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Development of "Water Detective" Diorama in Islamic Education through Pancasila Student Profile Strengthening Project (P5)

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ABSTRACT

Having high level human resources that globally competitive is very important in this era of constant changes. The limited use of concrete media contributes to the decline of efficiency, creativity, and involvement in the classes. The purpose of this research is to assess the feasibility and efficiency of various learning media. The ADDIE R&D model is used in this study. The results of the validation test by material and media experts shows a score of 33 out of 40 or 82.5%, which means that this product is "very feasible". The learning expert gives it a score of 38 out of 40 or 95%, which also indicates that the product is "very feasible". The effectiveness test conducted by pretest and posttest shows an increase of 51.6 points, and the questionnaire given to students shows product usability of 90.5%, which means this product is "very feasible". The observation of Pancasila Student Profile Strengthening Project shows that the character of student profile improves from level 2 to level 4. Based on the research result, the "Detective Air" (Water Detective) media can optimally improve learning and can be a reference in facilitating learning process.

***Keywords**: Pancasila Student Profile Strengthening Project (P5); Diorama Media; Islamic Education*

ABSTRAK

Memiliki sumber daya manusia tingkat tinggi yang berdaya saing global sangat penting di era perubahan yang konstan ini. Penggunaan media konkrit yang terbatas berkontribusi pada penurunan efisiensi, kreativitas, dan keterlibatan di kelas. Tujuan dari penelitian ini adalah untuk menilai kelayakan dan efisiensi berbagai media pembelajaran. Model R&D ADDIE digunakan dalam penelitian ini. Hasil uji validasi oleh ahli materi dan media menunjukkan skor 33 dari 40 atau 82,5% yang berarti produk ini "sangat layak". Pakar pembelajaran memberikan skor 38 dari 40 atau 95% yang juga menunjukkan bahwa produk tersebut "sangat layak". Uji keefektifan yang dilakukan dengan pretest dan posttest menunjukkan peningkatan sebesar 51,6 poin, dan angket yang diberikan kepada siswa menunjukkan kegunaan produk sebesar 90,5% yang berarti produk ini "sangat layak". Pengamatan Proyek Penguatan Profil Siswa Pancasila menunjukkan bahwa karakter profil siswa meningkat dari level 2 ke level 4. Berdasarkan hasil penelitian, media "Detektif Air" (Detektif Air) dapat meningkatkan pembelajaran secara optimal dan dapat menjadi referensi dalam memfasilitasi proses pembelajaran.

Kata-kata Kunci: Proyek Penguatan Profil Mahasiswa Pancasila (P5); Media Diorama; Pendidikan Agama Islam

1. INTRODUCTION

Excellent and globally competitive human resources become urgently required, particularly right now in the era of disruption. The rapid technology development in the beginning of the 21st century has brought a phenomenon of disruption that has been changing the fundamental life orders, one of which is the shift of human activities from real world to virtual world (Asriyatuzzahra, 2022). his technology development was accelerated by the spread of Covid-19 virus around the world (Widiyono, 2020). Restrictions on human activity at that time caused many workers to be laid off. On the other hand, the company still needed to operate for the sake of the continuity of the company. Therefore, new technologies emerged to solve the problems. New technologies have the effect of reducing the need for human resources because they can be replaced by robots or artificial intelligence technology (Adha, 2020; Widiyono & Millati, 2021; Wijayanti et al., 2022).

The use of technology affects education field. Online learning during pandemic forced human to be adaptive to the growth of technology (Siahaan, 2020). The main problem is on the unpreparedness of the facilities, knowledge, and experience. Therefore, it takes time to adapt, and it causes delay in learning process. Moreover, the condition of the areas are different, so not all of the areas can be reached by internet connection (Saleh, 2020). Another problem that occurs to students is learning outcomes in various subjects that are not optimal, especially science (Izzah et al., 2022; Zannah & Zulfadewina, 2022).In addition, the teacher's role in accompanying student learning in schools is still not optimum. This is due to limitations in applying the right models and media (Abidin, 2019; Alwi, 2017; Anugraheni, 2017; Pebrianti, 2019). Therefore, it is necessary to adjust models and media during the pandemic so that they can have an impact on the learning process, for example conducting contextual learning based on students' daily lives.

