

Perceptions of Dayak culture and education practitioners on project-based learning in primary education

Eliana Yunitha Seran¹, Imanuel Sairo Awang¹, Gabriel Serani², Yayan Adrianova Eka Tuah³,
Anna Marganingsih⁴

¹Department of Primary Teacher Education, STKIP Persada Khatulistiwa, Sintang, Indonesia

²Department of Social Humanities, STKIP Persada Khatulistiwa, Sintang, Indonesia

³Department of Computer Education, STKIP Persada Khatulistiwa, Sintang, Indonesia

⁴Department of Economic Education, STKIP Persada Khatulistiwa, Sintang, Indonesia

Article Info

Article history:

Received Jun 9, 2023

Revised Mar 22, 2025

Accepted Apr 18, 2025

Keywords:

Dayak culture

Independent curriculum

Perceptions

Primary school

Project-based learning

ABSTRACT

The implementation of the independent curriculum (IC) in Indonesia requires realizing the Pancasila student profile (PSP) at all education levels, including elementary schools (ES). Project-based learning (PjBL) is a suitable model for achieving PSP but needs reinforcement, particularly in fostering attitude and character values. Integrating the noble values of Dayak culture into PjBL is identified as a relevant approach to strengthen PSP. This study explores the perceptions of Dayak culture actors and primary education stakeholders on implementing PjBL in ES to enhance PSP. Data were collected through semi-structured interviews with 12 key informants and analyzed thematically using NVivo software. Findings are categorized into three aspects: planning, implementation, and evaluation of PjBL. Planning focuses on defining learning outcomes, developing tools, and ensuring student readiness. Implementation involves a 5-step PjBL process integrated with Dayak cultural values, emphasizing honesty, religion, collaboration, kinship, creativity, and independence. Challenges include limited cultural and PjBL literacy, insufficient stakeholder collaboration, and inadequate monitoring during PjBL activities. These issues need addressing to optimize PjBL effectiveness in strengthening PSP.

This is an open access article under the [CC BY-SA](#) license.



Corresponding Author:

Eliana Yunitha Seran

Department of Primary Teacher Education, STKIP Persada Khatulistiwa

Sengkung, Sintang, West Kalimantan, Indonesia

Email: elianaseran@persadakhatulistiwa.ac.id

1. INTRODUCTION

The Developments in science and technology present increasingly complex challenges in all fields of activity. Disruption of technology, work to competence is some of the challenges that are of great concern, especially for workers as human resources (HR) [1], [2]. This challenge requires a variety of skills that emphasize higher-order thinking. Starting from critical thinking, creativity and continuous innovation to become the basic skills needed today [3], [4]. In addition, his main skill boils down to solving complex problems on the job [5], [6]. Education, as one of the HR development institutions has a crucial role in dealing with it [7]. Education must be able to equip and prepare students as HR candidates who will fill future jobs [8]. Efforts to prepare superior and competitive HR in dealing with current technological developments must start early, namely in elementary school (ES) [7]. ES has a significant role in forming the foundation for students to construct the skills needed [9]. In addition, previous research reports revealed that education in ES serves to form a strong personality and interests and talents [10].

As an effort to provide a foundation of skills and personality that is followed by their talent interests, integrated and comprehensive learning innovations are certainly needed in ES [11]–[13]. In Indonesia itself, regarding learning in forming the foundation it seems that the government has responded, through the independent curriculum (IC) policy [14]. IC is a set of learning content that refers to the aptitude and interest approach [15]. Students can choose what subjects they want to learn according to their passion [16]. IC carries a vital vision, namely to achieve and strengthen the profile of Pancasila student profile (PSP). PSP is several character traits and skills that are expected to be achieved by students, which are based on the noble values of Pancasila (the philosophy of the Indonesian nation) [17]. Where religious characters such as piety to God almighty and having noble character are one of the main characteristics. Apart from that, having a positive attitude towards global diversity, learning and working independently, and having a cooperative attitude are also the identity of the characters on the PSP [18]. Furthermore, PSP is also characterized by students with critical, creative and collaborative thinking skills in learning. To achieve PSP, IC also emphasizes four main programs that must be carried out: intracurricular activities, extracurricular activities (interests and talents), school culture, and PSP strengthening projects [19].

Of the programs announced at the IC to achieve PSP, the researcher highlights the PSP strengthening project program. The PSP strengthening project is a program that organizes a project-based learning (PjBL) process [16]. In IC, the project has a particular portion in each subject hour allocation which allows students to be able to develop their knowledge, skills and attitude competencies by learning from their friends, teachers, and even local community leaders in analyzing hot issues that occur in the neighborhood [17]. PjBL for strengthening PSP has nine themes that can be selected and integrated into the project. The themes include sustainable lifestyles, local wisdom, *bhineka tunggal ika*, building a body and soul, the voice of democracy, engineering and technology, entrepreneurship, work, and work culture. Of course, all of these themes are not required to be chosen, especially in the context of learning in ES [19]. In this case, especially teachers in ES must be careful in determining the project's theme to form a strong foundation of character and skills in their students. Besides that, the teacher must also analyze the child's needs and adapt them to the community environment [20].

Determining the project theme based on the needs of the children and the community environment certainly requires the involvement of various parties. Two of the most important are the involvement of the teacher as a manager of learning and culture that develops and is preserved somewhere [21]. This is important, considering that the teacher is the primary mover in the class in planning, implementing, assessing and evaluating learning, so experience is needed in this regard [20]. Meanwhile, cultural involvement is needed to be integrated into PjBL, considering that learning is based on the needs and conditions of the surrounding community [21], [22]. Thus, the involvement of cultural practitioners is needed in providing views related to developing cultural values to support PjBL as an effort to strengthen PSP, especially in ES.

Dayak culture is a culture that has great values and is known to be widely implemented in education and learning [23]. Dayak local wisdom has inspired various researchers to research and develop learning to preserve culture and facilitate students to achieve competence [24], [25]. In addition, the great values in Dayak culture, which prioritize the principles of togetherness and kinship, justice, and upholding spiritual or religious values, are their advantages and are very appropriate to be integrated into learning [23]. Learning based on Dayak local wisdom is also reported to be able to foster strong character in students to continue to develop their competence [24]. In addition, the values also become a psychological basis for students to have a strong drive to study and work to achieve life goals [26]. These descriptions are the background for us to reveal the concept of learning to support PjBL to strengthen PSP in ES. The involvement of educational and cultural practitioners is needed to provide a comprehensive picture of this concept. Thus, this study aims to explore the perceptions of the two practitioners toward the realization of PSP in ES students through PjBL.

