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Integrasi Kearifan Lokal dalam Kurikulum Sains di Sekolah Dasar: Tinjauan Literatur Sistematis

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Abstract
The integration of local wisdom into the curriculum has become an interesting topic considering Indonesia as a multicultural country. Although related research and publications have been conducted on various subjects and educational levels, a comprehensive study on the integration of local wisdom into the science curriculum at the elementary school level has not been conducted. This study aims to comprehensively explore the integration of local wisdom into the science curriculum at the elementary school level. The chosen research method is a systematic literature review by analyzing 74 articles from the Scopus and Google Scholar databases published between 2014-2024. The integration of local wisdom into the science curriculum at the elementary school level has the potential to improve the quality of learning and preserve local culture. Integration can be done through intra, co, and extracurricular activities. In intra-curricular activities, local wisdom is integrated into teaching materials, strategies, media, and assessments. Co-curricular activities include the P5 program, environmental education, field trips, and educational tours. Extracurricular activities can include wayang performances. This integration enhances science literacy, eco-literacy, science process skills, disaster knowledge, critical thinking, and student learning outcomes.

Keywords: *local wisdom, curriculum, science, elementary education*

Abstrak
Integrasi kearifan lokal ke dalam kurikulum menjadi topik menarik mengingat Indonesia sebagai negara multikultural. Meskipun penelitian dan publikasi terkait sudah dilakukan pada berbagai subjek dan jenjang pendidikan, kajian komprehensif mengenai integrasi kearifan lokal dalam kurikulum sains di sekolah dasar belum pernah diteliti. Penelitian ini bertujuan mengeksplorasi secara komprehensif integrasi kearifan lokal dalam kurikulum sains di sekolah dasar. Metode penelitian yang dipilih adalah tinjauan literatur sistematis dengan menganalisis 74 artikel dari database *Scopus* dan *Google Scholar* yang terpublikasi periode 2014-2024. Integrasi kearifan lokal dalam kurikulum sains di sekolah dasar berpotensi meningkatkan kualitas pembelajaran dan melestarikan budaya lokal. Integrasi dapat dilakukan melalui kegiatan intra, ko, dan ekstrakurikuler. Dalam kegiatan intrakurikuler, kearifan lokal diintegrasikan ke dalam bahan ajar, strategi, media, dan asesmen. Kegiatan ko-kurikuler mencakup program P5, pendidikan lingkungan, field trip, dan wisata edukasi. Kegiatan ekstrakurikuler melalui ekstrakurikuler wayang. Integrasi ini meningkatkan literasi sains, ekoliterasi, keterampilan proses sains, pengetahuan kebencanaan, berpikir kritis, dan hasil belajar siswa.

Kata kunci: *kearifan lokal, kurikulum, sains, sekolah dasar*

PENDAHULUAN

Integrasi kearifan lokal dalam kurikulum sains di sekolah dasar menjadi penting mengingat Indonesia adalah salah satu negara multikultural terbesar dengan kekayaan budaya yang beragam. Kearifan lokal mencakup karakteristik budaya, nilai, norma, dan pengetahuan yang dikumpulkan oleh suatu komunitas melalui pengalaman dan interaksi mereka dengan lingkungan (Meristin & Supriatna, 2023; Rizkia & Nurfaidah, 2022). Kearifan lokal berperan penting dalam melestarikan sumber daya alam, mengembangkan sumber daya manusia, melestarikan budaya, memajukan ilmu pengetahuan, serta menegakkan etika dan moral (Nur et al., 2023). Integrasi kearifan lokal dalam kurikulum dapat meningkatkan relevansi dan kontekstualitas pembelajaran bagi siswa, serta menumbuhkan rasa bangga dan kepedulian terhadap budaya lokal dan lingkungan (Pamungkas et al., 2023; Setya et al., 2024; Widiyawati et al., 2023).

Kearifan lokal yang tertanam dalam kehidupan siswa merupakan bentuk pengalaman langsung, sehingga penggunaan kearifan lokal dalam pembelajaran dapat membantu siswa memahami konsep secara kontekstual (Kurniawati, 2017). Kearifan lokal mengandung pengetahuan yang telah teruji dan memiliki nilai-nilai yang relevan dengan kehidupan sehari-hari, seperti pengelolaan lingkungan, kesehatan, dan keberlanjutan (Sandoval-Rivera, 2020; Sarbaini et al., 2022). Integrasi kearifan lokal memiliki potensi untuk meningkatkan hasil belajar dan menumbuhkan karakter baik siswa. Integrasi sains dengan pengetahuan lokal dalam pembelajaran dilakukan untuk menanamkan pengetahuan dan mewariskan budaya lokal yang ada di lingkungan siswa (Parmin et al., 2016). Penanaman nilai-nilai kearifan lokal dalam proses pembelajaran dapat dilakukan melalui penanaman nilai-nilai budaya melalui metode observasi penduduk di lingkungan siswa (Pornpimon et al., 2014). Hasil observasi tersebut kemudian dapat diintegrasikan dengan model pembelajaran di kelas, sehingga siswa dapat memiliki pengetahuan dan sikap yang baik dari lingkungannya. Dengan mengintegrasikan kearifan lokal, siswa tidak hanya mempelajari sains secara teoretis, tetapi juga memahami dan menghargai nilai-nilai budaya yang ada di sekitar mereka.

Penelitian berkaitan dengan integrasi kearifan lokal dalam berbagai subjek, topik kajian, dan jenjang pendidikan telah banyak dilakukan. Penelitian pada pembelajaran IPAS (Dewi & Suniasih, 2023; Latifah et al., 2023), matematika (Farhatin et al., 2020), dan pendidikan karakter (Prawiyogi et al., 2023). Secara keseluruhan, studi ini menyoroti dampak positif dari mengintegrasikan kearifan lokal ke dalam kurikulum di sekolah dasar untuk pengembangan siswa secara holistik. Beberapa tinjauan literatur sistematis integrasi kearifan lokal dalam pembelajaran sudah pernah diteliti mengenai model pembelajaran berbasis kearifan lokal (Pamungkas et al., 2023), kearifan lokal dalam pembangunan berkelanjutan (Lestari et al., 2024), dan kearifan lokal untuk ESD (Febrian et al., 2024). Namun, kajian tinjauan literatur sistematis yang secara khusus membahas tentang integrasi kearifan lokal dalam kurikulum sains di sekolah dasar belum pernah diteliti. Dengan begitu, penelitian ini bertujuan untuk mengeksplorasi secara komprehensif integrasi kearifan lokal dalam kurikulum sains di sekolah dasar berkaitan dengan pentingnya kearifan lokal, strategi, serta dampak integrasi kearifan lokal dalam kurikulum sains di SD.

