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Find Out Publications for Decade in Local Wisdom: Contribute to Education and Physics Education

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Abstract

The development of local wisdom from various sectors continues to increase yearly, especially in Indonesia. This study aims to find trends, topics, and contributions of local wisdom to the education sector. This research used quantitative research with bibliometrics and assisted with VoSViewer, Word Cloud, MS Excel, and MS Word software to analyze and visualize metadata results obtained from Scopus. The results of this study reveal trends in the development of local wisdom, with the top 100 cited from 2012 to 2021. Then, the topic of local wisdom is dominated by researchers from Indonesia. In addition, the contribution of local wisdom in education continues to grow along with the times, especially in physics education. Furthermore, it is hoped that there will be further research on local wisdom that can be used as a reference source for all things and preserve local wisdom and communities that still need to be held due to changing times. On the other hand, local wisdom can also be known with the slogan “Glocalization”.

Keywords: Education; Local wisdom; Physics education; Trend

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INTRODUCTION

Today, local wisdom is a discussion to study. This is because many forms of local wisdom can be integrated into various fields, including education, medicine, and agriculture (Amiruddin & Suliyannah, 2023; Zuk Madani et al., 2020; Putri et al., 2019; Setiawan et al., 2017; Sudarmin, 2014). In addition, local wisdom is one of the essential natural and scientific resources in a country,

especially an area in preserving the heritage of the ancestors (Hasbiah, 2015; Jumriani et al., 2021; Mungmachon, 2012; Sudarmin, 2014; Sungsi, 2015). Thus, there is great hope that local wisdom worldwide will continue to be preserved and developed into fields that can benefit culture, society, government, and the world. In addition, Ramadhan et al. (2018); Darmadi (2018); Dewi et al. (2020) stated that knowledge related to



local wisdom continues along with developments to date. One indicator that knowledge of local wisdom continues to grow is looking at the results of publications in this field. Based on the Scopus database publications, local wisdom increases yearly.

The Scopus database was chosen because it is a world-leading research database and has an international reputation (Falagas et al., 2008; Joshi and Rahman, 2015; Khudzari et al., 2018; Majuri et al., 2018; Schotten et al., 2017; Vieira and Gomes, 2009). However, these developments are still comprehensive. Meanwhile, this research will discuss the contribution of local wisdom to developing education more deeply. Thus, there is a need for research that will discuss research related to local wisdom for education and physics education.

Local wisdom is so important to discuss because it is a characteristic of every country and even the culture that exists in an area (Jumriani et al., 2021; Mungmachon, 2012; Pageh and Permana, 2020; Pornpimon et al., 2014; Putri et al., 2021; Touwe, 2020). In addition, so much local wisdom can be integrated into various sectors, including education and especially for physics education. However, to know the development of local wisdom in the education sector, an analysis is needed to help the trend's development. This bibliometric study can determine trends, roles, and developments of local wisdom to benefit future education.

In addition, the help of Software, Word Cloud, MS Excel, and MS Word can help in packaging research data to make it more interesting to present (Chen et al, 2020; Hamidah et al, 2020; Julia et al., 2020; Tan et al., 2014). This research will later become a reference

source for future researchers, especially on local educational wisdom. The specific objectives of this research are as follows: (1) to know the trend of local wisdom publications in the last ten years, (2) to find out the top document type and top countries in the last ten years, (3) to find out the top affiliations and top authors in the last ten years, (4) to find out the top source title, subject area, and citation in the last ten years, (5) to identify and visualize research trends of local wisdom in the last ten years, (6) to examine and study the contribution of local wisdom to education, and (7) to explore the potential of local wisdom in physics education.

METHOD

This research is a type of quantitative research using bibliometric analysis. Bibliometric analysis was chosen because it can find novelty, trends, and developments in research fields (Adegoriola et al., 2021; Firmansyah et al., al., 2020; Herrera-Franco et al., 2020; Huang et al., 2020; Tao et al., 2020). The data was collected from the Scopus database as of 2022, February 12, with the keyword "Local Wisdom".

It was 509 documents for whole years on the topic of Local wisdom. Then, the data is downloaded and stored as .ris and .csv. After that, perform a deeper analysis and visualize the display to make it more interactive and attractive with the help of Software, Word Cloud, MS Excel, and MS Word. That way, it can answer the objectives of the research.

To provide an overview of the stages of the research, the following is a research flowchart to make it easier to understand. This flowchart aims to make it easier for readers to understand the flow of research being carried out.

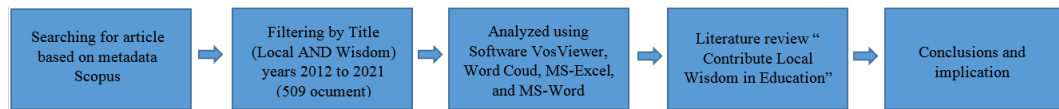


Figure 1 Research flowchart

RESULT AND DISCUSSION

Publication research trend

Figure 2 shows the trend of the development number of articles with the keyword Local Wisdom.

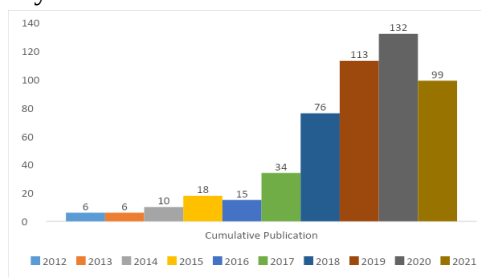


Figure 2 Publication trends last ten years

Figure 2 shows the development of Local Wisdom publications in Scopus during the last ten years, from 2012 to 2021. In 2012, the number of publications seen only reached 6 documents. Meanwhile, in 2020, the publication of articles went to 132 documents and continued in 2021 to reach 99 documents. However, in 2021 there was a decline in publications. This is due to the Covid-19 pandemic which also impacts local wisdom by looking at the development of publications in ten years. Lastly, it is predicted that for the next year, on the topic of local wisdom, the number of published documents on Scopus will continue to increase.

Keywords of Paper

The most frequently used keywords on local wisdom topics can be seen in Figure 3. The font size indicates that the word is often used or rarely used. The words commonly used in this local wisdom topic are local wisdom,

Indonesia, Education computing, students, learning system, sustainable development, survey, learning process, human, etc.



Figure 3 Most keywords on Scopus

Top Document Type, Document Source, and Language Source for The Last Ten Years in Local Wisdom

There are 538 papers throughout the year published on Scopus on local wisdom. Then it is limited from 2012 to 2021, 509 documents have been distributed to Scopus. The types of documents cited for the last ten years include four types, namely articles (60), conference papers (37), reviews (2), and editorials (1). Then, through documents sources, articles (257), conference papers (232), reviews (9), and Book Chapters (6) were obtained. Furthermore, from 509 documents from 2012 to 2021 the most frequently used languages are English (504), Malaysia (3), and Thailand (2). For more details, see Table 1.