2. RESEARCH METHOD

This qualitative research is used to explore perceptions related to the concept of PjBL as an effort to achieve and strengthen PSP in ES from education practitioners (lecturers) and practitioners of Dayak culture. Some teachers with good experience and competence in organizing learning become involved education practitioners. Then, several practitioners of Dayak culture were appointed, representing several clans. Several representatives of educational practitioners ensure that their competence has been certified by the authorized institution therein. Meanwhile, Dayak cultural practitioners are ensured of their capacity to provide feedback through recommendations from tribal leaders

2.1. Key informant

The key informants from both sides (cultural and educational practitioners) were determined using a purposive sampling technique. In particular, the characteristics of the key informants in the study, as in Table 1, the criteria for the key informants selected for cultural practitioners are: cultural actors who are active

in preserving Dayak culture; have experience as a Dayak practitioner for at least two years; and served as chairman, coach, trainer, and observer of Dayak culture. The aim is to get synchronization of learning content that will be integrated with Dayak culture as an effort to strengthen PSP for ES students. As a comparison, the criteria for key informants for education practitioners are basic education lecturers with teaching experience of more than 5 years, experience in implementing PjBL and a professional lecturer certificate. The goal is to obtain accurate information regarding the implementation, limitations and challenges of learning, so that existing phenomena can be uncovered, and can promote the concept of effective PjBL.

The 12 key informants, including seven practitioners of primary education and 5 practitioners of Dayak culture, were involved in providing the data. The number of informants was determined based on considerations from Cresswell [27], who said the ideal number of qualitative informants was at least three. So, this study has met the criteria to consider data triangulation techniques. The work experience of key informants in this culture is 12-22 years, while primary education practitioners are 17-37 years. Based on age, key informants from cultural practitioners are aged 38-54, while lecturers are 43-62. The length of time working in a particular position and the current age indicate that the informant can fully reveal the phenomenon and can explain the information.

Table 1. Profile of key informants

Pseudonym	Role	Age	Experiences	Short backgrounds
HA	Education practitioner	45	21 years	University professor in the major of elementary education
MBS	Education practitioner	62	37 years	University professor in the major of elementary education
TS	Education practitioner	48	23 years	University professor in the major of elementary education
HER	Education practitioner	58	32 years	University professor in the major of elementary education
KUB	Education practitioner	47	21 years	University professor in the major of elementary education
NS	Education practitioner	44	17 years	University professor in the major of elementary education
STY	Education practitioner	43	17 years	University professor in the major of elementary education
MN	Dayak cultural practitioner	42	22 years	Dayak cultural coach
HKN	Dayak cultural practitioner	43	12 years	Dayak cultural observer
HJR	Dayak cultural practitioner	38	12 years	Dayak cultural coach
MM	Dayak cultural practitioner	54	22 years	Head of the Dayak tribe
WEK	Dayak cultural practitioner	48	18 years	Head of the Dayak tribe

2.2. Data collection procedures

Data collection was carried out in two stages, starting with interviews and continuing with focus group discussions (FGDs). The interview stage is further divided into two stages as well. The first interview was conducted with 5 key informants from Dayak cultural practitioners. Interviews were conducted in January-February 2023 with a duration of $\pm 60-90$ minutes. The interviews used interview guidelines validated by Dayak cultural experts and learning practitioners at ES. Interviews were conducted to explore the experiences and opinions of Dayak cultural practitioners regarding procedures and skills that were adjusted to strengthen the PSP indicators. The next step was interviewing seven key informants from primary education practitioners from three universities. Interviews were conducted in March-April 2023 with a duration of $\pm 60-90$ minutes. Dayak cultural experts and primary learning practitioners have validated the interview guide. In the final stage, Dayak culture and primary education practitioners conducted FGDs to discuss findings and evaluate the concept of implementing PjBL based on Dayak culture. Thus, a new formula was made between the two parties to recommend that PjBL organizers be more professional and effective in supporting the development of PSP indicators. The instrument was reviewed based on a review of relevant and member-reviewed literature to check the credibility of the fourteen key informants.

2.3. Data analysis and visualization procedures

Before data analysis, we transcribed the data as a whole for further coding. Furthermore, the data obtained were processed using the NVivo 12 plus software. Data were analyzed thematically to identify, evaluate, and describe concepts/themes based on responses from key informants. The stages of data analysis consist of open coding, axial coding, and selective coding. Systematically, the stages of the research were as follows: first, the transcribed interview data were put into a file container and read repeatedly, then nodes were made based on descriptive coding, coding on NVivo 12, and process coding. Furthermore, the data is grouped by category and theme to produce a PjBL concept integrated with Dayak culture for strengthening PSP. Second, the research team discussed the results of selective coding, including code simplification and integration between themes. The next step is presenting the data, which will be discussed in detail. The stages in data analysis are presented in the conceptual framework in Figure 1.