METODE

Penelitian ini merupakan Tinjauan Literatur Sistematis *(Systematic Literature Review)* mengadopsi model Kitchenham (Kitchenham & Charters, 2007). Adapun tujuan dari penelitian ini yaitu untuk menganalisis secara komprehensif temuan dan studi mengenai integrasi kearifan lokal dalam kurikulum sains di sekolah dasar. Tahapan penelitian dimulai dengan mencari artikel-artikel pada rentang waktu 2014-2024 melalui aplikasi *Publish or Perish* pada database Scopus dan Google Scholar dengan kata kunci

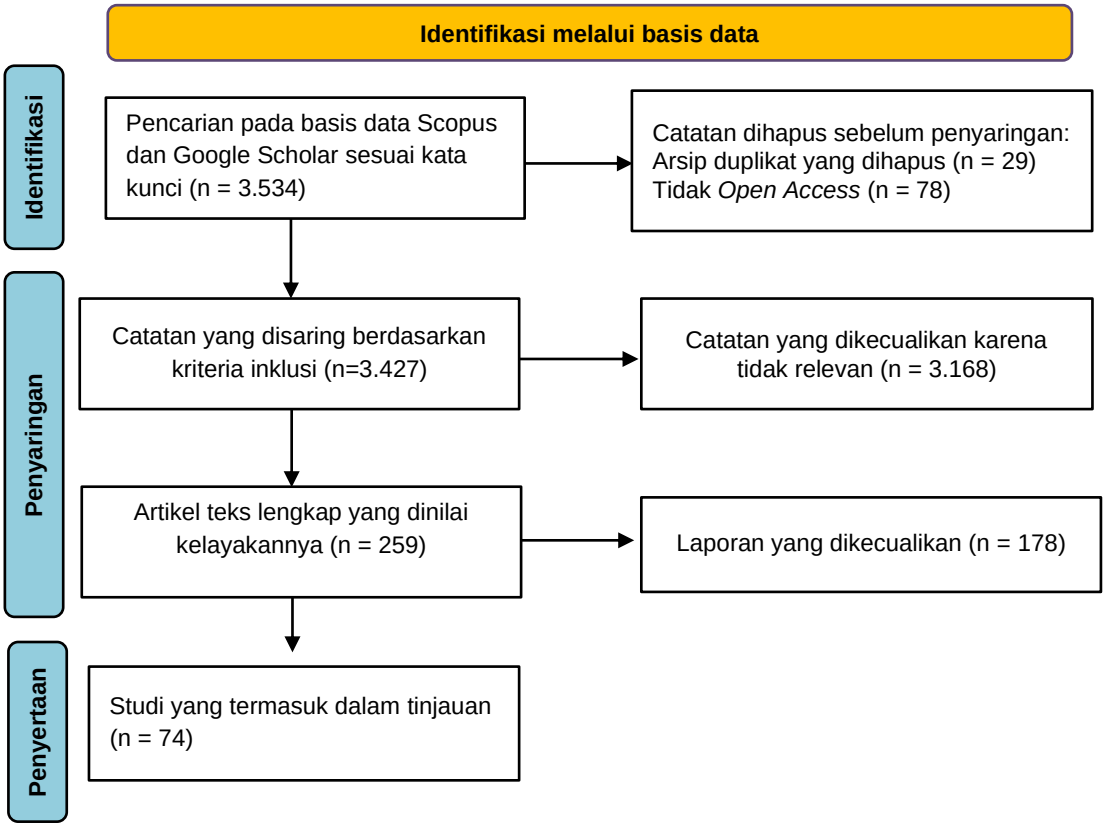
"local wisdom", "*science education",* dan *"elementary school".* Kata kunci ini dipilih dengan harapan dapat memfasilitasi artikel yang diterbitkan dalam bahasa Inggris maupun bahasa Indonesia. Artikel yang terkumpul kemudian dipilih berdasarkan kriteria inklusi dan eksklusi. Artikel yang memenuhi kriteria kemudian diekspor dalam format RIS dan divisualisasikan menggunakan perangkat lunak VOSviewer. Selanjutnya, artikel dianalisis sesuai dengan pertanyaan penelitian. Adapun pertanyaan penelitian *(Research Question/RQ)* yang menjadi acuan analisis data penelitian ini meliputi,
(1) Mengapa kearifan lokal penting dalam pembelajaran sains siswa SD?
(2) Bagaimana strategi integrasi kearifan lokal dalam kurikulum sains di SD?
(3) Apa saja dampak integrasi kearifan lokal dalam kurikulum sains di SD?

Pencarian artikel pada database Scopus dan Google Scholar menghasilkan 3.534 artikel yang terbit pada periode 2010-2024. Adapun rincian hasil pencarian artikel berdasarkan kata kunci dapat dilihat pada Tabel 1 di bawah ini.

