Integrating Space Science and Local Wisdom through Creative Learning: Indonesian Case Study

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Abstract

Indonesia has various local wisdom. The local wisdom has been inherited from generation to generation. It is also integrated into formal education. Integrating local wisdom and education is also practiced in isolated areas like Gunung Katun Tanjungan village in Tulang Bawang Udik subdistrict, Tulang Bawang Barat regency, Lampung province. This village only has one school andit is an elementary school. Without a strong communication signal, students in this village cannot access educative information. In this limitation, creative learning is needed so students can get their right to education. This article seeks to investigate the author's creative learning strategy for teaching science, namely the solar system to 6th graders to connect space science and local wisdom. This article was written based on the author's experience. Then, the experience was analyzed using creative learning theory. The analysis was carried out by matching the variable mentioned in the creative learning theory and the author's experience. The conclusion shows that creative learning can create a fun learning environment to overcome the limitations in an isolated area. Moreover, creative learning has helped students to relate space science and local wisdom so space science can be a part of their lives.

Keywords*:* Creative Learning; Isolated Areas; Local Wisdom; Solar System

Introduction

Local wisdom is a set of beliefs or policies based on the values and qualities prevalent in a community that are frequently used, thought to be life's direction, and passed down from generation to generation. Local wisdom can take the shape of information, skills, and policies that are used to benefit the people involved. There are two kinds of local wisdom: tangible and intangible. Tangible local wisdom takes the shape of traditional text, traditional architecture, and cultural symbols, whereas intangible wisdom takes the form of advice or proverbs (Manugeren, et al., 2017).

The above definition mentions that local wisdom is inherited from generation to generation. One method to inherit local wisdom is through education. Education can be used to inherit local wisdom because it has proved its ability to develop society. In Guatemala, a scholarship program offers 25 days of intensive leadership training for young indigenous women through a peer tutorial system that provides a unique experience, a variety of practical training, opportunities for personal growth, and evidence of empowerment, has demonstrated social changes for youngwomen, as well as their families and communities (Bowen & Miller, 2018). Another example in Eastern Europe, community-engaged educational programs may enhance local capacity for building communities by bolstering local community assets; increasing community functioning capacity; and engaging in transformative social processes that enable community groups to formulate their long-term objectives, contribute to policy-practice, and social change processes that they deem necessary (Sugawara, et al., 2023).

That situation is also suitable for Indonesia because it has more than 17,000 islands and a lotof ethnic groups. Each island's communities have distinct characteristics in terms of environmental preservation and utilization. The environment can be maintained and used in a variety of ways, depending on environmental variables. People live on the banks of rivers, on the seashore, on the outskirts of woods, in the mountains, and so on. Their behavior has been molded by their environment in such a way that they can continue to grow, develop, and adapt to their surroundings. They always take good care of their environment to live longer (Wahyu, 2021).

Besides distinct environmental conditions in Indonesia, among those 17,000 plus islands, there are a lot of isolated areas. These isolated areas are relatively poor and lack access to development, the economy, and other public facilities, like education, health, technology, and communication. In Indonesia, the term 3T (*terdepan*, *terluar*, *tertinggal*) or frontier regions, outermost regions, and disadvantaged regions are used to describe the isolated areas. The Indonesian government has five standards to classify certain areas as 3T. They are the border; the economic conditions; the human resources; the development facilities and infrastructure, the regional finance, the access barrier; and the areas' characteristics (Purwanda et al., 2023). However, those isolated areas also have local wisdom that should be preserved as the national wealth.

In Indonesia, local wisdom has been applied in different areas. Research shows that businessmen develop collaborative social responsibility when they study local wisdom to increase product development, marketing strategy, and corporate social responsibility (CSR) programs. By implementing collaborative social responsibility, businessmen allow local people to give their aspirations on what the companies can provide in their CSR programs. This collaborative pattern involves companies, government, and local people (Kartikawangi, 2017). In isolated areas of Indonesia, local wisdom has been preserved and practiced for centuries. Baduy tribe, one of the indigenous tribes in Indonesia, depends on nature and always maintains the balance of nature, through traditional rules. Pikukuh Sapuluh are the basic guidelines of life and produce Baduy culture in thinking, acting, and behaving (Halmahera, et al., 2019).

