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Strengthening Tourism Village: Training on Project-Based Learning and Development of Local Wisdom-Based Assessment Instruments

Arif Sholahuddin*, Yasmine Khairunnisa, Aulia Hasanah, Ika Annisa Rahmah, Moh. Rudi Febrissa, and Mohammad Arif Yanuar Purwaka
Faculty of Teacher Training and Education, Universitas Lambung Mangkurat, Banjarmasin, Kalimantan Selatan
*arif.science.edu@ulm.ac.id

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Abstract

The government of the Karang Bunga village has not yet focused on innovating the education sector as an integral part of developing a tourist village to support the development of sustainable village tourism with a well-educated community. This CS aims to train school teachers in Karang Bunga village (1) to understand how to design, implement, and evaluate project-based learning outcomes and (2) to design, implement, and evaluate project-based learning outcomes based on local wisdom. The community service applied an ABCD (Asset-Based Community Development) approach through training with stages of (1) analysis and socialization, (2) preparing training materials, (3) implementation of training, (4) evaluation of activities, and (5) dissemination of results. This activity involved 22 people, including elementary school teachers, early childhood education teachers, and representatives of the village officials of Karang Bunga Village, Mandastana Barito Kuala of South Kalimantan. The instructors consisted of 2 lecturers of science education and two local practitioners engaged in citrus cultivation and animal husbandry/organic fertilizer. The results showed that (1) all the trainees understand local wisdom-based learning projects and their assessment, and (2) 68% have good skills in designing, implementing, and evaluating project-based learning outcomes with local wisdom learning resources.

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INTRODUCTION

Karang Bunga Village has successfully developed its natural potential. This village was originally a transmigration area, but has now developed into a village with excellent products. The main excellent products developed by Karang Bunga village are banjar siam oranges, local rice, cattle, and fisheries. Karang Bunga has more than 500 hectares of citrus plantations. Each farmer has an average of 2 hectares of citrus plantation. One of the areas in South Kalimantan that has long cultivated this variety is Karang Bunga Village (Sjafrina, 2010).

Based on the Karang Bunga village profile document, the Village-Owned Enterprise (BUMDes) Berkah Bersama is the institution that drives the development of this village's potential. BUMDes Berkah Bersama has a business unit offering savings and loans, grain trading, clean water supply services, management of a multi-purpose facility, cattle

fattening, and orange ice cream production. The Lambung Mangkurat University community service (CS) team has also collaborated to diversify orange peel into hand sanitizer (Sholahuddin et al., 2022) and soap (Analita et al., 2022).

Karang Bunga village is an independent village that has developed local potential into a tourist village in collaboration with Bank Rakyat Indonesia (BRI). For this purpose, the village has developed its local potential. It has pioneered educational agro-tourism in citrus planting, rice planting, cattle farming, and chicken farming. Indeed, in their quest to transform into a tourist destination, all aspects of the village must collaborate towards enhancing facilities and infrastructure. They include adhering to Cleanliness, Health, Safety, and Environmental Sustainability (CHSE) protocols, as Sitepu et al. (2023) highlighted. Notably, there needs to be more potential in the education sector, which could significantly contribute to the village's development through edu-tourism initiatives.

The development of the education sector in conjunction with the pilot tourism village's development involves incorporating environmental assets into the curriculum. Utilizing the environmental potential of learning resources has been proven effective for instilling knowledge and attitudes and training students' skills such as literacy, process skills, and problem-solving (Greene, 2019; Wilujeng et al., 2019). Therefore, the education sector needs attention. In addition to being part of human resource development, it can become educational tourism. Villages can become innovation pioneers and centres for sharing good practices in human resource development through education.

One of the learning strategies that can be developed by integrating local potential is project-based learning (PjBL) (Sholahuddin et al., 2021; Sholahuddin et al., 2023). PjBL is a learning approach that uses project activities to achieve learning objectives. This instructional approach entails addressing practical, real-life issues through product-based solutions. Adjustments are necessary when implementing it in early education settings like elementary schools, early childhood education, and kindergartens. The adjustments include selecting uncomplicated real-life problems that align with the developmental stage of the learners. Wirda (2023) concluded that using simple learning resources around students can enhance students' engagement and interest in learning science.

