



The Aptitude of Universitas Pendidikan Indonesia Students in Designing Science Learning that Integrates Culture

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Abstract: The aim of this research is to describe how the aptitude of elementary school students in designing a learning that integrates culture. The research methodology that was used in this research was descriptive qualitative by analysing each components of the learning plans that was designed by elementary school teacher matriculant of seventh semester who enrolled in a course namely science learning based on Banten culture that consists of 30 females and 15 males. The result of the study showed that the students' aptitude in designing science learning that integrates culture in elementary school is categorised as good with average overall score for each lesson plan components of 3,13. The research result was categorised as good because before designing the lesson plan the students have already had rich experiences towards local wisdom contents related to the course material, especially science through lectures. This research gave impacts in developing students aptitude in designing lesson plan that integrated cultures which can be their provision when they become elementary school teachers so that can also give impact for the elementary school students to know more about their cultures which is wrapped in a form of science.

Keywords: Designing science learning; Elementary school; Integrates culture

Introduction

Based on the law of national education system number 20 year of 2003, learning can be defined as social interaction process between students and teachers in a learning environment. Based on the understanding, learning is an assistance that is given by the teachers so that there is a process of acquiring knowledge, mastering, and also behaviour building, and students beliefs. Through learning it is expected that there is not merely gaining knowledge but gaining attitude as well. To elevate students' attitudes, it is necessary to have learning that has cultural values. In appendix IV of the Miinister of Education and Culture No. 81A Year 2013 explicitly explained that learning in the elementary school is implemented thematically, namely integration across learning subjects that aims to improve aspects of attitudes, skills, and knowledge as well as appreciate the diversity of local cultures. To make this happen, it is necessary to integrate culture in learning. Cultural integration in learning is an effort to increase pride in culture which is a local superiority in the environment and as an effort to fight the flow of globalization that will

destroy our culture. In line with the above (Mafongoya et al., 2021) in Zimbabwe that local wisdom can be integrated in science education and needs to be supported by government policies and in collaboration with scientific researchers based on western science. But the fact is that many teachers have not done this, namely to integrate culture in learning. According to Wuryastuti (2021) many teachers are already familiar with the culture in their area but do not think about integrating it into learning, including science. They know and understand about culture but do not understand how culture relates to learning. This shows that these teachers have not been able to reconstruct the original science that incorporates culture into scientific knowledge. The current science curriculum comes from western culture or so-called "Western Science" which is derived from scientific science and is contradicted with the ingenious science that applies to local people and this creates a conflict between the views of native science and scientific science. Western science is based on observations that use the empirical senses without involving cultural elements (Rifenta, 2019).

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Furthermore, Wuryastuti stated that based on the results of her research, there are still many teachers, especially elementary school teachers who have not been able to design learning that integrates culture so that it needs attention from education observers. For this reason, responsive teachers are needed to immediately implement learning that integrates culture. Therefore, teacher education institutions are required to prepare prospective teachers who have cultural competence to adapt to students who come from various cultural backgrounds, races, social classes and diverse languages. This is reinforced by Wiggan et al. (2023) in the United States, there is a need for culturally responsive learning practices especially in science, technology, engineering and mathematics (STEM) and science, technology, engineering, arts and mathematics (STEAM). Palecek (2020) also emphasized that the application of the concept of culture is clearly beneficial for the social and scientific sciences.

As one of the institutions that produce prospective elementary school teachers, our institution has equipped students with these competencies. Students have been equipped with the ability to design and implement learning that integrates culture, including in science learning. The purpose of this research is to escalate students' ability in designing science learning that integrates culture. The method used in this research is qualitatively destructive by observing carefully the components of a science learning plan that integrates culture with certain criteria. The novelty of this research is a lesson plan or learning design that is different from the usual because this research produces lesson plans or learning designs that integrate culture and are very contextual in learning because culture is closely integrated with students' daily lives.

The authenticity of cultured education is marginalized due to having to follow global criteria. The problem of education today is only based on global standards that only pursue the problem of numbers. In addition, when it comes to values or character today, there are many people, especially the younger generation, who are experiencing a decline in morals and attitudes. Character education applies a system of inculcating character values to school members which includes components of knowledge, awareness or willingness, and actions to implement these values.