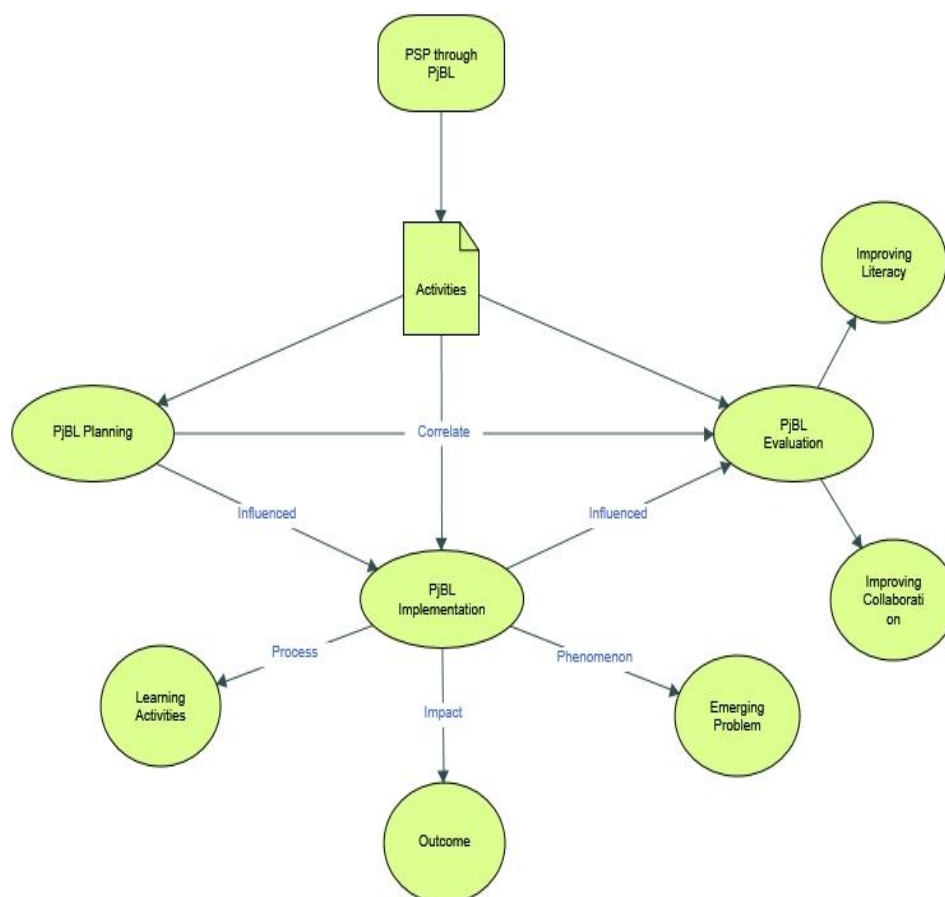


Figure 1. The conceptual framework in this research

3. RESULTS AND ANALYSIS

3.1. PjBL planning

Learning activities before implementing PjBL to realize PSP are essential to support its success. Practitioner experience when training or implementing successful PjBL is needed to provide pilot learning in ES, particularly as an effort to strengthen PSP. As stated by primary education practitioners [HA, MBS, TS, HER, KUB, TS and STY] that PjBL in primary education needs careful planning, starting from achievement analysis, developing learning tools, and student readiness, as in Figure 2. Even though many teachers still need help managing PjBL as a reinforcement of PSP in the IC, the primary education professors try to provide a mature and practical concept to implement based on their experiences. In the PjBL planning aspect, primary education practitioners reveal three essential aspects: defining learning outcomes, developing learning tools, and ensuring student readiness. The focus of defining learning outcomes is related to achievements in the cognitive, affective and psychomotor dimensions. Then, the development of learning tools focuses on determining learning strategies, integrating Dayak cultural values, and involving Dayak cultural figures in planning PjBL learning. Meanwhile, related to student readiness, psychological conditions and strengthening cultural literacy, especially Dayak culture, need to be done. This opinion is detailed by key informants as follows:

“Talking about project-based learning planning, one of the most important things is defining learning outcomes. According to the developing theory, I agree that the achievement of the affective dimension is an important dimension to plan for. This dimension will bring students to a good learning personality, so that the motivation to learn will be high.” [HER and KUB]

“The cognitive aspect needs to be built for the first time in PjBL learning to build literacy in teachers and students. Knowledge within them is very important and underlies the formation of other dimensions.” [HA and NS]

“Related to defining project-based learning outcomes, this is closely related to the psychomotor dimension, where the orientation is skills in producing products. In making products, the psychomotor dimension gives the highest dominance.” [MBS and STY]

“Regarding the development of learning tools, determining learning strategies is the most important thing. The strategy will provide views, directions and guidelines in completing the learning cycle. Strategy also plays an important role as one of the determinants of success in project-based learning in elementary schools, considering that elementary schools are treated differently from higher levels.” [HER, KUB, and TS]

“I am very interested in Dayak culture which has local wisdom values which are very relevant to project-based learning as strengthening the profile of Pancasila students. An example is the “betang culture” which has the value of instilling the values of honesty, piety to God, deliberation and democracy, and justice in diversity.” [HER and NS]

“The involvement of Dayak cultural figures is very important as an effort to develop learning tools. I see that Dayak culture has highly upheld values that are very relevant to be integrated into learning as an effort to shape the profile character of Pancasila students.” [HA and STY]

“Ensuring student readiness is vital in learning, so that it can determine the success of learning. Related to this, the most important readiness is to ensure psychological readiness in students. Psychological condition is an important aspect to be strengthened, considering that this aspect will affect students’ motivation to learn.” [MBS and TS]

“Instilling noble cultural values is very important to do for students in elementary schools. Through it, a strong personality within students can be awakened, because in the implementation of the Pancasila student strengthening project requires a strong attitude to achieve it.” [HA and TS]

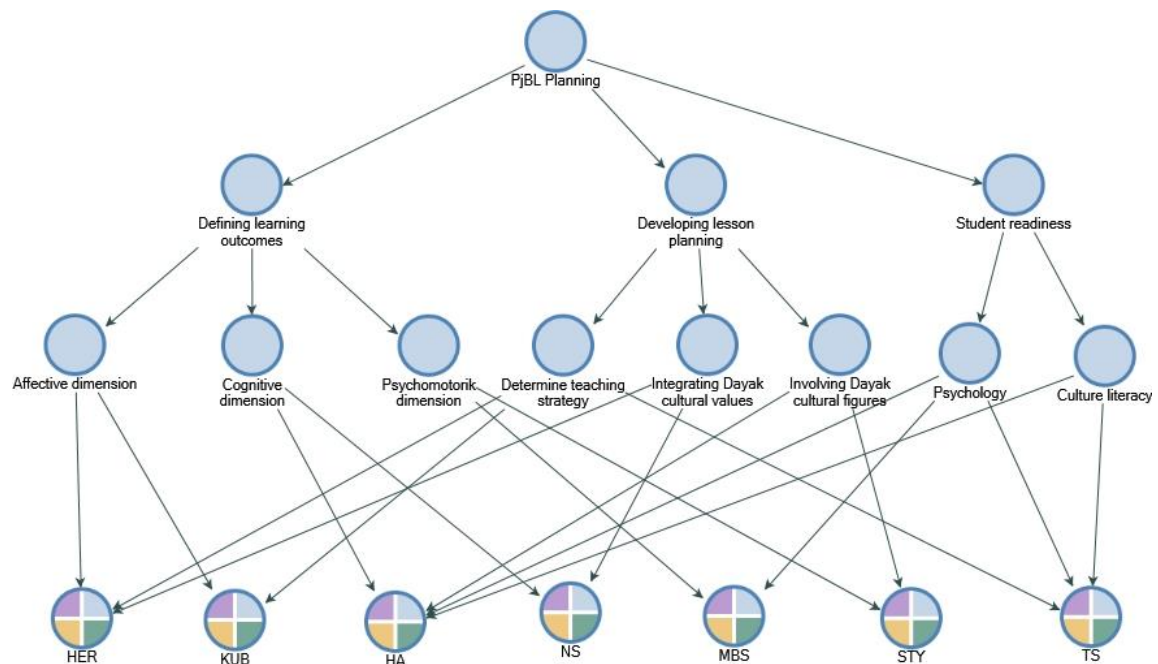


Figure 2. The concept of PjBL planningwork

Regarding the PjBL planning findings, it is essential to define learning outcomes, including achievements in the cognitive, affective and psychomotor dimensions. The cognitive dimension includes students’ knowledge and understanding of project creation. Then, the affective dimension includes attitudes, character and personality that must exist during the PjBL process. Meanwhile, psychomotor achievement is a skill dimension that must be possessed after carrying out the project. The three dimensions of learning achievement must be fully developed in students who are indicators of successful PjBL implementation [28]. What also needs to be considered in implementing PjBL is the preparation and development of learning tools that serve as guidelines for teachers during their implementation. Related to this, first, the determination of learning strategies is essential to be studied in depth by the teacher [29]. The strategy will provide views, directions and guidelines for completing the learning cycle. The strategy also plays a vital role as one of the determinants of success in PjBL in ES, considering that ES have different treatment of their students when carrying out product manufacturing [30]. Second, it is essential to integrate Dayak’s cultural values into

learning tools, given their high relevance in the PjBL process, to increase PSP. An example is the “Betang culture,” which has the value of instilling the values of honesty, purity to God, deliberation and democracy, and justice in diversity [26]. This is very suitable to be integrated into the project creation process, considering that collaboration and tolerance must be upheld in PjBL, especially in ES [31]. In addition, the involvement of Dayak cultural figures is very important as an effort to develop learning tools that are integrated with these cultural values [24]. As reported by several studies, the Dayak culture has highly upheld values that are relevant to be integrated into learning to shape the character of PSP [25]. Finally, the aspect that must be planned is student readiness, where the psychological condition and cultural literacy must be ascertained first [32]. Research from Kovalchuk *et al.* [33] reported that the psychological condition of students in PjBL is very important to note, considering that most PjBL fail in its implementation due to the low psychological condition of students [34]. In addition, cultural literacy must be prepared, considering that PjBL has high relevance for collaborating with local wisdom to help facilitate student achievement [22].