Table 1 Top document type, document source, and language source for the last ten years in local wisdom

Document Type	Total	Document Source	Total	Language Source	Total
Article	60	Article	257	English	504
Conference Paper	37	Conference Paper	232	Malaysia	3
Review	2	Review	9	Thailand	2
Editorial	1	Book Chapter	6	-	-
TOTAL	100	TOTAL	504	-	-

Top 10 Country, Affiliation, and Funding Sponsors for The Last Ten Years in Local Wisdom

The top ten countries that publish the most papers related to local wisdom are Indonesia (443 docs), Thailand (24 docs), Malaysia (16 docs), Australia (7 docs), United Kingdom (5 docs), Japan (4 docs), Ireland, Mexico, and Taiwan each published (3 docs) and the last China (2 docs). Then, for the top ten affiliates from the Universitas Pendidikan Indonesia (33 docs), Universitas Negeri Yogyakarta (30 docs), Universitas Sebelas Maret (23 docs), Universitas Sumatera Utara (22 docs), Hasanuddin University (17 docs), Universitas Negeri Malang (12 docs), Universitas Padjajaran (11 docs), Universitas Negeri Semarang (10 docs), and Universitas Diponegoro and

Universitas Pendidikan Ganesha (9 docs).

Universities in Indonesia dominate the top ten affiliates. Furthermore, for the top ten funding sponsors on the topic of local wisdom, namely the Kementerian Riset Teknologi dan Pendidikan Tinggi Republik Indonesia (12 docs), Lembaga Penelitian dan Pengabdian Kepada Masyarakat (4 docs), Ministry of Higher Education and Scientific Research, Universitas Sumatera Utara, Sumatera, Binus University each (3 docs), Islamic Development Bank, Chiang Mai University, Thailand Research Fund, United States Agency for International Development, Universitas Diponegoro (2 docs). For more details, see Table 2.

Table 2 Top country, affiliation, and funding sponsor for the last ten years in local wisdom

Top Country	Total	Top Affiliation	Total	Top Funding Sponsor	Total
Indonesia	443	Universitas Pendidikan Indonesia	33	Kementerian Riset Teknologi dan Pendidikan Tinggi Republik Indonesia	12
Thailand	24	Universitas Negeri Yogyakarta	30	Lembaga Penelitian dan Pengabdian Kepada Masyarakat	4
Malaysia	16	Universitas Sebelas Maret	23	Ministry of Higher Education and Scientific Research	3
Australia	7	Universitas Sumatera Utara	22	Universitas Sumatera Utara	3
United Kingdom	5	Hasanuddin University	17	Binus University	3
Japan	4	Universitas Negeri Malang	12	Islamic Development Bank	2
Ireland	3	Universitas Padjajaran	11	Chiang Mai University	2
Mexico	3	Universitas Negeri Semarang	10	Thailand Research Fund	2
Taiwan	3	Universitas Diponegoro	9	United States Agency for International Development	2

Top Country	Total	Top Affiliation	Total	Top Funding Sponsor	Total
China	2	Universitas Pendidikan Ganesha	9	Universitas Diponegoro	2

Table 3 Top distribution paper

Year	Paper	Cited	ACPP	ACPPY	Citable Years
2012	2	44	22.00	2.20	10
2013	2	9	4.50	0.50	9
2014	1	8	8.00	1.00	8
2015	5	66	13.20	1.89	7
2016	5	65	13.00	2.17	6
2017	18	207	11.50	2.30	5
2018	26*	246*	9.46	2.37	4
2019	18	246*	13.67*	4.56*	3
2020	22	121	5.50	2.75	2
2021	1	3	3.00	3.00	1
Total	100	1015	103.82	22.72	-

ACPP= Average Citation Per Paper, ACPPY= Average Citation Per Paper Per Year, *=the highest number

Distribution Top Cited 100 Paper in Local Wisdom

Based on Table 3 for the last ten years from 2012 to 2021, there are publications made with the least amount in 2014 and 2021 (1 paper). While the most in 2018 (26 papers). In addition, for the top 100 cited papers, the number of cited citations is the least in 2021 (3 cited) and the most in 2018 and 2019 (246 cited). The data obtained shows that a large number of publications cannot ensure that it has the highest number of citations.

Top Source Title and Subject Area in The Last Ten Years in Local Wisdom

The top ten source titles in the last ten years in local wisdom from journals indexed by Scopus are IOP Conference Series Earth And Environmental

Science (93), Journal Of Physics Conference Series (71), AIP Conference Proceedings, and International Journal of Innovation Creativity and Change respectively (13), Indonesian Science Education Journal (12), E3s Web Of Conferences, International Journal Of Scientific and Technology Research, and IOP Conference Series Materials Science and Engineering (13), Opcion (8), and the International Journal Of Advanced Science And Technology (6), respectively. Then, for the subject areas, namely, Social Sciences (170), Environmental Science (150), Earth and Planetary Sciences (115), Physics and Astronomy (87), Engineering (77), Arts and Humanities (60), Computer Science (48), Business Management and Accounting (47), Energy (27), and Agricultural and Biological Sciences (25). For more details, see Table 4

Table 4 Top source title and subject area in the last ten years in local wisdom

Source Title	Total	Subject Area	Total
"IOP Conference Series Earth and Environmental Science"	93	Social Sciences	170
"Journal Of Physics Conference Series"	71	Environmental Science	152
"AIP Conference Proceedings"	13	Earth and Planetary Sciences	115
"International Journal of Innovation Creativity and Change"	13	Physics and Astronomy	87
"Jurnal Pendidikan IPA Indonesia"	12	Engineering	77

Source Title	Total	Subject Area	Total
“E3s Web of Conferences”	10	Arts and Humanities	60
“International Journal of Scientific and Technology Research”	10	Computer Science	48
“IOP Conference Series Materials Science and Engineering”	10	Business, Management and Accounting	47
“Opcion”	8	Energy	27
“International Journal of Advanced Science and Technology”	6	Agricultural and Biological Sciences	25

Table 5 Top author in the last ten years in local wisdom

Author	Document	Country
Kuswanto, H	7	Universitas Negeri Yogyakarta, Yogyakarta, Indonesia
Sibarani, R	7	Universitas Sumatera Utara, Medan, Indonesia
Maryani, E	5	Post Graduate School, Makassar, Indonesia
Hakam, K.A	4	Universitas Pendidikan Indonesia, Bandung, Indonesia
Supahar	4	Universitas Negeri Yogyakarta, Yogyakarta, Indonesia
Usmeldi	4	Universitas Negeri Padang, Padang, Indonesia
Wardani, R.A.K.	4	Universitas Negeri Yogyakarta, Yogyakarta, Indonesia
Anggereini, E	3	Universitas Jambi, Jambi, Indonesia
Budiarta, I. N. P.	3	Universitas Warmadewa, Denpasar, Indonesia
Dewi, I.N.	3	Universitas Mataram, Lombok, Indonesia