The Kurikulum Merdeka (Freedom Curriculum) emphasizes PjBL to develop student competencies. Term projects strengthen the Pancasila learner profile, which includes critical thinking, creativity, communication, and collaboration. Moreover, students must cultivate positive character traits such as self-reliance, accountability, and appreciation for global diversity. These attributes can be fostered through problem-solving-based learning or PjBL methodologies.

Generally, teachers still need help innovating learning, including designing learning that integrates local potential through PjBL activities to make learning more meaningful for students. This challenge stems from insufficient expertise in crafting and executing innovative PjBL and teachers' limited engagement with their communities. Implementing PjBL effectively at the elementary and early childhood education levels necessitates careful adaptation, including selecting authentic everyday problems that align with students' developmental stages.

PjBL has been proven to be able to train various student competencies in knowledge, attitudes, and skills such as science literacy, critical thinking skills, and natural problem-solving skills (Agustin et al., 2018; Ariningtyas et al., 2017; Emdin, 2011; Jamalludin et al., 2021; Maretta, 2016; Parmin et al., 2016; Zimmerman, 2017; Sholahuddin, et al., 2021), and character building (Rahmawati & Ridwan, 2017). Even the Merdeka Curriculum has made project learning a leading strategy for developing learner competencies from elementary to higher education.

Many teachers encounter challenges in designing and executing PjBL and assessing the learning outcomes or competencies students attain following its implementation. From observations, it is evident that schools employ diverse assessment tools for PjBL. This indicates the absence of a standardized instrument capable of precisely gauging the impact of PjBL endeavours. Given that project activities aim to assess competence, behaviour, and products, teachers must be able to create performance assessment tools.

Karang Bunga village has four schools: a Cahaya Early Childhood Centre, Mandastana State Kindergarten, Karang Bunga Primary School, and At-Taqwa Islamic School. Suppose these schools can develop a curriculum that utilizes the potential of the surrounding environment. In that case, it will support Karang Bunga village to become a tourist village that develops not only the environmental sector and superior production but also the education sector. A good education sector can be an attractive tourist destination for parents, students, teachers, and education practitioners from other regions. In the long term, innovation in the education sector will support the development of village human resources integrated with other development sectors.

Based on the above problems, equipped with experience and research results, the Community service team innovates the tourism village program through training on PjBL with local potential learning resources in Kebun Bunga Village and preparing a project learning outcome assessment. Local potentials that can be used as support for project learning include siam orange plantations, rice cultivation, chicken and cattle farming, fisheries, and socio-cultural activities that develop in the village community.

This CS aims to train school teachers in Karang Bunga village (1) to understand how to design, implement, and evaluate PjBL outcomes and (2) to design, implement, and evaluate PjBL outcomes based on local wisdom.

This CS activity can support the development of a sustainable tourism village with an educated community. Teachers' ability to design, implement, and assess project learning based on local wisdom will strengthen critical thinking skills, student creativity, and awareness of the potential of the environment in which they live. Furthermore, developing a sustainable tourism village will impact the development of the village's economic sector.

METHODS

This CS initiative employed the ABCD (Asset-Based Community Development) approach. ABCD focuses on empowering the village's potential and resources, such as orange plantations, rice fields, fisheries, and others, as learning resources for elementary school and early childhood education students around Karang Bunga Village. The development of the education sector will support the growth of sustainable tourism villages with a well-educated community.

Activity Target

This CS activity's main target is the 22 elementary school, early childhood education, and kindergarten teachers in Karang Bunga Village, Barito Kuala. The activity's organization is coordinated with the Head of Karang Bunga Village and the principal. Five groups of 22 teachers were formed to apply the learning design in the classroom. Three groups of 15 teachers (68%) have completed implementing the learning design at their school and disseminated the results.

Activity Stages

The stages of this CS activity are arranged as follows.

(1) Analysis and socialisation

During this phase, the CS team gathered data from officials of Karang Bunga Village and teachers in the targeted schools through visits and surveys. These surveys and visits

aimed to gain an accurate understanding of the village and school's challenges and their potential to contribute to developing a tourist village. The findings revealed that Karang Bunga Village has an existing development program as a tourist destination, possesses various natural resources, and offers socio-cultural activities suitable for educational purposes. Additionally, it highlighted that teachers encounter challenges in designing, executing, and assessing project-based learning activities. Furthermore, the CS team and village officials elaborated on the problems encountered and the potential for an innovative idea to solve problems and support the development of tourist villages through education sector innovation. Activities at this stage ended with socialization in schools and villages, assisted by the Karang Bunga village secretary.