The efforts to improve achievement and learning outcomes can be made by teachers through the application of learning models and media. Applying the right learning model can improve student achievement and learning outcomes (Budiarti & Widiyono, 2022; Burhan et al., 2022; Widiyono et al., 2023). In addition, learning media has an effect on increasing students' ability to follow the learning process (Afifah et al., 2022; Widiyono et al., 2022; Wijaya & Mustika, 2022). The results of research conducted by researchers have good impacts on improving students' abilities and learning outcomes. However, difficulties still occur, including the application of learning steps according to the model and the use of media that seems to be less structured (Astri et al., 2021; Winda & Dafit, 2021).The results of observations and interviews in September 2022 at MI Mamba'unnidhom Bulungan Tayu Pati, found that learning at MI still uses the 2013 curriculum with thematic learning. The school has not yet implemented the Independent Curriculum, and information about it is still minimal.

In addition to the lack of information regarding the latest educational curriculum and policies, the learning media used are still simple, resulting in low interest and concentration in students. Based on interviews with fifth grade teachers, teachers are aware of the importance of using concrete media in learning, but media is not available in MI, and there is not enough time for teachers to develop learning media.

Based on the research results, there is still quite a lot that needs to be optimized in media development. The media provides a role that students can directly feel because it can be used to develop skills during the learning process. Therefore, researchers are trying to develop manipulative media (water detective media) that can adapt the material taught to the water cycle material. Currently, in the water cycle material, teachers often use interactive video media which has weaknesses in the material content which is too broad and less optimum in improving students' skills (Hardianti and Asri 2017). The concept offered by this study is the development of media that has an impact on students in developing skills, increasing knowledge, and changing attitudes optimally through the development of interactive media. Water detective media on the water cycle material is expected to be able to provide a solution for students who have experienced a decrease in learning outcomes, especially in science subjects in the post-pandemic period. In addition, the dimension of strengthening the Pancasila student profile which is the character of the implementation of the Independent Curriculum will be implemented in learning activities by applying appropriate learning media.

The independent curriculum is the newest curriculum implemented in the academic year of 2022/2023. The Pancasila student profile is developed in the independent curriculum as a form of implementing Indonesia's educational vision. The Pancasila Student Profile Strengthening Project (P5) is a refinement of Strengthening Character Education (PPK) from the previous curriculum (Wardani et al., 2015). The Pancasila Student Profile Strengthening Project emerges as an answer to the rapid advancement of technology, socio-cultural shifts, environmental changes, and differences in the future work world (Kahfi, 2022). The profiles of Pancasila students consist of six dimensions: (1) having faith, fear of God, and having good morality, (2) having sense of global diversity, (3) cooperating, (4) independent, (5) thinking critically, and (6) creative.

The goal of this research is that students can increase the dimensions of the profile of Pancasila student by developing "Water Detective" media. One thing to do is to choose the right theme and material. One of the themes chosen is "sustainable lifestyle" with the hope that students can understand the impact of human activities on the life sustainability, have an awareness of environmentally friendly attitudes and behavior, learn about potential crises that occur in their environment, and develop readiness to deal with them. Through water cycle material, students are expected to understand climate change that is already happening right now, be able to prepare for

crises/disasters that might occur, and participate in protecting the environment (Díaz-Kommonen, 2017; Étienne, 2017; Maulana & Khansa, 2019). In order to make students understand the importance of protecting the environment, material exposure and direct experience are needed. Diorama media is a three-dimensional visual media in the form of miniatures that can help students gain visual experience to shape their understanding (Chusni et al., 2017) related to environmental crises, especially those related to water (Cools et al., 2018; Heuling, 2021; Oh & Whangbo, 2015).

Learning media helps students get closer to their learning objects. Especially for SD/MI students, the media plays an important role in understanding because it is in accordance with the cognitive development of students who are at the concrete operational stage. This means that at this stage students still need real objects/visual aids in learning (Evitasari & Aulia, 2022). Media provides real experience, motivates, and facilitates understanding in the learning process. Using the right media will increase motivation, make students more active, and make learning more fun (Hendrik, 2021).