Top Author in the Last Ten Years in Local Wisdom

Based on Table 5 we can see the top 10 authors in 2012 to 2021 for the topic of local wisdom with several documents. Based on the table data. The four countries that dominate the publication topics local wisdom with details such as the following; Kuswanto, H from Universitas Negeri Yogyakarta, Yogyakarta, Indonesia (7 docs), Sibarani, R from Universitas Sumatera Utara, Medan, Indonesia (7 docs), Maryani, E from Postgraduate School, Makassar, Indonesia (5 docs), Hakam, KA from Universitas Pendidikan Indonesia, Bandung, Indonesia (4 docs), Supahar from Universitas Negeri Yogyakarta, Yogyakarta, Indonesia (4 docs), Usmeldi from Universitas Negeri

Padang, Padang, Indonesia (4 docs), Wardani from Universitas Negeri Yogyakarta, Yogyakarta, Indonesia (4 docs), Anggereini, E from Universitas Jambi, Jambi, Indonesia (3 docs), Budiarta, IN P from Universitas Warmadewa, Denpasar, Indonesia (3 docs), and Dewi, IN from Universitas Mataram, Lombok, Indonesia (3 docs). Writers from Indonesia dominate no-wonder publications related to local wisdom. This is because Indonesia is so rich in culture and local wisdom (Nisafani et al., 2014; Raharjo, 2016; Rahyono, 2017; Hawin and Riswandi, 2020; Setiawan et al., 2017)

Top 10 Cited Authors and Affiliation

The top 10 cited authors and affiliations are presented in Table 6.

Table 6 Top 10 cited authors and affiliation

Top Cited Author			Top Cited Affiliation		
Authors	Source Title	Citation	Affiliation	Country	Citation
Setiawan B., Innatesari D.K., Sabtiawan W.B., Sudarmin S. (2017)	“Jurnal Pendidikan IPA Indonesia”	37	Universitas Negeri Surabaya	Surabaya, Indonesia	37

Top Cited Author			Top Cited Affiliation		
Authors	Source Title	Citation	Affiliation	Country	Citation
Kusumasari B., Alam Q. (2012)	“Disaster Prevention and Management: An International Journal”	37	Monash University	Caulfield East, Australia	37
Dwianto A., Wilujeng I., Prasetyo Z.K., Suryadarma I.G.P. (2017)	“Jurnal Pendidikan IPA Indonesia”	29	Universitas Negeri Yogyakarta	Yogyakarta, Indonesia	29
Parmin, Sajidan, Ashadi, Sutikno (2015)	“Jurnal Pendidikan IPA Indonesia”	24	Semarang State University	Semarang, Indonesia	24
Sibarani R. (2018)	“International Journal of Human Rights in Healthcare”	23	Universitas Sumatera Utara	Medan, Indonesia	23
Parmin, Sajidan, Ashadi, Sutikno, maretta Y. (2016)	“Journal of Turkish Science Education”	21	Semarang State University	Semarang, Indonesia	21
Hartini S., Firdausi S., Misbah, Sulaeman N.F. (2018)	“Jurnal Pendidikan IPA Indonesia”	18	Universitas Lambung Mangkurat	Banjarmasin, Indonesia	18
Pesurnay A.J. (2018)	“IOP Conference Series: Earth and Environmental Science”	17	Universal University	Batam, Indonesia	17
Parwati N.N., Sudiarta I.G.P., Mariawan I.M., Widiana I.W. (2018)	“Journal of Technology and Science Education”	17	Universitas Pendidikan Ganesha	Bali, Indonesia	17
Arnyana I.B.P., Sadia I.W., Suma I.K., Divayana D.G.H. (2017)	“Journal of Theoretical and Applied Information Technology”	17	Universitas Pendidikan Ganesha	Bali, Indonesia	17

Table 6 shows the top authors and affiliations based on the top citations obtained. For top writers and affiliation with citations is Setiawan et al., (2017) publication in the Indonesian Science Education Journal (37 cited) from Universitas Negeri Surabaya, Surabaya, Indonesia, Kusumasari et al., (2012) publication in Disaster Prevention and Management: An International Journal (37 cited) from Monash University, Caulfield East, Australia, Dwianto et al,

(2017) publication in the Indonesian Science Education Journal (29 cited) from Universitas Negeri Yogyakarta, Yogyakarta, Indonesia, Parmin et al., (2015) publication in the Indonesian Science Education Journal (24 cited) from Semarang State University , Semarang, Indonesia, Sibarani (2018) publication in the International Journal of Human Rights in Healthcare (23 cited) from the Universitas Sumatera Utara, Medan, Indonesia, Parmin et al.,

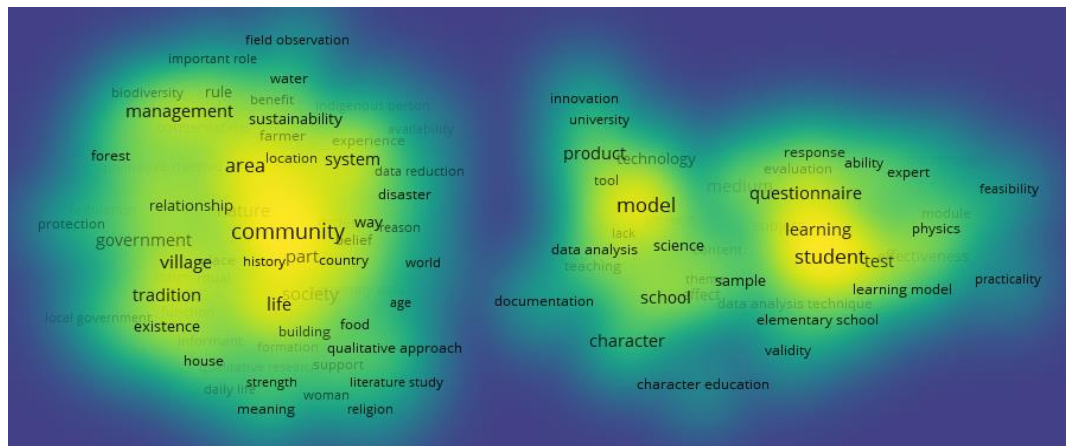


Figure 4b Density visualization of local wisdom years 2012 – 2021

Figure 4b describes the depth of research in the field of local wisdom from 2012 to 2021, namely, the colors that shine the most are community, model, learning, student, life, tradition, area, village, school, questionnaire, existence, and management. For slightly faded colors, it is stated that the improvement occurred in related studies.