(2) Preparing training materials

The second phase of this community service activity involves preparing training materials. These materials include:

a. Educational resources on PjBL and its evaluation.
b. Practical instructions for nurturing Banjar Siam oranges and producing organic fertilizer to facilitate PjBL.

The steps of PjBL include determining the project, designing it, preparing the schedule, completing it, submitting the activity results, and evaluating the process and work results.

(3) Training

The training implementation phase is the pivotal stage of community service activities and is conducted collaboratively with partners. Within this stage, two significant activities take place:

a. Delivery of training materials

The community service team delivered materials and guided participants to practice designing, implementing, and evaluating project learning. This material delivery stage involves local practitioners sharing their experiences cultivating the village's superior products of Banjar siam oranges and animal husbandry/organic fertilizer production. These are examples of learning resources for PjBL. Table 1 details the individuals in charge of the training sessions and the materials presented during the CS activities.

Table 1 Resource persons and materials for community service activities

No	Name	Topic
1	Dr. Arif Sholahuddin, S.Pd., M.Si	PjBL-based local wisdom
2	Yasmine Khairunnisa, S.Pd, M.A	Assessment of PjBL
3	Agus Esthi Panti Iti	Citrus Cultivation
4	Hadi Mulyono	Organic Fertiliser Making

b. Application of training results at school

Teachers applied the training's knowledge and skills to school settings during classroom instruction, with the CS Team conducting assessments. Participants' proficiency in applying the training outcomes is evaluated through presentations showcasing the implementation of local wisdom-based project learning and its assessment. PjBL outcomes are evaluated through poster presentations, utilizing criteria outlined in Table 2.

Table 2 Criteria for assessing the results of implementing PjBL

Score Interval	Category
3,51 – 4,00	Excellence
2,51 – 3,50	Good
1,51 – 2,50	Moderate
1,00 – 1,50	Poor

c. Evaluation

Following the training, an evaluation phase was undertaken to assess the process and influence of the training activities on participants' proficiency in designing, executing, and assessing project-based learning. This evaluation relied on appraising the implementation's outcomes and gathering feedback through participant response questionnaires. This evaluation was conducted using a Likert scale questionnaire with four options. The indicators measured consisted of administration service, training activity (material, training method, consumption service), and participants' competencies (the questionnaire results are summarized in Table 4).

d. Dissemination

The concluding phase of CS activities involves sharing the outcomes through publishing articles in community service journals and presenting them at seminars or conferences.

RESULT AND DISCUSSION

Before the CS activity, as presented in Figure 1, the team observed the partner village on 8 July 2023. The observation aimed to collect data related to the conditions and potential of the partners, namely Karang Bunga Village, teachers at the target school, and learning activities at school, and village communities related to their daily activities related to local potentials, such as cattle farming and Siamese orange farming.

Training participants | Practical tillage and cultivation of Banjar Siam Orange

Project-based learning | Project-based learning assessment

Figure 1 Community service activities in karang bunga village

These initial observations produced data that accurately represented the problems and the potential that the village and school possessed to support efforts to develop a tourist village. Karang Bunga Village is a transmigration area where most of the population comes from Java. Karang Bunga Village has been developed as an independent village by developing its potential as a tourist village and collaborating with BRI Bank. Some of its potential includes Banjar siam orange plantations, rice paddies, animal husbandry, cattle

fattening, organic fertilizer, and fisheries. The village has developed a village-owned enterprise (BUMDes), 'Berkah Bersama,' to mobilize the development of the village's potential. The BUMDEs have business units for savings and loans, buying and selling of unhulled rice, clean water supply services, management of a multi-purpose building, cattle fattening, and production of orange ice cream and diversification of processed orange peels into hand sanitizer and soap. Educational agro-tourism has been pioneered in citrus planting, rice planting, cattle farming, and chicken farming. Because it is still a pilot, the village must be well-known as a tourist village by the broader community.

Access to the Karang Bunga village area from Banjarmasin is approximately 30 km, almost the same distance as the capital of Barito Kuala Regency. The road infrastructure is good but needs to be more extensive, and there is only one access road to Karang Bunga village from the main road. As a village that is pioneering in becoming a tourist village, all sectors must work together to become part of the development that supports the realization of a tourist village. One potential area to be strategically developed in the education sector to support human resources development is village tourism and other programs. In addition, education also allows it to be an attractive education in the tourism sector. The existing education in this village is elementary school and early childhood/Kindergarten education.

