

Indigenous knowledge in Smart Society 5.0 for Merdeka Curriculum of Elementary School

Adriana Gandasari^{✉1}, Dinn Wahyudin², Asep Herry Hernawan³, Markus Iyus Supiandi⁴, Thomas Joni Verawanto Aristo⁵, Ursula Dwi Oktaviani⁶, Anastasia Selvi⁷, Fiony⁸, and Mawardi⁹

^{1,5,6,8} Pendidikan Guru Sekolah Dasar, STKIP Persada Khatulistiwa, Sintang, Kalimantan Barat, Indonesia

^{4,7,9} Pendidikan Biologi, STKIP Persada Khatulistiwa, Sintang, Kalimantan Barat, Indonesia

^{2,3} Sekolah Pascasarjana Pengembangan Kurikulum, Universitas Pendidikan Indonesia, Bandung, Jawa Barat, Indonesia

✉ adrianagandasari@gmail.com, adrianagandasari@persadakatulistiwa.ac.id

Abstract. The development of the times and technological advances in the era of society 5.0 cannot be avoided, so a shift in life situations from traditional to modern occurs, and the impact can erode existing indigenous knowledge. This is the basis for conducting research in Sintang Regency, West Kalimantan, Indonesia, which aims to screen existing indigenous knowledge so that it can be preserved by becoming part of the Merdeka curriculum so that it can be implemented at the educational level, one of which is elementary school. This qualitative descriptive research uses a survey with interview methods with primary informants, keys informants, and recommendations informants. The research results show that there are 12 areas of indigenous knowledge with a total of 105 sub-coverages that can be part of the Merdeka curriculum and implemented at the basic education level by utilizing technological collaboration.

Keywords: Indigenous Knowledge, Smart Society 5.0, Merdeka Curriculum, Elementary School.

How to Cite: Gandasari, A, et al. (2024). Indigenous knowledge in Smart Society 5.0 for Merdeka Curriculum of Elementary School. *Proceeding The 6th International Conference Elementary Education*, 6(1), 1-12.

INTRODUCTION

Indonesia is an island state, with 17,000 islands registered by 2021 and, by 2022, Statistic Indonesia (literally: Central Agency of Statistics), locally known as Badan Pusat Statistik (BPS) has registered 17,001 islands. There are five major islands in Indonesia, of which the largest is Papua, Kalimantan, Sumatra, Sulawesi and the last is Java. This peculiarity is part of the wealth of the region as indigenous knowledge that the Indonesian nation possesses and this is something to be proud of.

The wealth of the indigenous knowledge of the Indonesian people emerged from the interaction in the socio-cultural life of the tribes that inhabited the region. Areas in this case can be islands, provinces, districts, towns, villages, even villages. The tribes that inhabit the habitation evolved and played different roles in the life of society (Prasojo, 2017), both as a majority tribe and as a minority. Each tribe has its own social-cultural characteristics (Sanjaya, June 2022) thus reflecting indigenous knowledge.

Indigenous knowledge is part of the indigenous wealth of Indonesian cultural values (UNESCO, 2016). In the era of smart society 5.0 as it is today, indigenous knowledge is threatened with degradation to extinction. This is because indigenous knowledge is still being transmitted in traditional media forms, inter alia, from mouth to mouth, through myths, and rituals; changes in the perception of local communities that lead to modernization and lifestyle changes that tend to affect the detrimental environment can also make indigenous knowledge extinct, not to mention commercialization and social and economic changes as well as the lack of knowledge and preference of the younger generation towards indigenous knowledge that also affect the increasing extinction of indigenous knowledge.

Previous research has revealed a number of problems that threaten the existence of indigenous knowledge. Not well documented even without a written document (Sahai, 2014) making the disappearance of indigenous knowledge trail. Orally transmitted from generation to generation (Carter, 2010, October 3) makes indigenous knowledge undergo breakdown. Technological advances have influenced the shift of lifestyles from traditional to modern.

Excessive foreign culture harassment of local culture (Ullah & Ho, 2021), wild deforestation, palm coconut cultivation (Vijay, Pimm, Jenkins & Smith, 2016; Petrenko, Paltseva & Searle (2016); Kinyili, 2021; Suglo, Effah, Acheampong, Sunkari & Yeboah, 2021; Munez, 2022, December 7) that causes the local endemic flora and fauna as part of indigenous knowledge to become rare (Sodhi, Brook, & Bradshaw, 2023).

A simple step that can be taken to preserve indigenous knowledge is through educational containers. Now it's possible to introduce indigenous knowledge to a pupil, one of whom was in elementary school, thus giving rise to a sense of pride in things that are of a local nature. Of course this is not apart from the role of the curriculum because it is the body of education (Gandasari, Abdulhak, Djohar, & Wahyudin 2019). Through curricula, whether it's curriculum 2013 or Merdeka Curriculum, the opportunity to extract indigenous knowledge is very potential, especially at the operational curriculum level (Oderonmu, Alagbe, Opoko, Oluwatayo, & Alagbe 2014; Chen & Wei 2015; Gandasari 2019).

While there are negative impacts of the smart society 5.0 era on indigenous knowledge, there are positive impacts. Indigenous knowledge can also be preserved by taking the opportunity in the era of smart society 5.0 in terms of documenting indigenous know-how by using digital technology. In the era of smart society 5.0, we see the demand for a human-centred society that collaborates with technology to solve social problems. The main objective of this era is to balance economic progress with social well-being through the integration of virtual and physical space by leveraging innovations born in the 4.0 revolution era, such as the use of AI (Artificial Intelligence) and IoT (Internet of Things). Documentation of indigenous knowledge digitally provides an opportunity for indigenous knowledge to be preserved and passed on from generation to generation (Marrie, 2019) so as not to go extinct (Luu, October 2019). In addition, indigenous knowledge can also be known by the wider community both locally, nationally and internationally so that there is a sense of mutual respect and appreciation of each other's cultural values (Williams, 2022, July 21) as well as pride in the local culture that they possess.