Tabel 1. Kata Kunci Pencarian pada Database

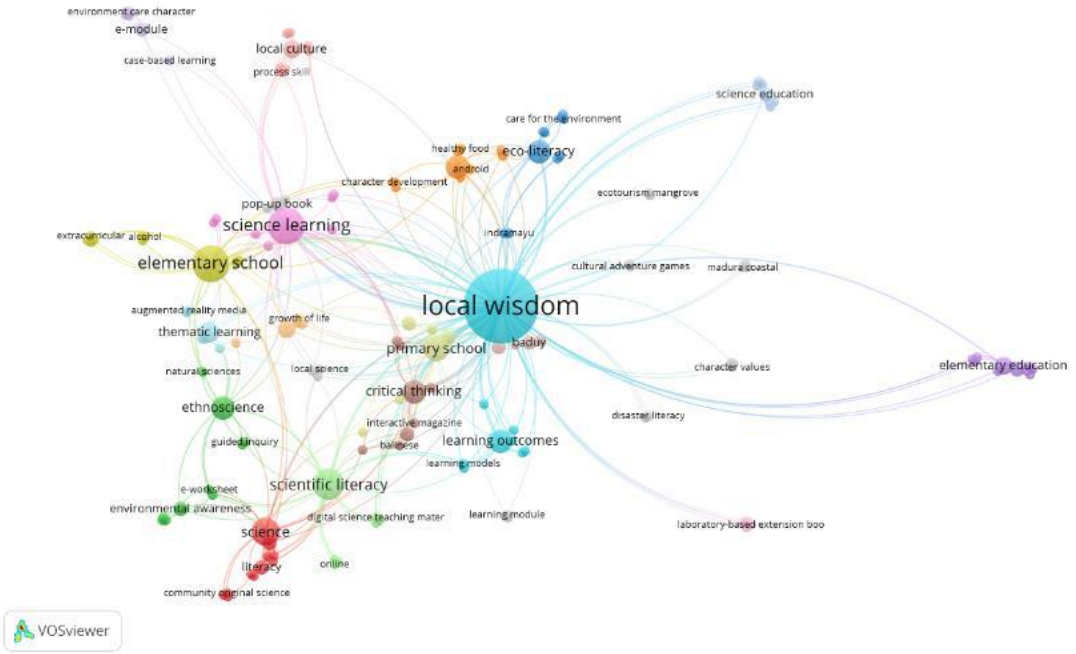
Database	Jumlah Artikel
Scopus	4
Google Shoolar	3.530
Jumlah	3.534

Proses pencarian artikel menggunakan diagram alur *Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA)* dengan empat tahapan yaitu identifikasi, penyaringan, kelayakan, dan penyertaan data. Tahapan tersebut divisualisasikan pada Gambar 1 di bawah ini.



Gambar 1. Diagram Alur PRISMA

Pencarian awal menghasilkan 3.534 artikel (lihat Tabel 1), namun tidak semua artikel dipilih untuk ditinjau. Dalam tahap penyaringan, 29 artikel yang sama dan 78 artikel yang tidak open access dihapus, menyisakan 3.427 artikel. Dari jumlah ini, penyaringan melalui kriteria inklusi menyisakan 259 artikel. Kriteria inklusi yang digunakan yaitu (a) artikel ilmiah yang ditinjau sejawat, (2) terindeks di Scopus atau Google Scholar dengan publikasi tahun 2014-2024, (c) ditulis dalam bahasa Indonesia atau Inggris, (d) PDF lengkap, (e) dipublikasikan di jurnal akses terbuka, (f) membahas kearifan lokal dalam konteks kurikulum sains sekolah dasar, serta (g) artikel merupakan hasil penelitian (data primer). Setelah penyaringan, 3.168 artikel yang tidak relevan dikeluarkan, menyisakan 259 artikel untuk dipertimbangkan lebih lanjut. Pada tahap kelayakan, 259 artikel dipilih untuk dibaca secara komprehensif menyisakan 74 artikel yang memenuhi kriteria relevansi dan sesuai dengan pertanyaan penelitian untuk dianalisis. Artikel-artikel ini kemudian diimpor ke dalam aplikasi Mendeley dan disimpan dalam format RIS untuk memetakan jaringan awal relevansi tematik melalui aplikasi VOSviewer. Hasil visualisasi jaringan berdasarkan kata kunci pada aplikasi VosViewers disajikan pada Gambar 2 berikut.



Gambar 2. Visualisasi berdasarkan Kata Kunci

Gambar 2 menampilkan diagram jaringan kata kunci artikel. Lingkaran-lingkaran berwarna mewakili kata kunci, di mana ukuran lingkaran mencerminkan frekuensi kemunculan kata kunci tersebut. Semakin besar ukuran, semakin besar pula frekuensi kemunculan kata kunci tersebut. Gambar 3 mengungkap kelompok istilah yang sering diteliti dan terkait dengan topik penelitian kearifan lokal *(local wisdom)* dalam kurikulum sains di SD. Dari cluster dalam visualisasi jaringan, terlihat bahwa penelitian tentang kearifan lokal dangat dekat dengan kata kunci pembelajaran sains *(science learning)* dengan total link 30, total kekuatan link 40, dan 12 kejadian *(occurences).* Istilah lainnya ada sekolah dasar *(elementary school)* dengan total link 29, total kekuatan link 38, dan 12 kejadian. Selain itu, ada literasi sains (scientific literacy) dengan total link 30, total kekuatan link 36, dan 9 kejadian.

HASIL DAN PEMBAHASAN

Bagian ini menyajikan temuan yang diambil dari 74 artikel, disusun berdasarkan rincian jurnal, nama penulis, judul, dan pertanyaan penelitian. Hasil identifikasi secara rinci disajikan pada Tabel 2.

Tabel 2. Temuan 74 artikel dari database Scopus & Google Scholar

No	Jurnal/Publisher	Penulis (Tahun)	Judul	RQ
1.	Journal of Basic Education Research	(Firza et al., 2022)	A Touch of Culture in Learning: Teaching Materials My Food is Healthy and Nutritious for Elementary School	2
2.	Jurnal Penelitian Pendidikan IPA	(Sukmawati et al., 2022)	Online Application of Science Practicum Video Based on Local Wisdom to Improve Student's Science Literacy	1,2,3
3.	International Journal of Elementary Education	(Utami et al., 2023)	Local Wisdom of Making Alcohol in Natural Science Learning in Elementary Schools	1,2,3
4.	Elementary School Teacher	(Asna & Sumilah, 2017)	The Development of Fourth-Grade Primary School Science Learning Material Based on Local Wisdom at SDN Kesongo 01 Kabupaten Semarang	2
5.	Jurnal Ilmiah Sekolah Dasar	(Restiani & Margunayasa, 2023)	Improving Scientific Literacy of Elementary School Students through Problem-Based Learning Model with Balinese Local Wisdom	2,3
6.	Jurnal Penelitian dan Pembelajaran IPA	(Asrial, Syahrial, Sabil, et al., 2022)	Integrating Local Wisdom of Nek Pung Dance in Grade 4 Elementary School Science Learning	2
7.	Journal of Primary Education	(Prasadi et al., 2020)	The Implementation of Student Worksheet Based on STEM (Science, Technology, Engineering, Mathematics) and Local Wisdom to Improve of Critical Thinking Ability of Fourth Grade Students	1,2,3
8.	Jurnal Penelitian Pendidikan IPA	(Zahro et al., 2023)	The Tradition of Making Lontong Tuyuhan in Rembang Regency as a Science Learning Resource	1,2
9.	Journal of Social Sciences and Humanities	(Fadilah et al., 2022)	Development of Local Wisdom-Based Discovery Learning Models to Improve Critical Thinking Skills on Theme Growth and Development of Life	1,2,3
10.	Profesi Pendidikan Dasar	(Yonanda, Haryanti, et al., 2023)	Local Wisdom-Based Pictorial Teaching Materials: A Strategy for Boosting Ecoliteracy in Elementary School Students	1,2,3
11.	Jurnal Penelitian Pendidikan IPA	(Anas & Hasibuan, 2023)	Development of Traditional Parmayaman-Based Digital Flipbooks in Increasing Scientific Literacy in the Disruptive Era	2,3
12.	Journal of Primary Education	(Nadhifatul A'yun et al., 2020)	Students' Concepts Understanding Through Inquiry Learning Model Based on Local Wisdom in the Theme of "Heat and Its Transfer"	2,3
13.	Jurnal Penelitian Pendidikan IPA	(Yanarti et al., 2023)	Integrated Science Interactive E-Book Local Potential of Kulon Progo: An Overview of Teacher and Student Needs	2
14.	Jurnal Pendidikan Sekolah Dasar	(Hendracipta et al., 2023)	Local Wisdom of Baduy Indigenous Comunity in Environmental Conservation Efforts for Character Education Development in Elementary School	2,3
15.	Jurnal Pendidikan Indonesia	(Asrial, Syahrial, Maison, Kurniawan, & Putri, 2021)	Fostering Students' Environmental Care Characters Through Local Wisdom-Based Teaching Materials	2,3
16.	Jurnal Penelitian Pendidikan IPA	(Mulatsih et al., 2023)	The Use of Local Wisdom-Based Media to Improve Critical Thinking	1,2,3

