



Creating new knowledge based on the ecological teaching material in Indonesian language education

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ABSTRACT

This article is based on research and development entitled "The Development of Digital Teaching Language in Indonesian Language Subjects based on Malay Ecology". In general, ecology-based research is not a new discovery. However, this research provides a new dimension related to the concept of Freedom to Learn. The concept of ecology has a direction for adapting education to the needs of students, as with independent learning which wants education to go according to the needs and characteristics of different students. Freedom to learn brings the same passion to concretize ecology-based education. The research data shows that 59% of students in SMA 1 Limapuluh, SMA 1 Asahan, SMA 1 Tanjungbalai and SMK 4 Tanjungbalai, assess that the Indonesian language subject matter teaching materials that have been used so far do not contain ecological content related to nature, the environment and their own culture. The teacher explained that this had an impact on 1) the difficulty of the teacher in providing examples, 2) the difficulty of students understanding the material and 3) the material being incompatible with the real life of students. Of course this is a problem. This research resulted in a conceptual understanding that the teacher's difficulty in providing examples of learning and the teacher's difficulty in relating material to the real life of students is due to the unfulfilled ecological dimension. This ecological dimension can be fulfilled by linking environmental values into materials, tests and assessments. The solution that can be offered from this article is to present Indonesian language subject materials based on local ecology. Also, as a concretization of "Merdeka Belajar" (Freedom to Learn) Program in the pandemic era, there must be a Learning Management System (LMS) developed by schools to support the learning process so that teachers and students have the freedom to create Indonesian language learning that is relevant to the needs of students.



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The concept of "*Merdeka Belajar*" (Freedom to Learn) encourages the freedom of teachers and students to find the right learning system for them. Freedom to Learn is a ministry of education program that synergizes with students' needs for appropriate learning. Nadiem Makarim explains that the "*Merdeka Belajar*" concept is related to Freedom to Learn. Teachers are given flexibility in compiling Lesson Plan so that it is not rigid and easy to implement. This is pursued so that teachers are freer in determining methods, media, and teaching materials by the real conditions faced by teachers and students. Learning freedom demands creativity and learning innovation.

The concept of "*Merdeka Belajar*" (Freedom to Learn) will free the learning process. The learning process is currently considered too rigid, centralized, and does not provide sufficient space to explore learning resources. One of the keys to the success of implementing the MBKM Policy is to make the learning process in higher education more autonomous and flexible (Rajagukguk, 2022). This has been complained about by teachers in several areas in North Sumatra. In the use of teaching materials, for example, the book used is a national standard book that references Java. Not all regions understand Javanese culture, especially in North Sumatra, which has a relatively strong and deep cultural base. This is certainly a problem in itself for teachers, especially teachers of Indonesian Language subjects. Indeed, there are many Javanese people in North Sumatra, and they definitely know Javanese culture, it's just that this is not relevant to the concept of contextual learning, which requires teachers and students to learn according to the situational or ecological context they have. Cultural texts related to the student's subject area were chosen as they can be the best ground for genuine exploration (Permatasari & Andriyanti, 2021).

The world of education is currently heading towards two branching goals that are to be synergized optimally. The first is the world of industry and technology, the second is the ecological and cultural dimensions (Kant, 2018). Both dimensions must be met to create a balance. If it is lame in the world of industry and technology, then there will be a tendency to ignore culture and nature. On the other hand, ignoring cultural and ecological values is a very dangerous thing because it can cause a loss of life balance. The reason *Homo Sapiens* (human) can survive for hundreds of millions of years is its ability to adapt to change (Harari, 2018).

At this time, there was an extraordinary modernization experienced by humans. Although essentially human life has changed, harmony with the social and cultural environment must still be maintained. The Malay community, for example, continues to live in its culture and philosophy even though it is in digital integration. Education is the front line for maintaining cultural roots so that they continue to grow in people's lives. This is what then

makes the direction of education must be synergized between the rapid pace of technology with deep sensitivity to maintain the ecological dimension. Ecology is a scientific discipline that examines the relationship between organisms or groups of organisms, such as humans, animals, plants, and their environment (Odum, 1993).