Based on Figures 4a and 4b, it can be seen that there is an update on local wisdom research during the last ten years. For example, elementary schools, schools, and universities are starting to appear in education. This means that learning with the local wisdom model continues to develop at the learning

level. Even in the subject of learning, as seen in physics learning. That way, it can be a breakthrough for future researchers by developing topics related to local wisdom in other sectors.

Figures 5 and 6 show the top relationships of interesting words with local wisdom between the red and green clusters. By focusing on a word, there is a closer relationship between local wisdom and one another. For example, management in the red cluster is related to the green cluster on the product and model. That way, this can be an opportunity for future research so as not to start from scratch. In addition, many novelties and trends can be obtained from word relationships when focused on local wisdom.

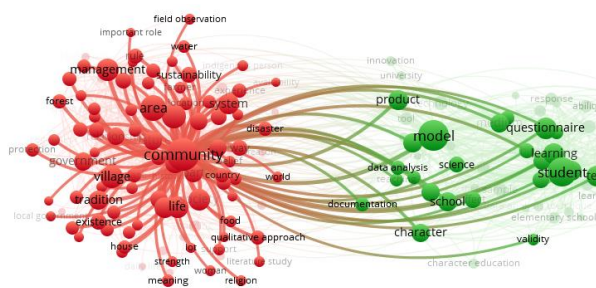


Figure 5a Community

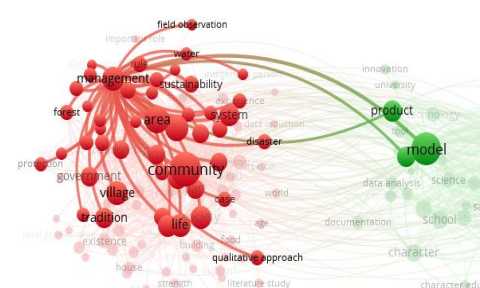


Figure 5b Management

Based on Figures 5a-5f, there are many opportunities for research that are directly related to the field of local wisdom. The red cluster is closely related to local wisdom for social and

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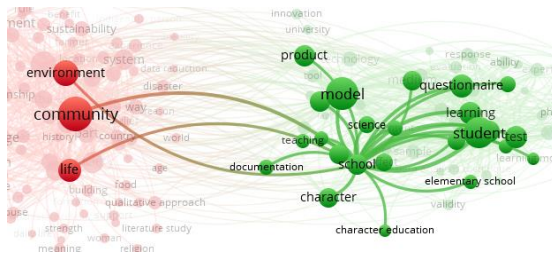


Figure 6e School

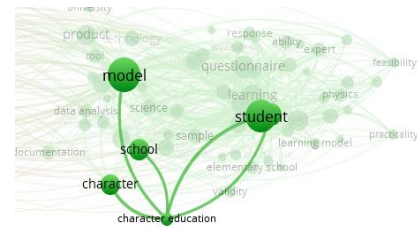


Figure 6f Character education

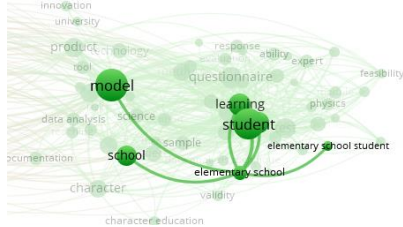


Figure 6g Elementary school

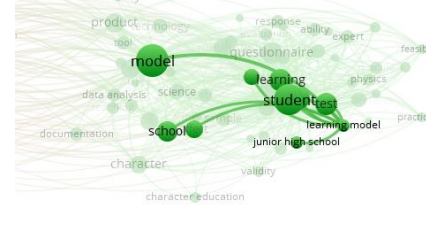


Figure 6h Learning Model

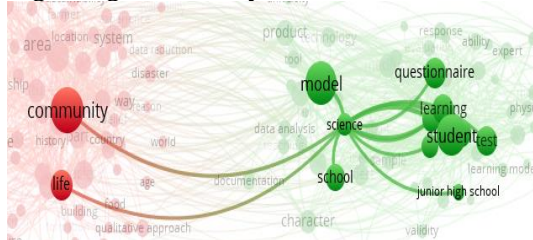


Figure 6i Science

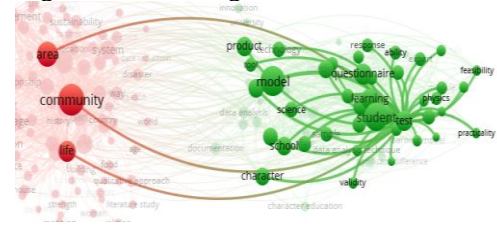


Figure 6j Tests

Figure 6 Top cluster green

Based on Figures 6a-6j are more prominent in the education sector. It can be seen that the green cluster is very dominant in its relationship to education—for example, learning models, tests, school, etc. In addition, many words are still starting to appear, which will become interesting later if it is investigated further. In addition, although it is mostly in the education sector, there is still a relationship with red clusters such as life, area, and community. Therefore, it is necessary to know the contribution of local wisdom to the education sector. This research is currently in the planning stages and has not been implemented. In this manner, the significance of research like this will be created and examined to serve as a reference point for future progress.

Contribute Local Wisdom in Education

Table 7 and Table 8 show the most cited articles on local wisdom in education. Not only the government, teachers, and students are involved in education but the community and culture or local wisdom in the area are also involved to explain more concrete learning. With various forms of development from learning models, media, hereditary culture, and tools, it can have an impact on education. Apart from all that, the existing advantages cannot be separated from the shortcomings. However, this can be a new picture for future researchers to develop local wisdom-based education to be more effective. Especially on more specific meters or subjects.

Table 7 Top cited article "local wisdom in education" for all years

Document title	Authors	Source	Cited by
"Incorporating beliefs, values and local wisdom of Betawi culture in a character-based education through a design-based research"	Suswandari, (2017)	"European Journal of Contemporary Education"	5
"Management of water resources based on local wisdom: A development study of Kampung Naga as field laboratory of Geography Education in Tasikmalaya, West Java"	As'Ari, R. et al., (2019)	"IOP Conference Series: Earth and Environmental Science"	4
"Demographic sources as a local wisdom: Potency of Indonesian physics education researchers in conducting survey research"	Suprpto, N. (2019)	"Journal of Physics: Conference Series"	4
"Local wisdom value's-based literacy education learning model in elementary school"	Lyesmaya, D.,et al., (2020)	"Journal of Physics: Conference Series"	3
"Environmental education and indigenous knowledge: Towards the connection of local wisdom with international agendas in the framework of the Sustainable Development Goals (SDGs)"	Sandoval-Rivera , JCA (2020)	"Diaspora, Indigenous, and Minority Education"	3
"Kawruh pamomong: Children education based on local wisdom in yogyakarta [Kawruh pamomong: Children's education based on local wisdom in Yogyakarta]"	Gularso, D.,et al., (2019)	"Cakrawala Pendidikan"	3
"Indonesian curriculum reform in policy and local wisdom: Perspectives from science education"	Suprpto, N. et al., (2021)	"Journal of Indonesian Science Education"	2
"The development of cooperative learning model based on local wisdom of Bali for physical education, sport, and health subject in junior high school"	Yoda, I (2017)	"IOP Conference Series: Materials Science and Engineering"	2
"Character education based on local wisdom in Pancasila perspective"	Yuliatin,Y. et al., (2021)	"Journal of Legal, Ethical and Regulatory Issues"	1
"Design of Islamic education based on local wisdom (An analysis of social learning theories in forming character through ngejot tradition in Bali)"	Saihu,A et al., (2020)	International Journal of Advanced Science and Technology	1