Education must be implemented more optimally by emphasizing policies that favor local values and involve society involvement. In this case, anthropologists see a very close relationship between education, society, and culture where all those three have the same potential, namely about values. The authenticity of cultured education is marginalized due to having to follow global criteria. The problem of education today is only based on global standards that only pursue the problem of numbers. In addition, when it comes to values or character today, there are many people, especially the younger generation, who are experiencing a decline in

morals and attitudes. Character education applies a system of inculcating character values to school members which includes components of knowledge, awareness or willingness, and actions to implement these values.

One of the essences of implementing the 2013 curriculum is that students not only acquire cognitive knowledge but also noble characters that have been reflected in Indonesian culture. This is very important for students who are still in elementary school, because at this level the basics of character building are very important to be instilled so that later students have strong characters so that they become excellent personalities.

In addition, in the 2013 curriculum it has also been explained that each student has their own uniqueness. The uniqueness can be different characters because they come from different genes, different economic backgrounds and socio-cultural backgrounds and so on. Disnawati et al. (2019) emphasized that in preparing and developing learning activities, the principles of preparation and development must be considered in accordance with the conditions in the education unit, including the cultural background, norms, values and environment of students. Therefore how important it is for science educators to pay attention to the cultural environment from which students come from. Things that need to be considered from the aspect of the student's cultural background, seen from how students carry out daily activities in developing their culture. This is relevant to Piaget's theory which asserts that through the process of assimilation, children learn according to the existing schema and are transformed into new experiences. In the world of education it is assumed that the learning process must take advantage of what students already know (Bibon, 2022).

In Attachment IV to Permendikbud No. 81A of 2013 states that the implementation of learning in elementary schools is developed thematically to improve aspects of attitudes, skills and knowledge and respect local culture. King's findings state that there is an increase in the ability of multicultural students to adapt to other cultures in learning (King et al., 2022). With the above statement it is clear that the integration of culture or local wisdom in learning is something that can no longer be negotiated, considering that in local wisdom there are noble values that play a role in shaping the character of students. In addition, it is also an effort to prevent cultural erosion from the swift currents of globalization. The implementation of the curriculum by integrating local culture aims to increase the sense of nationalism in students. However, this has not been seen because science learning materials still apply Western science and exclude local science. Alonso-Yanez (2017) reinforces the above revelation by asserting that the sociocultural context is an important aspect of science education. This can make science curriculum 'alive' and

can help students understand science as advice in overcoming challenges facing today's society.

Cultural integration in the curriculum or in learning also occurs in several other countries. The results of a study Weise et al. (2021) involving indigenous and non-indigenous representatives from Bolivia, Colombia, Ecuador, and Argentina produced several concepts that took into account an intercultural perspective to build the basis for an intercultural curriculum.

The 2013 curriculum has accommodated some of these foundations as a consideration for combining schools and communities in the education dimension. Therefore, efforts to integrate culture into learning in primary schools aim to accommodate students' cultural differences, and utilize culture as learning content as well as the first step in developing culture itself. In addition, one's cultural background is a key role in learning because learning is a social process (Brion, 2022a).

Many studies reveal that many teachers have not integrated local culture/wisdom in learning. Although in practice, it is rare for teachers to use learning methods exclusively because in general teachers combine various strategies to encourage active processing of meaning formation (Jakobsen et al., 2019).

Based on these facts, there must be immediate steps taken to make the teacher's role more meaningful in creating meaningful and innovative learning. Science teachers need to try to implement science learning that integrates culture. Brown says there is a need for cultural relevance in the teaching of science, technology and mathematics in America and that by implication teachers need to create lesson plans that link cultural relevance in their STEM classrooms.

There are some teachers who have tried to do science learning that integrates culture, but not through proper planning. teachers who want to try to integrate

culture in science learning, are still not able to make appropriate lesson plans. These teachers should develop their ability to create learning plans that integrate culture because according to Miller et al. (2021) based on the results of his research showed that professionally designed lesson plans can be used to improve learning practices and support school improvement efforts.

Method

The research design used in this study is a descriptive qualitative research design that aims to describe the ability of prospective elementary school students in designing learning plans that integrate culture at PGSD, Universitas Pendidikan Indonesia. The subjects in this study were PGSD students at the Universitas Pendidikan Indonesia as many as 45 people consisting of 30 women and 15 men. The student is a 7th semester PGSD student who is taking the Banten Culture-Based Science Learning course.

The method used is careful observation of the design of learning plans made by students which include components of learning objectives, teaching materials, media and learning resources as well as learning scenarios. Each of these components consists of several aspects that are assessed with suspension criteria which are described as rubrics in table I. Table I describes the assessment criteria for learning plans and guidelines for suspension. The method used is careful observation of the design of learning plans made by students which include components of learning objectives, teaching materials, media and learning resources as well as learning scenarios. Each of these components consists of several aspects that are assessed with suspension criteria which are described as rubrics in table 1.