Adaptability is the key for humans to survive. Not only is *Homo Sapiens* scientifically the ancestor of humans, it is the same for modern humans. It's just that the challenges of life faced by modern humans are far more complex. Changes in the industrial, technological, economic, social and governance world require humans to adapt to change. Even so, there are challenges that humans, both sapiens and modern humans, have always experienced, namely natural challenges. Humans and nature cannot be separated. The survival of humanity is determined by its ability to manage nature within the framework of ecological intelligence. Ecological intelligence is the human ability to adapt to the ecological niche in which they live (Goleman, 2010).

Based on observations of teaching materials for Indonesian language subjects in Senior High School/Vocational High School in Batubara, Asahan, Tanjungbalai and Langkat, it was generally found that mandatory teaching materials for teachers and students were standardized teaching materials that provide more space for discourse. The discourse was based on Javanese culture. Of course, this is a logical consequence of a centralized learning system. These books are a form of level similarity construction in the learning process. The goal is to create quality standards for education. Ideally, of course, this goal makes sense, but in an implementation manner, standardization creates a common perception towards the entire discourse being developed. With possession of cultural intelligence, people can understand and respect the values of each other's cultures (Suryadimulya et al., 2023). This element is very important to be integrated into the learning process through the preparation of teaching materials that have local cultural content (Laksana, 2016). For this reason, it is necessary to develop teaching materials that prioritize elements of local wisdom, especially the local culture of the community. This can provide encouragement and motivation for students to study at school and can also be implemented in social life (Saidah, K., & Damariswara, R). Learning with local wisdom is essentially an attempt to dig up local wisdom values and integrate them into learning activities. So it is necessary to have teaching materials that are integrated with the local wisdom of the local community. Local wisdom-based learning can instill values and norms in each student (Njatrijani, 2018). Integrating local wisdom in learning is to increase the love for local wisdom in their environment and as an effort to maintain the existence of local wisdom amidst the swift currents of globalization (DN Khatimah, 2019).

In the Implementation of Indonesian language learning for Senior High School/Vocational High School, schools in North Sumatera implement the K13 curriculum. Materials such as negotiation texts, explanatory texts, complex procedural texts, drama texts, poetry texts, understanding short stories are the materials that exist in the K13 curriculum. This is certainly not a problem because the determination of curriculum and learning materials has been carefully considered by the Ministry of Education and Culture. The problem is the implementation of textbooks that tends to ignore ecological nuances, especially those related to local ecology. This is indeed part of the standardization to be achieved. Still, the standardization of the quality of achievement should also consider the peculiarities and authenticity of the learner's ecology which is manifested through the distribution of themes and discourses in the text which must be correlated with the real life of students. It is very difficult to imagine if the complex procedural text material for students in Tanjungbalai was filled with discourses on how to make pizza. It would be more precise if the complex procedure text material for high school students in Tanjungbalai was filled with procedures for keeping the river clean (Asahan River) or how to cook shellfish hygienically. This will certainly make it easier for students and teachers during the learning process because the discourses presented can be included in students' lives. Ecological coverage is not only about nature, but also related to culture and society. In the world of education, Lev Vygotsky is known as one of the figures who contributed brilliant ideas about individual ways of learning, especially children. Vygotsky(1978) argues that a child's culture and social environment are the most important things that influence the formation of their knowledge. Children learn through songs, language, art and games. He also stated that culture influences the learning process, children learn through interaction and cooperation with other people and their environment.

The results of the analysis of student books on Indonesian language subjects used in Senior High School/Vocational High School in Tanjungbalai and Langkat still have not found the substance of the material that carries the text containing local culture and local ecology. What emerges is that the material and texts following central standardization with Javanese-centric nuances, becomes ironic if an Indonesian language teacher at a school at the foot of Sinabung Mount has to teach a procedural text with a discourse on mangrove forest conservation. Apart from making it difficult for teachers, it also has less significant impact on efforts to improve ecological intelligence, considering that there are no mangrove forests in the Karo area. The same thing happened concerning culture. Central standardization of themes and discourses in Indonesian language textbooks is less acceptable for people who have certain cultures who are still strong in adhering to customs.

