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Validity of Geopark Integrated Natural Science Learning Resources to Enrich Students' Local Wisdom in Elementary School

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ABSTRACT

Quality education is needed to form quality human resources. Learning resources are one of the supporting factors for a quality learning process. In general, this study aims to examine the validity of geopark integrated science video learning resources to enrich students' local wisdom in elementary schools. The subjects of this study amounted to three validators. The design of this research is research and development. Validity testing is done by using the Product Moment Correlation formula. Testing the instrument's reliability was carried out using the Cronbach Alpha formula because the data was in the form of interval data. This study shows that the learning resources in videos meet the validity of the content and constructs. Pearson Correlation (r) on each validator shows > rt = .432 with valid criteria. Cronbach's Alpha value on content > .60, then the decision making in the reliability test on content by 3 validators was concluded to be reliable. Learning resources in the form of videos meet the reliability requirements based on the assessment of three validators. The validator's recommendations on learning resources in the form of videos strengthen the content of learning resources. This research has a contribution as a geopark integrated science learning resource for elementary school students.

Key words: learning resources, learning videos, natural science, geopark, local wisdom

INTRODUCTION

Education plays an important role in developing the potential of human resources. Quality education is needed to form quality human resources. A quality learning process is an indicator of quality education. Many factors can affect a learning process, one of which is learning

resources. Learning resources have a vital position and role in the learning process. Complete, relevant, and up-to-date learning resources can encourage the realization of quality learning (Abdurahimovna, 2020). Learning resources are all aspects that can be used as a vehicle for students to carry out the process of behaviour change. Learning resources for students are one of the components of learning that can increase their learning productivity (Qiang et al., 2020). Learning resources can be in the form of places or the surrounding natural environment, objects, people, books, and events and facts that occur. The environment is a learning resource that has much influence on the ongoing learning process. The environment is part of humans, especially for students to live and interact (Afifulloh, 2019).

Applications in the highly developed field of information and communication technology have facilitated the integration of various learning materials into videos that can be presented in learning activities. Previous forms of video, such as film and television, have been commonly used to enhance and support learning for decades. However, in recent years the use of more sophisticated video as a learning resource has grown rapidly in the education sector. This expansion is supported by the ease of video production (e.g. voice-over PowerPoint) with accessible ready-to-use tools, widely available recording studios, and easy access to streaming media platforms such as YouTube. Furthermore, video is the main method of delivering learning material content in online learning (Proquet et al., 2018). Video is an audio-visual medium that displays images and sound. Compared to image media, video media as a learning resource further enhances student learning outcomes. So that the existence of learning video media makes students more motivated in learning which ultimately increases student learning outcomes (Budiastra et al., 2020), the use of video as a learning resource can increase the efficiency of space, time, and the message conveyed. In addition, videos can also display microscopic, macroscopic, dangerous objects or objects that students cannot find directly.

Natural science education is an effort or process of teaching students to understand the nature of science, including products, processes, and developing scientific attitudes and being aware of the values that exist in society for the development of attitudes and actions in the form of positive science applications. The objectives of science/science education include knowledge and understanding, exploration and discovery, imagination and creativity, attitude and science, and application. The science learning model in delivering science material has special characteristics. A special characteristic in science material is studying real natural phenomena, either in reality or events and cause-effect relationships (Hwang et al., 2013). Science learning in schools should emphasize mastery of basic scientific work skills or science process skills so that learning is more meaningful (Budiastra et al., 2021). The learning process should be valuable, meaningful and make students believe in what they have learned and apply it in real life. Meaningful learning should be applied in the educational process to find the relationship between the concept of knowledge obtained from the learning process and the environment around students (Martin & Bolliger, 2018).