The survey and outreach efforts revealed that Karang Bunga village has initiated a tourist village development program and boasts diverse natural assets and socio-cultural activities, which can serve as engaging learning resources. However, it was found that teachers generally encounter challenges in designing, executing, and assessing project-based learning initiatives. In collaboration with village officials, the CS team, specifically the village secretary, discussed the village's potential and challenges and brainstormed innovative solutions by empowering the village’s resources to address the challenges or facilitate the development of tourist villages through educational initiatives. One such proposed innovation in education is implementing PjBL training and assessment.

The training material delivery activities were carried out on 14 August 2023. The CS team delivered the material and guided the participants in practicing designing, implementing, and evaluating project learning. Concurrently, local practitioners shared their expertise on cultivating the village's prominent products, such as Banjar Siam oranges and animal husbandry/organic fertilizer production, which served as learning project examples. The event was attended by teachers from early childhood/kindergarten, elementary schools, and madrasahs in Karang Bunga Village.

During the activity, it was observed that the training participants showed great enthusiasm for engaging in the program. Participants interacted with resource persons by asking various questions or providing responses to problems related to PjBL materials and how to assess them. Participants also discussed cultivating good siam oranges, starting from seed selection, fertilization, pest treatment, and fruit harvesting. Some of the teachers who participated in this training activity also have citrus plantation businesses, so they make them more intensive. Citrus cultivation and the production of organic fertilizer from cow dung were integrated into the PjBL training so that teachers have insights into the local potential of the village as an inspiration for learning resources that can be used in learning. Resource persons related to Banjar siam oranges' cultivation and organic fertilizer production from cow dung are local farmers/practitioners of Karang Bunga village. It is an effort to empower the community to overcome problems in their village, especially those related to developing PjBL for students.

Citrus cultivation and organic fertilizer production are examples of contextualized learning resources for learners. Teachers can utilize various learning resources around them to produce meaningful learning and instill learners' early awareness of their region's potential and local wisdom. For example, how to process rice fields on peatlands, clean

water treatment, and fisheries, which are undoubtedly different from other types of land. Peatlands, rich in organic matter but lacking minerals and low in acidity, require a neutralization process and different types of mineral fertilizers than mineral soils. This early awareness can support village programs, especially those related to the tourism village pilot. With its citizens' support and awareness, community programs can achieve sustainability.

Integrating learning resources in the environment is very important because they fit the context and experience of learners. Consequently, learners will find it easier to construct their knowledge by connecting previous learning experiences at school and empirical experiences in the community with the knowledge or concepts being learned (Agra et al., 2019; Polman et al., 2020). Agra et al. (2019) stated that constructing learners' experiences produces new knowledge in their cognitive structures and a deep sense of meaning. Meaningful learning provides significant meaning for learners according to its usefulness in everyday life. Its further impact is to produce strong knowledge retention in learners' minds.

Environmental potential or local wisdom around learners can be used as a trigger or learning problem that students elaborate through problem-solving or produce exciting and challenging educational projects. The complexity of the problem or environmental potential that is raised as a trigger for learning in the classroom must be adjusted to the developmental phase of learners, both in early childhood education, primary school, and higher education levels. For example, for early childhood, teachers can use orange leaves to make collages, orange juice as a vitamin C source, and hand sanitizer from orange peel extract. Children at the primary school level can also practice school gardening through collaborative projects, starting from tilling the soil, preparing fertilizer, planting, tending, and harvesting. Contextualized learning, such as projects or problem-solving, has been proven to train knowledge, attitudes, and various skills, including collaboration, creativity, critical thinking, and scientific literacy.

The implementation of this local wisdom-based project learning strategy aligns with the findings of Polman et al. (2020) that to produce meaningful learning, teachers generally use a variety of approaches such as activating prior knowledge, connecting to students' world, displaying values outside of school, setting goals for/with students, establishing a future-focused context, drawing from the teacher's expertise, applying school learning content, and fostering a cross-curricular approach. Mystakidis et al. (2019) and Polman et al. (2020) also concluded that meaningful learning is active, constructive, intentional, authentic, collaborative, dialogue, working independently, and experiential learning. All these activities are elements of project learning.