When talking about the concept of ecology, of course it is not only related to nature alone, but to all aspects of the living system in which humans live, or what is known as an ecosystem. Ecosystems do not only accommodate nature, but more than that, for humans, the ecosystem where they live will be related to culture, customs, cuisine, means of transportation and so on. This is slightly different from the understanding built by Suwandi which specifically reveals that ecological intelligence is needed to deal with natural disasters (Suwandi et al., 2018). This understanding localizes the function of ecological intelligence only around nature and the environment, not yet on cultural aspects. Whereas culture is part of the human life system which greatly influences the survival of humanity itself. Thus, we can define ecological intelligence as the ability of humans to adapt and collaborate with their ecosystems. The ecosystem includes the relationship between humans and other humans, with nature and the environment, with the culture and customs that surround it.

Previous studies allow for a relationship between learning materials and ecological intelligence. The ecological concept cannot be seen solely as nature. The ecological concept refers to ecosystems which are not only related to nature but also to the environment and culture. Malay is no longer seen only as Malay nature or Malay geography but as an extension of Malay nature, environment and culture. The main point of this research is to present a different dimension of ecology. The meaning of ecology becomes broad and touches on the cultural dimension. Based on the situation above, it is necessary to present teaching materials that accommodate ecological values by providing space for discourses based on the local environment and culture in digital form, especially in the era of distance learning. Apart from being a solution for learning in the pandemic era, this is also part of the implementation of the concept of Freedom to Learn. In this era, humanity will survive, but the world we will live in will be different (Harari, 2020) The novelty of this research relates to the location used. Research that produces ecological products is certainly designed according to the ecology of students. In this case, Malay is the representative of ecology in this study. Malay is a big culture and influences culture in the North Sumatra region. Presenting Indonesian language teaching materials based on Malay ecology is an invention that correlates with the principle of independent learning. Freedom to learn brings the same spirit to concretize ecology-based education. This article attempts to answer the following questions.

1. How is the product development of teaching materials based on Malay ecology?
2. How do teaching materials based on Malay ecology synergize with the concept of Merdeka Belajar?

METHOD

This research lasted for 6 months, from May to October with the division of implementation stages starting from preparation, data collection, data analysis, reports, results seminars and publications. The locus of research is at SMA/SMK in Langkat Regency and Tanjungbalai City which are considered to represent the Malay ethnicity. The study received ethical approval from an institutional review board, and informed consent was obtained from the participants or guardians. The researcher has a cooperation agreement with the school in the form of an MoU.

Data Collection

Data were obtained by observing Indonesian language teaching materials at SMA 1 Limapuluh, SMA 1 Asahan, SMA 1 Tanjungbalai and SMK 4 Tanjungbalai. The data found that the discourse used as an example in learning Indonesian refers to the Javanese dimension, not according to the local ecology.

This research was designed using the Research and Development (R&D) method adopted by Sugiyono . The RnD method was chosen because it is relatively simpler to adjust to the various output bills that are charged. ADDIE is an acronym for Analysis, Design, Development, Implementation, Evaluation (Sugiyono, 2018).The stages are:

1. Stage of Analysis (Analysis)

The analysis step consists of two stages, namely job analysis and needs analysis. Job analysis is carried out to find out what problems are faced by the product object or target so that the product being developed can be accepted. Needs analysis is a step needed to determine the abilities or competencies students need to learn to improve learning performance/achievement. The results of the identification in the first stage are related to the two things above, so the next intention is to use the data to determine the need for the product to be used and then be interested in using it. Based on the identification above, the product specifications to be developed must meet the criteria, namely 1) easy to understand, 2) attractive appearance, 3) equipped with supporting images, 4) material according to learning needs and collaborated with the dimensions of North Sumatra's local wisdom.