Table 8 Top cited article "local wisdom in education" for all years

Document title	Authors	Finding	Recommendations
"Incorporating beliefs, values and local wisdom of Betawi culture in a character-based education through a design-based research."	Suswandari, (2017)	They are finding why locals of the Betawi ethnicity deserve to be included in the learning based on what characteristics and methods are appropriate for classroom instruction.	For further researchers, it is hoped that they can examine more deeply in two parts: 1) How to transfer local wisdom into a broader class, and 2) Assess the influence of local wisdom on student learning achievement.

Document title	Authors	Finding	Recommendations
“Management of water resources based on local wisdom: A development study of Kampung Naga as field laboratory of Geography Education in Tasikmalaya, West Java.”	As'Ari, R. et al., (2019)	Management of water resources based on local wisdom in Kampung Naga can be used in education as a field laboratory for Geography Education.	Based on the results of this research, it is hoped that Kampung Naga will not only be used as a Geography Education laboratory. However, it can be used as a learning resource for other subjects.
“Demographic sources as a local wisdom: Potency of Indonesian physics education researchers in conducting survey research”	Suprpto, N. (2019)	The results of the study found the potential of local wisdom that can be integrated into physics learning.	For future researchers, it is hoped that 1) can describe trends in physics education topics, 2) use cross-sectional survey types, and 3) carry out a broader scope of research.
“Local wisdom value's-based literacy education learning model in elementary school”	Lyesmaya, D.et al., (2020)	This research provides a new orientation towards values-based local wisdom in literacy learning.	Literacy learning can be integrated with local wisdom values. In addition, it can promote an active and corona-positive classroom.
“Environmental education and indigenous knowledge: Towards the connection of local wisdom with international agendas in the framework of the Sustainable Development Goals (SDGs).”	Sandoval-Rivera, JCA (2020)	This study discusses projects in the research community of Veracruz, Mexico.SDGS results of cultural practices are in line with the paradigm. In addition, the local worldview there supports respectful behavior between times.	Hoped that it could preserve practices that intervene in education to fulfill the SDGs in preserving customs and culture.
“Kawruh pamomong: children education based on local wisdom in Yogyakarta”	Gularso, D.et al., (2019)	The study obtained results on how parents teach their children. With Kawruh Pamomong, the local father's competence improved in thinking and doing good.	Future research is expected to be able to develop Ki Ageng Suryomentaram (KAS) culture because there are still many topics contained in it that have not been discussed.
“Indonesian curriculum reform in policy and local wisdom: Perspectives from science education.”	Suprpto, N. et al., (2021)	This study finds a collection of Indonesian curriculum reforms and local wisdom and views for government, academics, and policymakers.	In the future, it is expected to create a curriculum that is direct with local wisdom so that it is easy for the younger generation to remember their local wisdom.
“The development of cooperative learning model based on local wisdom of Bali for physical education, sport, and health subjects in junior high school”	Yoda, I, (2017)	The PKBKL model has met the criteria for the operation of the outreach. In addition, the PKBKL has been validated as valid, practical, and effective.	It is hoped that learning the PKBKL will be implemented with the need for teachers to have an understanding of the STAD model and master the Tri Pramana concept well before teaching.

Document title	Authors	Finding	Recommendations
“Character education based on local wisdom in Pancasila perspective”	Yuliatin, Y. et al., (2021)	PKBKL can be the most competent for education that is integrated with local wisdom. In addition, PKBKL has very good relevance to Pancasila.	It is hoped that Model PKBKL can be developed in shaping character education based on local wisdom and values Pancasila
“Design of Islamic education based on local wisdom (An analysis of social learning theories in forming character through the ngejot tradition in Bali)”	Saihu, A. et al., (2020)	Through the Ngejot cultural tradition by using the theory of social learning from Albert Bandura it turns out that it can show character Hindu and Muslim communities in Jembrana who are mutually tolerant	Recommendations for the future, it is important to choose a learning character education that emphasizes relationships between Muslims and non-Muslims

Strengths and Weaknesses of Local Wisdom-Based Education in Indonesia

Based on the results of scientific observations and studies, several strengths of local wisdom education are obtained, including, (1) being unique, (2) being adaptive and dynamic, (3) being meaningful for human life, (4), closer to the concrete situation, (5) the material is easier for students to accept, (6) more creative, and (7) love of culture and homeland. As for the weaknesses, they are (1) not evenly distributed, (2) the lack of skill capacity possessed by the institution, (3) the facilities from local wisdom are still inadequate, (4) teacher skills are still lacking, (5) education is slow to modify in responding to the changing demands of the times, (6) there is a bias in understanding between the community and teachers, and (7) teachers' insight is still lacking regarding local wisdom outside their area. Thus, there is a need for further evaluation and development related to local wisdom-based education.

The Potential of Local Wisdom in Physics Education

Through the search for the contribution of local wisdom to education, it turns out that research results that integrate local wisdom in physics education can also be traced. After searching the Scopus database with the keyword "Local Wisdom in Physics Education" there were 31 documents found. This is then visualized to make it clearer how the correlation between 31 documents with existing keywords. The following is presented in Figure 7.

Figure 7 presents the correlation between physics education and local wisdom. If traced deeper, we can know that local wisdom has the brightest density then, followed by four other densities, namely students, surveys, physics, and physics education. This indicates that the potential for integrating local wisdom in physics education is still wide open.

However, local wisdom in the global context is still tiny and has not been accepted globally because of the wealth of local knowledge that is most abundant in Indonesia. That way, articles that have been published are dominated by authors from Indonesia.