3.2. PjBL implementation

PjBL implementation activities as an effort to realize PSP in ES refer to the experience of lecturers who have implemented or provided training to teachers. In this case, the accumulation of experience is a phenomenon that has been going on for more than three years. We collected perceptions from lecturers majoring in primary education about their positive and negative experiences in managing or training the implementation of PjBL. The findings of activities during the implementation of the PjBL resulted in important sub-themes, namely learning activities, PSP achievements, and problems that arose during their implementation, as in Figure 3. During the implementation of PjBL, it was revealed that several vital activities were carried out mainly by students. According to information from the lecturers, namely [HA, MBS, TS, HER, and KUB], successful PjBL activities included 5 stages. These stages are carried out systematically by covering problem analysis, project design, scheduling coordination, creating and monitoring projects, and assessing and evaluating results. In these 5 processes, perceptions from Dayak cultural figures were involved in providing input during implementation. These inputs were expressed by [MN, HKN, HJR, MM, and WEK], who revealed that there are several noble values of Dayak culture that are relevant in PjBL, as stated by the professors. These noble values include “Betang culture,” which has many good meanings, namely about respecting diversity among students, collaboration in discussions, and being oriented towards consensus and democracy. Other noble values are also found in the “Belom Bahadat culture,” which contains the values of honesty, tolerance, togetherness, creativity, independence, care for the environment and the public interest and responsibility. These values are very relevant to be integrated into the PjBL process as an effort to realize PSP for students in ES. Finally, in implementing PjBL, some problems arise from various teachers and the lecturers themselves. [KUB, NS, and STY] revealed three crucial problems that were obtained based on many teachers’ experiences and personal experiences, namely, the lack of student literacy, limited practical tools, and student monitoring. The following is an explanation of the more specific essential points from the informants directly related to the implementation of the PjBL:

“The first step in project-based learning is to do problem analysis, where problems must come from the real world that have an urgency to be solved. Elementary school students must be trained sensitivity. It should be noted that in analyzing problems, it must start with problems that are basic and easy for elementary school students to understand, for example problems that are faced daily and are aware of. For example, issues regarding food, children’s play, and the environment.” [HA, MBS, and KUB]

“In this process, Dayak cultural values, especially “Belom Bahadat culture” are suitable for integration. The values contained therein include honesty, togetherness in reaching a consensus, and caring for the environment and the public interest. In analyzing problems, at least it is necessary to consider these aspects.” [MN and HKN]

“The second stage is about designing projects, where students and teachers are able to produce simple designs or concepts related to the object to be worked on. In this step creativity is needed to convert the problem into a concept to solve it. In addition, intensive discussion and mutual tolerance between students are needed, bearing in mind that it is not uncommon for elementary school students to be too selfish in determining a design, so that in the end it doesn’t work.” [TS, HER, and KUB]

“Related to the product design process, it is very important to instill collaboration values to achieve consensus, tolerance and respect for diversity, creativity in “Betang Culture and Belom Bahadat Culture”, ”. [HJR, MM, and WEK]

“The third step is scheduling coordination, where students are accompanied by teachers to coordinate to form a schedule for project completion.” [TS and KUB]

“The fourth step is to create and monitor the progress of the project, where the teacher becomes a learning facilitator, while students are required to be independent and collaborate with their group mates in completing the project.” [HA and MBS]

“Regarding the process of making a project, it is very important to instill collaboration values to achieve consensus, tolerance and respect for diversity, creativity that exists in “Betang Culture and Belom Bahadat Culture”,”. [MN, HKN, HJR, MM, and WEK]

“The final process is the assessment and evaluation of the products produced through the project. Project assessment includes presentations made by students, product consistency and product usefulness in solving existing problems.” [HA, MBS, TS, HER, and KUB]

“Regarding the last step, I really highlight the presentation activities to be carried out instilling collaboration values to reach consensus, tolerance and respect for diversity, creative in presentation. This is relevant to the values contained in “Betang Culture and Belom Bahadat Culture”,”. [MN, HKN, HJR, MM, and WEK]

“The problems that arise from most PjBL implementations as an effort to increase PSP are related to student literacy, limited product-making practice tools, and student monitoring.” [HA, MBS, TS, HER, and KUB]

“Not all students are able to understand PjBL syntax as a whole and are able to instill noble values that are important to be integrated into it.” [HA and HER]

“The limited tools owned by schools are a crucial aspect that occurs. This has an impact on reducing the efficiency of project execution time, considering that there are several products that require special tools and are used interchangeably.” [HA, HER, and KUB]

“The lack of monitoring of students becomes a deficiency during the implementation of project-based learning. This is very crucial, considering that elementary school students still need more intensive monitoring than higher education levels.” [TS and HER]