2. Design Stage (Design)

At this stage the researcher makes a product design in the form of a product design in the form of a teaching material design on language and literature materials. The teaching materials developed are designed to be as effective as possible so that students are not confused about understanding the material. The researcher made a module design consisting of: 1) chapter titles, 2) CP, TP, and ATP, 3) material, 4) sample text, 5) practice questions (quiz) (Satinem & HP, 2015)

3. Development Stage

Activities at this stage are preparing material that will be described to make the design into the desired product. The steps at this stage are 1) designing the appearance of the design page. 2) Arrange each page with the main material, CP, TP, and ATP, exercises or quizzes, and things that support the material. 3) Collaborating with the dimensions of North Sumatra's local wisdom.

4. Implementation Stage

After the design is developed and made in learning media, the next step is implementing the product. The implementation stage is to see the advantages/disadvantages of teaching materials used in schools. Product evaluation activities are carried out by one design expert reviewer. This evaluation is also intended to obtain input and connections related to the product. Based on input and corrections from reviewers, the product can be improved. As for media experts, assessment aspects for product validation include 1) Information guide. The category guidelines used for media use are very good (5), good (4), enough (3), less (2), very less (1). 2) fill in the material. The guide categories used are very good (5), good (4), enough (3), less (2), very less (1). Likewise with material experts, aspects of the assessment for product validation include: 1) the feasibility of the content of the material. The category guidelines used are very good (5), good (4), enough (3), less (2), very less (1). 2) display quality. The categories used are very good (5), good (4), enough (3), less (2), very less (1).

5. Evaluation stage

Activities carried out at the evaluation stage are testing the product. Product testing is carried out with the dissemination stage to see the product feasibility response from users, namely, as follows. 1) the first stage of testing is carried out with a small size of ten people. Testing used to find out product deficiencies. Each student has different abilities, then the results of the ability to work on teaching materials are analyzed. 2) revision I (first). 3) Phase II testing of users with a larger size, namely thirty-two students. Next, the results of the ability to work on teaching materials were analyzed. 4) revision II (second). 5) procurement of products.

Data Analysis

The five stages of ADDIE were used to produce the material content of language education based on the local ecology. From ADDIE, teaching materials were not only produced, but also could be evaluated by the researcher to make it complete. ADDIE was also used to make a continuance research that was applied by another researcher based on this product. In the development method, product analysis is carried out by observing existing teaching materials. Based on the observations that have been made, the

teaching materials currently used by students at SMA 1 Limapuluh, SMA 1 Asahan, SMA 1 Tanjungbalai and SMK 4 Tanjungbalai are textbooks from the government that use Javanese discourse. Based on these observations, materials, assignments, and exercises were then developed to give the teaching materials a Malay ecological feel. Malay Ecology is based on the ecosystem where teachers and students go through the learning process, including tradition, nature, environment, food etc. The data is analyzed to develop teaching materials that are in accordance with the curriculum and also in accordance with the ecology of the Malay community.

FINDINGS

From a sample questionnaire that has been distributed to four senior high school/vocational high school in Batubara, Asahan, and Tanjungbalai, results were obtained that could illustrate how the teaching materials currently used did not reflect the local ecology. From 120 students in SMA 1 Limapuluh, SMA 1 Asahan, SMA 1 Tanjungbalai and SMK 4 Tanjungbalai, 59% said that the teaching materials used in Indonesian subjects did not represent their learning conditions and situations. More than half of the sample said that there was a discrepancy between learning materials and students' real lives.