Geopark is a management concept for sustainable area development that harmonizes geological, biological and cultural diversity through conservation principles and existing Spatial Plans. In addition to geological wealth, this area is also rich in biodiversity conservation and protection. Geoparks are a means of development where conservation of existing protected areas can be strengthened, and at the same time, opportunities for socio-economic development of local communities can be further enhanced simultaneously (Phaiboonnugulkij

et al., 2021). The 2015 launch of UNESCO Global Geoparks defined the definition of a new format of land development that focuses its two main actions on Geotourism and Education on environmental issues. These are two key aspects for conserving the geological and geomorphological assets of the areas where they are found and promoting the socio-economic development of their inhabitants sustainably with nature (Alvarez, 2020). Concerning formal education, geoparks can be utilized for various activities and develop educational resources for students and teachers (field trips, geology study groups, educational programs and resources adapted to different school levels, and learning tools). Geoparks can provide non-formal education for adults, and some also provide special training aimed at local communities (Catana & Brilha, 2020).

Local wisdom is the fruit or result of certain communities/ethnicities through their experiences and not necessarily experienced by other communities. Local wisdom is very strongly attached to certain communities/ethnicities because the value of local wisdom is tested, and through a long process, even its age is almost equal to the existence of a certain community or ethnicity (Wibowo & Gunawan, 2015). Local wisdom is a local cultural value that can regulate the order of people's lives wisely or wisely. Local wisdom forms a community with characteristics unique to an area so that it can be distinguished from people from other regions. Local wisdom in Indonesia has developed from about 633 ethnic groups that are heterogeneous with high diversity forming a multicultural society. Along with the times, local wisdom is often eroded by the era of globalism. The importance of integrating local wisdom values into learning has been suggested in Permendikbud No. 81A of 2013. Each region requires education following regional characteristics and daily life experiences to be more effective and contextual. Studies on the value of local wisdom in science learning have also been widely studied. Teachers can take advantage of the local potential in science learning in schools by adopting the framework of sociocultural studies in education, the process of integration with enculturation, assimilation and acculturation. The benefit obtained is that it is easy for students to construct modern science concepts while maintaining local wisdom. Besides being positive for cultural values, local wisdom has the potential to improve student's literacy skills.

In general, this study aims to examine the validity of geopark integrated science video learning resources to enrich students' local wisdom in elementary schools. More specifically, this study aims as follows: (1) to describe the validity of the content of learning resources in the form of videos; (2) describe the construct validity of learning resources in the form of videos; (3) describe the reliability of learning resources based on the assessment of three validators; (4) describe the validator's recommendations about learning resources in the form of videos; and (5) describe the geopark integrated science video visualization for elementary students.

PERSPECTIVE

Learning Resources

In a simple sense, learning resources are teachers and learning materials/teaching materials, either reading books or the like. In the design that the teacher usually prepares, there is one teaching component designed in the form of learning or teaching resources that are generally filled with reference books (compulsory reading books or recommended). Understanding learning resources is not that simple. All resources that can be used to benefit teaching processes/activities, either directly or indirectly, outside of the students themselves (the environment) that complete themselves during teaching are referred to as learning resources

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(Saputro, 2021). Classification of learning resources is as follows (Afifulloh, 2019; Irwin et al., 2012; Melchiorre et al., 2012; Mitchell, 2021): (1) Places or the natural environment around which a person can learn or process behaviour change then the place can be categorized as a place of learning which means learning resources, such as libraries, markets, museums, rivers, mountains, landfills, fish ponds, and so on; (2) Objects, namely all objects that allow changes in behaviour for students, then these objects can be categorized as learning resources. For example, sites, temples, other relics; (3) People or anyone with certain expertise where students can learn something, then the person concerned can be categorized as a learning resource. For example, teachers, geologists, police, and other experts; (4) Books, namely all kinds of books that can be read independently by students. For example, textbooks, textbooks, dictionaries, encyclopedias, fiction, and so on; (5) Events and facts that are happening, for example, riots, disaster events, and other events that the teacher can use as a source of learning events or facts.

