



# Assessing the “Gotong-royong” Spirit in the Merdeka Curriculum: A Case Study of Student’s Engagement in Renewable Energy Project-Based Learning (PjBL)

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**Abstract:** This research is conducted to find out the Gotong Royong attitude toward the students in Merdeka Curriculum. The method of this research is quantitative method. The purpose of this research is to describe the attitude of Gotong Royong which was obtained by the students during learning activity. The research was conducted in February 2023. The place of this research was SMA Al Azhar Syifa Budi Solo. The population was X I IPA 1. The school was selected based on the driving schools with supporting teachers as organizer teachers in Merdeka Curriculum. There are 3 steps in this research such as preparation, design, and implementation. There the observation of 4 aspects during the learning process. These aspects are related to the development of the Gotong Royong dimension from the Pancasila Student Profile in the Merdeka Curriculum. The result of Gotong Royong's attitude obtains a very good category. This category is observed in the students during the learning process with the highest score being 4 and the lowest score is 1. Gotong Royong's attitude is based on the good category (3 aspects) and the good category (1 aspect). Although Gotong Royong's attitude is based on the highest presentation to all of the scores in the collaboration dimension. Score 1 is 42%, score 2 is 43%, score 3 is 85%, and score 4 is 38%.

**Keywords:** Gotong-royong; Merdeka Curriculum; Project Based Learning (PjBL)

## Introduction

Nowadays, the education world in the 21st century faces challenges and demands to create excellent and certain quality (Herlambang, 2018; Mardhiyah et al., 2021). The demands are related to the students as the generation of the advanced country and be ready to face the demands of the era. Education is the step to advance the country and create an excellent generation that must be held programmed through a curriculum with students' needs (Nurohmah et al., 2023; Rawung et al., 2021). The curriculum needs modification to the demands. The purpose is to equip individuals in order to have skills in the 21st century (Kan & Murat, 2018). Nadiem as the Minister of Education and Culture announces the formation new curriculum in Indonesia.

This new curriculum is Merdeka Curriculum in 2019. Munawar (2022) states that Merdeka Curriculum is a variety of intracurricular learning with more optimal content. In order to students have enough time to extend the concept and the strength of competency.

The Ministry of Education and Culture has launched 19 topics of discussion about the Merdeka Curriculum right now. One of the topics of this curriculum is Merdeka Curriculum with Project Based Learning. Merdeka Curriculum is the curriculum with Project Based Learning to support the character of the Pancasila Student Profile (Suryadien et al., 2022). According to Putri et al. (2021) *Project Based Learning* (PjBL) is a learning model that emphasizes the activities of students through various stages of the thought

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process to produce a final product in the form of a project (Guo et al., 2020).

The model of learning in teaching and learning activity is used to increase the skill of individuals in the 21st century (Hairida et al., 2021; Ilma et al., 2021). One of the skill is collaboration. Collaboration becomes the key in the skill of 21th century which students must have this skill (Child, 2016; Yokhebed, 2019). Collaboration is needed in 21th century because every activities can create the relationship to other people, appreciate relationships, do the teamwork to reach similar purpose (Le et al., 2018) and give positive contribution in the achievement as documentation from the previous research (Hooper & Hannafin, 1988; Weinberger et al., 2007). The important factor in the succeed of collaborative learning is active, willing, and voluntary to share information among the students (Jer Yuen & Majid, 2007). Sharing the knowledge increases the satisfaction and increases the succeed of students (Yeşil, 2019).

Collaboration is one of the sub-elements in one of the characters from the Pancasila Student Profile such as Gotong Royong. Gotong Royong comes from Javanese such as gotong which means carry or lift and royong means togetherness. Thus, Gotong Royong lifts the load together in order to be lighter (Luthfi Kurnia et al., 2021). According of Mulyani et al., (2020) and Rosyani et al., (2019), gotong royong is one of the works together in the school of citizens in order to reach a specific purpose. Gotong royong is also called the identity of the Indonesian. Indonesian citizens develop a quality of life based on Pancasila values marked by the practice of working together in an effort to maintain and maintain ethnic, racial, religious, belief, and cultural diversity (Borromeus Mulyatno & Yosafat, 2022). The application of gotong royong can keep, conserve, and strengthen the point of view about the unity of the continuous generation of the nation in the diversity of Indonesia. It is the character and identity of the Indonesian nation (Hijriana, 2020; Mangunwijaya, 2020). In the midst of global individualism, there is anxiety and concern that the spirit and values of mutual cooperation will fade (Borromeus Mulyatno & Yosafat, 2022). Currently, the culture of gotong royong has decreased from time to time as a result of technological developments from the industrial revolution 4.0. With the era of the industrial revolution which made it possible to carry out all activities using technology, there are things we need to be aware of, such as the fading of noble Indonesian cultural values in building the nation's character (Astuti, 2023). Therefore, gotong royong is very important to Indonesia for realizing the generation of countries that have good value. It becomes the basis of the Ministry of Education and Culture to implement gotong royong

