Pengembangan Pendidikan Karakter*. *5*, 50–65.

Syafruddin, A. B., Widarti, H. R., & Rokhim, D. A. (2024). Development of Instagram-Based Learning Media to Increase Students Learning Interest in Acid-Base Materials. *Turkish Online Journal of Distance Education*, *25*(2), 228–247. https://doi.org/10.17718/tojde.1312770