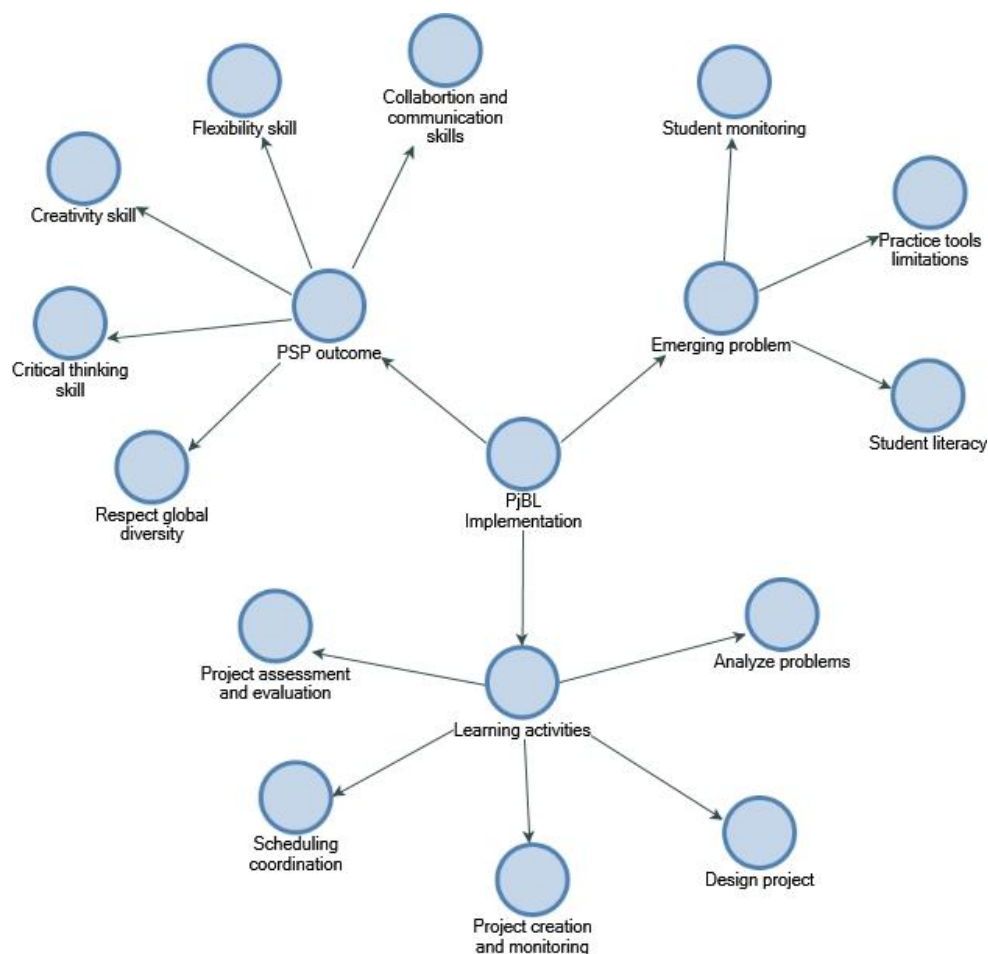


Figure 3. The concept of implementing PjBL

Significant findings during PjBL implementation imply that 5 important syntaxes synergize with Dayak's cultural values. The first syntax is to do a problem analysis, where the problem must come from the real world and urgently needs to be solved. In this process, Dayak's cultural values, especially "Belom Bahadat culture," are suitable for integration. The values contained therein include honesty, togetherness in reaching a consensus and caring for the environment and the public interest, so it is very relevant for integration, as reported by Mukhlisin *et al.* [25], Lee and Galindo [28]. The second stage is about designing projects, where students and teachers can produce simple designs or concepts related to the object to be worked on. Regarding the product design process, it is essential to instill collaboration values to achieve consensus, tolerance, respect for diversity, and creativity in "Betang culture and Belom Bahadat culture" [35]. This is confirmed by previous research that product design is a vital aspect that influences product results, and the manufacturing process requires creativity and good collaboration in doing so [36]. Then, in the fourth step, namely making and monitoring project progress, it is essential to instill collaboration values to achieve consensus, tolerance and respect for diversity and creativity in the "Betang culture and Belom Bahadat culture" [35]. The primary reason is that ES students still have unstable emotions, and it is not uncommon for PjBL not to be adequately implemented because of differences in opinion between students, so instilling these values is very important [37]. The last process is assessing and evaluating the products produced through the project. Related to the last step, it is necessary to instill the value of collaboration to achieve consensus, tolerance and respect for diversity to be creative, especially in presenting presentations for assessment [38].

3.3. PjBL evaluation

Maturity as material for evaluating PjBL improvements to realize PSP among ES students, two essential aspects should be the primary focus: increasing literacy and collaboration, as in Figure 4. From the perspective of primary education practitioners, increasing Dayak cultural literacy must be done [HA]. Meanwhile, [MBS and TS] emphasized increasing PjBL implementation literacy for teachers and students. From the point of view of [MM, NS, and WEK], it is essential to increase collaboration with stakeholders. In addition, collaboration with the surrounding community must also be carried out [NS, KUB, and MN]. Meanwhile, Dayak cultural actors who are partners in primary education have been explained and have understood the implementation of the PjBL. From their point of view, increasing cultural literacy is an aspect that ES must improve as the PjBL organizer [HJR and HKN]. In addition, [MM and WEK], as local tribal chiefs, revealed that increasing the intensity of collaboration with stakeholders is an important thing that must be improved. Following are the responses from informants regarding the PjBL evaluation:

"The important thing that should be the focus of evaluating the implementation of PjBL as an effort to strengthen PSP in elementary school students is related to increasing literacy in students and teachers." [HA, HJR, HKN, MBS, and TS]

"I hope that learning practitioners in elementary schools will increase Dayak cultural literacy, especially those that have relevance in implementing project-based learning. This is in addition to aiming to preserve culture, but also to facilitate and uphold the great values that exist in the Dayak." [HA, HJR, and HKN]

"Increasing understanding of the implementation of PjBL among teachers and students in elementary schools is a fundamental step that must be taken. This is based on the many reports from teachers and research complaining about the complexity of implementing PjBL in elementary schools." [HA, MBS, and TS]

"Actually, I highlighted the lack of intensive cooperation between elementary schools and related stakeholders. Cooperation between the two is needed as reinforcement in the formulation of learning curricula, implementing learning, procuring infrastructure, and so on. In this case, encouraging an increase in the intensity of cooperation between the two is very important to do." [MM, NS, and WEK]

"Increasing cooperation between schools and the community must be carried out, bearing in mind that the community is an important pillar in the implementation of basic education." [NS, KUB, and MN]

As material for evaluating PjBL improvements to realize PSP for ES students, two important aspects must be the main focus: increasing literacy and collaboration. From the perspective of basic education practitioners, increasing Dayak's cultural literacy needs to be done. Dayak cultural literacy is important to understand comprehensively, given the many values that are very relevant to support the success of PjBL [35]. Meanwhile, a significant emphasis is also placed on increasing PjBL implementation literacy for teachers and students. This was confirmed by previous research, which revealed low literacy in PjBL implementation among teachers and students, thus affecting its success [28], [39]. In addition, increasing collaboration with stakeholders and the community is essential. This is because stakeholders and the community play an essential

role in helping develop the PjBL process [39]. In addition, increasing cultural literacy is an aspect that ES must improve as the PjBL organizer.