2. METHOD

The research focuses on the development of water cycle diorama media, which is completed with the guidance of Pancasila student profile strengthening project. The research uses Research and Development (R & D) design. R & D research is a kind of research aims at resulting and testing effectiveness (Sugiyono, 2009). The product development procedure uses ADDIE model that consists of five steps: analysis, design, development, implementation, and evaluation (Sa'adah, 2021).

a. Analysis

A pre-research observation was conducted to collect information about the issues and requirements on the field. Interviews with the head master, teachers, and students were done to know the curriculum used the use of media, and students' understanding. Next, theory analysis, P5 project theme selection, and advanced observation on the environment surrounding MI Mamba'unnidhom Bulungan Tayu were conducted. On this step, the collection of materials and references for product developmet for making water cycle diorama to support the project of Pancasila student profile strengthening was done.

b. Design

The design stage includes: determining achievement targets, designing water cycle diorama media, designing the Pancasila Student Profile Strengthening project (P5), and designing the evaluation of the product developed. At the product design stage, the media title and the P5 Project theme were selected. The theme chosen for the P5 project is "Sustainable Lifestyle". The chosen topic was "Water Detective". It was made in 3 activities. Project activities can be observed in table 1.

Table 1. Design of" Water Detective" Project Activities

No	Objectives	Implementation	Time
1	Introducing various kinds of water disasters	a. The teacher explains that students will be asked to become "Water Detective" b. The teacher asks a triggering question "Do you know how water travels?" c. The teacher explains various disasters dealing with water and the causes. **task**: interviewing an above 50-year-old person about the situation in the past and present and about disasters dealing with water.	2 Lesson Hours
2	d. Analyzing the investigation results e. figuring out more on "water cycle" to the happening of disasters	a. making groups of 5-6 to discuss and record the interview results in a table b. A representative of each group presents the result of the discussion in front of the class. c. While the representative of a group is presenting, the teacher writes the points on the whiteboard. After that the teacher leads a class discussion on the cause of the disaster. d. Next, the teacher explains how water cycle happens using "water cycle diorama media" e. The teacher explains about how the disaster relates to the water cycle. **task:** students write on their project journal about the condition in the past and in the present	2 Lesson hours
3	a. understanding human's roles in keeping the water cycle b. Training the teamwork skill c. developing vision	a. Visiting agricultural areas, river, and irrigation canal in the surrounding b. Students in the groups observe and record the condition of the area. c. Students return to class, the teacher then ask question "imagine all people have willing to take part in taking care of the environment, what they can do? d. Students express their ideas, the teacher writes them on the board. e. Students put the ideas on a picture with theme "Together Protecting Water". f. All students draw together in one drawing media, and the teacher monitors and facilitates the process. g. The teacher appreciates the work and let students celebrate the result of their works.	4 Lesson Hours

c. Development

The stage of product development includes activities of product making and product testing by experts before the product is implemented. The stage of product testing by experts is also known as expert validation stage, which aims at obtaining suggestions for product development. The expert validation was done by experts of material, media, and learning.

d. Implementation

Implementation stage is the stage of a product trial with students in the P5 project which theme is "sustainable lifestyle". The trial was done in the class of the 5th grade of MI Mamba'unnidhom Bulungan Tayu Pati in semester 1 of the academic year of 2022/2023. In this stage students were given test and questionnaire to know the clarity and usability of the product. Observation was done to see the implementation and the students' response in the Pancasila student profile strengthening project.

e. Evaluation

The results of the students' works and the questionnaire of the product's usability then were analyzed to see the product's feasibility. Beside the results of test and questionnaire, the result of the observation was also used to evaluate the feasibility of the guidance of Pancasila student profile strengthening project. The product feasibility was counted using formula and criteria (Riduwan, 2003).

$$P = \frac{\sum X}{\sum X_i} \times 100\%$$

Explanation:
P : percentage of the feasibility
$\sum X$: total score
$\sum X_i$: maximum score of the criteria

After the percentage was obtained, it was then analyzed using the following feasibility criteria table.

Table 2. Feasibility Criteria

Scoring Percentage	Category
0% - 20%	Not feasible
21% - 40%	Less feasible
41% - 60%	Quite feasible
61% - 80%	Feasible
81% - 100%	Very feasible

3. RESULTS AND DISCUSSION

Need analysis was done through interviews and observations at MI Mamba'unnidhom Bulungan Tayu Pati and the surrounding environment. The results of these activities show the problem of low awareness of environmental protection by both

students and the surrounding, especially those related to the medium water cycle. The medium cycle is a cycle that begins with sea water evaporating until the water flows in the river towards the sea again. Students who are currently in school are guardians of the water cycle in the future, so the P5 project with the theme "Sustainable Lifestyle" and the topic "Water Detective" was chosen so that students understand and are aware of the importance of preserving water.