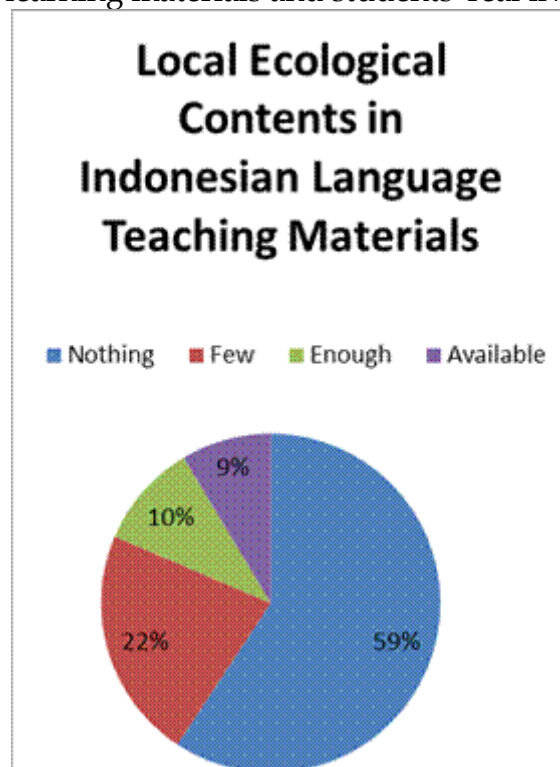


Diagram 1. Ecological content

This is worrying if we further examine the content contained in the teaching materials for Indonesian language subjects. In the complex procedure text material, the discourse that is presented as an example is precisely the discourse on how to make pizza. Besides pizza does not reflect the local ecology, especially Malay, pizza is also a symbol of consumerism and hedonism. In Indonesia, fast food is used as a measure of one's maturity. Relatively expensive pizza can confirm the social status of an individual within the community. Even so, in their place of origin, fast food such as burgers and pizza have become foods that are synonymous with workers and miners. With limited afternoon breaks, laborers and miners prefer fast food to be consumed, even with the risk of ill health (Baudrillard, 2009). In the West, fast food is a symbol of poverty, disorder, and disease, while in Indonesia, fast food is a sign of a person's high social strata. This is certainly not good content for students. The discourse on pizza seems to teach consumerism. In the context of culture, students should be introduced to understanding the culinary specialties of their region so that they become part of cultural preservation efforts.

In relation to this research, Malay ecology is defined as a living system which includes nature, culture, customs, environment, and lifestyle related to ethnic Malays. Malay ethnicity is a large ethnic group that is spread throughout almost the entire archipelago. Medan is one of the epicenters of Malay culture, especially Deli Malay. What stands out from the Malay ecology is the Mlaimun Palace, rhymes, Putri Hijau Folklore, songket, and the history of Medan City, (Hafni, 2017)

Apart from students, teachers also experience difficulties in using Indonesian language teaching materials published by the Ministry of Education and Culture. Nine Indonesian language subject teachers who teach at SMA 1 Limapuluh, SMA 1 Asahan, SMA 1 Tanjungbalai and SMK 4 Tanjungbalai, were distributed questionnaire, where the following data can be compiled.