Another indigenous tribe, Suku Anak Dalam, during the covid-19 pandemic, left the settlement based on the habit of melangun, namely leaving the house to escape some danger or grief. Based on the message of the ancestors of Suku Anak Dalam, melangun underlies alienating behavior by going to the forest during the covid-19 pandemic to avoid illness (Ridwan & Sari, 2020). In Kei islands, research shows that a combination of traditional coastal community values and marine characteristics, such as phytoplankton biomass, coral reefs, mangroves, and seagrass in the waters, may lower coastal community resistance (Hamid, et al., 2021). In the education area, local wisdom has been applied widely. Research in Thailand, forexample, recommends the appropriate model for applying local wisdom in developing teaching and learning activities in elementary schools as follows: 1) cooperation between the governmental and private sectors in promoting community learning and teaching, 2) cooperation between educational institutes and community organizations in supporting the creativity of leaders and villager philosophers, 3) religious communities as the center of local wisdom development, learning source, learning process, 4) educational institutes administrators had to supervise their local education, inspire, urge the community and family to be conscious, and collaborate in the educational process, and 5) teachers had to study their community as well as information and select traditional knowledge which integrates local wisdom and highlights local wisdom application (Chusorn, Ariratana, & Chusorn, 2014).

In Indonesia, research shows that local wisdom-based education contains values that are relevant in the education field and everyday life. It can improve the quality of the

teachers, students, and schools. It motivates teachers to achieve qualified learning. It also makes students become more active and love regional potential. It makes schools become culture centers, not only places to transfer knowledge (Suarningsih, 2019). Moreover, for students who study foreign languages, local wisdom will assist students in learning about their local values and traditions. As a result, they may filter both the good and negative impacts brought by the languages during the learning process. As a consequence, the pupils will retain their national and local identities. They can also compete and be ready to meet challenges in the global era (Irwan, Taufiq, & Fernando, 2019).

Diverse local wisdom has been integrated into education by different tribes in Indonesia. Three of them are cited here. First, in Yogyakarta, cooperation, sincerity, togetherness, mutual help, and the preserving tradition, are local wisdom preserved by the Javanese and integrated into character education (Marhayani, 2016). Second, in Bandung, research shows that local wisdom- based learning influences land ethic comprehension. Local wisdom-based learning can be applied in six steps namely orientation, material application, core concept identification, inter-concept comprehension, concept implementation, and reflection (Ningrum, Nandi, & Sungkawa, 2018). Third, in Sukabumi, local wisdom education inside the Ciletuh Geo-Park region focuses more on local people's engagement, youth participation as a well-educated tour guide, in particular, to conserve local knowledge and geo-diversity (Nurbayani & Utami, 2018).

In other isolated areas of Indonesia, local wisdom has also been integrated into education. First, the Dayak tribe in West Kalimantan has developed educational management based on local wisdom. The local wisdom exists in the use of indigenous terminologies namely Tajahan, Kaleka, Sapan Pahewan, and Support of Himba (Darmadi, 2018). The second example is in the Toraja tribe in South Sulawesi. Education has been valued in Tongkonan since the Toraja people's early days, and it is used in many aspects of life. Tongkonan's cultural learning experiment begins with labor solidarity and concludes with food distribution in the form of pork and buffalo meat. Such educative dynamics may be found in happy mourning and thankfulness celebrations for Toraja traditional dwellings, as well as in the face of difficult labor. The philosophy of education in Toraja culture is characterized by hard effort and sincerity, as well as solidarity with others in fellowship. Since the primitive days of the Toraja people, the value of education in Tongkonan has existed by developing an educational model or experimental learning in Tongkonan with a cybernetics system, namely the first party to educate children in the family than the second party in the patron-client model for generations (Tarrapa, Junaedi, & Utama, 2021).

This article aims to explore the creative learning method used by the author to teach space science, the solar system in particular, and connect it with local wisdom. Studying the above current research on local wisdom-based education, it can be seen that there is no research on space science and local wisdom. Moreover, there is no research on local wisdom-based education conducted in Lampung province. Given these two facts, this article provides new insight into the current studies on local wisdom-based education in two things. First, it gives new insight becauseit discusses space science. Second, the article is written based on a case study in an isolated area called Gunung Katun Tanjungan in Lampung province. This location is never been discussed in the previous studies on local wisdom-based education.