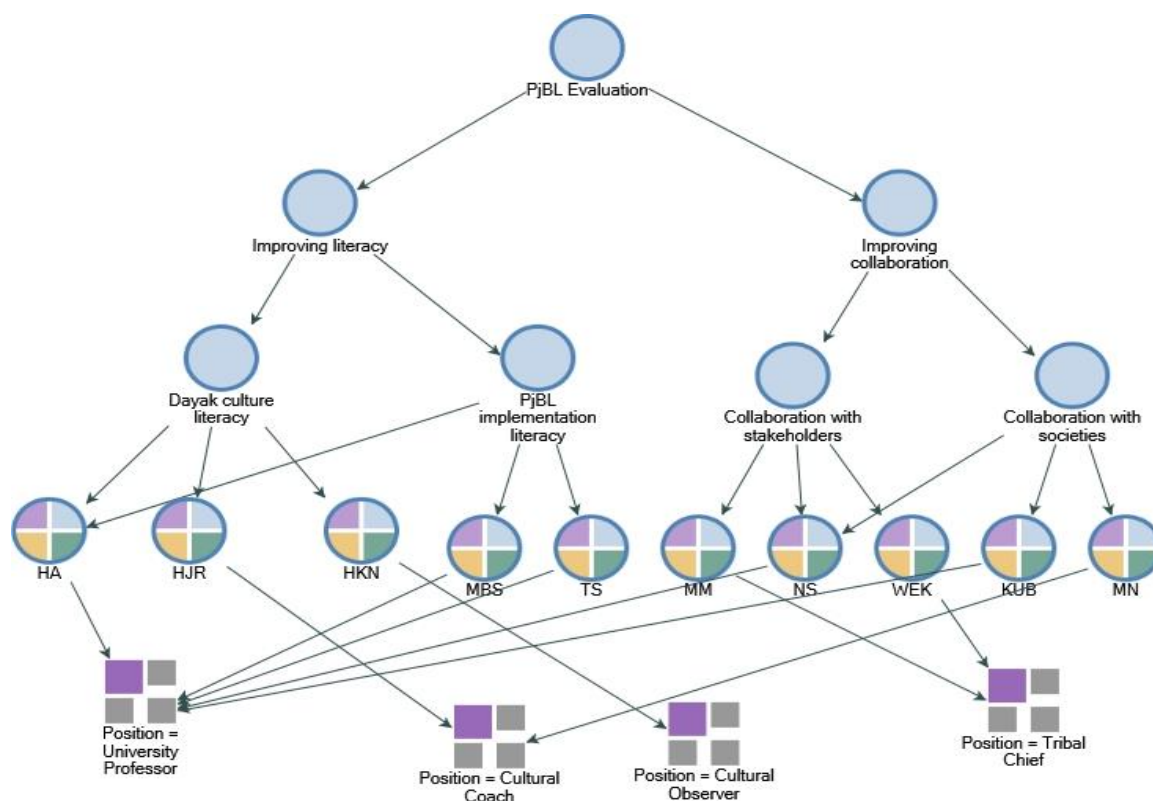


Figure 4. PjBL evaluation

4. CONCLUSION

The perceptions of cultural and primary education practitioners about PjBL have made fundamental changes in increasing PSP among ES students. Lecturer experience during PjBL implementation and views from Dayak cultural actors provide an overview of implementation during learning, including activities during PjBL, PSP achievements, and problems that arise. The role of cultural practitioners in this research is to provide an overview of the noble values of local Dayak wisdom, which have high relevance to PjBL. His role is also related to providing advice on increasing cultural literacy and increasing intensive collaboration with stakeholders and the community. The role of cultural actors is expected to help guide and advise ES in an effective and systematic manner. To increase the effectiveness of PjBL in the future, Dayak culture practitioners hope that ES will always increase cooperation with stakeholders, including the education and culture office and the surrounding community who have instilled noble values to help facilitate the achievement of PSP through PjBL.

ACKNOWLEDGMENTS

The authors would like to express their sincere gratitude to STKIP Persada Khatulistiwa through the Institute for Research and Community Service (LPPM) for the academic support and opportunity to conduct this research. Special thanks are extended to all respondents, including Dayak cultural practitioners and primary education experts, for their valuable contributions. The authors also appreciate the insightful and constructive comments provided by the reviewers, which significantly helped improve the quality of this manuscript.

FUNDING INFORMATION

This research received no external funding and was fully supported by the authors' personal resources.

AUTHOR CONTRIBUTIONS STATEMENT

This journal uses the Contributor Roles Taxonomy (CRediT) to recognize individual author contributions, reduce authorship disputes, and facilitate collaboration.

Name of Author	C	M	So	Va	Fo	I	R	D	O	E	Vi	Su	P	Fu
Eliana Yunitha Seran	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Immanuel Sairo Awang	✓	✓				✓	✓	✓		✓				✓
Gabriel Serani	✓		✓		✓	✓			✓					
Yayan Adrianova Eka	✓	✓			✓					✓				
Tuah					✓									
Anna Marganingsih						✓				✓				

C : **C**onceptualization

M : **M**ethodology

So : **S**oftware

Va : **V**alidation

Fo : **F**ormal analysis

I : **I**nvestigation

R : **R**esources

D : **D**ata Curation

O : **O**riting - **O**riginal Draft

E : **E**riting - **R**eview & **E**editing

Vi : **V**isualization

Su : **S**upervision

P : **P**roject administration

Fu : **F**unding acquisition

CONFLICT OF INTEREST STATEMENT

The authors declare that there is no conflict of interest regarding the publication of this paper.

INFORMED CONSENT

We have obtained informed consent from all individuals included in this study. All participants were informed about the purpose of the research, their voluntary participation, and their right to withdraw at any time. No identifying personal data were disclosed in the publication.

ETHICAL APPROVAL

When papers talk about using people or animals, authors should make it clear that the research followed all national rules and institutional policies, and it was approved by the authors' institutional review board or a similar committee. The Helsinki Declaration's tenets must guide all investigations involving human subjects. Authors must also identify the committee or review board approving the experiments and provide a statement indicating approval of the research. Incorporate the following (or a similar) statement: The research related to human use has been complied with all the relevant national regulations and institutional policies in accordance with the tenets of the Helsinki Declaration and has been approved by the authors' institutional review board or equivalent committee; or: The research related to animal use has been complied with all the relevant national regulations and institutional policies for the care and use of animals.

DATA AVAILABILITY

The data that support the findings of this study are available from the corresponding author, [EYS], upon reasonable request. These data are not publicly available due to privacy restrictions and the protection of participant identities.

REFERENCES

- [1] K. Schwab, *The fourth industrial revolution*. Geneva: World Economic Forum, 2016.
- [2] M. Xu, J. M. David, dan S. H. Kim, "The fourth industrial revolution: opportunities and challenges," *International Journal of Financial Research*, vol. 9, no. 2, pp. 90–95, 2018, doi: 10.5430/ijfr.v9n2p90.
- [3] S. Kergroach, "Industry 4.0: new challenges and opportunities for the labour market," *Foresight and STI Governance*, vol. 11, no. 4, pp. 6–8, 2017, doi: 10.17323/2500-2597.2017.4.6.8.
- [4] J. Khadka, N. Dahal, U. Acharya, G. Puri, N. Subedi, dan M. K. Hasan, "Higher-order thinking skills in e-learning contexts in higher education: a phenomenological study," *Frontiers in Education*, vol. 10, no. April, hal. 1–13, Apr 2025, doi: 10.3389/educ.2025.1555541.
- [5] W. W. Al-Rahmi, M. S. Othman, dan L. M. Yusuf, "The role of social media for collaborative learning to improve academic performance of students and researchers in Malaysian higher education the role of social media for collaborative learning to improve academic performance of students and researchers," *The International Review of Research in Open and Distributed Learning*, vol. 16, no. 4, pp. 177–204, 2015, doi: 10.19173/irrodl.v16i4.2326.
- [6] B. Martz, J. Hughes, dan F. Braun, "Creativity and problem-solving: closing the skills gap," *Journal of Computer Information Systems*, vol. 57, no. 1, pp. 39–48, Jan. 2017, doi: 10.1080/08874417.2016.1181492.
- [7] V. Deshmukh, *Education for human resource development*. Chennai: Atlantic, 2012.