Given the importance of preserving existing indigenous knowledge, there is a need for a study to screen the existing knowledge. The pilot study was conducted in the tribes of Dayak, Malay and Chinese in Sintang district, West Kalimantan, Indonesia. This research is a preliminary step towards finding any indigenous knowledge that can be a focus of conservation and can be documented using digital technology so that it can be accessed by educational institutions, for example, basic education as a digital reference for Merdeka Curriculum.

METHOD

This research is qualitative descriptive research (Nassaji, 2015) using exploratory survey methods with the aim of screening indigenous knowledge that exists in the society by conducting a search for indigenous knowledge owned by the tribes of Dayak, Malay and Chinese that is potentially to be integrated into the Merdeka Curriculum through the use of smart society 5.0. The pilot study was conducted in 14 districts of Sintang Regency, West Kalimantan, Indonesia, namely: Serawai, Ambalau, Kayan Hulu, Sepauk, Tempunak, Tebelian River, Sintang, Dedai, Kayan Hilir, Kelam Permai, Binjai Hulu Ketungau Hilir, Ketungau Tengah and Ketungau Hulu.

The source of research data is obtained through public figures and the general public as informants who are divided into three categories of informants namely primary informants, key informants and recommendation informants that know, collect and maintain indigenous knowledge of their tribe. The informants of each tribe in each district totaled 161 people selected purposively by a sample consisting of two primary informants, there are four key informants and five or six recommendation informants (Table 1).

Table 1. Sub-districts at Sintang Regency, West Kalimantan, Indonesia and Research informant

Dayak	Malay	Chinese	Σ Informant				
			Primary	Key	Recomendation		
Sub-district					Know	Collect	Maintain
(1) Serawai							
(2) Ambalau							
(3) Kayan Hulu							
(4) Sepauk							
(5) Tempunak							
(6) Sungai Tebelian							
(7) Sintang			2 persons	4 persons			5-6 persons
(8) Dedai							
(9) Kayan Hilir							
(10) Kelam Permai							
(11) Binjai Hulu							
(12) Ketungau Hilir							
(13) Ketungau Tengah							
(14) Ketungau Hulu							

Data collection uses open interviews and in-depth interviews with the instrument of the interview sheet as well as documentation. Data analysis using qualitative descriptive analysis covers four activities: data collection, data reduction, data display and conclusion. Data collection is carried out to obtain data of indigenous knowledge of the people of Dayak, Malay, and Chinese. Data obtained is then reduced with the aim of obtaining data that corresponds to the purposes of research. The data are presented in descriptive form in writing, table and picture. The results obtained are then summarized and concluded.

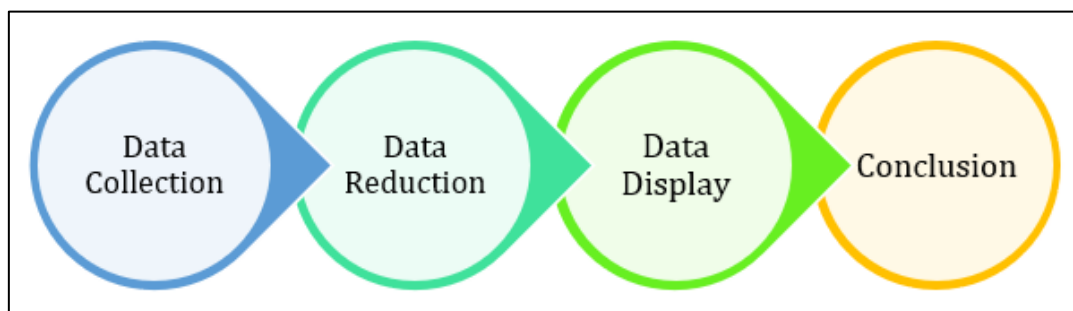


Figure 1. Four Activities of Qualitative Descriptive Analysis

RESULTS

Data collected from informants from the Dayak, Malay and Chinese tribes in 14 districts in Sintang district, West Kalimantan, Indonesia shows that there are 12 areas of indigenous knowledge that exist in the tribal communities of the Dayaks, Malay and Chinese, as well as obtained 105 Indigenous Knowledge sub-coverages. Indigenous knowledge dan indigenous knowledge sub-coverages displayed in Table 2.