Tutorial Video

Video is a medium that contains audio and visual elements, so it is called audiovisual media (Han et al., 2020). Learning videos are used to stimulate students' thoughts, feelings, and willingness to learn through displaying audiovisual ideas or ideas, messages and information. Learning videos are used to help students achieve learning objectives. Learning videos are live image recordings to deliver learning materials to obtain learning objectives (Ario & Asra, 2019). Learning videos that can increase learning motivation for students need to pay attention to the characteristics and criteria. Characteristics of learning videos (Wibawa & Schulte, 2015; Daryono et al., 2021; Nisbet et al., 2017); namely: (1) Clarity of Massage (clarity message) With video media, students can understand learning messages more meaningfully, and information can be received as a whole so that information will automatically be stored in long-term memory and is retention; (2) Stand Alone (stand-alone). The videos developed do not depend on other teaching materials or must not be used with other teaching materials; (3) User Friendly (friendly/familiar with the wearer). Video media uses simple language, is easy to understand, and uses common language. Information display that appears helpful and friendly to the user, including the ease of the user in responding and accessing as desired; (4) Representation of Content The material must be truly representative, for example, simulation or demonstration material. Both social and scientific subject matter can be made into video media; (5) Visualization with media The material is packaged in a multimedia manner which includes text, animation, sound, and video according to the demands of the material. The materials used are applicable, processed, difficult to reach, dangerous if directly put into practice, have a high level of accuracy; (6) Using high-quality resolution Display in the form of video media graphics made with digital engineering technology with high resolution but support for every speech computer system; and (7) Can be used classically or individually. Learning videos can be used by students individually, not only in school settings but also at home. It can also be used classically with a maximum number of 50 students. It can be guided by the teacher or listen to the narrative description from the narrator who has been provided in the program.

Natural Science

Learning science or learning Natural Sciences is one part of learning that focuses on explaining phenomena in the universe. Science learning is learning about natural science products and how these scientific products can be produced through the scientific method by paying

attention to scientific attitudes (Acesta, 2021). Science learning helps students develop higher-order thinking skills to enable them to face the challenges of everyday life. Natural science is formed from the interrelation between attitudes and scientific processes, investigations of natural phenomena, and scientific products (Suryawati & Osman, 2017). These interrelationships are cyclic and influence each other. A scientific product takes a long time to be produced. Scientists have gone through a very long process to formulate a concept, theory, or law that can be accepted and used throughout time. The process is not a one-time, linear process but a continuous, cyclic process and is supported by a strong mental attitude to find and produce a form of knowledge that will be useful to society. This combination of scientific processes and attitudes means that the investigation of natural phenomena becomes real in the form of scientific products produced (Chen, 2020).

Geopark

Geopark is a management concept for sustainable area development that harmonizes geological, biological and cultural diversity through conservation principles and existing Spatial Planning (Li et al., 2021). According to UNESCO, a Geopark is an area with clearly defined boundaries and has a large enough surface area for local economic development. Geopark consists of several geological diversity sites of special scientific importance, rarity and beauty known as geological heritage. Geoparks are not only related to geological diversity but also archaeological, ecological, historical or cultural values. Geopark is a form of utilization of protected area space, an opportunity to achieve sustainable development. Geopark is an earth park that is included in a conservation area. Geoparks have elements of geodiversity (geological diversity), biodiversity (biological diversity and cultural diversity) (Rodrigues et al., 2021). Geoparks include aspects of education as knowledge in the field of earth sciences on the uniqueness and diversity of the earth's heritage and aspects of the earth's heritage—the economic role of the community in managing the area as geotourism. The Geopark Program is a conservation program for geological diversity (geodiversity) and geological education for the community (geo-education) through geological site tourism (Mehdioui et al., 2020).

Local Wisdom

Local content is study material or subjects in academic units that contain content and learning processes about local potential and uniqueness. Local content provides an educational program in schools that provides broad insight to students about the specificities that exist in their environment (Murti, 2020). Curriculum Local content is a curricular activity that develops competencies tailored to the region's characteristics and potential, including regional advantages whose material cannot be grouped into existing subjects (Hetharion, 2021). Local wisdom is an attitude competency resulting from learning about the surrounding environment. Local wisdom is the behaviour of students so that they have solid insight into the state of the environment and the needs of the community, following the values / rules that apply in their area and supporting the continuity of regional development and national development. Local wisdom is a reflection of a society's way of life. Local wisdom is the knowledge found by certain local communities through a collection of experiences in trying (Ramdiah et al., 2020). This is then integrated with an understanding of the culture and natural conditions of a place. Local wisdom is one aspect that is closely related to culture. Local wisdom is a society's way of life and relates specifically to a particular culture (Safitri et al., 2020). Each ethnic group has local wisdom that contains socio-cultural values that must be maintained. This includes education,

health, and ancestral advice to always do good to fellow humans, even the nature in which they live.