17.	Journal of Physics: Conference Series	(Toharudin & Kurniawan, 2019)	Learning Models-Based Sundanese Local Wisdom: Is It Effective to Improve Student's Learning Outcomes?	2,3
18.	IOP Conference Series	(Wirawan et al., 2021)	The Effectiveness of Madurese Culture Wisdom on Science Learning Sound Material in Primary School Students' Critical Thinking Skills	2,3
19.	Jurnal Pendidikan IPA Indonesia	(I. S. Dewi et al., 2020)	Local Wisdom and Laboratory Experiment-Based Extension Booklet Development for Wadi Makers of Elementary-Educated and Dropout Society in Central Kalimantan	2
20.	Jurnal Ilmiah Sekolah Dasar	(Mudiartana et al., 2021)	How is The Development of Valid and Practical Android- Based Local Wisdom Teaching Materials?	2
21.	Jurnal Penelitian Pendidikan Sains	(Safitri et al., 2024)	Local Wisdom Oriented-Problem Based Learning Model Assisted by Interactive E-Magazine to Improve Students' Critical Thinking Skills	2,3
22.	Jurnal Penelitian Pendidikan IPA	(Wahyu et al., 2023)	STEM-based PjBL Learning Model with Manggaraians Indigenous Science Content to Improve Science Literacy: is it Effective?	2,3
23.	International Journal of Learning Reformation in Elementary Education	(Satrio & Laila, 2024)	Developing the Local Wisdom-Based Pop-Up Book for Fifth-Grade Students	2
24.	Jurnal Pendidikan IPA Indonesia	(Parmiti et al., 2021)	The Effectiveness of Local Culture-Integrated Science Learning Through Project-Based Assessment on Scientific Attitudes and Science Process Skills of Elementary School Students	1,2,3
25.	Jurnal Prima Edukasia	(Aji & Pujiastuti, 2022)	Development of Natural Science Supplement Books Based on Local Wisdom in Integrative Thematic Learning in The Elementary Schools	2
26.	Antlantis Press	(Mahyudin et al., 2024)	Adonara Woven Fabrics: Integrating Local Wisdom into Elementary Education	1, 2
27.	Journal of Social Sciences and Humanities	(Sajdah et al., 2022)	Development of Natural Science Teaching Book Based on Local Wisdom for The Improving of Learning Outcomes of Students of Grade IV Public Primary School 2 Karangmangu District Sarang Rembang Regency	2,3
28.	Jurnal Nakula: Pusat Ilmu Pendidikan, Bahasa dan Ilmu Sosial	(Pasaribu, 2023)	Pengembangan Modul IPA Materi Gaya Terintegrasi Kearifan Lokal Berburu Menggunakan Busur Panah Untuk Meningkatkan Hasil Belajar Peserta Didik Kelas IV SD Inpres Timika III	2,3
29.	Journal of Physics: Conference Series	(Nasrudin et al., 2019)	Packaging science and local wisdom in digital devices for primary school students: Challenges and obstacles	2
30.	Entita: Jurnal Pendidikan Ilmu Pengetahuan Sosial dan Ilmu-Ilmu Sosial	(Zahrawati, 2023)	Eco-pedagogic Based on Local Wisdom as an Effort to Grow Students' Ecological Awareness	2,3
31.	International Journal of Instruction	(Fatchurahman et al., 2022)	Development of Animation Learning Media Based on Local Wisdom to Improve Student Learning Outcomes in Elementary Schools.	1,2,3
32.	Jurnal Pendidikan IPA Indonesia	(Andriana et al., 2017)	Natural Science Big Book with Baduy Local Wisdom-Based Media Development for Elementary School	2,3
33.	Research Square	(Sirjon et al., 2024)	Cultural adventure games: exploring natural science through local wisdom	1,2
34.	GeoEco Journal	(Rosyid, 2020)	Development of Mangrove Eco-Literacy Storytelling as Environmental Education	2