Tabel 2. Indigenous Knowledge and Indigenous Knowledge Sub-coverages

Indigenous Knowledge	Indigenous Knowledge Sub-Coverages	Indigenous Knowledge	Indigenous Knowledge Sub-Coverages
(1) History	Political History Social History Intellectual History Cultural History Economic History Local History Scientific History History of Ideology Historical Sites Primary Historical Sources Historical sources Write History of a folklore Folklore sites	(9) Fashion	Men's Clothing Men's Pants Men's hats Men's earrings Men's Necklace Men's Wristband Men's Ring Men's Anklets Other Men's Accessories Women's Clothing Women's skirts Women's Hats Women's Earrings Women's Necklace Women's Wristband Women's Ring Women's Anklets Other Women's Accessories
(2) Art	Local Song Musical instrument Dance Fabric Motifs Carving Motifs	(10) Technology and Tools	Production tools Weapon Container Raising a fire Food fulfilment Clothing Maker Jewellery Shelter Means of transportation Color processor
(3) Language	Local Languages Levels in local languages Terms in local languages Words in the vernacular	(11) Craft	From natural soft materials From natural hard materials From natural fibers From metal From stone From Second-hand goods As a decorator As a wearable object As a ritual necessity As a symbolic necessity As a constructive need
(4) Literature	Prose literature Poetry literature Dramatic literature Fairy Tale Literature Hikayat Literature Biographical Literature	(12) Medicines	Plant Roots Plant Stems Plant Leaves Plant Flowers Plant Fruits Plant Seeds Plant Fruit Skin
(5) Food and Beverage	Fermented vegetables Dried vegetable Smoked/roasted vegetables Meat fermented Dried meat Smoked/grilled meat Fruits are fermented Dried fruit Smoked/roasted fruit Snacks Drink		
(6) Customary Customs and Customary Law	Original custom Compacted customs Customary customs Written custom Unwritten custom Customs Customary criteria		

Indigenous Knowledge	Indigenous Knowledge Sub-Coverages	Indigenous Knowledge	Indigenous Knowledge Sub-Coverages
(7) Sport	Martial arts Game Agility Cooperative interaction		Plant Bark Plant Fluids Whole Body of Animal Animal Organs Animal Shell Animal mucus/fluid
(8) Natural Environment and Ecosystems	Flora Fauna Nature		

The research results show that there are 12 areas of indigenous knowledge with a total of 105 sub-coverages. This is the indigenous knowledge that is the focus to be preserved through the educational container. This indigenous knowledge can be integrated and become part of the Merdeka Curriculum, i.e. at the operational curriculum level at learning objectives flow (locally: ATP) and learning objectives as outlined in the learning module (Gandasari, Sopia, Ege: 2022). A flexible operational curriculum can take advantage of what the smart society 5.0 era offers, especially as a device to acquire learning resources that contain content indigenous knowledge.

The era of smart society 5.0 demands the mastery of four skills: leadership, language skills, information and technology literacy, and writing skills. Application of the operational curriculum derived from the instructional curricula of the syllabus and lesson plan and keeping in mind the corridors established in the formal curricula is the national curricular which in this case is the Merdeka Curriculum at the level of primary school education. Indigenous knowledge that is part of the Merdeka curriculum and implemented at the basic education level by utilizing technological collaboration in this research results are shown through Figure 2.

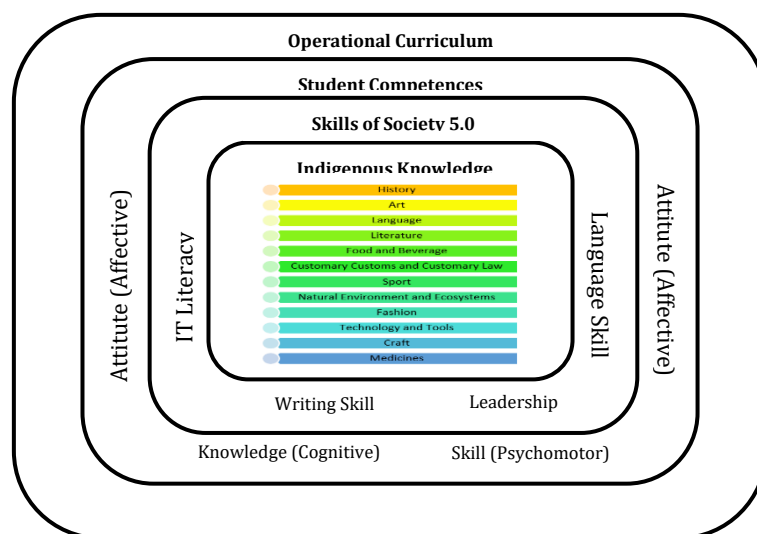


Figure 2. Model of Operational Curriculum of Indigenous Knowledge

The Model of Operational Curriculum of Indigenous Knowledge is a modification of the "Model of operational curriculum based on multiple intelligences to enhance the scientific abilities of students" (Gandasari, 2019: 178), because the nature of the operational curriculum is flexibility with a form that always looks like an onion layer. This curriculum model can be applied to any level of education by adhering to the four curricular components of purpose, content, method and evaluation.

DISCUSSION

The country of Indonesia is rich in diversity so that life in a society is not without the existence of interaction between one and the other different. One of them is different tribes. These differences were unified by Pancasila as the foundation of the state and the philosophy of the nation and Constitution of 1945 as its legal foundation. So even though they are different, they remain a uniform that always burns the spirit of the Indonesian people to remain united and peaceful.

The diversity of Indonesian peoples can be seen from the indigenous knowledge of their communities. This indigenous knowledge spread from Sabang to Marauke. Indigenous knowledge refers to the existence of understanding, skills and philosophy developed by a particular society with a long history of interaction with the natural environment and its societies (UNESCO, 2021). In other words, indigenous knowledge is the embodiment of knowledge obtained from the interaction between man and man with nature. This indigenous knowledge can be real or tangible and non-material or intangible (UNESCO, 2022). Indigenous knowledge does not immediately exist except through a long process, involving both sensible and non-sensible things. Based on the results of the research, 12 indigenous knowledge and 105 sub-indigenous know-how were obtained.