Table 1. Describes the Assessment Criteria for Learning Plans and Guidelines for Suspension

Lesson Plan Components	Measured Aspects	Criteria
Learning Objectives	Consist of cultural content and compatible with competence and basic indicator	Score 4: if the teacher conveys learning objectives that contain cultural content and are in accordance with Competencies and Basic Indicators Score 3: if the learning objectives contain cultural content but are not in accordance with the Competencies and Basic Indicators Score 2: if the learning objectives contain cultural content but are not in accordance with the Competencies and Basic Indicators Score 1: if the learning objectives do not contain cultural content and are not at all in accordance with the Competencies and Basic Indicators
	Conformity of the formulation of goals with cultural aspects	Score 4: if the teacher conveys the formulation of objectives in accordance with the cultural aspects Score 3: if the formulation of goals is not in accordance with the cultural aspects Score 2: if the formulation of goals is not in accordance with the cultural aspects Score 1: if the formulation of goals does not contain cultural aspects

Lesson Plan Components	Measured Aspects	Criteria
	There is a formulation of student competencies to solve problems that arise from the student cultural community.	Score 4: when the teacher conveys the formulation of goals about student competence to solve problems that arise from the student's cultural community
		Score 3: if there is a formulation of goals about students' competence to solve problems but not from the student's cultural community
		Score 2: if there is a formulation of goals about student competence to solve problems but not about culture
Teaching Resources	Taking advantage of the linkage of the concepts studied with the cultural community of students	Score 1: if there is a goal formulation about student competence to solve problems but it is less meaningful
		Score 4: if the teacher delivers teaching materials that describe the relevance of the concepts studied toward the student's cultural community
		Score 3: if the teaching materials delivered by the teacher do not describe the relevance of the concepts being studied toward the student's cultural community
	Tracing of teaching materials containing cultural content	Score 2: if the teaching materials delivered by the teacher do not describe the relevance of the concepts being studied toward the student's cultural community
		Score 1: if in the teaching materials delivered by the teacher contains no cultural content in the concepts being studied
		Score 4: if the teacher delivers teaching materials directly and contains cultural content
	Describing the relationship of the field of science studied with other fields of science that contain cultural content	Score 3: if the teaching materials delivered by the teacher are less direct but already contain cultural content
		Score 2: if the teaching materials delivered by the teacher are not direct but already contain cultural content
		Score 1: if the teacher conveys teaching materials that describe the relationship of the field of science being studied with other fields of science, where each field of science contains cultural content
	Containing cultural content and is in accordance with learning objectives	Score 4: if the teacher conveys teaching materials that describe the relationship of the field of science being studied with other fields of science, where each field of science contains cultural content
		Score 3: if the teaching materials delivered by the teacher describe the relationship of the field of science being studied with other fields of science, where one of the fields of science contains cultural content.
		Score 2: if the teaching materials delivered by the teacher describe the relationship of the field of science being studied with other fields of science, but each field of science does not contain cultural content
Media and Learning Resources	Containing cultural content and is in accordance with learning objectives	Score 1: if the teaching materials delivered by the teacher do not describe the relationship of the field of science being studied with other fields of science, but each field of science does not contain cultural content
		Score 4: if the teacher uses media and learning resources that contain cultural content and are in accordance with learning objectives
		Score 3: if the media and learning resources used by the teacher contain cultural content, but are not in accordance with the learning objectives
	Containing cultural content and is in accordance with teaching materials	Score 2: if the media and learning resources used by the teacher contain cultural content, but are not in accordance with the learning objectives
		Score 1: if the media and learning resources used by the teacher do not contain cultural content
		Score 4: if the teacher uses media and learning resources that contain cultural content and are in accordance with teaching materials
		Score 3: if the media and learning resources used by the teacher contain cultural content, but are not in accordance with the teaching materials