culture through Education such as Merdeka Curriculum.

Gotong royong's skills are manifested in learning through knowledge that must be mastered by students. Knowledge is not only calculation but also related to nature. Renewable energy is included in natural science and is very important to study because the continued use of fossils will result in the world becoming an energy crisis. Business as Usual (BAU) estimates that during 2018-2050 energy demand will increase by an average of 3.9% per year (BPPT, 2020). According to Diantari et al. (2019) energy issues are very important for the world because all systems and dynamics of human and state life depend on the energy sector in all. Learning about the energy needed by students as the next generation. Energy issues must be studied for the benefit of the world through collaborative education. Effective collaboration can solve problems as has been done by previous studies (Hannania et al., 2022; Lai & Wong, 2022; Maria Angelita et al., 2020; Yusal et al., 2021).

Based on the above problems, researchers are encouraged to conduct research on the latest curriculum, namely the merdeka curriculum which is based on the profile of Pancasila students on gotong-royong attitude when implementing renewable energy in project-based learning.

## Method

The method of this research is descriptive method with quantitative research. The purpose is to describe gotong-royong attitude which obtained by students during a learning activity. The research was held in February 2023 at SMA Al Azhar Syifa Budi Solo. The population was all students of X IPA 1. The school was selected based on the driving schools with supporting teachers as organizer teachers in Merdeka Curriculum. There are 3 steps in the procedure such as preparation, design, and implementation.

The analysis technique used to analyze validation results by changing the score result from the Likert scale to counted score using the formula 1 (Arikunto, 2013).

$$X = \frac{\sum x}{N} \quad (1)$$

Counting mean sore is held with categorizing to the five criteria according to Azwar (2007) as shown in Table 1. Data collection used the observation method with an instrument sheet of 4 aspects related to 3 dimensions of gotong royong from Indonesian Ministry of Culture and Education such as collaboration, concern, and sharing. Although, 4 aspects to be modification from the opinion (Suherman, 2001).

**Table 1.** Assessment Criteria

Rating Result Score Interval	Category
$Mi + 1.5 Sbi < X$	Very good
$Mi + 0.5 Sbi < X \leq Mi + 1.5 Sbi$	Good
$Mi - 0.5 Sbi < X \leq Mi + 0.5 Sbi$	Enough
$Mi - 1.5 Sbi < X \leq Mi - 0.5 Sbi$	Less
$X \leq Mi - 1.5 Sbi$	Very less

Notes:

$Mi = \frac{1}{2}$  (ideal maximum score + ideal minimum score)

$Sbi = \frac{1}{6}$  (ideal maximum score - ideal minimum score)

**Table 2.** Aspects of Gotong Royong

Aspects	The Flow of Development of the Gotong Royong Dimension (Dimension of Gotong Royong)
Following the rules	Align keep self-action also group members in order to make suitable to the others and accept action consequences in order to reach common goals. <i>(Collaboration)</i>  Take the right action in order to respond to other people which is suitable with the expectation in order to finish the work and reach the goals. <i>(Concern)</i>
Assist friends who cannot do something	Strive to give important things. <i>(Sharing)</i>  Align group capacity in order for the group members can help each other to fulfill their needs such as individual or collective. <i>(Collaboration)</i>
Want all friends to do the activity and be a success	Build a team and manage collaboration to reach suitable similar purposes with predefined targets. <i>(Collaboration)</i>
Cooperative to reach the purpose	Active listening to understand and analyze the information, idea, emotion, skill, and concerns arrived at by other people and groups using many symbols and media effectively, and use many communication strategies to finish the problem in order to reach many similar purposes. <i>(Collaboration)</i>