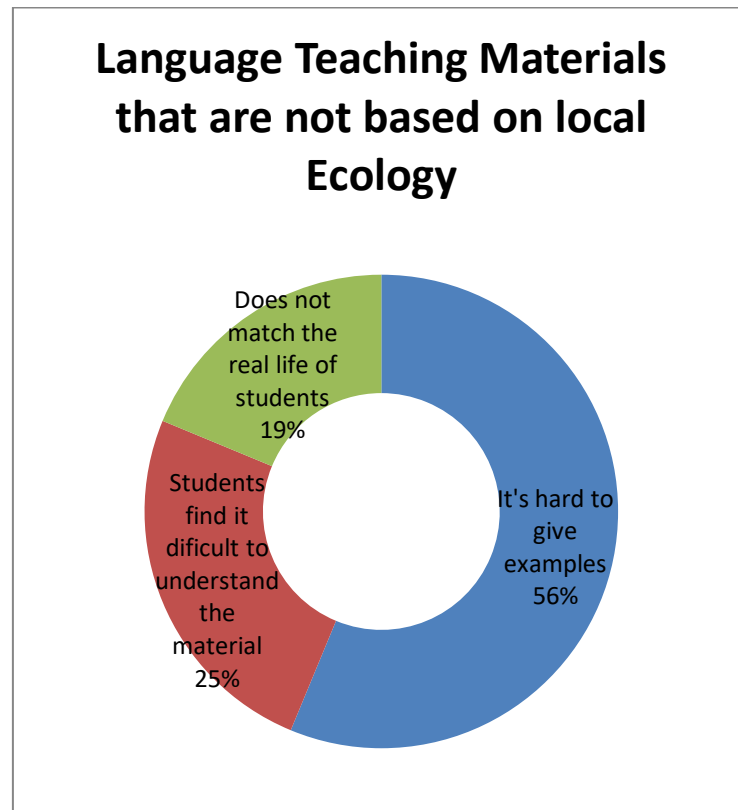


Diagram 2. Teaching Material without Local Ecology

In learning, relevant examples are important to understand the material. The more examples were given by the teacher, the more could be accessed by students' minds. Teachers can explore learning tools, but they need references and experiences that are realized in the learning process, both based on research and community service. The convenience of students is caused by learning content that is related to natural life and the environment that has been known so far. The easier it will be for students to explore the material. In the Indonesian subject textbook, examples of discourses presented are not relevant to student life, especially in the Asahan and Tanjungbalai areas. Discourses on batik, Borobudur Temple and mangrove preservation emerge as examples in understanding material. These things are certainly inaccessible to students' minds, given their limited experience in understanding examples that are never found in real life every day. The teacher complained that this condition made it difficult for students to understand the material. Some teachers do choose to improvise in teaching. Examples that do not exist in student life are being ignored and replaced with things that are familiar and familiar to the students, such as songket cloth, the Asahan River, shells and so on. The examples related to shellfish, the Asahan river and songket cloth are an inseparable part of the ecology of Asahan and

Tanjung Balai. How to preserve the songket culture, how to keep the Asahan river clean, the stages of hygienic cooking of shellfish should be included as a discourse in learning Indonesian.

The presence of teaching materials that accommodate the local ecology is important for the learning process of Indonesian in schools. The suitability of the discourse presented with the environmental characteristics of students is the most important part of ecology-based teaching materials. Besides, teaching materials must also be actual and accommodate actualization for students. How can students carry out the actualization while the discourse that is presented in the teaching material is the discourse that is not relevant to their lives? Asahan and Tanjungbalai are areas that are synonymous with ethnic Malays. By presenting the content of Malay ecology, it will be easy for teachers and students to carry out the learning process. The material presented will synergize with the student experience. The implementation of student competencies will also relate to the environment and culture with which students are familiar.

Apart from the low ecological content in Indonesian language learning, the concept of Freedom to Learn is also difficult to implement due to the use of unrepresentative learning media. In the current pandemic era, teachers are required to present digital-based learning to demonstrate effective and efficient distance learning. Based on interviews with Indonesian language teachers at SMA 1 Limapuluh, SMA 1 Asahan, SMA 1 Tanjungbalai and SMK 4 Tanjungbalai, the learning process uses the Whatsapp Group (WAG) application more. WAG is of course a digital application as a means of communication, but WAG is very inadequate as a learning medium. Besides not being able to present video conferences, WAGs are also difficult for teachers and school principals to monitor. To realize learning independence in schools, it is necessary to develop a Learning Management System (LMS) that can be used by teachers and students and also allows monitoring to be carried out by the principal as the academic person in charge.

This research use ADDIE to develop the product. The five stages of ADDIE were used to produce the material content of language education based on the local ecology. From ADDIE, teaching materials were not only produced, but it also could be evaluated by the researcher to make it complete. ADDIE was also used to make continuance research that was applied by another researcher based on this product.

DISCUSSION

Teaching materials that have undergone due diligence and effectiveness tests are properly recommended as supplemental teaching materials to raise ecological awareness for SMA/SMK students in Langkat and Tanjungbalai, as well as all SMA/SMK students who need them. Supriatna (2016) quoted

Gadotti in the opinion that ecological learning is an approach to learning that makes students independent, autonomous learners, capable of developing their potential in learning based on experiences brought from outside the classroom and realizing that every action has an impact on themselves and their environment. Presenting Indonesian language teaching materials is an effort to fulfill the principles of culture-based learning and humanity. In accordance with the concept of culture that gives values to the people who own it, teaching materials based on ecology will make it easier for teachers and students in the learning process because there is compatibility between the material and the values held by students. Thus, learning Indonesian language will be more effective.