Lesson Plan Components	Measured Aspects	Criteria
	<p>In accordance with the characteristics of students who come from the surrounding cultural environment</p>	<p>Score 2: if the media and learning resources used by the teacher contain cultural content, but are not in accordance with the teaching materials</p> <p>Score 1: if the media and learning resources used by the teacher do not contain cultural content</p> <p>Score 4: if the teacher uses media and learning resources that are in accordance with the characteristics of students who come from the surrounding cultural environment</p> <p>Score 3: if the media and learning resources used by the teacher are not in accordance with the characteristics of students that come from the surrounding cultural environment</p> <p>Score 2: if the media and learning resources used by the teacher are not in accordance with the characteristics of students who come from the surrounding cultural environment</p> <p>Score 1: if not using media and learning resources</p>
<p>Learning Scenario</p>	<p>Showing the introductory, main, and closing activities clearly and there is a relationship between the concept and the student's cultural community</p> <p>Constructivist and problem solving in the context of cultural communities</p> <p>Involve the active participation of students and gain an integrated understanding between the fields of science and culture as a basis for critical thinking</p>	<p>Score 4: if the teacher conveys a learning scenario that clearly displays the introductory, main, and closing activities and there is a relationship between these concepts and the student's cultural community</p> <p>Score 3: if the learning scenario presented by the teacher displays preliminary, main, and closing activities, but only in the main activity there is a relationship between the concept and the student's cultural community</p> <p>Score 2: if the learning scenario presented by the teacher displays preliminary, main, and closing activities but only in the introductory or closing activities or both, there is a relationship between the concept and the student's cultural community.</p> <p>Score 1: if the learning scenario presented by the teacher displays preliminary, core, and closing activities but only in the introductory or closing activities or both but there is no relationship between the concept and the student's cultural community</p> <p>Score 4: if the teacher presents a constructivist learning scenario and solves various problems in the context of a cultural community</p> <p>Score 3: if the learning scenario presented by the teacher is less constructivist, but solves various problems in the context of the cultural community</p> <p>Score 2: if the learning scenario presented by the teacher is less constructivist and does not solve various problems in the context of the cultural community</p> <p>Score 1: if the learning scenario presented by the teacher is not constructivist and does not solve various problems in the context of the cultural community</p> <p>Score 4: if the teacher conveys a learning scenario that involves the active participation of students and gains an integrated understanding between the fields of science and culture as a basis for critical thinking</p> <p>Score 3: if the learning scenario delivered by the teacher involves less active participation of students, but students gain an integrated understanding of the fields of science and culture as a basis for critical thinking</p> <p>Score 2: if the learning scenario delivered by the teacher involves less active participation of students and students do not have an integrated understanding of the fields of science and culture as a basis for critical thinking</p> <p>Score 1: if the learning scenario delivered by the teacher does not involve the active participation of students and students do not gain an integrated understanding between the fields of science and culture as a basis for critical thinking</p>

Result and Discussion

The results of this study can be seen from the assessment of learning plans for science learning that integrates culture. The results of student learning plans about science learning that integrates culture in elementary schools is the average for learning objectives component is 2,72, teaching materials component is 3,14, media and learning resources component is 3,42 and learning scenarios component is 3,22. From the data above, there are several indicators that become components in the design of Science Learning that Integrates Culture: Learning Objectives, Teaching Materials, Media and Learning Resources and Learning Scenarios. Based on the data above, the average score obtained was 3.13.

Discussions

In this study, in the design of science learning that integrates the culture applied in lectures, the lecturer has compiled learning steps that can later be used by students in designing science learning in elementary schools. For example, first determine local wisdom in Banten or indigenous knowledge related to the topic being discussed and look for its alignments. The next step is to try to insert cultural content in each learning step, both in the introduction, main and closing activities. In addition, every aspect of learning design such as learning objectives, methods, media and learning resources as well as evaluation must also contain cultural content. This is in accordance with the opinion Garza (2021) that the content of local wisdom needs to be included in the science curriculum in universities because in his article Garza discusses the international curriculum on the stem curriculum in universities which includes elements of indigenous knowledge.

In terms of designing this learning, researchers do not require students to apply Banten culture in their designs but are free to choose their native culture with the aim of making it easier for students to apply natural phenomena in the surrounding environment which are local wisdom and are more contextual in learning design. In addition, it also aims to make the learning plan more contextual because students already know and understand and feel various local wisdoms in the area. The learning process with a contextual approach is a complete educational process because it is able to make students understand the material by connecting the context of everyday life and being able to solve problems (Hakim et al., 2020). From the results of the analysis of student learning plans conducted by researchers, their most prominent ability is in designing learning media and resources, and next is designing learning scenarios,

the next sequence is in designing teaching materials and the lowest is designing learning objectives.