Local wisdom is believed to have good values and become a reference in acting on people's lives so that these principles become mindsets and traditions in the lives of local people. Even though there are differences in the character and intensity of socio-cultural relations, for a long time, they are bound by the same vision and perception in

creating a dignified and prosperous life. In this perspective, individuals and groups of people complement each other in their interactions by maintaining social values and norms that have been mutually agreed upon. Although local wisdom has local values and characteristics, the values contained in it can be universal, meaning that they can be used as a basis for thinking, behaving, and acting for other communities from different places and origins who live together in one area (Ruslan, 2018).

There are two ethnic groups in the Lampung tribe namely Lampung *Pepadun* and Lampung *Saibatin*. They have different ancestral origins and natural environments. This article focuses on Lampung *Pepadun* because Gunung Katun Tanjungan village belongs to Lampung *Pepadun*. The *Pepadun* population primarily resides on the city's outskirts and relies on Lampung's existing waterways. The river fish is used and processed as a protein source by the *Pepadun* population. River fish holds considerable significance for Lampung *Pepadun*, as daily food and for ritual and customary uses. Lampung *Pepadun* residents continue to use the traditional method of producing, distributing, and consuming river fish. The process of river fishing tactics, tools employed, and fishpreparation for eating are examples of local wisdom's creativity (Nurdin & Ng, 2013).

Besides river fishing and fish preparation, Lampung *Pepadun*'s religious belief is also part of its local wisdom. Lampung people embrace Islam as their religion and they never leave this in their daily lives. In marriage, for example, religion cannot be abandoned so Lampung people require marriage of one religion. They believe that increasing and explaining marriage by religiouslaw will not diminish cultural tolerance in a marriage both locally and nationally (Habibi & Kusdarini, 2020). Religious belief has individual and social functions. In an individual's life, religion serves as a value system including specific norms. These norms form a frame of reference for how they behave by their religious views. Religion contains an element of obedience and holiness as a motivator to provide stability, happiness, protection, and fulfillment. The role of religion in communal life encompasses educational, salvific, conciliatory, and social control functions (Wijayanti, et al., 2020).

The production of fresh and meaningful contributions to one's own and others' learning and lives is referred to as creative learning. This definition of creative learning follows standard definitions of creativity, which include two basic criteria: it must be original (new, different, or unique) as defined within a specific context or situation, and it must be useful (meaningful, effectively meets task constraints, or adequately solves the problem at hand). In this sense, creativity is a type of restricted originality. This is especially good news for educators because encouraging creative learning does not imply abandoning all restraints but rather assisting students in developing new and alternative ways of satisfying academic requirements and learning goals (Beghetto, 2021).

The above definition of creative learning requires teachers or educators to trigger their students to find something new different or unique to address certain problems. For example, asking students to make their inquiries or questions in a group and then discussing them with another group of students to find the answer is more creative than stuffing them with a list of questions and answers. Moreover, creative learning also requires students to be able to create meaning and solve problems. For example, in social science, there is a topic about hygiene. Creative learning requires the students to be able to maintain clean living habits and spread these habits to other people in their family and neighborhood, if possible. Creative learning does not only stop when students know some activities to keep a clean environment.

According to Beghetto (2021), at least four interconnected components are required for creative learning to occur in schools, classrooms, and beyond. They are students, teachers, academic subject matter, and uncertainty. Individual students' unique

learning histories will impact the types of creative insights, ideas, and interpretations they have when confronted with fresh learning stimuli. Furthermore, most formal educational activities, such as those that take place in schools and classrooms, aim to ensure that pupils have formed accurate or at least compatible knowledge of existing concepts, ideas, and skills. As a result, creative learning in schools, even at the individual level, entails allowing students to test and get feedback on their unique understandings and insights to guarantee that what they have learned fits within the greater academic subject area. When this happens, creative learning at the individual level is a mix of idiosyncratic and widely accepted academic information.

Next, teachers have a pivotal role in triggering students' creativity by designing learning activities. The major goal of education in many schools and classrooms is to facilitate students' academic learning. If teachers see creativity as competing with or incompatible with that goal, they will understandably feel obligated to devote their curricular time to fulfilling academic learning objectives, even if they admire and want to promote students' creative potential. Thus, recognizing that encouraging creative and academic learning can be compatible goals is a crucial first step in supporting the development of kids' creative potential. When instructors recognize that they can promote both creative and academic learning, they are in a better position to plan forand respond to opportunities for students' creative expression in their daily lessons. Creativity necessitates a combination of uniqueness and meaningfully meeting criteria or work constraints. If the uniqueness component of creativity is represented by students' unique viewpoints and interpretations, then existing academic criteria and realms of knowledge represent the criteria and task constraints. Creativity is constantly limited by constraints. Those constraints often represent academic learning goals and standards in the context of creative learning. Most educators are already halfway to promoting creative learning since they understand how to set learning goals and criteria. The other half entails thinking about how academic subject matter might be combined with activities that allow students to meet those goalsand criteria in their own unique and different ways.