Indigenous knowledge arose because of its existence (Gandasari, Anggrayni, Supraningsih, Budi, Dahlia, 2021) which was formed over a long period of time and was similar so that history became part of tracing the process of its formation (Gorjestani, 2010). Indigenous knowledge relating to history is spread out into thirteen sub history: political history, social history, intellectual history, cultural history, economic history, local history, scientific history, history of ideology, historical sites, primary historical sources, historical sources write, history of a folklore, and folklore sites.

Languages play an important role in everyday life to be able to communicate with one another, such as local languages. The involvement of local languages as a means of communication (Susanti, Oktaviani & Suryadi, 2021) in the interaction of local communities makes the local language inseparable from the culture of the community itself [UNESCO, 2019; Galnares, February, 2023). Indigenous knowledge relating to languages is distributed into four sub-languages: local language itself, levels in local languages, terms in local language, and words in the vernacular.

Literature is a part of the expression of society about life in the form of a cultural product. Local literature which is part of a variety of cultural products of the region (Kurniati, Oktaviani & Aristo, 2022), reflected from the life of the old community that is pervaded by the society of today the region (Mojares, 2020, September 1). Indigenous knowledge relating to literature is spread out into six subs, namely prose literature, poetry, dramatic, fairy tale, narrative, and biographical literature.

Apart from literature, art is also part of the social expression of life that forms a cultural product. Local art as a cultural expression that is not only entertaining (Oktaviani, Susanti & Utami, 2022), it can also be a moral message for future generations (Mcmaster, 2020). Indigenous knowledge related to art is spread out into five sub, namely local song, musical instrument, dance, fabric motifs, and carving motifs.

Many products are produced from a study that requires the mastery of a skill that is determined. Crafts can be said to be a medium, used by society for the fulfilment of life needs (Suntrayuth, 2016), that is, secondary needs that are boards and vaults. Indigenous knowledge relating to craft is spread out into eleven sub, namely from natural soft materials, from natural hard materials, by natural fibers, by metal, by stone, by second-hand goods, as a decorator, as an wearable object, by ritual necessity, by symbolic necessity and by constructive necessity.

In a society, there is a need for something that can guarantee a society's equitable rights and duties. Traditional customs and customary laws are the guidelines that govern the customary order and the law that applies in the society (World Intellectual Property Organization, 2013; Gandasari, Supiandi, Syafruddin, Nita & Mawardi, 2022). Indigenous knowledge relating to customary customs and customary law is spread out into seven sub-parts,

namely original custom, compacted customs, customary customs, written custom, unwritten custom, customs, and customary criteria.

It cannot be denied that civilization arose because of the technology used and developed for the needs of life. Technology functions as a tool used for the fulfilment of life needs (Borrero, 2013; Tharakan, 2017; Giri, U., Paul, Dey, Giri & Kundu, 2020), that is, tertiary needs. Indigenous knowledge related to technology and tools is spread out into ten subs, namely production tools, weapon, container, raising a fire, food fulfilment, clothing maker, jewellery, shelter, means of transportation and color processor.

The availability of natural environments and ecosystems enables humans to meet their life needs. The natural environment/ecosystem provides the flora and fauna used by local communities (United Nations Environment Programme, 2023, September 19; Dharma, Aristo, Sijono, & Elisa, 2021) to satisfy primary or food needs, as well as the habitat of endemic flora and fauna that have their own peculiarities. Indigenous knowledge relating to the natural environment and ecosystems is spread into three subs, namely flora, fauna and nature.

Humans also need a condition that allows them to perform their daily activities. This condition is related to health. Health is also part of the necessity of life and it is here that traditional medicine plays an important role for its society (Bodeker & Kariippanon, 2020; Syafruddin, Supiandi, Gandasari, Mahanal, & Zubaidah, 2022; Supiandi, Syafruddin, Gandasari, Mahanal, & Zubaidah, 2023; Gandasari, Supiandi, Syafruddin, Nita, Mawardi, Zubaidah, & Mahanal, 2023). Indigenous knowledge related to medicines is spread out into thirteen subs, namely plant roots, plant stems, plant leaves, plant flowers, plant fruits, plant seeds, plant fruit skin, plant bark, plant fluids, whole body of animal, animal organs, animal shell, and animal mucus/fluid.

The food obtained requires treatment to be consumed. In ancient times, the proper processing of food could have an impact on survival and it is still done today. Food processing can be typical local cuisine [Kennedy, Kanter, Chotiboriboon, Covic, Delormier, Longvah, Maundu, Omidvar, Vish, & Kuhnlein, 2021; Vijayan, Ludwig, Rybak, Hoffmann, Schönfeldt, Mbwana, Rivero, & Lohr, 2022; Priatini, Wahyudin, Sukirman, & Kusumah, 2022). Indigenous knowledge relating to food and beverage is spread out into 6 sub-groups, fermented vegetables, dried vegetables, smoked/roasted vegetables, fermented meat, dried meat, smoked/roasted meat, fermented fruit, dried fruit, smoked/roasted fruit, snacks and drink.

Unlike other living creatures, humans can make clothes to cover their bodies. This has been done since the days of our ancestors. The clothes that are made adapt to the environment so they are local. Local fashion can be used as a characteristic characteristic (Gale, 2012; The Culture-ist, 2014, November 28; Sari, Permana, Firmansyah, & Hernawan, 2021) of the community of its wearers. Indigenous knowledge related to fashion spread into eighteen subs, i.e. men's clothing, men's pants, men's hats, men's earrings, men's necklace, men's wristband, men's ring, men's anklets, other men's accessories, women's clothing, women's skirts, women's hats, women's earrings, women's necklace, women's wristband, women's ring, women's anklets, and other women's accessories.