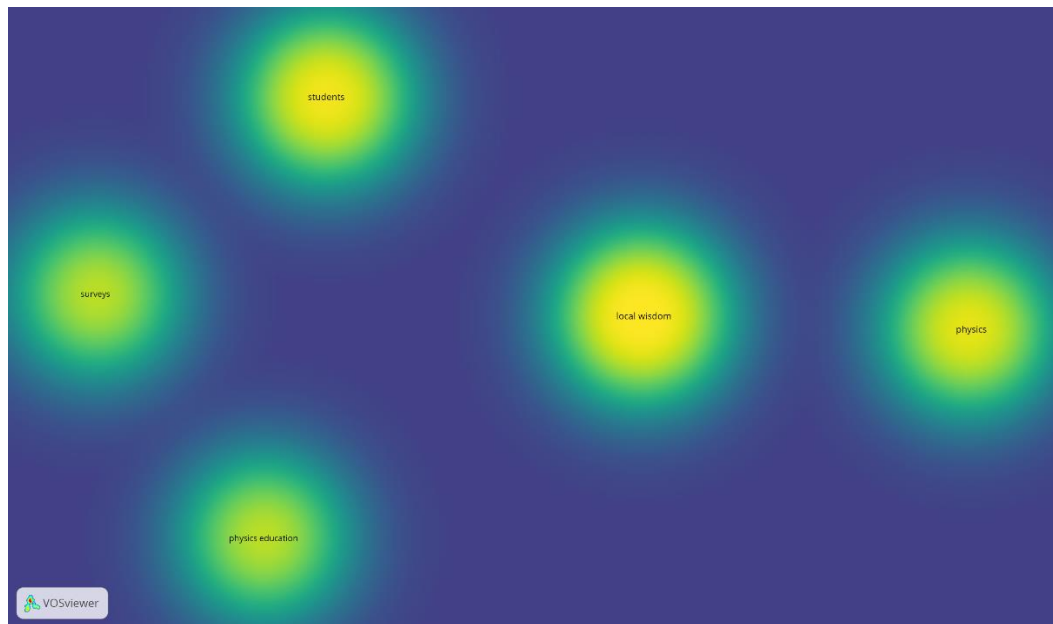


Figure 7 Correlation between local wisdom and physics education

Implications of Local Wisdom in Education and Physics Education

The information, abilities, and values particular to a given group or culture are referred to as local wisdom. Numerous recent research studies have been conducted on incorporating local knowledge into education, especially physics education. Based on the search results, the following are some implications of local knowledge in education and physics education:

1. Promotes Cultural Preservation: Integrating local knowledge into schooling helps conserve cultural wealth, encouraging cultural preservation. Students can learn about their cultural customs and heritage, which can help them respect and value their own and other people's cultures.
2. Enhances Learning Outcomes: Learning results can be improved by incorporating local wisdom into instruction, including physics education, according to several studies. In a study on the effect of local wisdom-based learning on student's comprehension of the land ethic, for instance, it was discovered

that students who received local wisdom-based learning comprehended the land ethic better than those who did not.

3. Promotes innovation: Learning based on local wisdom can result in innovative teaching methods. By combining local knowledge and practices, educators can develop fresh and efficient teaching strategies that are customized to the needs and interests of their students
4. Encourages a happy coexistence of humans and nature: Local knowledge has demonstrated its importance in attaining this coexistence. Students can learn about sustainable behaviors and gain a greater awareness of the environment by incorporating local wisdom into education, particularly physics instruction.

CONCLUSION

Local wisdom is significantly developed after bibliometric analysis. The development of local wisdom is not only in one sector but in several sectors, for example, education, agriculture, and medicine. From Scopus data from 2012

to 2021, it can be seen that the average trend continues to increase. On the topic of local wisdom, this is dominated by the Indonesian state. This is because Indonesia has a lot of local wisdom and culture. The most prominent in the red cluster is a community, part of a social group closely related to local wisdom. Meanwhile, four green clusters have the most prominent words (model, student, learning, and questionnaire). The words that stand out in the green color cluster are part of the education sector. In addition, research can be known globally with local wisdom, especially in education and physics education, which is already developed in Indonesia. So that can keep growing to be glocalization (Global and Localization). The implications of the research are (1) Researchers in the field of local wisdom topics have great opportunities for future research that can examine more deeply related to culture and developments that can be integrated into Local Wisdom, (2) Trends in research publications related to indexed local wisdom Scopus has a substantial contribution, especially in Indonesia, (3) This research can be a reference for further researchers, especially in the field of local wisdom so that they do not start from scratch. For different cultures or wisdom locally that can be beneficial to the community and at the same time could preserve it, (2) Researchers who want to focus on education that is integrated with local wisdom can start from the trend of the research results. Throughout the year, based on Scopus data for local wisdom that contributes to education, there are still 25 documents. Hopefully, in the future, there will be more publications that can be useful for the world.

REFERENCES

- Amiruddin, M. Z. B., & Suliyanah, S. (2023). Exploration physics concepts in local wisdom mappere bone south sulawesi as a source of physics learning: an analytical study. *JIPF (Jurnal Ilmu Pendidikan Fisika)*, 8(1), 94-104. <https://dx.doi.org/10.26737/jipf.v8i1.3397>
- Adegoriola, M.I., Lai, J.H.K., Chan, E.H., and Amos, D. (2021). Heritage building maintenance management (HBMM): A bibliometric-qualitative analysis of literature. *Journal of Building Engineering*, 42, 102416. <https://doi.org/10.1016/j.jobbe.2021.102416>
- Arnyana, I. B. P., Sadia, I. W., Suma, I. K., & Divayana, D. G. H. (2017). Determination of effectiveness of evaluation results on school culture and character of junior high school students using character assessment instruments with the local wisdom of Bali based on mobile phone. *Journal of Theoretical & Applied Information Technology*, 95(20), 5348 – 5359.
- As'ari, R., Rohmat, D., Maryani, E., & Ningrum, E. (2019, March). Management of water resource based on local wisdom: a development study of Kampung Naga as field laboratory of Geography Education in Tasikmalaya, West Java. In *IOP Conference Series: Earth and Environmental Science* (Vol. 243, No. 1, p. 012002). IOP Publishing. <https://doi.org/10.1088/1755-1315/243/1/012002>
- Boonrourrut, C., Saroinsong, W.P. & Thamdee, N., (2022). Research on students in Covid-19 pandemic outbreaks: a bibliometric network analysis. *International Journal of Instruction*, 15(1), 457-472.
- Bornmann, L., Schier, H., Marx, W., & Daniel, H. D. (2012). What factors determine citation counts of publications in chemistry besides their quality?. *Journal of Informetrics*, 6(1), 11-18. <https://doi.org/10.1016/j.joi.2011.08.004>