METHOD

Participants

The subjects of this study amounted to three validators. The validators involved were one primary school teacher, one principal and one community leader. Validator lives on the island of Belitung, Bangka Belitung Province, Indonesia.

Procedure

This research design is research and development, R&D (Gall, Gall, & Borg, 2003). The design includes four general stages, namely: (1) Introduction to the content of local cultural values of the Belitung Geopark (Budiastra et al., 2021b); (2) The design of teaching materials packaged in science learning videos is integrated with geoparks; (3) Trial of teaching materials packaged in science learning videos integrated with geoparks; and (4) product dissemination. This article presents the research results in the second stage, namely the design of teaching materials packaged in integrated science learning videos with geoparks. The design stage is the activity of compiling teaching materials through an expert validation process. The result of this stage is the validity of teaching materials.

Case Materials and Discussion Questions

Teaching materials that require the development of an integrated geopark are in grades four, five and six for elementary students. The aspects measured in this design stage are: (1) the validity of the content of teaching materials in the form of videos; (2) construct validity of teaching materials in the form of videos; (3) reliability by three validators; (4) the recommendation of the validator regarding teaching materials in the form of videos; and (5) visualization of geopark integrated science learning resources.

Instruments And Data Analysis

In quantitative research, the main criteria for research data are valid, reliable, and objective. Validity is the degree of accuracy between the data that occurs in the object of research and the power that the researcher can report. Validator data can be identified through the information VV = Very Valid, V = Valid, IV = Invalid; and VIV = Very Invalid. Validity testing is done by using the Product Moment correlation formula. Testing the instrument's reliability was carried out using the Cronbach Alpha formula because the data was in the form of interval data.

RESULTS AND DISCUSSION

This study produces the following data: (1) the validity of the content of learning resources in the form of videos; (2) construct validity of learning resources in the form of videos; (3) the reliability of the instrument based on the assessment of three validators; (4) validator recommendations regarding learning resources in the form of videos; and (5) geopark integrated science video visualization for elementary students. The answers to the research objectives are discussed as follows.

(1) The validity of the content of teaching materials in the form of videos

Table 1: Content Validity Statistics

		V_1	V_2	V_3	Total_Score
V_1	Pearson Correlation	1	.443*	.492*	.817**
	Sig. (2-tailed)		.039	.020	.000
	N	22	22	22	22
V_2	Pearson Correlation	.443*	1	.509*	.795**
	Sig. (2-tailed)		.039	.016	.000
	N	22	22	22	22
V_3	Pearson Correlation	.492*	.509*	1	.813**
	Sig. (2-tailed)		.020	.016	.000
	N	22	22	22	22
Total_Score	Pearson Correlation	.817**	.795**	.813**	1
	Sig. (2-tailed)		.000	.000	.000
	N	22	22	22	22

*** Correlation is significant at the 0.05 level (2-tailed)**
**** Correlation is significant at the 0.01 level (2-tailed)**

Table 1 shows the results of the assessment of three experts on the content of learning resources through video media. Experts validate teaching materials before being used for teaching. The validator determines the suitability of 22 statements to the learning resource, including the suitability of the content. Table 3 provides information about the validity of teaching materials. Table 3 shows the validation process with valid results. Pearson Correlation (r) on V_1 shows .817 > rt = .432 indicating valid criteria. Pearson Correlation (r) on V_2 shows .795 > rt = .432 indicating valid criteria. Pearson Correlation (r) on V_3 shows .813 > rt = .432 indicating valid criteria. The validity test uses 22 statement items with a significance of 5%. The results of content validation from three experts met the aspects of content feasibility, presentation feasibility and language feasibility. This learning resource is presented using video media. Feasibility of content following science learning that is integrated with the environment. The environment around children is one of the learning resources that can be used in the learning process (Erlina, 2021). The goal is to utilize the surrounding environment so that learning is not boring and students better understand objects around the school environment. Because by bringing students directly to their placement, students will better understand what is in the school environment and the benefits of the school environment. Students not only learn with theory but immediately see objects around them.