There is no creative learning without uncertainty. This is because uncertainty creates the circumstances for innovative thought and action. Students (and teachers) are rehearsing or reinforcing knowledge and skills if they already know what to do and how to execute it. Teachers typically try to eliminate uncertainty from learning activities by predefining all parts of them. This is reasonable, since teachers may fear that adding or allowing for ambiguity in the activity may result in curricular chaos irritation, and confusion for themselves (and their pupils). As a result, most teachers learn to plan (or select pre-planned) lessons that give students a predetermined problem or task to solve, a predetermined process or procedure for solving it, already established criteria for determining success, and a clearly defined outcome. Although highly planned lessons allow students to learn and develop new and personally meaningful insights, such lessons are "over-planned" in terms of providing curricular space for students to make creative contributions to peers and teachers. Indeed, successful performance in learning activities with predefined elements necessitates pupils doing what is expected and how it is expected. In contrast, introducing uncertainty in the form of to-be-determined aspects in a lesson is required for the full expression of creative learning. As previously said, this entails providing planned opportunities for students (and teachers) to interact with uncertainty in a controlled and supportive learning environment.

Method

This article was written based on the author's experience when she taught the solar system to the 6^{th} graders at the public elementary school in Gunung Katun Tanjungan

village in Tulang Bawang Udik subdistrict, Tulang Bawang Barat regency, Lampung province. Research shows that local wisdom-based teaching materials might be used in primary classrooms as an alternate source of learning natural science and it can enhance students' scientific literacy skills (Suryanti,et al., 2020). The author's experience was analyzed by using creative learning theory. In conducting the discussion, the author matched the variables mentioned in creative learning theorywith her experience. Finally, the conclusion was made based on the discussion. The analysis result shows that the creative learning method used to teach space science helps students connectscience and their local wisdom.

Results and Discussion

1. General Condition of Gunung Katun Tanjungan, Tulang Bawang Barat

Talking about the isolated areas in Indonesia, Tulang Bawang Barat Regency in Lampung province of Indonesia can be categorized as an isolated area. This is a relatively new regency because it was appointed as a regency in 2008. This regency is divided into 9 subdistricts and every subdistrict is divided into some villages. The majority of citizens in this regency are the Lampung tribe. Other tribes Javanese, Balinese, and Sundanese also live there due to the national transmigration program held by the government in the 1970s. This regency is isolated because reaching this regency takes about 3 hours of driving from the capital city of Lampung province andthere are limited public buses. Students or workers who study or work in the capital of the province usually go home every weekend in their car or rent a car with their neighbors. The picture below shows the map of Lampung province. The picture shows that Tulang Bawang Barat Regency is the farthest regency from Bandar Lampung, the capital city of the province.

Picture 1. Map of Lampung Province
Source: https://id.wikipedia.org/wiki/Lampung

Due to its far location from the capital city, Tulang Bawang Barat Regency has a lack of education, health, and other facilities. Its economic development is also less developed compared to other regencies. For example, this regency does not have a hospital. It only has a health center called *puskesmas* in every village so when people get a severe illness, they have to go to the hospital in other regencies. Besides the fact that Tulang Bawang Barat is isolated due to its location, the gap can also be seen in the quality of life of the Lampung tribe, which on average is below that of immigrant tribes such as the Javanese. Most of the Lampung tribe live in the old villages or *tiyuh tuho* in the local language. Meanwhile, the immigrants live in different villages resulting in the designation

Kampung Bali, Kampung Jawa, and other kampung based on the tribesliving in the area. One of the old villages is named Gunung Katung Tanjungan and it is taken as the case study of this article because the author lived and worked there for a year in 2016.