Learning Objectives

According to Yaz et al. (2020) it can be said that sains curriculum in several countries are based on dynamic process and possess dynamic structure, same as other curriculum. For this reason, there are several elements or aspects in the curriculum that are inserted with other elements such as elements of local wisdom. Before determining learning objectives, a teacher or prospective teacher must conduct a curriculum analysis whether the curriculum has instructed that in its implementation it recommends integrating culture or local wisdom as in the 2013 curriculum. Curriculum analysis is used to identify competencies and understand the depth and breadth of competencies that must be achieved in learning. Curriculum analysis begins by looking at the basic competencies that must be achieved in the curriculum. The next step is to describe competency standards into indicators. After making indicators, the next step is to create learning objectives to be achieved. Learning objectives will be a reference for determining learning materials, learning strategies, learning methods and learning media in the learning process. In learning design that integrates culture, the cultural content is reflected in the objectives because the learning objectives will determine the focus of the entire series of learning activities.

In this study the indicator that has the lowest score is the learning objective. Almost all students do not integrate culture into learning objectives. They are only able to design learning objectives based on the nationally applicable lesson plan format which is only a standard format, for example they must use operational verbs, which contain aspects of Audience, Behavior, Condition and Degree. This is as expressed by Asmaningrum et al. (2019) that based on the results of his research in schools that have adequate learning facilities, but are generally national in nature. The point is that the learning tools in these schools including lesson plans follow national rules and there is absolutely no touch of local culture involved in setting learning objectives. They have been able to formulate learning objectives in accordance with applicable rules but some students have not been able to incorporate cultural content into it.

Teaching Material

Culture is the main strength in people's lives so it must consider culture at every stage of the professional learning process (Brion, 2022b). Because culture is something that must be considered in learning, culture or local wisdom is also something that needs to be integrated in teaching materials. The ability to make

teaching materials or teaching materials with local contexts is the goal of developing science learning that integrates culture. The ability to make teaching materials based on local wisdom is an act in maintaining local wisdom because local wisdom itself is rarely documented.

The ability to make teaching materials makes students trained through field activities. This is understandable because students get rich experience through observation and interviews when this research takes place, so they can easily register in making lesson plans. Field activities carried out by students are very helpful in improving their understanding. Zarestky et al. (2022) who has conducted research on science learning for adults said that science learning that focuses on field experiences encourages students to interact with the natural environment and can improve their knowledge and skills. They already understand how to associate the results of their observations and interviews with resource persons in the field with the elementary school materials. As explained by the researchers above that, science learning that integrates the culture that they have followed so far is very helpful for them in designing culture-based science learning, especially in terms of designing teaching materials because science learning that integrates culture that is implemented in lectures is very contextual so that students understand the material being studied. That field activities can facilitate the diverse needs of students and can increase students' insight.

As revealed by Adu-Yeboah et al. (2018) that the experience in educational institutions, teachers can improve pedagogical skills such as designing lessons, setting learning objectives and providing learning resources and increasing their ability in learning practices. This is reinforced by Crocetto (2021) that field activities can facilitate the diverse needs of students and can increase students' insight. In addition, most of the teaching materials made by students already contain or train students to think at higher levels and contain cultural content. Students understand that in addition to containing cultural content, the designed teaching materials must also train students to think at a high level. This is because students refer to the handbook in elementary schools, namely the 2013 SD/MI integrated thematic book curriculum. Based on the results of research Prastowo (2019) that the 2013 SD/MI integrated thematic book curriculum has facilitated learning oriented to the development of higher order thinking skills. This book has met expectations with 21st century learning that already contains HOTS content that is greater than LOTS content.

Media and Learning Resources

In the standard contents of the National Education System Law no. 20 of 2003 implies that in the learning process, teachers must prepare contextual teaching materials according to the needs and environment of the local community (National Education Department, 2003). Contextual teaching materials will support the implementation of contextual learning. Contextual teaching materials will be realized if supported by using contextual media and learning resources. For this reason, it is recommended for teachers to use media and learning resources that are able to realize contextual learning. The world of education is an ever-changing system that needs to be developed and adapted to modern socio-economic realities. Currently there is a dramatic change to the pedagogical framework so that there are changes at all levels of education and online learning platforms are encouraged (Kuatbekov et al., 2023).