Table 3 Assessment results of project-based learning implementation

No	Aspects of Assessment	TKN Mandastana		KB Cahaya		TK Masyitoh	
		J1	J2	J1	J2	J1	J2
A	Visual & Graphic						
1	Appropriateness of poster content with Title/Theme	4	4	4	3	4	4
2	Interesting images or visualizations	4	4	3	3	3	4
3	The flow/stages of the learning process are easy to understand	4	4	4	2	3	4
	The average score of the judges	4.00	4.00	3.67	2.67	3.33	4.00
	The average score of both judges		4.00		3.17		3.67
B	Poster comprehension						
4	Group understanding of poster content	4	3	3	3	3	3

No	Aspects of Assessment	TKN Mandastana		KB Cahaya		TK Masyitoh	
		J1	J2	J1	J2	J1	J2
5	The group's explanation of the poster content is clear, systematic, logical, and accurate	3	4	4	4	3	4
	The average score of the judges	3.50	3.50	3.50	3.50	3.00	3.50
	The average score of both judges		3.50		3.50		3.25
	The cumulative score of all aspects		3.75		3.33		3.46
	Category		Very Good		Good		Good

Based on Table 3, they generally understood the material presented in this training well. Furthermore, the participants were allowed to apply the training results in their respective schools in groups according to the school. They were given time from 15 August to 4 September 2023, or 3 weeks. Of the five schools involved in this activity, three groups or 15 teachers of 22 trainees (68%) successfully finished the presentation: Masyitoh Kindergarten, Mandastana State Kindergarten, and Cahaya Playgroup (Figure 2).

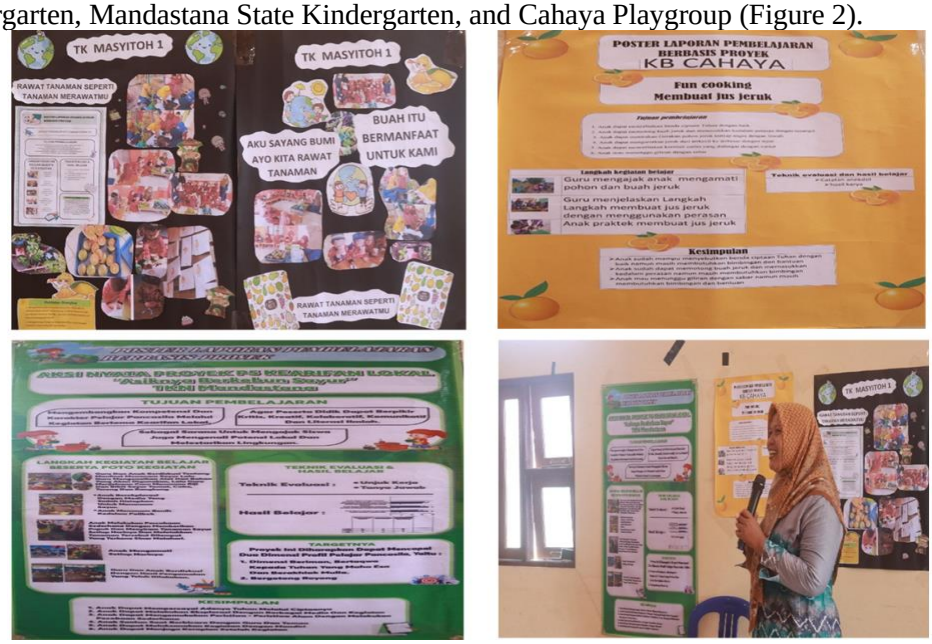

Figure 2 Presentation of implementation results

Furthermore, the participants were allowed to apply the training results in their respective schools in groups according to the school. They were given time from 15 August to 4 September 2023, or 3 weeks. Out of the five schools involved in this activity, three school groups successfully finished the presentation: Masyitoh.

The evaluation of the three groups that showcased their projects indicated that the teachers engaged in the training possess a solid grasp of project-based learning implementation. This encompasses assessing learners' needs, scrutinizing learning goals, and selecting projects leveraging local resources. Examples include environmental care through planting, utilizing natural resources and nutrition with orange juice, and fostering artistic expression and creativity through collage-making. Teachers have also been able to implement the stages of project learning well and adjust to the level of learner development.