- Chen, X., Zou, D., & Xie, H. (2020). Fifty years of british journal of educational technology: A topic modeling based bibliometric perspective. *British Journal of Educational Technology*, 51(3), 692-708.
<https://doi.org/10.1111/bjet.12907>
- Darmadi, H. (2018). Educational management based on local wisdom (descriptive analytical studies of culture of local wisdom in West Kalimantan). *Journal of Education, Teaching and Learning*, 3(1), 135-145.
- Dewi, I. S., Hastuti, U. S., Lestari, U., & Suwono, H. (2020). Local wisdom and laboratory experiment-based extension booklet development for wadi makers of elementary-educated and dropout society in central kalimantan. *Jurnal Pendidikan IPA Indonesia*, 9(4), 611-619.
- Dwianto, A., Wilujeng, I., Prasetyo, Z. K., & Suryadarma, I. G. (2017). The development of science domain-based learning tool which is integrated with local wisdom to improve science process skill and scientific attitude. *Jurnal Pendidikan IPA Indonesia*, 6(1).
- Falagas, M. E., Pitsouni, E. I., Malietzis, G. A., & Pappas, G. (2008). Comparison of PubMed, Scopus, web of science, and Google scholar: strengths and weaknesses. *The FASEB journal*, 22(2), 338-342.
<https://doi.org/10.1096/fj.07-9492LSF>
- Firmansyah, A., Qadri, R. A., & Arham, A. (2020). Pelatihan melalui web seminar terkait publikasi artikel untuk menembus Jurnal Sinta 2 dan Scopus. *Abdimas: Jurnal Pengabdian Masyarakat Universitas Merdeka Malang*, 5(2), 131-138.
<http://jurnal.unmer.ac.id/index.php/jpkm>
- Garfield, E. (2007). The evolution of the science citation index. *International microbiology*, 10(1), 65.
- Gularso, D., Sugito, S., & Zamroni, Z. (2019). Kawruh pamomong: children education based on local wisdom in Yogyakarta. *Jurnal Cakrawala Pendidikan*, 38(2), 343-355.
<https://doi.org/10.21831/cp.v38i2.21556>
- Hamidah, I., Sriyono, S., & Hudha, M. N. (2020). A Bibliometric analysis of Covid-19 research using VOSViewer. *Indonesian Journal of Science and Technology*, 5(2), 34-41.
- Hartini, S., Firdausi, S., Misbah, M., & Sulaeman, N. F. (2018). The development of physics teaching materials based on local wisdom to train saraba kawa character. *Jurnal Pendidikan IPA Indonesia*, 7(2), 130-137.
- Hasbiah, A. (2015). Analysis of local wisdom as environmental conservation strategy in Indonesia. *Journal Sampurasun: Interdisciplinary Studies for Cultural Heritage*, 1(1), 2460 – 5743.
<http://dx.doi.org/10.23969/sampurasu.n.v1i1.19>
- Hawin, M., & Riswandi, B. A. (2020). Isu-isu penting hak kekayaan intelektual di Indonesia. UGM PRESS.
- Herrera-Franco, G., Montalván-Burbano, N., Carrión-Mero, P., Apolo-Masache, B., & Jaya-Montalvo, M. (2020). Research trends in geotourism: A bibliometric analysis using the scopus database. *Geosciences*, 10(10), 379.
<https://doi.org/10.3390/geosciences10100379>
- Huang, L., Zhou, M., Lv, J., & Chen, K. (2020). Trends in global research in forest carbon sequestration: A bibliometric analysis. *Journal of Cleaner Production*, 252, 119908.
<https://doi.org/10.1016/j.jclepro.2019.119908>

- Joshi, Y., & Rahman, Z. (2015). Factors affecting green purchase behaviour and future research directions. *International Strategic management review*, 3(1-2), 128-143. <https://doi.org/10.1016/j.ism.2015.04.001>
- Julia, J., Supriatna, E., Isrokatun, I., Aisyah, I., Hakim, A., & Odebode, A. A. (2020). Moral education (2010-2019): a bibliometric study (part 2). *Online Submission*, 8(7), 2954-2968. <https://doi.org/10.13189/ujer.2020.08.0724>
- Jumriani, J., Mutiani, M., Putra, M. A. H., Syaharuddin, S., & Abbas, E. W. (2021). The urgency of local wisdom content in social studies learning: literature review. *The Innovation of Social Studies Journal*, 2(2), 103-109. <https://doi.org/10.20527/>
- Khudzari, J. M., Kurian, J., Tartakovsky, B., & Raghavan, G. V. (2018). Bibliometric analysis of global research trends on microbial fuel cells using Scopus database. *Biochemical engineering journal*, 136, 51-60. <https://doi.org/10.1016/j.bej.2018.05.002>
- Kusumasari, B., & Alam, Q. (2012). Local wisdom-based disaster recovery model in Indonesia. *Disaster Prevention and Management: An International Journal*. 21(3), 351 – 369. <https://doi.org/10.1108/09653561211234525>
- Lyesmaya, D., Musthafa, B., & Sunendar, D. (2020, February). Local wisdom value's-based literacy education learning model in elementary school. In *Journal of Physics: Conference Series* (Vol. 1470, No. 1, p. 012030). IOP Publishing. <https://doi.org/10.1088/1742-6596/1470/1/012030>
- Majuri, J., Koivisto, J., & Hamari, J. (2018). Gamification of education and learning: A review of empirical literature. In *Proceedings of the 2nd international GamiFIN conference, GamiFIN 2018. CEUR-WS.* (Vol 2186, pp11 – 19).
- Mungmachon, M. R. (2012). Knowledge and local wisdom: Community treasure. *International Journal of Humanities and Social Science*, 2(13), 174-181.
- Nieminen, P., Carpenter, J., Rucker, G., & Schumacher, M. (2006). The relationship between quality of research and citation frequency. *BMC Medical Research Methodology*, 6(1), 1-8. <https://doi.org/10.1186/1471-2288-6-42>
- Nisafani, A. S., Muqtadiroh, F. A., & Nugraha, N. F. (2014). Analisis dan perancangan wikibudaya dalam rangka melestarikan budaya bangsa dan kearifan lokal nusantara. *Jurnal SISFO*, 5(2), 146-158.
- Pageh, I. M., & Permana, A. A. J. (2020, April). Content design: e-learning module for study on cultural tourism information systems based on local wisdom. In *Journal of Physics: Conference Series* (Vol. 1516, No. 1, p. 012037). IOP Publishing. <https://doi.org/10.1088/1742-6596/1516/1/012037>
- Parmin, P., Sajidan, S., Ashadi, A., & Sutikno, S. (2015). Skill of teacher candidates in integrating the concept of science with local wisdom. *Jurnal Pendidikan IPA Indonesia*, 4(2).
- Parmin, P., Sajidan, S., Ashadi, A., Sutikno, S & maretta, Y. (2016). Preparing prospective teachers in integrating science and local wisdom through practicing open inquiry. *Journal of Turkish Science Education*, 13(2), 3-14.
- Parwati, N. N., Sudiarta, I., Mariawan, I., & Widiana, I. W. (2018). Local wisdom-oriented problem-solving learning model to improve mathematical problem-solving ability. *JOTSE: Journal of technology*