(2) Construct validity of teaching materials in the form of videos

Table 2: Construct Validity Statistics

		V_1	V_2	V_3	Total_Score
V_1	Pearson Correlation	1	.877**	.351	.929**
	Sig. (2-tailed)		.000	.153	.000
	N	18	18	18	18
V_2	Pearson Correlation	.877**	1	.169	.852**
	Sig. (2-tailed)		.000	.502	.000
	N	18	18	18	18
V_3	Pearson Correlation	.351	.169	1	.626**
	Sig. (2-tailed)		.153	.502	.005
	N	18	18	18	18
Total_Score	Pearson Correlation	.929**	.852**	.626**	1
	Sig. (2-tailed)		.000	.000	.005
	N	18	18	18	18

**** Correlation is significant at the 0.01 level (2-tailed)**

Table 2 shows the results of the assessment of three experts on the construction of learning resources through video media. Experts validate teaching materials before being used for teaching. The validator determines the suitability of 18 statements to the learning resource, including the suitability of the content. Table 3 provides information about the validity of teaching materials. Table 3 shows the validation process with valid results. Pearson Correlation (r) on V_1 shows .929 > rt = .468 indicating valid criteria. Pearson Correlation (r) on V_2 shows .852 > rt = . 468 indicates valid criteria. Pearson Correlation (r) on V_3 shows .626 > rt = .468 indicating valid criteria. The validity test uses 18 statement items with a significance of 5%. The results of construct validation from three experts meet the feasibility aspects of graphic and electronic media feasibility. The presentation of this learning resource uses electronic media in the form of learning videos. So that the learning video can explain an abstract explanation and is very good for explaining a process. The message conveyed is more interesting in learning by using video. It encourages and increases student motivation to make students remember the material more (Budiastra et al., 2020). If designed properly, learning videos will effectively convey information and knowledge to students (audience). There are many advantages of video programs that can be explored to provide optimal benefits for its users. Learning videos can also make it easier for educators to carry out learning activities.

(3) The reliability of the instrument is based on the assessment of three validators

Table 3: Reliability Statistics

	Cronbach's Alpha	N of Items
Content	.727	3
Construct	.732	3

Table 3 shows the results of the correlation between the three experts' assessments of the content and constructs of learning resources through video media. Cronbach's Alpha value on content is .727 > .60, then the decision making in the reliability test on content by 3 validators is concluded to be reliable. The value of Cronbach's Alpha on the construct is .732 > .60, then the decision making in the reliability test on the construct by 3 validators is concluded to be reliable. The results of the assessment have a correlation indicating agreement that this

learning resource meets integrated science learning. Integrated science learning supports a science curriculum development framework that links science with everyday life, the environment, and technology. This learning is relevant to one of the essential principles of 21st-century learning, namely learning that needs to be linked to real-world situations. In this way, integrated science learning can support the framework of science curriculum development in schools. The structure and content of science are full of abstract concepts and principles so that the media can concretize those abstractions according to the cognitive capacity of students (Adeleke, 2020).

(4) Recommendation of the validator regarding teaching materials in the form of videos

Here are some recommendations and validator responses regarding Geopark integrated science learning resources through video media:

• In making learning videos such as "marastaun" activities to focus on and not neglect the main point of the event, the main thing is its implementation and rituals.
• Marastaun / happy year, meaning that the community and traditional and community leaders gather to express gratitude for the produce of the land one year ago and pray for great results in the following year.
• Ordinary rituals and habits of traditional leaders or village shamans such as offerings to the earth in the form of offerings or the like to be displayed.
• The activities of praying together and rituals at the annual Maras ceremony should be the main focus while welcoming guests and cutting the long leapt are just a sweetener for the event.
• The video material displayed follows the real situation and situation in the field and is feasible to be taught/given to students.
• The setting and material presented are appropriate for raising the topic of kaolin lakes in Tanjung Pandan District, Kab. Belitung Prov. Kep. Bangka Belitung.
• The video follows the reality on the ground.