			Learning Media for Coastal Children in Banten	
35.	Al Ibtida: Jurnal Pendidikan Guru MI	(Yonanda, Supriatna, et al., 2023)	The Effectiveness of Teaching Materials of Local-Wisdom Based Picture Storybooks on the Eco-Literacy of Elementary School Students	1,2,3
36.	Jurnal Iqra: Kajian Ilmu Pendidikan	(Asrial, et al., 2021)	Integration of Local Wisdom Mangrove Ecotourism in Class IV Learning in Elementary School	2
37.	The Science and Science Education International Seminar Proceedings 2019	(Siswoyo & Wijaya, 2019)	Ethnoscience Study of Corn Field as a Thematic Science Learning Resource	1,2
38.	Jurnal Pendidikan IPA Indonesia	(Atmojo et al., 2018)	The Reconstruction of Disaster Knowledge Through Thematic Learning of Science, Environment, Technology, and Society Integrated with Local Wisdom	2,3
39.	Journal of Primary Education	(Alim et al., 2020)	Implementation of Ethnoscience-based Guided Inquiry Learning on The Scientific Literacy and The Character of Elementary School Students	2,3
40.	Atlantis Press	(Sumarwati et al., 2019)	Learning of Local Wisdom About Food Security in Rural Primary School: Identification of Materials and Learning Strategies	2
41.	Advances in Social Sciences Research Journal	(Budiastra et al., 2021)	Study of The Local Wisdom Curriculum of Geopark Belitung to Support Local Cultural Values in Context of Natural Science Learning for Elementary School	2
42.	Atlantis Press	(Istiqomah et al., 2020)	The Urgency of Science Comic Based on Local Culture in Forming Elementary School Character of Environmental Care and Awareness	2,3
43.	Indonesian Journal of Science and Mathematics Education	(Pratiwi et al., 2024)	Unveiling the needs for ethnoscience-based e-worksheets to enhance nature of science and environmental awareness of elementary school students	1,2,3
44.	Asian Journal of Science Education	(Fauziah & Ningsyih, 2022)	Eligibility of Thematic Student Worksheets Based Ethnoscience on Single Substance and Mixed Substance Materials for Elementary School	2
45.	International Journal of Multicultural and Multireligious Understanding	(Riani et al., 2021)	Development of Local Wisdom Augmented Reality (AR) Media in Elementary Schools	2
46.	International Conference on Elementary Education	(Mustofa et al., 2023)	Disaster Literacy based on local wisdom to Instill Disaster Response in Selo, Boyolali Regency	2,3
47.	Atlantis Press	(Widiyastuti et al., 2021)	Development of Science Comic Media Based on Local Culture Wisdom to Improve HOTS	1,2,3
48.	International Seminar on Education and Development of Asia	(Rosidah et al., 2018)	Phase Define: Pop-Up Book as A Media Learning Elementary School Student Based Indigenous Science Local Wisdom Farmers Village Salt Jono	1,2
49.	Jurnal Pendidikan Fisika Indonesia	(Subali et al., 2015)	Developing Local Wisdom Based Science Learning Design to Establish Positive Character in Elementary School	2,3
50.	Jurnal Komunikasi Pendidikan	(Suparya, 2024)	Development of a Critical Thinking Test with Science Content Orientated to Tri Hita Karana Local Wisdom	2

51.	Revista de Gestao Social e Ambiental	(Winangun et al., 2024)	E-Modules for Basic Science and Elementary School Concepts Based on Cases in The Context of Local Wisdom	2
52.	Jurnal Ilmiah Sekolah Dasar	(Sumarwati et al., 2021)	Field Trip and Its Effect on Traditional Ecological Knowledge Literacy During the COVID-19 Pandemic in Rural Primary School	2,3
53.	International Conference on Islamic Education Ponorogo 2017	(Prasasti, 2017)	Implementation of Science Learning Based on Local Wisdom to Provide Cultural Literacy	1,2,3
54.	Jurnal Pendidikan IPA Indonesia	(Widiana et al., 2020)	The Effect of Literacy Based on Exploration of Science with Cultural Insights on Thematic Content Mastery and Social Attitude	2,3
55.	Indonesian Journal of Early Childhood Education Studies	(Sulistyorini et al., 2022)	Integrated Thematic Teaching Materials Based on Local Wisdom to Develop the Elementary School Students' Characters	1,2,3
56.	Dwija Cendekia: Jurnal Riset Pedagogik	(Meristin & Supriatna, 2023)	From Local Wisdom to the Classroom: Integrating Belangiran Values for Holistic Elementary Education	1,2
57.	Kasetsart Journal of Social Sciences	(Vioreza et al., 2023)	The Effect of Utilizing Betawi Local Food in The Implementation of Pancasila Student Profile Strengthening Project on Increasing Ecoliteracy of Elementary School Students	2,3
58.	Jurnal Ilmiah Peuradeun	(Asrial, Syahrial, Kurniawan, et al., 2022)	E-Module Mangrove Ecotourism: Difference and Relationship Perception, Interest, and Environment Character Care Elementary Students	2,3
59.	Pegem Journal of Education and Instruction	(Muskania et al., 2024)	Teacher's Perspective about Digital STEM-PjBL Teaching Material Based on Local Wisdom to Improve Scientific Literacy	2,3
60.	International Conference on Humanity Education and Society (ICHES)	(Pritasari et al., 2024)	Strengthening The Profile of Pancasila Students Through Integration of Madura Coastal Local Wisdom in Natural and Social Science Learning in Primary School	2,3
61.	International Journal of Current Educational Research	(Azura et al., 2023)	Science Teaching Materials Based on Field Trips with Local Wisdom to Improve Elementary School Students' Critical Thinking	1,2,3
62.	Proceedings of the 1st International Conference on Science and Technology for an Internet of Things	(Lidi et al., 2018)	The Development of Science Learning Model Based on Local Wisdom of Ngada Society at Elementary School Combined by Audio Visual Media	2
63.	Journal of Innovation in Educational and Cultural research	(Puspita et al., 2024)	Self-Directed Learning Model Based on Local Wisdom Values on Student Learning Outcomes	2,3
64.	Science Education Journal	(Puspasari et al., 2019)	Implementasi Etnosains dalam Pembelajaran IPA di SD Muhammadiyah Alam Surya Mentari Surakarta	2
65.	Progres Pendidikan	(Rasya et al., 2024)	Development of A Learning Module Based on Local Wisdom of The Sasak Tribe on Fifth Grade in Social Science Subject at SDN 22 Ampenan	2
66.	Indonesian Journal of Education Methods Development	(Rakhmawati & Wulandari, 2023)	The Influence of Science Textbooks on Simple Machines Based on Local Wisdom on Students' Learning Outcomes	1,2,3
67.	Jurnal Penelitian Pendidikan IPA	(Yanti et al., 2022)	The Development of Scientific Learning Model Based on Local Wisdom of "Piil Pesenggiri" to Improve Process Skills and Character Values of Elementary School Students	1,2,3