Gunung Katun Tanjungan is one of old villages in Tulang Bawang Udik subdistrict, Tulang Bawang Barat Regency. This village is isolated because the settlement is not large and this village is surrounded by rubber forest. The villagers' main livelihood is rubber farming, and they work in that rubber forest. Next, this village is also disadvantaged due to some factors. First, this village only has one public elementary school so students who have passed the elementary level have to continue to high school in different regencies which have high schools. If the family is too poor to send their children to school, they will not send them. They will ask them to work, instead. Second, this village does not have any health facilities, including puskesmas so people have to go to other regencies to access health facilities. Third, the communication signal is very poor in this village. People can only get the communication signal at specific points in the village. It seems that this condition does not cause a lot of trouble for the local people since their settlement is not very largewith houses close together so they can visit each other when needed. Moreover, everyone living in this village has family relations so they always visit each other. However, the lack of communication signals makes it impossible to access educative information from the internet.

Although this village is isolated and disadvantaged, children living in this village have the same right to access education as other more fortunate children. According to the Indonesian national curriculum, the solar system is part of the Science subject for the 6th grade, and the solar system is a part of space science. In the Indonesian curriculum, the topic of the solar system is the first topic for children to learn about the universe at school. They learn about celestial objects' names, Earth's rotation and revolution, and solar and lunar eclipses. This topic is a good introduction to space science for students at the elementary level. Then, after introducing space.

2. Case Study

The teaching and learning process was conducted at an elementary school in Gunung Katun Tanjungan in 2016. At that time, there were 12 students in the 6th grade. The topic of the solar system was part of the science subject for the 6th grade. There were two creative ways of teaching conducted by the author. The first was a role play to learn about planets' rotation and revolution. The second was an exhibition gallery to learn about solar eclipses, lunar eclipses, and Gregorian and Hijri calendars. In the beginning, the teacher gave an introduction about the names of the celestial objects. This activity was conducted through a usual discussion because this introduction aimed to make the students familiar with the celestial objects.

After the introduction, the teacher explained a little about Earth's rotation and revolution and guided students to do the role-play. Before doing the role play, every student chose their role as the Sun, Mercury, Venus, Earth, and other planets in the solar system. After choosing their roles, students practice planets' rotation and revolution. They had to rotate on their axis and at the same time walk and then revolve around the friend who played the role of the sun. This activity was fun because they played as kids who liked to joke and nosy with their friends. After they finished the role play, the teacher led a discussion with them. During the discussion, students shared their feelings and told what they had learned from the activity. Picture two below shows the role play.

Picture 2. The Role Play of Planets' Rotation and Revolution
Source: Author's collection

The teaching and learning process on solar eclipses, lunar eclipses, and Gregorian and Hijri calendars was continued at the next meeting. For learning them, an exhibition gallery was used. The twelve students were divided into four groups so a group had three members. They also drew a lottery to determine the material they would present. Before the exhibition, they had to draw a poster in groups. Their posters had to cover the material mentioned in their lottery. They were allowed to use their creativity to prepare their posters because they had to make them as attractive as possible to make visitors come to their galleries. After they finished drawing, they stuck their posters on the wall. Then, the teacher explained how to conduct the exhibition. In everygroup, they had to determine a person who visited three other galleries, while two other members explained their posters to the visitors from other groups. They were given about fifteen minutes todivide the role. That fifteen minutes were also used by two members who had to explain to the visitors to practice before the exhibition. After all preparations were done, the exhibition was conducted. After all galleries had presented their works, a discussion was held to dig into their experience and what they could learn from the previous activity. Picture 3 below shows theactivity in one gallery.

Picture 3. Exhibition Gallery to Learn Eclipses and Calendars
Source: Author's collection

As Beghetto (2021) mentioned, four interconnected factors needed for creative learning at school are students, teachers, subject matters, and uncertainty. Students learning history affects the insight or ideas they get through creative stimulation. In the case of Gunung Katun Tanjungan students, they were very interested because it was their first time. Their teachers used to lecture them or ask them to make a note of what was written in the textbook and memorize it. Role play and presentation through an exhibition gallery made them excited. Their excitement could be seenfrom their expression and their attitude. They thought that those activities were not studying but playing with their friends so they had a chit-chat and joked with one another in their local language.

Moreover, since it was their first time, they had to adapt to creative learning. In the role play, their adaptation was seen during the activity. Although the teacher had explained, they felt confused and thought it was a joke. In the exhibition gallery, their adaptation process could be seen during the preparation. All of them tried to memorize everything they had planned to explain. They made notes and memorized them. Then, during the presentation, they read their notes instead of explaining their posters creatively.