Most geoparks promote activities tailored to different school levels and national curriculum disciplines (biology, geology, geography). They also promote interdisciplinary activities highlighting the relationship between geoscience and biology, history and culture, nature conservation and protected areas, and environmental education. Geological themes usually raised by geoparks are based on general geological concepts/processes, geodiversity, geological heritage, and conservation. Geoparks effectively contribute to raising awareness for the protection and conservation of the natural and historical-cultural heritage in their areas and considering national/regional/local projects or strategies for sustainable development (Budiastra et al., 2021b).

(4)Visualization of geopark integrated science learning resources for elementary students

The following pictures are geopark integrated science learning resources for elementary school students packaged attractively through learning videos. Teaching materials consist of an introduction to the module and the content of the module. The videos are also equipped with motivational content for elementary school students. Videos relevant to student development can build on students' needs and emotions (Kopsov, 2021). This educational video instils the spirit of local wisdom to maintain the environmental sustainability. Maintaining local wisdom in order to remain sustainable is not an easy matter. Globalization affects local wisdom through the human mindset, leading to cultural transformation. Culture can be completely lost, or it can

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be maintained but combined with foreign culture. The sustainability of this local wisdom needs to be developed through knowledge and combining it with technology that is beneficial for human survival (Zainuddin et al., 2018).



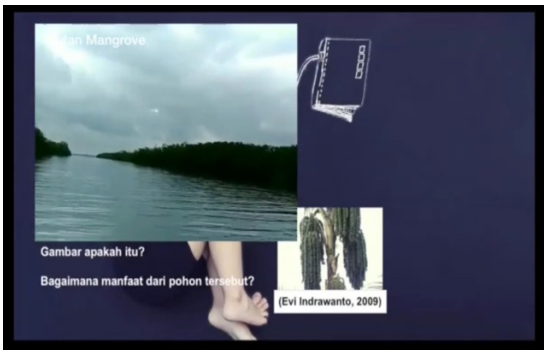
Geopark Integrated Natural Science Video Introduction



Motivation to Learn Local Wisdom for Elementary Students in The Video



Teaching Materials for Grade 5



Contents of the Video About Mangroves

It can also be stated, through learning resources and teaching materials that practice local wisdom, teachers can provide knowledge, skills, the formation of student attitudes and behaviour in the form of insight into environmental conditions and community needs. With this provision, students are expected to develop and preserve natural and cultural resources around them. Students can be aware of the environment and the problems in society and can help find solutions (Fadli, 2020).

CONCLUSIONS

All kinds of sources that exist outside of oneself and facilitate the learning process can be referred to as learning resources. The right learning resources enable individuals to change from not knowing to know, and not understanding to understanding, from being unskilled to being skilled, and enabling individuals to be able to distinguish between what is good and what is not, what is praiseworthy and what is not, and so on. Learning resources through geopark integrated science video media to enrich students' local wisdom in elementary schools fulfil content and construct validity. Learning resources also meet the reliability based on the assessment of three experts. The validator's recommendations on learning resources in videos can improve the quality of teaching materials. The teaching materials that have been developed support the learning motivation of elementary school students related to the geopark area.

SUGGESTIONS

The implementation of environmental-based science teaching materials can be further developed on a broader topic. The learning process using learning resources in geopark integrated science videos can introduce and familiarize students with their natural, social, and cultural environment. Local wisdom in teaching materials equips students with the abilities, skills, and knowledge about their area useful for themselves and the community in general. Further development needs to be done, so that teaching materials comprehensively train attitudes and behaviours in line with the values or rules that apply in the area and preserve and develop the noble values of local culture to support national development. Furthermore, higher-order thinking skills can also be internalized in these teaching materials.

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