68.	Journal of Innovation in Educational and Cultural research	(Primaniarta, 2024)	Implementation of Emergency Curriculum in Local Wisdom Contents at Television as a Learning Media During the Pandemic Period	2
69.	Jurnal Penelitian Pendidikan IPA Journal of Research in Science Education	(Hariana et al., 2023)	Development of a Hybrid Learning Virtual Space Module Based on Local Saluan Language Wisdom in Science Education for Elementary School Students	2
70.	Unnes Science Education Journal	(Kurnia & Sumadi, 2019)	Local Content Adiwiyata Curriculum and Responsive Web-Based Mitigation	2
71.	Paedagogia: Jurnal Penelitian Pendidikan	(Kasi et al., 2024)	Integrating Local Science and School Science: The Benefits for Preserving Local Wisdom and Promoting Students' Learning	2,3
72.	International Journal of Education and Practice	(Sarbaini et al., 2022)	Environmental Education Based on Local Values: Its Integration in The Indonesian Elementary School Curriculum	2
73.	Proceedings of the 5th International Conference on Arts Language and Culture (ICALC 2020)	(Ratnawati et al., 2021)	Puppet Art Extracurricular for Education Noble Values of Javanese Culture in Elementary Schools	2,3
74.	International Journal of Science and Applied Science: Conference Series	(Widyaningrum & Prihastari, 2020)	Student worksheet based on Surakarta's local wisdom in primary school: A preliminary research	2

Artikel-artikel tersebut kemudian dianalisis sesuai dengan pertanyaan penelitian yang telah dirumuskan dan temuan penelitian hasil analisis disajikan dalam format deskriptif sebagai berikut.

Pentingnya Kearifan Lokal dalam Kurikulum Sains

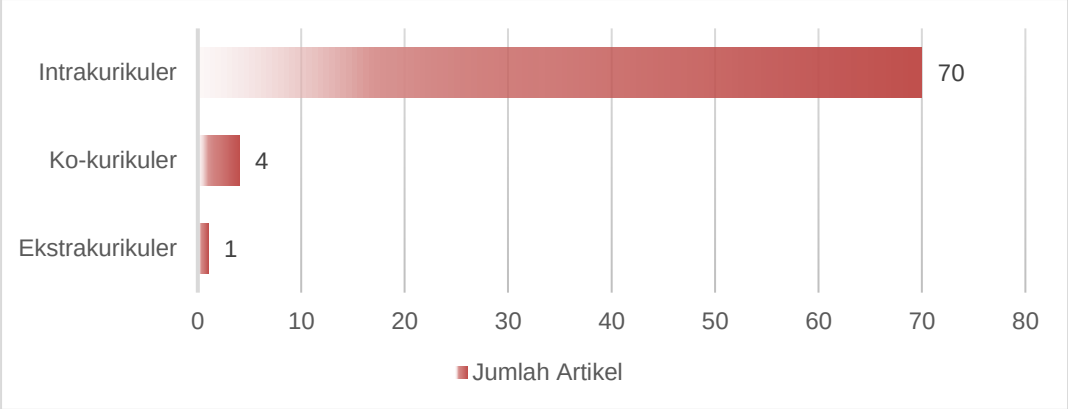
Pentingnya integrasi kearifan lokal dalam pendidikan sains di sekolah dasar (SD) tidak dapat diabaikan. Kearifan lokal mencakup berbagai pengetahuan, nilai, dan praktik yang telah berkembang dalam budaya masyarakat setempat dan diwariskan secara turun-temurun (Siswoyo & Wijaya, 2019; Utami et al., 2023; Yonanda, Supriatna, et al., 2023). Integrasi ini memberikan beberapa manfaat penting dalam konteks pendidikan sains di SD (Meristin & Supriatna, 2023; Rakhmawati & Wulandari, 2023; Sirjon et al., 2024). Kearifan lokal memberikan relevansi kontekstual terhadap materi sains yang dipelajari siswa (Mahyudin et al., 2024; Rosidah et al., 2018; Yonanda, Haryanti, et al., 2023; Zahro et al., 2023). Ketika siswa dapat melihat keterkaitan antara konsep sains yang abstrak dengan fenomena sehari-hari yang mereka alami dalam lingkungan mereka sendiri, pemahaman mereka terhadap materi tersebut menjadi lebih mendalam dan bermakna. Integrasi kearifan lokal dalam kurikulum sains dapat menumbuhkan rasa bangga dan identitas budaya di kalangan siswa (Prasasti, 2017; Rosidah et al., 2018; Sulistyorini et al., 2022). Dalam era globalisasi, penting bagi generasi muda untuk memiliki penghargaan yang kuat terhadap warisan budaya mereka sendiri. Dengan memahami dan menghargai kearifan lokal, siswa tidak hanya belajar tentang sains, tetapi juga tentang pentingnya menjaga dan melestarikan budaya dan tradisi mereka.

Integrasi kearifan lokal ke dalam kurikulum juga menjadikan konsep sains yang dipelajari lebih aplikatif dan solutif. Kearifan lokal sering kali mengandung solusi praktis yang relevan untuk tantangan lingkungan dan sosial saat ini (Pratiwi et al., 2024; Sirjon et al., 2024). Misalnya, teknik-teknik pengelolaan sumber daya alam yang berkelanjutan yang ditemukan dalam kearifan lokal dapat diterapkan dalam upaya konservasi dan pengelolaan lingkungan yang lebih baik. Dengan mempelajari dan menerapkan kearifan

lokal, siswa dapat mengembangkan keterampilan berpikir kritis dan kreatif dalam menghadapi masalah-masalah nyata di masyarakat mereka (Azura et al., 2023; Fadilah et al., 2022; Mulatsih et al., 2023; Prasadi et al., 2020). Integrasi kearifan lokal dalam pendidikan sains juga dapat memperkaya metode pengajaran (Pamungkas et al., 2023). Guru dapat menggunakan cerita, lagu, permainan tradisional, dan kegiatan praktis yang berakar pada kearifan lokal untuk menjelaskan konsep-konsep sains. Pendekatan ini tidak hanya membuat pembelajaran menjadi lebih menarik dan menyenangkan, tetapi juga membantu siswa mengembangkan berbagai kecakapan seperti keterampilan proses sains, kemampuan berpikir kritis, kemampuan literasi sains, HOTS, ekoliterasi, sikap peduli lingkungan, dan hasil belajar siswa (Fatchurahman et al., 2022; Parmiti et al., 2021; Pratiwi et al., 2024; Sukmawati et al., 2022; Widiyastuti et al., 2021; Yanti et al., 2022; Yonanda, Haryanti, et al., 2023). Dengan demikian, integrasi kearifan lokal dalam pendidikan sains di SD memiliki peran penting dalam meningkatkan kualitas pembelajaran, menumbuhkan identitas budaya, dan mengembangkan keterampilan yang relevan untuk menghadapi tantangan masa depan.