In life too, people can interact in the form of sports. Sport is also a cultural product. Local sports are also characteristic (Bronikowska, Groll, & Savola, 2015; UNESCO, 2021; Maryuni, & Nasrulloh, 2022). Indigenous knowledge related to sports is spread into four subs, namely martial arts, games, agility, and cooperative interaction.

In this study, so much indigenous knowledge was discovered by only conducting pilot studies on tribes of Dayak, Malay and Chinese. This indigenous knowledge needs to be safeguarded. Not only to be known by the next generation, but be known to the wider public.

In the Age of Smart Society 5.0, the impact of the era of the evolution of Industry 4.0 demonstrates that the patterns of society have already led even some to the collaboration of human beings and technology. It could have an impact on leaving things that smell local or traditional to smell modern, technology-based things. However, it should be noted that there is also a positive impact gained from the era of smart society 5.0 that is by using technology to document indigenous knowledge as a local load (Badan Standar, Kurikulum, Dan Asesmen

Pendidikan Kementerian Pendidikan, Kebudayaan, Riset, dan Teknologi, 2022: 234) that exists in the form of digital documentation.

Digital documentation can be used as a learning resource that can be utilized as part of the curriculum. Currently, Indonesia has three curricula namely the curriculum 2013, the Merdeka Curriculum and the Emergency Curricular, but in this case it is more focused on the Merdeka Curriculum. The regulation of the Merdeka Curriculum was previously laid down in the Decision of the Board of Trustees No. 56/M/2022 on the Guidelines for the Application of the Curriculum in the Framework of the Recovery of the Defence, which contains the autonomous curricula for early childhood, primary and secondary education in its entirety (Rahayu, Rosita, Rahayuningsih, Hernawan, & Prihantini, 2022; Sumarsih, Marliyani, Hadiyansah, Hernawan, & Prihantini, 2022; Trisna, Wahyudin, Rusman, Riyana, & Monika, 2023). Subsequently, a new regulation was issued in the form of Decision No. 262/M/2022 on Changes to the Decision of the Minister of Education, Culture, Research and Technology No. 56/M/2022, on Guidelines for the Implementation of Curricula in the Framework of Learning Rehabilitation. The Merdeka Curriculum has three characteristics, namely development of soft skills and character (Kementerian Pendidikan dan Kebudayaan, 2020), focus on essential materials and flexible learning, in addition to providing a container for the school to be able to carry out the Pancasila Student Profile Enhancement Project. While in college, the so-called Merdeka Belajar-Kampus Merdeka (Kementerian Pendidikan dan Kebudayaan, 2020; Tuju, Wahyudin, Dewi, 2023) was launched in early 2020 with a legal umbrella namely Permendikbud No. 3 Year 2020 on National Standards of Higher Education. With the introduction of this policy, then an Merdeka Curriculum requires references of local wisdom based indigenous knowledge both digitally and printed.

In the Merdeka Curriculum, indigenous knowledge can be entered as a local load learning point (Badan Standar, Kurikulum, Dan Asesmen Pendidikan Kementerian Pendidikan, Kebudayaan, Riset, dan Teknologi, 2022: 395) which can be an intra-curriculum or extra-curriculum learning point depending on the policy of the educational institution. The policy of educational institutions relating to the curriculum used and implementing it is very closely related to the operational curriculum of the Elementary School (Gandasari A, Wahyudin D, Abdulhak I, & Djohar A, 2022). The indigenous knowledge introduced from an early age in basic education has influenced the growing pride in the local culture of the region, which is part of the rich diversity of the Indonesian nation.

CONCLUSION

The research focuses on screening the indigenous knowledge that exists in society with the pilot study of the tribes of Dayak, Malay and Chinese in Sintang District, West Kalimantan, Indonesia. The results show that there are 12 indigenous knowledge and 105 subindigenous knowledge. In the era of smart society 5.0, it is indisputable that indigenous knowledge can be distributed, but through the use of technology, Indigenous know-how can be preserved in the form of digital documentation that can be accessed and used as a learning resource on Merdeka Curriculum. Introducing indigenous knowledge in elementary schools can create pride in indigenous knowledge.

ACKNOWLEDGMENTS

This work received financial support from the Research and Community Service Information Base-Ministry of Education, Culture, Research, and Technology (BIMA-Kemendikbudristek) of the Republic of Indonesia, through Domestic Collaborative Research (PKDN) Scheme between STKIP Persada Khatulistiwa and Indonesia University of Education, Fiscal Year 2023 (Grant Contract No. 187/E5/PG.02.00.PL/2023).