Although human life has changed, it must be maintained in harmony with the social and cultural environment. The Malay community, for example, continues to live in its culture and philosophy even though it is in digital integration. Education is the front line for maintaining cultural roots so that they continue to grow in people's lives. This can be instilled through Indonesian subjects. This is related to how fundamentally the function of Indonesian subjects is for the development of students' character and intelligence. One of the objectives of learning Indonesian subjects is to improve intellectual abilities, as well as emotional and social maturity. The novelty of this research relates to the location used. Research that produces ecological products is certainly designed according to the ecology of students. In this case, Malay is the representative of ecology in this study. Malay is a grand culture and influences culture in the North Sumatra region. Presenting Indonesian language teaching materials based on Malay ecology is an invention that correlates with the principle of independent learning. At this time, there was an extraordinary modernization experienced by humans.

Although essentially human life has changed, harmony with the social and cultural environment must still be maintained. The Malay people, for example, still live in their culture and philosophy even though they are in digital integration. Education is the front line for maintaining cultural roots so that they continue to grow in people's lives. This is what then makes the direction of education must be synergized between the rapid pace of technology with deep sensitivity to maintain the dimension of local wisdom. Vygotsky (1978), argued that a child's culture and social environment are the most important things that influence the formation of their knowledge. Children learn through songs, language, art and games. He also stated that culture influences the learning process, children learn through interaction and cooperation with other people and their environment.

Piaget (2018) also revealed that in psychological development, language has a role to build logic and children's operational work. Based on this, Indonesian lessons have a very strong potential to become a medium for

instilling mitigation awareness for students. The choice of the junior high school level was based on consideration of prepubescent age which is a form of transition from childhood to adolescence. As stated by Piaget, the age between 12-15 years is the age of significance and operationalization of language logically and systematically. At that age it is alleged that the development of children's cognition requires more logical instructions and concrete reasoning. Learning language and literature is an important part of the development of children's cognition, as well as the process of forming character (Udasmoro, 2012). In this case, Malay is the representative of ecology in this study. Malay is a big culture and influences culture in the North Sumatra region. Presenting Indonesian language teaching materials based on Malay ecology is an invention that correlates with the principle of psychopedagogy indeed. Previous studies allow for a relationship between learning materials and ecological intelligence. The ecological concept cannot be seen solely as nature. The ecological concept refers to ecosystems which are not only related to nature, but also to the environment and culture. Malay is no longer seen only as Malay nature or Malay geography, but as an extension of Malay nature, environment and culture. The main point of this research is to present a different dimension of ecology. The meaning of ecology becomes broad and touches on the cultural dimension.

In relation to this research, Malay ecology is defined as a living system which includes nature, culture, customs, environment, and lifestyle related to Malays' ethnic. Malay ethnicity is a large ethnic group that is spread throughout almost the entire archipelago. Medan is one of the epicenters of Malay culture, especially Deli Malay. What stands out from the Malay ecology is the Maimun Palace, rhymes (pantun), Putri Hijau Folklore, songket, and the history of Medan City (Hafni, 2017)

North Sumatra is a multicultural province. There are Malay, Javanese, Karo, Batak, Malay-Karo etc. A Malay-Karo, for example. As a cultural entity, Mount Sinabung will fill all cultural aspects of the Malay-Karo people, which include social systems, beliefs, art, literature and language. Mount Sinabung became a source of inspiration with regard to the dimensions of literature and language. The language dimension that is attached to ecological entities will bring up linguistic discourses that are included in the life of the Malay-Karo people. Matters related to traditional ceremonies, artistic symbols, oral literature, and myths are also mostly inspired by Mount Sinabung. In this regard, Mount Sinabung will be difficult to separate from the pulse of life for the Karo people. Even so, the Malay-Karo people must not ignore the danger side of Mount Sinabung. Of course, the potential for an eruption that terrorizes residents must be taken seriously. Moreover, it is understood that provinces have an unequal ratio of the number of schools, so it can be concluded that the education process in Karo is disproportionate. Low

community response to disasters will increase the impact of the disaster (Indriatoro, 2013). In contrast to the region of Java which tends to be homogeneous, North Sumatra allows the emergence of multiculturalism which must be understood wisely. Presenting Malay ecology does not mean only seeing North Sumatra as Malay, but rather as an effort to introduce and connect students with their own ecology.