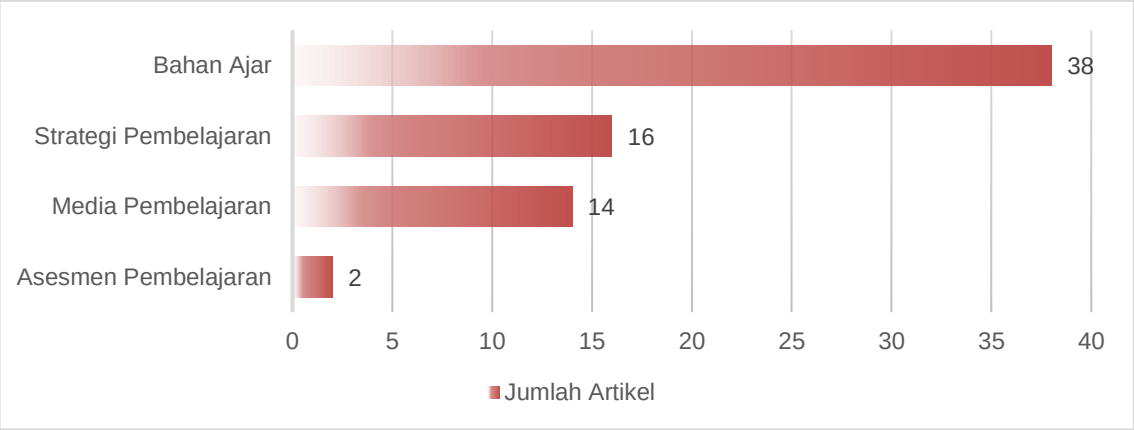
Strategi Integrasi Kearifan Lokal dalam Kurikulum Sains SD

Integrasi kearifan lokal dalam kurikulum sains SD dapat dilakukan melalui kegiatan intrakurikuler, ko-kurikuler, dan ekstrakurikuler. Berdasarkan 74 artikel yang dianalisis, proporsi jumlah publikasi penelitian dalam bentuk artikel pada masing-masing kegiatan ditampilkan pada Gambar 3 berikut.



Gambar 3. Strategi Integrasi Kearifan Lokal dalam Kurikulum Sains SD

Berdasarkan Gambar 3, penelitian berkaitan dengan integrasi kearifan lokal dalam kurikulum sains di sekolah dasar paling banyak dilakukan pada kegiatan intrakurikuler. Sedangkan penelitian berkaitan dengan integrasi kearifan lokal pada kegiatan ko-kurikuler dan ekstrakurikuler masih jarang diteliti. Adapun bentuk pengintegrasian kearifan lokal pada kegiatan intrakurikuler dapat diintegrasikan pada bahan ajar, strategi, media, dan asessmen pembelajaran. Pada kegiatan ko-kurikuler integrasi kearifan lokal dapat dilakukan melalui Proyek Penguatan Profil Pelajar Pancasila/P5 (Vioreza et al., 2023), pendidikan lingkungan (Sarbaini et al., 2022), field trip (Sumarwati et al., 2021), dan wisata edukasi (Sarbaini et al., 2022). Kegiatan diluar kelas seperti ekstrakurikuler pertunjukan wayang menjadi salah satu wadah integrasi kearifan lokal dalam kurikulum sains di sekolah dasar (Ratnawati et al., 2021). Adapun bentuk-bentuk integrasi kearifan lokal pada kegiatan intrakurikuler dapat dilihat pada Gambar 4 berikut.