REFERENCES

- Badan Standar, Kurikulum, dan Asesmen Pendidikan Kementerian Pendidikan, Kebudayaan, Riset, dan Teknologi. (2022). *Capaian Pembelajaran Pada Pendidikan Anak Usia Dini, Jenjang Pendidikan Dasar, Dan Jenjang Pendidikan Menengah Pada Kurikulum Merdeka*. Jakarta: Kementerian Pendidikan, Kebudayaan, Riset, dan Teknologi.
- Bodeker, G & Kariippanon, K. (2020). Traditional Medicine and Indigenous Health in Indigenous Hands. *The Oxford Research Encyclopedia of Global Public Health*. <https://doi.org/10.1093/acrefore/9780190632366.013.155>.
- Borrero, R. M. (2013). *Innovation And Technology For Indigenous Peoples*: <https://www.un.org/esa/socdev/egms/docs/2013/ict/innovation-technology-indigenous.pdf>.
- Bronikowska, M. A., Groll, M., & Savola, J. (2015). Cultural aspects of Traditional Sports and Games. *International Journal of Physical Education*, 52(3), 1-14. <https://doi.org/10.5771/2747-6073-2015-3-25>.
- Carter. B. (2010, October 3). *Orality - Indigenous Knowledge through Oral Narratives*. <https://blogs.ubc.ca/etec540sept10/2010/10/03/orality-%E2%80%93-indigenous-knowledge-through-oral-narratives/>.
- Chen B & Wei B (2015) Investigating the factors that influence chemistry teachers' use of curriculum materials: The case of China. *Science Education International Journal* 26 (2):195-216. <http://www.icaseonline.net/sei/june2015/p6.pdf>.
- Dharma, Y. P., Aristo, T. J. V., Sijono, & Elisa, H. (2021). English Learning Media Based on Local Wisdom for Teaching Writing Descriptive Text. *Journal of English Educational Study*, 4(2), 140-147. <https://doi.org/10.31932/jees.v4i2.1327>.
- Gale, C. (2012). *Dress and Cultural Heritage* [Internet]. Conference: 4th Fine Arts International Conference At: Bangkok. https://www.researchgate.net/publication/321110824_Dress_and_Cultural_Heritage.
- Galnares, A. R. (February, 2023). United Nations Department of Economic and Social Affairs. *Why Indigenous languages matter: The International Decade on Indigenous Languages 2022-2032*. <https://www.un.org/development/desa/dpad/wp-content/uploads/sites/45/publication/PB151.pdf>.
- Gandasari A (2019) *Pengembangan Model Kurikulum Operasional Berbasis Multiple Intelligences untuk Meningkatkan Kemampuan Saintifik Siswa*. Disertation, Universitas Pendidikan Indonesia, Bandung.
- Gandasari A, Abdulhak I, Djohar A, & Wahyudin D (2019) The conceptual framework of the curriculum operational based on the multiple intelligences' theory and its implementation in Panca Setya 2 Elementary School Sintang Kalimantan Barat Indonesia. *Scholarly Research Journal for Interdisciplinary Studies* 6 (51):12520-12544. <https://www.srjis.com/pages/pdfFiles/156689690336.%20Adriana%20Gandasari%20SRJIS.pdf>.
- Gandasari A, Wahyudin D, Abdulhak I, & Djohar A (2022) The national curriculum implementation into the operational curriculum based on multiple intelligences theory (Research dissemination before pandemic Covid-19). *Indonesian Journal of Social Sciences* 14 (1):14-25. <https://doi.org/10.20473/ijss.v14i1.33003>.
- Gandasari, A., Anggrayni, A., Supraningsih, A., Budi, A. D. W. S, Dahlia, R. (2021). *Sejarah Kerajaan Selimbau Darussalam*. Sintang: Perkadosi.
- Gandasari, A., Sopia, N., & Ege, B. (2022). *Penyuluhan Pendidikan Tentang Kurikulum Merdeka Bagi Guru Sekolah Dasar*. *JPPM: Jurnal Pelayanan dan Pemberdayaan Masyarakat*, 1(2), 67-76. <https://doi.org/10.31932/jppm.v1i2.2055>.
- Gandasari, A., Supiandi, M. I., Syafruddin, D., Nita, S. T., Mawardi. (2022). Traditional Ritual of Karue Ase: Local wisdom and cultural conservation in the Labian Ira'ang Society. *JPBIO (Jurnal Pendidikan Biologi)*, 7(1), 36-43. <https://doi.org/10.31932/jpbio.v7i1.1521>.
- Gandasari, A., Supiandi, M. I., Syafruddin, D., Nita, S. T., Mawardi, Zubaidah, S., & Mahanal, S. (2023). *Indigenous knowledge source: Plants and animals as traditional medicine dayak*