- and science education, 8(4), 310-320.
<https://doi.org/10.3926/jotse.401>
- Pesurnay, A. J. (2018, July). Local wisdom in a new paradigm: Applying system theory to the study of local culture in Indonesia. In *IOP Conference Series: Earth and Environmental Science* (Vol. 175, No. 1, p. 012037). IOP Publishing.
<https://doi.org/10.1088/1755-1315/175/1/012037>
- Pornpimon, C., Wallapha, A., & Prayuth, C. (2014). Strategy challenges the local wisdom applications sustainability in schools. *Procedia-Social and Behavioral Sciences*, 112, 626-634.
<https://doi.org/10.1016/j.sbspro.2014.01.1210>
- Putri, D. C., Munandar, A., & Supriatno, B. (2019, February). The implementation of indigenous people local wisdom lekuk 50 tumbi in managing agriculture and lakes as biological learning sources. In *Journal of Physics: Conference Series* (Vol. 1157, No. 2, p. 022095). IOP Publishing.
<https://doi.org/10.1088/1742-6596/1157/2/022095>
- Putri, M. A., Abbas, E. W., & Jumriani, J. (2021). Strategies in developing creative economic activities based on local wisdom. *The Innovation of Social Studies Journal*, 3(1), 42-48.
<https://doi.org/10.20527/iis>
- Raharjo, S. T. (2016). Kearifan Lokal, Keberfungsian Sosial dan Penanganan Bencana. *Share: Social Work Journal*, 3(2), 111 – 125.
- Rahyono, F. X. (2017). *Kearifan Budaya Dalam Kata*, Edisi Revisi.
- Ramadhan, I. R., Djono, D., & Suryani, N. (2018). Local wisdom of kasepuhan ciptagelar: the development of social solidarity in the era of globalization. *International Journal of Multicultural and Multireligious Understanding*, 5(3), 35-42.
- Saihu, A. A., Mubin, F., & Sarnoto, A. Z. (2020). Design of Islamic education based on local wisdom (An analysis of social learning theories in forming character through Ngejot tradition in bali). *International Journal of Advanced Science and Technology*, 29, 1278-93.
- Sandoval-Rivera, J. C. A. (2020). Environmental education and indigenous knowledge: Towards the connection of local wisdom with international agendas in the framework of the Sustainable Development Goals (SDGs). *Diaspora, Indigenous, and Minority Education*, 14(1), 14-24.
<https://doi.org/10.1080/15595692.2019.1652588>
- Schotten, M., Meester, W. J., Steinginga, S., & Ross, C. A. (2017). A brief history of Scopus: The world's largest abstract and citation database of scientific literature. In *Research Analytics* (pp. 31-58). Auerbach Publications.
- Setiawan, B., Innatesari, D. K., Sabtiawan, W. B., & Sudarmin, S. (2017). The development of local wisdom-based natural science module to improve science literation of students. *Jurnal Pendidikan IPA Indonesia*, 6(1).
- Sibarani, R. (2018). Batak Toba society's local wisdom of mutual cooperation in Toba lake area: a linguistic anthropology study. *International Journal of Human Rights in Healthcare*. 11(1), 40 – 45.
<https://doi.org/10.1108/IJHRH-08-2017-0035>
- Sudarmin, S. (2014). Pendidikan karakter, etnosains dan kearifan lokal [konsep dan penerapannya dalam penelitian dan pembelajaran sains]. Unnes Semarang
- Sungsri, S. (2015). The role local wisdom in promoting lifelong learning in thailand. Retrieve on Dec:10

- Suprpto, N. (2019, February). Demographic sources as a local wisdom: Potency of Indonesian physics education researchers in conducting survey research. *In Journal of Physics: Conference Series* (Vol. 1171, No. 1, p. 012003). IOP Publishing. <https://doi.org/10.1088/1742-6596/1171/1/012003>
- Suprpto, N., Prahani, B. K., & Cheng, T. H. (2021). Indonesian curriculum reform in policy and local wisdom: Perspectives from Science Education. *Jurnal Pendidikan IPA Indonesia*, 10(1), 69-80.
- Suswandari. (2017). Incorporating beliefs, values and local wisdom of betawi culture in a character-based education through a design-based research. *European Journal of Contemporary Education*, 6(3), 574-585.
- Tahamtan, I., Safipour Afshar, A., & Ahamdzadeh, K. (2016). Factors affecting number of citations: a comprehensive review of the literature. *Scientometrics*, 107(3), 1195-1225. <https://doi.org/10.1007/s11192-016-1889-2>
- Tan, J., Fu, H. Z., & Ho, Y. S. (2014). A bibliometric analysis of research on proteomics in science citation index expanded. *Scientometrics*, 98(2), 1473-1490. <https://doi.org/10.1007/s11192-013-1125-2>
- Tao, Z., Zhou, S., Yao, R., Wen, K., Da, W., Meng, Y., ... & Tao, L. (2020). COVID-19 will stimulate a new coronavirus research breakthrough: a 20-year bibliometric analysis. *Annals of Translational Medicine*, 8(8), 528. <https://dx.doi.org/10.21037/atm.2020.04.26>
- Touwe, S. (2020). Local wisdom values of maritime community in preserving marine resources in indonesia. *Journal of Maritime Studies and National Integration*, 4(2), 84-94. <https://doi.org/10.14710/jmsni.v4i2.4812>
- Vieira, E., & Gomes, J. (2009). A comparison of scopus and web of science for a typical university. *Scientometrics*, 81(2), 587-600. <https://doi.org/10.1007/s11192-009-2178-0>
- Yoda, I. K. (2017, March). The development of cooperative learning model based on local wisdom of Bali for physical education, sport and health subject in junior high school. *In IOP Conference Series: Materials Science and Engineering* (Vol. 180, No. 1, p. 012166). IOP Publishing. <https://doi.org/10.1088/1757-899X/180/1/012166>
- Yuliatin, Y., Husni, L., Hirsanuddin, H., & Kaharudin, K. (2021). Character education based on local wisdom in pancasila perspective. *Journal of Legal, Ethical and Regulatory Issues*, 24(1), 1-11.
- Zukmadini, A. Y., Kasrina, K., Jumiarni, D., & Rochman, S. (2020). Pocketbook based on local wisdom and its effectivity in improving students' knowledge on the utilization of traditional medicine plants. *Biosfer: Jurnal Pendidikan Biologi*, 13(1), 59-74. <https://doi.org/10.21009/biosferjpb.v13n1.59-74>