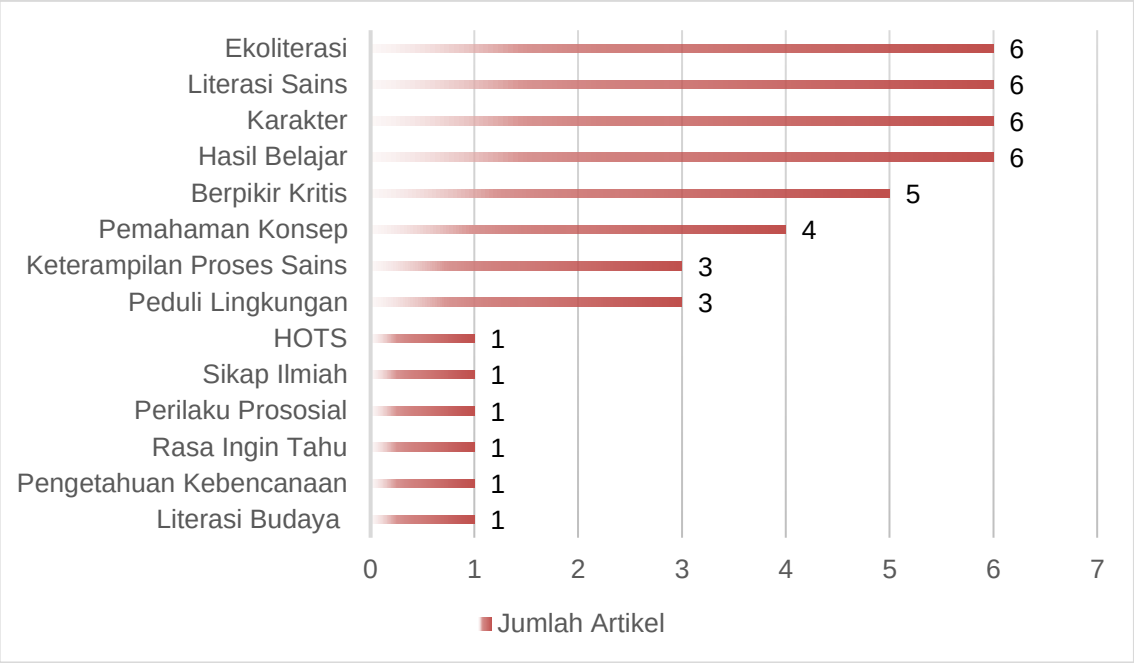


Gambar 4. Integrasi Kearifan Lokal pada Kegiatan Intrakurikuler

Integrasi kearifan lokal pada kegiatan intrakurikuler diantaranya melalui pengembangan bahan ajar berbentuk materi pembelajaran (Asrial, Syahrial, Maison, Kurniawan, & Putri, 2021; Sulistyorini et al., 2022), buku cerita bergambar (Yonanda, et al., 2023), LKPD (Widyaningrum & Prihastari, 2020), modul (Hariana et al., 2023; Pasaribu, 2023), e-book interaktif (Yanarti et al., 2023), e-worksheet (Pratiwi et al., 2024), dan bahan ajar berbasis android (Mudiartana et al., 2021). Strategi pembelajaran berbasis kearifan lokal yang dikembangkan diantaranya game petualangan budaya (Sirjon et al., 2024), SETS, pembelajaran tematik, *discovery learning* (Fadilah et al., 2022), etnosains (Alim et al., 2020), project-based learning, STEM (Wahyu et al., 2023), dan STEAM. Sedangkan media yang dikembangkan meliputi media *augmented reality* (Riani et al., 2021)**,** komik (Widiyastuti et al., 2021), media animasi (Fatchurahman et al., 2022), *pop-up book* (Rosidah et al., 2018; Satrio & Laila, 2024), majalah Interaktif (Safitri et al., 2024), *big book* (Andriana et al., 2017), dan *flipbook* (Anas & Hasibuan, 2023). Adapun instrumen asesmen yang dikembangkan dengan mengintegrasikan kearifan lokal diantaranya yaitu *project based assessment* (Parmiti et al., 2021) dan *critical thinking test* (Suparya, 2024). Asesmen menjadi komponen yang paling jarang diteliti pada pengintegrasian kearifan lokal dalam kurikulum sains di SD. Sedangkan bahan ajar merupakan produk yang paling banyak dikembangkan dalam pengintegrasian kearifan lokal dalam kurikulum sains di SD.

Dampak Positif Integrasi Kearifan Lokal dalam Kurikulum Sains SD

Integrasi kearifan lokal dalam kurikulum sains di sekolah dasar memiliki beberapa dampak positif yang signifikan pada berbagai aspek seperti pengembangan kemampuan ekoliterasi, literasi sains, karakter, hasil belajar, kemampuan berpikir kritis, pemahaman konsep sains, keterampilan proses sains, sikap peduli lingkungan, *High Order Thinking Skills (HOTS),* sikap ilmiah, perilaku pro-sosial, rasa ingin tahu, pengetahuan kebencanaan, dan literasi budaya. Proporsi jumlah artikel pada masing-masing aspek dapat dilihat pada Gambar 5 berikut.



Gambar 5. Dampak Integrasi Kearifan Lokal dalam Kurikulum Sains SD

Berdasarkan Gambar 5, dapat disimpulkan bahwa penelitian mengenai integrasi kearifan lokal pada kurikulum sains di SD paling banyak berdampak pada kemampuan ekoliterasi, literasi sains, karakter, dan hasil belajar siswa. Kemudian disusul dengan kemampuan berpikir kritis dan pemahaman konsep sains. Adapun yang masih jarang diteliti berkaitan dengan HOTS, sikap ilmiah, perilaku pro-sosial, rasa ingin tahu, pengetahuan kebencanaan, dan literasi budaya.

Integrasi kearifan lokal dalam pendidikan sains di sekolah dasar memiliki peran krusial dalam memberikan relevansi kontekstual terhadap materi yang dipelajari siswa. Kearifan lokal membantu siswa menghubungkan konsep-konsep sains dengan fenomena sehari-hari di lingkungan mereka, meningkatkan pemahaman dan apresiasi terhadap warisan budaya mereka (Mahyudin et al., 2024; Muyassaroh & Mukhlis, 2023; Rosidah et al., 2018; Yonanda, Haryanti, et al., 2023; Zahro et al., 2023). Integrasi ini tidak hanya memperkaya pengalaman belajar tetapi juga memperkuat identitas budaya siswa dan melestarikan nilai-nilai budaya lokal (Muyassaroh & Sunaryati, 2021; Prasasti, 2017; Rosidah et al., 2018; Sulistyorini et al., 2022). Dengan begitu, integrasi kearifan lokal dalam kurikulum sains di sekolah dasar dapat lebih efektif dan memberikan dampak positif yang lebih luas pada pengembangan siswa dan pelestarian budaya lokal.

SIMPULAN

Integrasi kearifan lokal dalam pendidikan sains di sekolah dasar memiliki peran krusial dalam memberikan relevansi kontekstual terhadap materi yang dipelajari siswa. Kearifan lokal membantu siswa menghubungkan konsep-konsep sains dengan fenomena sehari-hari di lingkungan mereka, meningkatkan pemahaman dan apresiasi terhadap warisan budaya mereka. Integrasi ini tidak hanya memperkaya pengalaman belajar tetapi juga memperkuat identitas budaya siswa dan melestarikan nilai-nilai budaya lokal. Strategi integrasi kearifan lokal dalam kurikulum sains dapat dilakukan melalui kegiatan intrakurikuler, ko-kurikuler, dan ekstrakurikuler. Kegiatan intrakurikuler mencakup pengembangan bahan ajar, strategi pembelajaran, media, dan asesmen yang berbasis kearifan lokal. Meskipun kegiatan intrakurikuler paling banyak diteliti,

kegiatan ko-kurikuler dan ekstrakurikuler, seperti Proyek Penguatan Profil Pelajar Pancasila, field trip, dan pertunjukan wayang, juga berpotensi besar untuk mengintegrasikan kearifan lokal dalam pendidikan sains. Integrasi kearifan lokal dalam kurikulum sains memberikan dampak positif signifikan pada berbagai aspek, termasuk peningkatan ekoliterasi, literasi sains, karakter, hasil belajar, kemampuan berpikir kritis, pemahaman konsep sains, keterampilan proses sains, dan sikap peduli lingkungan. Penelitian menunjukkan bahwa integrasi ini juga dapat meningkatkan High Order Thinking Skills (HOTS), sikap ilmiah, perilaku pro-sosial, rasa ingin tahu, pengetahuan kebencanaan, dan literasi budaya. Dengan implementasi yang tepat, integrasi kearifan lokal dalam kurikulum sains di sekolah dasar dapat memberikan kontribusi signifikan terhadap pendidikan yang lebih inklusif, relevan, dan berkelanjutan.

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