In the midst of society, especially children and adolescents who live under the threat of eruption, the education of ecology cannot be separated from the real implementation of life. As a subject supporting student character development, Indonesian must be an active solution to this problem. In fact, in the existing learning system, especially the Indonesian language subject, the teaching materials used do not contribute positively to these problems. Based on preliminary observations that have been made in four junior high schools in the Kabanjahe and Tigabinanga areas, it was found that the teaching materials used so far need to accommodate the attachment between the Karo people and Mount Sinabung. In this context, of course, it is associated with mitigation aspects, which should have been introduced to students early as a form of learning contribution to students' lives. Living under the threat of eruption and lacking knowledge about disaster ecological mitigation is certainly not an ideal life. The students and the teacher come from the same cultural background and the same language. It enables them to communicate and develop ideas about local culture that they are familiar with (Agustina, 2018).

The developed LMS should provide ample space for teachers to demonstrate teaching materials that are considered relevant to the situation of the defenders, including ecology-based teaching materials. With the LMS, the learning process can be accommodated and controlled by the authorities. Evaluation is also easier to apply to improve the learning process which is deemed inappropriate. LMS is a bridge to connect the concept of Freedom to Learn with learning situations in the pandemic era. The development of teaching materials is not new, but linking ecology with the concept of independent learning can bring new perspectives. Especially if the learning process can involve LMS which can be used by teachers and students. The pandemic era has indeed ended, but interactive LMS-based learning must be maintained to streamline the learning process. If so far, teaching materials have only been printed or digitized, then in more recent developments, teaching materials can be integrated with LMS. The cyber-world can also provide an alternative for producing literary works (Assalam, 2021).

CONCLUSION

Learning the Indonesian language is basic learning that can be used to shape students' character. On this basis, the Indonesian language subject must be

relevant to the situations and conditions faced by students. The teachings of nobility and character are also the main topics of discussion in learning Indonesian. What happens if it turns out that learning Indonesian is not relevant to student life? Moreover, it presents content that is hedonistic and ignores health, such as in the text of complex procedures on how to make pizza. Of course, this will damage the character of students as a cultural person.

The concept of Freedom to Learn provides adequate space for teachers to create teaching materials to suit the realities received by students in the context of their social and cultural life. An ecological material that includes nature, environment and culture is one of the fresh ideas to marry the material in Indonesian lessons with the context of learning. Indonesian is not only a subject that teaches how to structure language but also becomes the mother for teaching students' character so that they can synergize with nature, the environment and their culture.

This process is associated with distance learning in the pandemic era-needs to be supported by systematic and structured learning media. Of course there are technical obstacles in realizing this, but efforts to build an integrated digital learning system are the answer to problems that have been faced by teachers and students in the learning process. LMS becomes a bridge to connect ecological issues, distance learning and its integration with the concept of independent learning. LMS is a reflection of independent learning in the Freedom of Learning era.

This research is limited to areas that have been determined, namely the Malay ecology. This limitation might impact the generalizability of the findings and suggest avenues for future research to explore other ecologies and regions to create a more comprehensive understanding of ecological-based teaching materials for Indonesian language learning. For further information, it is hoped that there will be other studies that will continue this research so that they can reach other ecologies according to the different dimensions of the lives of students. The concept of "Merdeka Belajar" (Freedom to Learn) will free the learning process. The learning process is currently considered too rigid, centralized, and does not provide sufficient space to explore learning resources. This has been complained about by teachers in several areas in North Sumatra.

In the use of teaching materials, for example, the book used is a national standard book which reference is Java. Not all regions understand Javanese culture, especially in North Sumatra which has their own relatively strong and deep cultural base. This is certainly a problem in itself for teachers, especially teachers of Indonesian Language subjects. In closing, it is necessary to have teaching materials that can contribute to students' understanding of their ecology while at the same time providing free space to carry out

independent learning programs that are adapted to the characteristics of students, schools, and learning the concept of ecology. The recommendation based on this research is that the concept of ecology can be applied as part of the independent learning program so that students can learn to know their ecology more freely within an effective learning framework and an effort to introduce and connect students with their ecology.

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Creating new knowledge based on the ecological teaching material in Indonesian...

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