This situation was challenging for the teacher as well. Based on students' learning history, studying means sitting in silence and listening to the teachers or taking notes from the textbook. They had experienced this for years and they got bored when the learning material was difficult. So, the teacher had to trigger students' interest, first. Role play and the exhibition gallery were fun because they could move and talk with their friends. However, they were too excited and considered those activities as games. Here, the teacher had to guide the students and make sure that they understood the learning point. The teacher had to guide the students to change their minds that studying could be fun because, in a fun environment, they could easily receive new insight. Sharing sessions held after the activities were the method used by the teacher to assess students' understanding and make sure that both the academic aims and the creativity were achieved.

The subject matter of planets' rotation and revolution, solar and lunar eclipses, and calendars are taught by a lot of teachers through lecturing, taking notes, and memorizing although these subjects are easy to be taught in a fun and creative way. It is common because teachers mainly focus on achieving academic criteria namely good scores. Generally, in Indonesia, this existing condition is a constraint for creative learning to teach science. The second constraint is the fact that a lot of students easily get bored with the current teaching and learning method. Realizing these two facts, the author, when she taught at Gunung Katun Tanjungan, tried to develop fun and creative teaching and learning methods. Since the subject matter of planets' rotation and revolution, solar and lunar eclipses, and calendars are made descriptively by the curriculum, the teacher had to find possible creative methods.

The objects of the study namely the celestial objects are in space and the students cannot touch them. Because of that condition, role play and presentation through an exhibition gallery are possible creative ways to teach about celestial objects and the universe. Through role-play, students were able to practice the movement and feel it themselves. Direct experience is better than listening to a teacher's lecture or copying from a textbook. Then, through an exhibition gallery, students were able to learn together. The presenters were able to explain and answer questions. Meanwhile, the visitors were able to listen to their friends and ask questions. Learning with friends made them enjoy themselves because they were not afraid of their friends. They could also explain in their local language. Students' creativity in making their friends understand the explanation through the local language is one good point of this activity.

At last, the uncertainty in Gunung Katun Tanjungan is its condition as an isolated and disadvantaged village. For example, there are a lot of science materials with beautiful pictures and interactive narration on YouTube. However, they could not access them because their village had scarce communication signals. Their only learning resources were the textbook and their teachers.When they could not understand what was written in the textbook, they were supposed to ask the teachers. However, students could feel shy or afraid to ask and prefer to keep silent. Some of them also felt that studying was tedious and tiring and they chose to ignore the lesson. These situations of uncertainty urged the need for creative learning so they could learn within their limitations.

The interconnectedness of those four factors in Gunung Katun Tanjungan can be seen as a blessing in disguise because, through creative learning, students from one isolated area can be exposed to space science. Although they cannot access YouTube to see beautiful pictures of the celestial objects in the universe, they can feel their movement through role play. Moreover, after the introduction to space science, they connect their experience during creative learning to their local wisdom. The first connection between space science and Lampung *Pepadun*'s local wisdom is in the fishing technique called *bawang*. It is a technique in which fishermen build a basin beside a river bank. The water will overflow into the basin at high tide. The fish will get caught in these basins as the water drains (Nurdin & Ng, 2013). This tidal phenomenon is caused by the Earth's rotation and revolution that has been role-played by the students.

Second, the connection between space science and Lampung's local wisdom is related to their religious belief. Lampung people are Moslems and they celebrate Idul Fitri every year based on the Hijri calendar. The Hijri calendar is made based on the Moon revolution that they practiced during the role play. Before the role play, their daily life and their lesson at school are twoseparate facts. The first fact is they celebrate Idul Fitri based on the Hijri calendar. The second fact is the lecture from school says that the Moon revolution is used to make the Hijri calendar. However, after the role play, they can experience the movement of the celestial objects. Then, at the exhibition gallery, they present and ask and answer questions about the Moon revolution and the Hijri calendar. The sharing session after the creative learning helps the students connect the lesson and their daily life so they realize that the school lesson is a part of their local wisdom.

Conclusion

The interconnectedness of students, teachers, subject matter, and uncertainty has helped the introduction of space science to students at the elementary level in an isolated area. Creative learning has proved its ability to make students live within limitations to get their right to education. Moreover, creative learning has proved its ability to create a fun environment for learning and generate a correlation between school lessons and students' local wisdom. The usual teaching and learning methods through lecturing, taking notes, and memorizing are only able to give new knowledge about the universe to students. However, creative learning is a good way to introduce space science since it helps students experience what is written in the textbook and correlate it to their local wisdom. Associating space science with students' local wisdom makesspace science a part of students' lives.

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