Because students who are at the stage of concrete operational understanding are not sufficiently given verbal explanations, a product "water cycle diorama" is developed. Products are developed through a validation process by experts in order to get input for product revision. The validation consists of validation by experts of material, media, and learning, each of which consists of two validators. Data on product feasibility, product effectiveness, and the P5 Project are described as follows:

a. Data of Product Feasibility

The developed product is a diorama media and guidance for Pancasila Student Profile Strengthening Project with “Sustainable Lifestyle” as the theme, and “Water Detective as the topic. “Water Cycle” diorama media is made of glass, plywood, styrofoam, small pump, and complementary accessories. The product looks as follows:

Figure 1. Water Detective Media

Description of figure 1 Water detective media is a finished media that has gone through the design stages to the final stages of manufacture. The results of the water detective media can be explained as follows: first, evaporation of seawater and transpiration that can be shown on the brown foam as soil. The second is condensation, the clumping of water vapor in clouds which can be shown on the image of cotton that is already black and moving. Third, precipitation, the stage of water vapor clumps in the clouds that will descend to the sea and land. Fourth is infiltration, the process of absorbing water into the earth.

The feasibility test is conducted by three validators: material experts, media experts, and learning experts.

Table 3. Validation by Material Experts

Indicator	Obtained Scores	Maximum Score
Suitability of Learning Objectives	8	8
Suitability of Material explanation with Students' capability	13	16
Suitability of materials with Pancasila Student Profile Strengthening Project	12	16
Total	33	40
Percentage	82,5%	

Table 3 shows that the indicator of suitability with the learning objectives obtains a maximum value of 8. This result explains that the media designed is very suitable with the learning objectives. The indicator on the suitability of the material with the student's abilities obtains a score of 13 out of a maximum score of 16 (a difference of three points). The suitability of the material obtains a score of 12 out of a maximum score of 16 (difference of four points). The cumulative quantitative data from the material expert's assessment obtains a score of 33 out of 40 or 82.5% that, according to the Riduwan feasibility criteria table (2003), can be considered a "very feasible" product. Even though the designed media is very feasible, the expert provides input to add instructions for using the water detective diorama media, while the material and the project guidelines have been quite coherent.

Table 4. Validation by Media Experts

Indicator	Obtained Scores	Maximum Scores
suitability of the media with the material.	8	8
readability of the text and ease of use	6	8
suitability of the layout and appearance	10	12
suitability with context.	9	12
Total	33	40
Percentage	82,5%	

Based on table 4, in the validation of media experts, the suitability of the media with the material obtains a maximum score of 8, and the level of readability of the text and ease of use obtains a score of 6 out of a maximum score of 8 (a difference of two). The suitability of the layout and appearance obtains a score of 10 out of 12 (a difference of two). The appropriateness with context obtains a score of 9 out of 12 (difference of 3). Quantitative data obtained from media experts is 82.5% which means the product is "very feasible". Media experts suggest giving a dark color to the ground illustration on the diorama media so that it resembles the original. This result is almost the same as the description that a good diorama media is one that is easy to apply in the learning process. Therefore, content indicators in media content must be given proper attention (Afifah et al., 2022; Amalia et al., 2018; Khaq, 2014; Widiyono et al., 2022).

Table 5. Validation by Learning Experts

Indicator	Obtained Scores	Maximum Scores
Suitability with the Topic	16	16
Suitability with Students' Development Stage	11	12
Clarity of the Materials and Learning Coherence	11	12
Total	38	40
Percentage	95%	

Table 5 contains the validation of learning experts in which the first indicator in topic suitability obtains a maximum score of 16, student developmental stage suitability obtains a score of 11 out of a maximum score of 12 (difference of one), and material clarity and learning coherence obtains a score of 11 out of 12 (difference of one). The percentage of feasibility based on learning experts is 95%, meaning the product is "very feasible". Learning experts give a similar comment for the soil color illustration. There are no comments for the project guidelines. The validation results which get a high rating of 95% conclude that the media that has been designed is very good, feasible, and ready to use. Water detective media with glass, styrofoam, foam, balls, and plant toys is expected to increase student motivation and improve student skills. For this reason, researchers are optimistic that the implementation of this water detective diorama media can increase the profile dimensions of Pancasila students (Widiyono et al., 2022). The development of diorama media for sea water material is capable of producing very good assessments and is included in the category of very feasible to use in the learning process (Putra & Suniasih, 2021). Diorama media can improve student learning outcomes and creativity (Anita Seftriana, 2020; Evitasari & Aulia, 2022; Khaq, 2014; Putra & Suniasih, 2021).