In this study, students use media and learning resources in the form of the surrounding environment, pictures, videos and multimedia. The surrounding environment that is used as a medium and source of learning is the environment that contains Banten and Non-Banten local wisdom because students from outside Banten are allowed to explore their local wisdom. This multimedia can be in the form of videos, animated images, flash macromedia, e-books and Android-based teaching materials. Some students who use multimedia include those who want to explain the process of making pottery as an extension of the concept of style, making *jejerong* cakes and *emping* as typical Bantenese traditional foods to explain the concept of changing objects. The advantage of multimedia is that it is able to provide a true picture of a particular form or process. Thus, the use of multimedia can be used as a very contextual learning tool so that it can increase students' mastery of concepts. Multimedia is an interesting medium, especially for elementary school students because it looks like the original. According to Suroto et al. (2021) the more real the media used and the more involvement of students in learning, it will help achieve meaningful learning activities.

Multimedia has the comprehensive advantage of enabling students and teachers to attend classes and communicate remotely though online media. In addition, students' learning motivation can increase the learning effect (Shen et al., 2021). Besides aiming to improve students' mastery of concepts, the use of media as mentioned above also has an affective aspect, because if students are able to master these concepts, there will be student interest in science. This is as expressed by Opesade et al. (2022) which is a finding from his research which shows that a positive attitude towards science and

critical thinking behavior will increase a person's interest in science.

The explanation above is an overview of the media and learning resources used by students in making lesson plans which according to the researchers are quite ideal so that the indicators of media and learning resources get the highest score beforehand. In the lesson plan format, they use many cultural objects that contain high cultural values. For example, there is a student who is able to connect science and mathematics subjects, so that he is able to display media in the form of bamboo cups made by the Baduy community. The media describes the natural resources produced from the Baduy area (science) and the forms of space buildings (mathematics). The student can also display pictures of *leuit* by building flats and building rooms in *leuit*. *Leuit* is a place or barn for storing harvested rice for the Baduy in the form of a stilt building with four feet of wood and supported by stones that are in direct contact with the ground. *Leuit* aims to store rice for a long time and free from rat pests. According to Arisetyawan et al. (2019) apart from being a storage area for rice, *leuit* is seen as a symbol of food security for the Baduy community. In addition, there are other students who use media and learning resources for *bola bekel* games and *gatric* games in style learning in elementary schools.

Learning Scenario

In this learning scenario what seems to be charged with cultural values is little in the introduction, on the main activity and little on the closing. In the introductory and closing activities, only religious values are impressed, namely when praying to start and end learning activities. As stated by Nuralita (2020) that the religious value of the lesson plans designed by the teacher only appears through the opening and closing prayers about learning. This is because the habit of praying at school is only carried out during lessons scheduled for the first and last of study hours. In these main activities, some students have been able to make learning activities that contain cultural activities such as lesson plans that discuss object changes by showing a video of making *Jejong* cake, which is a typical cake from the Pandeglang area and there is also *Bontot* cake from Pontang District, Serang Regency.

By involving local wisdom such as making traditional cakes from the area where students come from, it will be able to increase students' mastery of concepts because there is the formation of meaning in a contextual learning atmosphere and the application that occurs in everyday life. The demands of 21st century skills explain the importance of mastering concepts and being able to apply them in everyday life. Aifan (2022) explained that if students cannot solve problems or find

innovative solutions in everyday life, then students are not confident in their abilities in their fields to get a job when they graduate. For this reason, universities must instill 21st century skills to make university graduates more competitive in the global job market. Thus in this learning scenario students have been able to relate to social issues. Social science problems are closely related to how students can understand science and its applications in everyday life. When students are faced with problems related to everyday life and these problems can be solved, it is hoped that students can change their attitudes (Parcha et al., 2020).

Conclusion

The scores showed that students' ability to design science learning that integrates culture are good. Lesson plan of science lesson that integrates culture which was design by students generally has given opportunity for activities creation to develop nation's culture values This is inseparable from the experience of students during lectures which is a science learning that integrates culture. While studying, both in class and in the field, students see many facts about local wisdom around them. This certainly increases their knowledge in translating original knowledge into scientific knowledge.

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Author Contributions

In this research, Wuryastuti performed conceptualization and analysis of the origin draft. Widodo, Encep conceived the idea and wrote some introductory information; Hanif developed and reviewed the manuscript. Methodology, Alfarisa.; software, Hanif.; validation, Wuryastuti and Widodo; formal analysis, Wuryastuti, Alfarisa.; investigation, Wuryastuti; resources, Wuryastuti and Ridwan.; data curation, Wuryastuti; writing—original draft preparation, Wuryastuti; writing—review and editing, Wuryastuti and Hanif.; visualization, Wuryastuti.; supervision, Wuryastuti.; project administration, Wuryastuti.; funding acquisition, Wuryastuti.

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Conflicts of Interest

The authors declare no conflict of interest.

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