Based on the presentation of project learning implementation activities in schools and questions and answers with participants, the ability of teachers to assess student competence and make instruments is good, but still needs improvement in (1) making a more systematic assessment rubric. The instrument used is still global, so the teacher sometimes judges less objectively. (2) Teachers evaluate numerous competencies within a single learning session, resulting in reduced attention to monitoring students' progress. The evaluation of project-based learning implementation through poster presentations is outlined in Table 3.

The trainees' feedback on the training demonstrated a positive response to the activity, acknowledging its effective organization and the utility of the training materials in bolstering project-based learning in schools (Table 4). This activity improved their knowledge and skills in designing, implementing, and assessing project learning based on local wisdom learning Resources.

Table 4 Trainee response to the training

No	Training Aspect	Score	Category
1	The training material can enhance understanding of project-based learning rooted in local wisdom.	3.58	Excellence
2	Training materials were delivered interactively	3.08	Good
3	Training can improve the ability to develop students' worksheets and local wisdom-based assessment	3.33	Good
4	Consumption service	3.41	Good
5	Administration service	3.33	Good
6	Readiness to implement the training results in schools	3.16	Good
7	The training can improve teacher professionalism	3.25	Good

This CS has effectively achieved its intended objectives based on the outcomes above. Nevertheless, there are areas requiring further enhancement, notably the elementary school teachers who could not present their project-based learning outcomes. Some teachers may still grapple with dilemmas and obstacles hindering curriculum innovation or face constraints on time for implementing learning activities. Therefore, it is essential to consider more intensive training or mentoring, or to optimize collaboration with experienced peers, or participation in teacher learning communities such as Subject Teacher Associations (Garcia, 2011; Al-Sharafi & Ahyaa, 2021).

It is further necessary to develop collaborative partnerships with other stakeholders, such as BRI and the Education Office, to support the implementation of similar training involving more participants and more developed materials. This activity can also be synergized with other programs, such as strengthening the profile of Pancasila students in schools and community-based village literacy (Yusnadi et al., 2023) in the context of developing human resources to support sustainable tourism villages.

CONCLUSIONS

The formal education sector has a very strategic role in preparing human resources for sustainable development. The formal education sector can support the realization of tourism villages with well-educated human resources. It can even support the realization of educational tourism, which is a place to share best practices of schools with the community, especially between educational practitioners. Generally, this sector has yet to be the main target in developing tourist villages such as Karang Bunga Mandastana village, Barito Kuala, and South Kalimantan. The results of CS activities in the form of local wisdom-based project learning training and assessment show that (1) the trainees have good knowledge about project-based learning and assessment, and (2) 68% of the trainees have good skills in designing, implementing, and evaluating project-based learning outcomes with local wisdom learning resources. It is necessary to collaborate with other stakeholders, such as

BRI as a partner in tourism village development and the Education Office of Barito Kuala Regency, to improve the quality of implementation and wider school involvement.

CONFLICTS OF INTEREST

The authors declare that there is no conflict of interest.

AUTHOR CONTRIBUTIONS STATEMENT

Conceptualization, AS; methodology, AS; formal analysis, YK; writing—preparation of the original draft, AH and IAR; and formatting manuscript, MRF and MAYP.

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AUTHOR PROFILES

Dr. Arif Sholahuddin, S.Pd., M.Si.
Master's Program in Science Education, Universitas Lambung Mangkurat, Research interest: cognitif style, literacy, ethno-science, environment literacy, Sinta ID: 6003571, Orcid: 0000-0002-6640-5479, Scopus ID: 57214265899, Google Scholar: PexeCyAAAAAJ.

Yasmine Khairunnisa, S.Pd, M.A.
Science Education Study Program Universitas Lambung Mangkurat, Research interest: Science Education, STEM, and ethno-science, Sinta ID : 6665868, Orcid ID: 0000-0002-1622-4768, Scopus ID: 57222351132, Google Scholar: 0bW-FUQAAAAJ.

Aulia Hasanah
Student of the Science Education Study Program, Faculty of Teacher Training and Education Universitas Lambung Mangkurat

Ika Annisa Rahmah
Student of the Science Education Study Program, Faculty of Teacher Training and Education

Moh. Rudi Febrissa
Student of the Chemistry Education Study Program, Faculty of Teacher Training and Education

Mohammad Arif Yanuar Purwaka
Student of the Chemistry Education Study Program, Faculty of Teacher Training and Education