Perceptions of dayak culture and education practitioners on project-based ... (Eliana Yunitha Seran)

- [8] S. Billett, *Vocational education: purposes, traditions and prospects*. Dordrecht: Springer, 2011, doi: 10.1007/978-94-007-1954-5.
- [9] L. M. dos Santos, "Becoming a pre-school and elementary school educator: how do male teachers describe their career decision and career development from the perspective of the social cognitive career approach and human resource management," *Journal of Education and e-Learning Research*, vol. 7, no. 2, pp. 159–166, 2020, doi: 10.20448/journal.509.2020.72.159.166.
- [10] Y. D. Wabiser, T. S. Prabawa, dan N. S. Rupidara, "The exploration of elementary school students' learning motivation: a case study in Papua," *Eurasian Journal of Educational Research*, vol. 97, no. 97, pp. 59–85, 2022, doi: 10.14689/ejer.2022.97.04.
- [11] D. A. Ritonga, S. Damanik, S. A. Damanik, Suprayitno, dan G. Priyambada, "Development of learning variations to improve basic jumping skills and play approaches of elementary school students," *International Journal of Education in Mathematics, Science and Technology*, vol. 10, no. 2, pp. 360–371, 2022, doi: 10.46328/ijemst.2246.
- [12] J. Julia, S. Gunara, T. Supriyadi, E. Agustian, E. Y. Ali, dan A. Budiman, "Improving elementary school teachers' competence in composing thematic songs: an action research," *Pegem Egitim ve Ogretim Dergisi*, vol. 12, no. 1, pp. 131–141, Jan. 2022, doi: 10.47750/pegegog.12.01.12.
- [13] M. Yangari dan E. Inga, "Article educational innovation in the evaluation processes within the flipped and blended learning models," *Education Sciences*, vol. 11, no. 9, p. 487, Aug. 2021, doi: 10.3390/educsci11090487.
- [14] J. H. G. Purwasih, E. Kumiawati, N. Hadi, dan I. W. P. Utami, "Developing an independent curriculum: village development project as an equalization of thesis," *International Journal of Emerging Technologies in Learning*, vol. 16, no. 7, 2021, doi: 10.3991/ijet.v16i07.21225.
- [15] E. Asmarawati, "Implementation of the independent curriculum in mathematics learning for class X vocational school in the administrative city of East Jakarta," *International Journal of Educational Research & Social Sciences*, vol. 3, no. 5, pp. 1915–1919, Oct. 2022, doi: 10.51601/ijersc.v3i5.487.
- [16] S. Maryati, G. D. Lestari, dan Y. Riyanto, "The effectiveness of mentoring in the implementation of the project-based learning (PjBL) model in the independent curriculum for PAUD educators," *European Journal of Education and Pedagogy*, vol. 3, no. 6, pp. 12–18, Nov. 2022, doi: 10.24018/ejedu.2022.3.6.471.
- [17] Usman, D. Nuraulia, R. Nauroh, I. Rajudin, dan I. Rifqiawati, "Project to strengthen Pancasila student profile as an application of differentiated learning in the independent curriculum: a case study at a senior high school in Pandeglang, Indonesia," *Jurnal Pendidikan Indonesia Gemilang*, vol. 3, no. 1, pp. 103–113, Feb. 2023, doi: 10.53889/jpig.v3i1.159.
- [18] A. C. Rahina dan M. E. K. Syamsi, "Independent curriculum in the perception of Indonesian language teachers of SMP/MTS in Yogyakarta," *International Journal of Linguistics, Literature and Translation*, vol. 6, no. 2, pp. 54–57, Feb. 2023, doi: 10.32996/ijlt.2023.6.2.8.
- [19] L. Chamisijatin, Y. Pantiwati, S. Zaenab, dan R. F. Aldya, "The implementation of projects for strengthening the profile of Pancasila students in the implementation of the independent learning curriculum," *Journal of Community Service and Empowerment*, vol. 4, no. 1, pp. 38–48, Jan. 2023, doi: 10.22219/jcse.v4i1.24679.
- [20] P. P. Ruaya, H. X. Kang, S. Reader, dan T. Hidayat, "Role of teacher competence to implement the independent curriculum," *International Journal of Science Education and Cultural Studies*, vol. 1, no. 2, pp. 94–108, Nov. 2022, doi: 10.58291/ijsecs.v1i2.48.
- [21] N. Nurdiansah, S. Kartadinata, E. Maryani, dan N. Supriatna, "Collaboration learning: project-based learning and local wisdom," *IOP Conference Series: Earth and Environmental Science*, vol. 683, no. 1, Mar. 2021, doi: 10.1088/1755-1315/683/1/012040.
- [22] Zulfa, A. Nusi, A. Ananda, A. Efi, dan P. S. Pernantah, "Using simulation on project based learning in Minangkabau culture subject," *International Journal of Instruction*, vol. 15, no. 1, pp. 311–326, Jan. 2022, doi: 10.29333/iji.2022.15118a.
- [23] C. Sada, Y. Alas, dan M. Anshari, "Indigenous people of Borneo (Dayak): development, social cultural perspective and its challenges," *Cogent Arts & Humanities*, vol. 6, no. 1, hal. 1665936, Jan 2019, doi: 10.1080/23311983.2019.1665936.
- [24] P. Suryanto, A. W. R. Emanuel, dan Pranowo, "Design of dayak kanayatn language learning mobile applications using gamification," *International Journal of Engineering Pedagogy*, vol. 10, no. 4, pp. 54–68, Jul. 2020, doi: 10.3991/ijep.v10i4.12899.
- [25] Mukhlisin, Hartono, dan R. Lanjari, "Jonggan Dayak Kanayatn dance: study of educational values in the learning process in elementary schools," *Catharsis*, vol. 9, no. 1, pp. 58–64, May 2020, doi: 10.15294/catharsis.v8i4.37181.
- [26] S. Dewintha, A. Mering, dan I. Astuti, "The development of adobe flash to learning Dayak traditional music for students in junior high school," *JETL (Journal of Education, Teaching and Learning)*, vol. 3, no. 2, pp. 225–232, Sep. 2018, doi: 10.26737/jetl.v3i2.750.
- [27] J. W. Cresswell, *Research design: qualitative, quantitative, and mixed methods approaches*, 3rd ed. Thousand Oaks, CA: SAGE Publications Inc., 2009.
- [28] J. S. Lee dan E. Galindo, "Examining project-based learning successes and challenges of mathematics preservice teachers in a teacher residency program: learning by doing," *Interdisciplinary Journal of Problem-based Learning*, vol. 15, no. 1, pp. 1–20, Aug. 2021, doi: 10.14434/ijpbl.v15i1.28786.
- [29] W. Zhang, A. C. H. Yang, L. Huang, D. Y. H. Leung, dan N. Lau, "Correlation between the composition of personalities and project success in project-based learning among design students," *International Journal of Technology and Design Education*, vol. 32, no. 5, pp. 2873–2895, Nov. 2022, doi: 10.1007/s10798-021-09716-z.
- [30] S. Dole, L. Bloom, dan K. K. Doss, "Engaged learning: impact of PBL and PjBL with elementary and middle grade students," *Interdisciplinary Journal of Problem-based Learning*, vol. 11, no. 2, pp. 1–13, Jul. 2017, doi: 10.7771/1541-5015.1685.
- [31] Safaruddin, N. Ibrahim, Juhaeni, Harmilawati, dan L. Qadrianti, "The effect of project-based learning assisted by electronic media on learning motivation and science process skills," *Journal of Innovation in Educational and Cultural Research*, vol. 1, no. 1, pp. 22–29, Jun. 2020, doi: 10.46843/jiecr.v1i1.5.
- [32] B. Berchiolli, F. Movahedzadeh, dan A. Cherif, "Assessing student success in a project-based learning biology course at a community college," *American Biology Teacher*, vol. 80, no. 1, pp. 6–10, Jan. 2018, doi: 10.1525/abt.2018.80.1.6.
- [33] M. A. Kovalchuk, V. F. Shevchuk, S. A. Solovyeva, A. V. Kosourikhina, dan N. O. Gerasimova, "Psychology of mobbing as a form of conflict in the workplace: finding and testing project-based learning in students' education," *Journal of Higher Education Theory and Practice*, vol. 22, no. 7, pp. 209–214, Jul. 2022, doi: 10.33423/jhetp.v22i7.5285.
- [34] M. Warr dan R. E. West, "Bridging academic disciplines with interdisciplinary project-based learning: challenges and opportunities," *Interdisciplinary Journal of Problem-based Learning*, vol. 14, no. 1, pp. 1–23, 2020, doi: 10.14434/ijpbl.v14i1.285901.
- [35] Rico, M. A. Hayat, Khuzaini, Sanusi, dan D. Susanto, "Huma Betang's philosophical values in the character of Dayak cultural communication," *JPPI (Jurnal Penelitian Pendidikan Indonesia)*, vol. 8, no. 3, pp. 640–653, Sep. 2022, doi: 10.29210/020221510.
- [36] R. Yilmaz, F. G. K. Yilmaz, dan H. Keser, "Vertical versus shared e-leadership approach in online project-based learning: a comparison of self-regulated learning skills, motivation and group collaboration processes," *Journal of Computing in Higher Education*, vol. 32, no. 3, pp. 628–654, Dec. 2020, doi: 10.1007/s12528-020-09250-2.
- [37] H. Trisdiono, Siswandari, N. Suryani, dan S. Joyoatmojo, "Multidisciplinary integrated project-based learning to improve critical thinking skills and collaboration," *International Journal of Learning, Teaching and Educational Research*, vol. 18, no. 1, pp. 16–30, Jan. 2019, doi: 10.26803/ijlter.18.1.2.