- tamambaloh's of labian ira'ang village. *JPBIO (Jurnal Pendidikan Biologi)*, 8(1), 20-33. <https://doi.org/10.31932/jpbio.v8i1.2039>.
- Giri, U., Paul, N., Dey, D., Giri, S., & Kundu, M. C. (2020). Indigenous Traditional Tools and Implements Used in Agriculture and Allied Sector in Tripura. *International Journal of Current Microbiology and Applied Sciences*, 9(5), 2101-2117. <https://doi.org/10.20546/ijcmas.2020.905.241>.
- Gorjestani, N. (2010). Indigenous Knowledge for Development: Opportunities and Challenges. <http://documents.worldbank.org/curated/en/574381468765625385/Indigenous-knowledge-for-development-opportunities-and-challenges>.
- Kementerian Pendidikan dan Kebudayaan. (2020). Karakteristik Kurikulum Merdeka. <https://kurikulum.kemdikbud.go.id/kurikulum-merdeka/>.
- Kementerian Pendidikan dan Kebudayaan. (2020). Panduan Merdeka Belajar - Kampus Merdeka <http://dikti.kemdikbud.go.id/wpcontent/uploads/2020/04/Buku-Panduan-Merdeka-Belajar-Kampus-Merdeka-2020>.
- Kennedy, G., Kanter, R., Chotiboriboon, S., Covic, N., Delormier, T., Longvah, T., Maundu, P., Omidvar, N., Vish, P., & Kuhnlein, H. (2021). Traditional and Indigenous Fruits and Vegetables for Food System Transformation, 5(8), 1-5. <https://doi.org/10.1093/cdn/nzab092>.
- Kinyili, B. (2021). Impacts Of Illegal Logging And Deforestation On National Security. https://www.researchgate.net/publication/353909099_IMPACTS_OF_ILLEGAL_LOGGING_AND_DEFORESTATION_ON_NATIONAL_SECURITY.
- Kurniati, A., Oktaviani, U. D., & Aristo, T. J. V. (2022). Digitalisasi Dongeng Nusantara Sebagai Alternatif Media Pembelajaran Era Digital di Tingkat Sekolah Dasar. *Jurnal Pendidikan Dasar Perkhasa*, 8(2), 173-181. <https://doi.org/10.31932/jpdp.v8i2.1964>.
- Luu, C. (October, 2019). What we lose when we lose indigenous knowledge. <https://daily.jstor.org/what-we-lose-when-we-lose-indigenous-knowledge/>.
- Marrie, H. (2019). Emerging trends in the generation, transmission and protection of Traditional Knowledge. <https://www.un.org/development/desa/indigenouspeoples/wp-content/uploads/sites/19/2019/04/TK-Emerging-trends-in-the-generation-transmission-and-protection-of-TK-final-paper.pdf>.
- Maryuni, & Nasrulloh, A. (2022). Research Study on Traditional Game Sports. Proceedings of the Conference on Interdisciplinary Approach in Sports in conjunction with the 4th Yogyakarta International Seminar on Health, Physical Education, and Sport Science (COIS-YISHPESS 2021). <https://doi.org/10.2991/ahsr.k.220106.050>.
- Mcmaster, G (2020). Contemporary Art Practice and Indigenous Knowledge. *Zeitschrift fur Anglistik und Amerikanistik*, 68(2), 111-128. <https://doi.org/10.1515/zaa-2020-0014>.
- Mojares, R. B. (2020, September 1). On Native Grounds: The Significance of Regional Literature <https://buglas-writers.medium.com/on-native-grounds-the-significance-of-regional-literature-9d547deaa0a3>.
- Munez C. (2022, December 7). Climate 101: Deforestation. <https://www.nationalgeographic.com/environment/article/deforestation/>.
- Nassaji, H. (2015). Qualitative and descriptive research: Data type versus data analysis. *Language Teaching Research*, 19(2), 129-132. <https://doi.org/10.1177/1362168815572747>.
- Oderonmu P, Alagbe O, Opoko A, Oluwatayo A, & Alagbe T (2014) Evaluating the gap between overt and operational curriculum in architectural education: Implication for profesional practice. In: Proceedings of EDULEARN14 Conference, 7th -9th July. Barcelona, Spain, 1619-1625. ISBN: 978-84-617-0557-3. https://www.researchgate.net/publication/269986178_EVALUATING_THE_GAP_BETWEEN_OVERT_AND_OPERATIONAL_CURRICULUM_IN_ARCHITECTURAL_EDUCATION_IMPLI_CATION_FOR_PROFESSIONAL_PRACTICE.
- Oktaviani, U. D, Susanti, Y, Utami, S. D. S. (2022). Analisis Campur Kode Dalam Lirik Lagu Melayu Sintang Karya Ade Sisbaipandi (Ngah Sis). *Jurnal Kansasi: Jurnal Pendidikan Bahasa Indonesia dan Sastra Indonesia*, 7(2), 103-112. <https://doi.org/10.31932/jpbs.v7i2.2064>.