b. Data of Product Effectiveness

After the feasibility test of materials, media, and learning, then the product was implemented for students. The implementation was done in three activities according to the guidelines of the Pancasila Student Profile Strengthening Project that had been prepared. In the second activity, participants were given a pretest and posttest to find out students' knowledge of the water cycle material. In addition, at the end of the activity students were asked to complete a questionnaire about product usability.

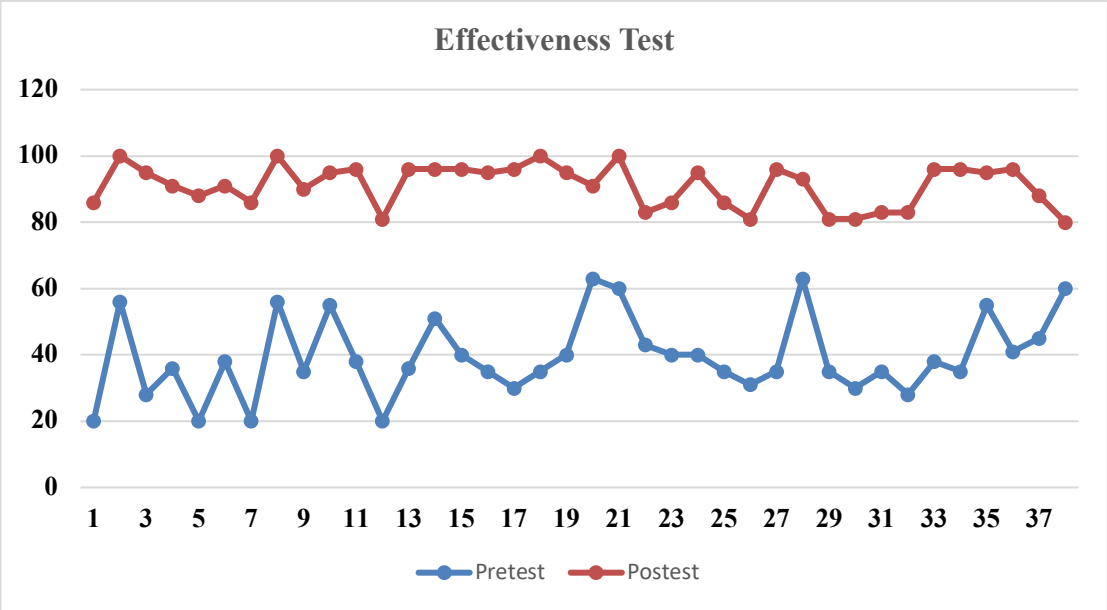

Figure 2. Graphic of Effectiveness Test

Figure 2 is a graphical test of the effectiveness of the application of water detective media. The result obtained is an average score of 39.5 for the pretest with the highest score of 63 and the lowest score of 20. While in the posttest, the average value obtained is 91.1 with the highest score of 100 and the lowest score of 80. These results indicate that the media is proven to be "effective", considered from the average value which rises by 51.6 points. From the product usability survey in the form of a questionnaire given to students, a score of 1376 is obtained from an expected value of 1520, which means that the percentage of usability is 90.5%. Based on the feasibility criteria table, the product is "very feasible". Meanwhile, based on observations, students show enthusiasm, willing to ask questions, and students even can retell the process of the water cycle in front of the class. Various research results related to the use of diorama media explain that the level of effectiveness is very high, reaching an average of above 75% (Afifah et al., 2022; Widiyono et al., 2022).

c. Pancasila Student Profile Strengthening Project (P5)

The P5 project activities were conducted in three activities according to the project guidelines that had been prepared. The implementation was done in the first week of October 2022 which was attended by 38 students of MI Mamba'unnidhom Bulungan Tayu Pati. The project aims at strengthening the profile of Pancasila students, including six elements of character: 1) having faith, fear of God Almighty, and having noble character; 2) having sense of global diversity; 3) cooperation; 4) independent; 5) critical reasoning; and 6) creative (BSKAP, 2022). Observations were made to determine the character development of the Pancasila Student Profile in the P5 project activities with the theme "Sustainable Lifestyle" with the media "Water Detective". The theme of a sustainable lifestyle is often used in environmental utilization (Hardianti &