- [38] Haryanto, W. M. Kusuma, F. Mutohhari, M. Nurtanto, dan Suyitno, "Innovation media learning: online project-based learning (O-PBL) on drawing competence in automotive engineering using video on YouTube," *Journal of Physics: Conference Series*, vol. 2111, no. 1, p. 012020, Nov. 2021, doi: 10.1088/1742-6596/2111/1/012020.
- [39] B. Hussein, "Addressing collaboration challenges in project-based learning: the student's perspective," *Education Sciences*, vol. 11, no. 8, p. 434, Aug. 2021, doi: 10.3390/educsci11080434.

BIOGRAPHIES OF AUTHORS



Eliana Yunita Seran    is a permanent lecturer in the Elementary School Teacher Education Study Program STKIP Persada Khatulistiwa Sintang, West Kalimantan, Indonesia. She earned her bachelor of Education from Sanata Dharma University Yogyakarta and master of Education from the Indonesian Education University in 2010. She has written several papers and books in the field of education with a focus on the field of elementary school social studies education, development of learning models and methods in elementary schools, social attitudes and social skills of elementary school students, development of sources and materials for elementary school social studies learning studies and local cultural studies as a reference source for learning social sciences in elementary schools. She can be contacted at email: elianaseran@persadakhhatulistiwa.ac.id.



Immanuel Sairo Awang    is a lecturer at STKIP Persada Khatulistiwa Sintang, Indonesia. He holds a master's degree in elementary education with a concentration in science education from the Postgraduate Program at Universitas Negeri Yogyakarta. His research interests lie in the development of effective science teaching strategies and the integration of character education in the classroom. In addition to his journal publications, he has also authored books related to his areas of expertise. He has published numerous articles in various Indonesian journals. He can be contacted at email: iman.saiaw@gmail.com.



Gabriel Serani    is a permanent lecturer at STKIP Persada Khatulistiwa Sintang, specializing in the elementary school teacher education program. He holds a bachelor's degree in philosophy and a master's degree in Christian theology from STFT Widya Sasana Malang. Currently, he is pursuing a master's degree in primary education at the Faculty of Teacher Training and Education, Universitas Tanjungpura. His research interests include children's literature, Indonesian language learning in elementary schools, instructional design for primary education, and the integration of music in elementary school learning. He has actively contributed to academic discourse through research and publications in these fields. He can be contacted at email: seranigabriel83@gmail.com.



Yayan Adrianova Eka Tuah    is a permanent lecturer at STKIP Persada Khatulistiwa, Sintang, Indonesia, in the Computer Education Study Program. He obtained his master's degree in Engineering and Vocational Education from Yogyakarta State University (UNY), Indonesia, and his bachelor's degree from STMIK Akakom Yogyakarta, Yogyakarta, Indonesia. He has written several papers in the fields of engineering and vocational education and training, learning evaluation, learning media, and ICT for learning. His research interests include engineering and vocational education and training (TVET), standardization in TVET, pedagogical innovation in TVET, skills and personal development, innovation in engineering and education, among others. He can be contacted at email: yayan.adrianova.eka.tuah89@gmail.com.



Anna Marganingsih    is a permanent lecturer at Perkumpulan Badan Pendidikan Karya Bangsa, Sintang Indonesia in the Economics Education Study Program. She obtained her master's degree in economics education from Universitas Tanjungpura Pontianak, Indonesia and her bachelor's degree from Sanata Dharma University, Yogyakarta, Indonesia. In 2007, she joined STKIP Persada Khatulistiwa in the Economics Education Study Program, Sintang Indonesia as a permanent lecturer at the Foundation. She has written several papers in the fields of accounting education and training, learning evaluation, and entrepreneur. Her research interests also include cultural and education, entrepreneurship. She can be contacted at email: marganingsihanna11@gmail.com.