- Petrenko, C., Paltseva, J. & Searle, S. (2016). Ecological Impacts of Palm Oil Expansion in Indonesia. https://theicct.org/sites/default/files/publications/Indonesia-palm-oil-expansion_ICCT_july2016.pdf.
- Prasojo, Z. H. (2017). Social Change and the Contributions of the Tionghoa, Dayak and Melayu (Tidayu) in West Kalimantan. In: King, V., Ibrahim, Z., Hassan, N. (eds) *Borneo Studies in History, Society and Culture. Asia in Transition*. Singapore: Springer. 427-442. https://doi.org/10.1007/978-981-10-0672-2_20.
- Priatini, W., Wahyudin, D., Sukirman, D., & Kusumah, A. H. G. (2022). Indonesian Traditional Food Preservation: A Curriculum Evaluation Analysis Review. *European Online Journal of Natural and Social Sciences*, 11(1), 164-173. <https://european-science.com/eojnss/article/view/6328/pdf>.
- Rahayu, R., Rosita, R., Rahayuningsih, Y. S., Hernawan, A. H., & Prihantini. (2022). Implementasi Kurikulum Merdeka Belajar di Sekolah Penggerak. *Jurnal Basicedu*, 6(5), 6313- 6319. <https://doi.org/10.31004/basicedu.v6i4.3237>.
- Sahai, S. (2014). Documentation & Protection of Indigenous Knowledge (IK). <https://genecampaign.org/indigenous-knowledge/>.
- Sanjaya C. (June, 2022). West Kalimantan. <https://alchetron.com/West-Kalimantan>.
- Sari, I. P., Permana, F. C., Firmansyah, F. H., & Hernawan, A. H. (2021). Computer-based learning: 3D visualization and animation as content development for digital learning materials for traditional Indonesian cloth (Songket Palembang). *Journal of Physics: Conference Series*. <https://doi.org/10.1088/1742-6596/1987/1/012003>.
- Sodhi, N. S., Brook, B.W. & Bradshaw, C. J. A. (2023). Causes and Consequences of Species Extinctions https://assets.press.princeton.edu/chapters/s5_8879.pdf.
- Suglo, P., Effah, P., Acheampong, A. A., Sunkari, R. & Yeboah, A. (2021). Effects of Illegal Mining on the Environment, Economy, and Agricultural Productivity. *Biochemistry and Molecular Biology*, 6(4), 79-91. <https://doi.org/10.11648/j.bmb.20210604.11>.
- Sumarsih, I., Marliyani, T., Hadiyansah, Y., Hernawan, A. H., & Prihantini. (2022). Analisis implementasi kurikulum merdeka di sekolah penggerak sekolah dasar. *Jurnal Basicedu*, 6(5): 8248- 8258. <https://doi.org/10.31004/basicedu.v6i5.3216>.
- Suntrayuth, R. (2016). Collaborations and Design Development of Local Craft Products: Service Design for Creative Craft Community. *International Journal of Creative and Arts Studies*, 3(2), 1-12. <https://doi.org/10.24821/ijcas.v3i2.1840>.
- Supiandi, M. I., Syafruddin, D., Gandasari, A., Mahanal, S., & Zubaidah, S. (2023). Animals ethnozoology as traditional medicine in the Dayak Tamambaloh Tribe, Labian Ira'ang Village, Kapuas Hulu District, Indonesia. *Biodiversitas Journal of Biological Diversity*, 24(1), 26-33. <https://doi.org/10.13057/biodiv/d240104>.
- Susanti, Y., Oktaviani, U. D. & Suryadi, T. (2021). Eksistensi Bahasa Melayu Sintang pada Media Spanduk dalam Pencegahan Penyebaran Covid-19 di Kabupaten Sintang (Kajian Etnolinguistik). *BELAJAR BAHASA: Jurnal Ilmiah Program Studi Pendidikan Bahasa dan Sastra Indonesia*, 6(1), 119-134. <https://doi.org/10.32528/bb.v6i1.349180>.
- Syafruddin, D., Supiandi, M. I., Gandasari, A., Mahanal, S., & Zubaidah, S. (2022). Potential of Medicinal Plants Against Cancer and Tumors: Ethnobotanical Study of the Dayak Tamambaloh Tribe, Indonesia. *Journal of Pharmaceutical Negative Results*, 13(4), 1514-1520. <https://doi.org/10.47750/pnr.2022.13.04.213>.
- Tharakan, J. P. (2017). Indigenous Knowledge Systems for Appropriate Technology Development. Book Chapter. <http://dx.doi.org/10.5772/intechopen.69889>.
- The Culture-ist. (2014, November 28). 31 Traditional Forms of Dress from Around the World. <https://www.thecultureist.com/2014/11/28/31-traditional-forms-dress-around-world/>.
- Trisna, G. A. P. S., Wahyudin, D., Rusman, Riyana, C., & Monika, K. A. L. (2023). The Urgency of Heutagogy Based Local Wisdom in Elementary School Curriculum in Bali. *Jurnal Kependidikan: Jurnal Hasil Penelitian dan Kajian Kepustakaan di Bidang Pendidikan, Pengajaran dan Pembelajaran*, 9(1), 151-161. <https://doi.org/10.33394/jk.v9i1.5894>.

- Tuju, R. S., Wahyudin, D., Dewi, L. (2023). Mekanisme Implementasi Merdeka Belajar Kampus Merdeka pada Program Studi di Perguruan Tinggi Keagamaan Kristen. *LOGON ZOES: Jurnal Teologi, Sosial dan Budaya*, 5(1), 46-60. <https://doi.org/10.53827/lz.v5i1.56>.
- Ullah A. K. M. A. & Ho, H. M. Y. (2021). Globalisation and Cultures in Southeast Asia: Demise, Fragmentation, Transformation. *Global Society*, 35(2), 191-206. <https://doi.org/10.1080/13600826.2020.1747992>.
- UNESCO (2019). Indigenous languages: Knowledge and hope. <https://en.unesco.org/courier/2019-1/indigenous-languages-knowledge-and-hope>.
- UNESCO (2021). Traditional Sports and Games. <https://en.unesco.org/themes/sport-and-anti-doping/traditional-sports-and-games>.
- UNESCO. (2016). Diversity of Cultural Expressions. Showcasing of Indonesian Culture in Foreign Countries. <https://en.unesco.org/creativity/policy-monitoring-platform/showcasing-indonesian-culture>.
- UNESCO. (2021). Local and Indigenous Knowledge Systems (LINKS). <https://en.unesco.org/links>.
- UNESCO. (2022). Tangible and Intangible Heritage. <https://ich.unesco.org/en/tangible-and-intangible-heritage-00097>.
- United Nations Environment Programme. (2023, September 19). Indigenous peoples and the nature they protect. <https://www.unep.org/news-and-stories/story/indigenous-peoples-and-nature-they-protect>.
- Vijay, V., Pimm, S. L., Jenkins, J. N., & Smith, S. J. (2016). The Impacts of Oil Palm on Recent Deforestation and Biodiversity Loss. *PLoS ONE*, 11(7), 1-19. <https://doi.org/10.1371/journal.pone.0159668>.
- Vijayan, D., Ludwig, D., Rybak, C., Hoffmann, H., Schönfeldt, H. C., Mbwana, H. A., Rivero, C. V., & Lohr, K. (2022). Indigenous knowledge in food system transformations. *Communications Earth & Environment*, 3(213), 1-3. <https://doi.org/10.1038/s43247-022-00543-1>.
- Williams, L. Q. (2022, July 21). How to Accept and Respect Other Cultures <https://owlcation.com/social-sciences/How-to-Accept-and-Respect-other-Cultures>.
- World Intellectual Property Organization (2013). Customary Law, Traditional Knowledge and Intellectual Property: An Outline of The Issues https://www.wipo.int/export/sites/www/tk/en/resources/pdf/overview_customary_law.pdf.