Asri, 2017). Various studies explain that the development of diorama media is very effective in learning science so that it can improve learning outcomes (Prabowo, 2019). The learning outcomes of the water cycle material with diorama media are very appropriate when collaborating with the demonstration method so that they can improve student learning outcomes (Putra & Suniasih, 2021). The implementation of the dimensions of strengthening the Pancasila student profile on the water cycle material at MI Mamba'unnidhom Bulungan Tayu Pati can be described in table 6 below:

Table 6. Objectives and Implementation Results of Pancasila Student Profile Strengthening Project

Objectives		Implementation of Observation Results
Dimensions	**Elements**	
having faith, fear of God Almighty, and having good morality	Morals to nature, sub-element: protecting the natural environment	Character develops as expected, indicated by the following attitudes of students: a. Warning friends who litter. b. Using water sufficiently, and closing faucet tightly
Having Sense of Global Diversity	Social justice, sub-elements: participating in collective decision-making processes and understanding the role of individuals in democracy	Character begins to develop, indicated by the attitude of students: a. Brave to express ideas but still need to be encouraged b. At first students scrambled to speak, then, with guidance, students began to respect friends by taking turns expressing ideas
Working together (cooperating)	a. Collaboration, sub-elements: cooperation and communication to achieve common goals b. Concern, sub-element responsive to the social environment	a. Working on group-work together and starting to understand about division of tasks b. In the last activity they were able to suggest steps to improve the environment and realize that protecting the environment is a shared responsibility.
Independent	Self-regulating, sub-element: regulating emotions	Character development is as expected, indicated by the ability of students to patiently take turns expressing their opinions and willing to listen to the opinions of other students.
Critical Thinking	obtaining and processing information and ideas, sub-elements: identifying, clarifying, and processing information and ideas	Character begins to develop, indicated by the attitude of students: a. Able to perform the task of interviewing, discussing, concluding, and conveying the discussion. b. Able to understand the explanation of the materials, and begin to be able to relate it to the condition of the environment
Creative	Producing original works and actions	Character development is as expected, shown by students who are able to express ideas in works in the form of joint pictures at the end of the project.

Table 6 contains the objectives of the Pancasila student profile strengthening project and the results of its implementation. The entire study states that the product developed is "very feasible" to use, as the results of validation by material, media and learning experts show a percentage above 80%. Based on the results of the pretest and posttest of students' understanding when using the product, it is found that diorama media effectively increases the score by 51.6 points. Observations on the use of media in the Strengthening Pancasila Student Profile Project show that diorama media can attract students' attention so that learning objectives are conveyed. In addition, diorama media can facilitate the development of Pancasila Student Profile characters (Fernández-Oliveras et al., 2021; Heuling, 2021). These results are consistent with previous research which states that diorama media has an influence on active learning (Evitasari & Aulia, 2022), both through physical, psychological and emotional activities as stated in the research. Diorama media has a positive and significant effect on student learning motivation (Hendrik, 2021).

4. CONCLUSION

The water cycle diorama media equipped with guidelines for the Pancasila Student Profile Strengthening Project was successfully developed using the ADDIE model. The results of the material and media expert validation test showed a score of 33 out of 40 or 82.5%, which means the product is "very feasible". The score obtained from the learning experts is 38 out of 40 or 95%, which means the product is "very feasible". The effectiveness test done with the pre-test and post-test showed an increase of 51.6 points. The value obtained from the product usability test in the form of a questionnaire given to students is 90.5%, which means the product is "very feasible". Observations on the implementation of the Pancasila Student Profile Strengthening Project show that the results of profile character development are at the level of 'starting to develop' (2) and 'developing as expected' (3). This research is only conducted in three activities so that the objectives of the Pancasila Student Profile Strengthening Project are limited. The limited time for implementation also resulted in a strengthening of the Pancasila Student Profile which is only able to reach level 3 of the 4 assessment levels. Hence, further research is needed to develop a more complete Pancasila Student Profile. This research is expected to provide an overview for future researchers and educational institutions to develop and implement the Pancasila Student Profile Strengthening Project.

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