## Result and Discussion

Gotong royong is the culture conducted by every people in Indonesia from generation to generation. This culture is held to provide help to other people when they feel difficulty without expecting a reward. This research is held with 3 observers to observe every group when they do Physics Learning Project. The data of Gotong Royong attitude from students SMA Al-Azhar Syifa Budi Grade X IPA 1 Central Java. There are observations of 4 aspects during the learning process including

following the rules, assisting the friends who cannot do something, wanting all friends to do the activity and be successful, and being cooperative to reach the purpose. This aspect is related to the flow of development gotong royong dimension. It must be had to the students which suitable to the Ministry of Education, Culture, Research, and Indonesian Technology to the Pancasila Student Profile in Merdeka Curriculum. The summary of observation results from gotong royong attitude is shown in Table 3 and the result of attitude is based on the aspect.

**Table 3.** The Observation Result of Gotong Royong Attitude

Sample Code	Score				Total of Score	Criteria
	1	2	3	4		
A	0	0	5	5	35	Very good
B	6	3	1	0	15	Very less good
C	0	2	5	3	31	Good
D	0	1	5	4	33	Very good
E	0	0	3	7	37	Very good
F	0	1	3	6	35	Very good
G	0	0	6	4	34	Very good
H	1	3	4	2	27	Enough good
I	1	1	5	3	30	Good
J	1	4	5	0	24	Enough good
K	1	4	5	3	24	Enough good
L	0	1	7	2	31	Good
M	4	2	4	0	20	Enough good
N	0	2	7	1	29	Good
O	5	3	2	0	17	Very less good
P	3	4	2	1	21	Less good
Q	4	3	2	1	20	Less good
R	6	4	0	0	14	Very less good
S	2	2	6	0	24	Enough good
T	2	3	5	0	23	Enough good
U	2	3	5	0	23	Enough good

Based on Table 3 above the score of Gotong Royong's attitude to the Science Students from Grade X obtains 5 criteria suitable with the counting of Table 1. There are 5 students with the best criteria, good criteria are 4 students, enough criteria is 6 students, less is 43 students, and very lack criteria are 3 students. The highest percentage is 29%. It indicates that the culture of gotong royong attitude as the identity of Indonesia is enough good for the students. Although, in Table 4 based on the aspect following the rules the highest presentation is in the item 1 and 6. All of the first aspects obtain a median 2 which indicates enough good students to follow the rules applied in the learning. An aspect of assisting the friends who cannot do something with the highest percentage is item 2, although this item also obtains the highest score 1. All of the sends aspects obtain good criteria. Aspect wants all friends to do the

activity and be success obtains percentage the highest score 1 in all of the aspects of gotong royong with 42% in item 4. Although item 4 also has a percentage of the highest score of 4 all of the third aspects include the good category with a median of 3. The aspect *cooperative to reach the purpose* is 43% aspect in scores 2 and 3. All of the four aspects include a good category with a median of 3.

**Table 4.** The Result of Gotong Royong Attitude based on the Aspect

Aspect	item	Score %			
		1	2	3	4
following the rules	6	24	14	43	19
	1	14	24	43	19
	9	14	19	38	29
Assist friends who cannot do something	2	24	23	48	5
	3	5	33	43	19
Want all friends to do the activity and be a success	5	5	10	85	0
	4	42	10	10	38
Cooperative to reach the purpose	10	24	33	24	19
	7	10	43	33	14
	8	19	10	43	28

**Table 5.** The Result of Gotong Royong Aspect based on the Dimension

Dimension	item	Score %			
		1	2	3	4
collaboration	4	42	10	10	38
	5	5	10	85	0
	6	24	14	43	19
	7	10	43	33	14
	8	19	10	43	28
concern	10	24	33	24	19
	1	14	24	43	19
	9	14	19	38	29
sharing	2	24	23	48	5
	3	5	33	43	19

Table 5 gotong royong attitude based on the dimension obtains the highest percentage in all of the scores in the collaboration dimension. Score 1 is 42%, score 2 is 43%, score 3 is 85%, and score 4 is 38%. The score with the highest is the focus of students during learning. Students tend to disturb the groups or other groups when they do the given projects. Although the sharing dimension obtains the highest presentation. It is 38% in score 3 such as the students are helpful when their friends are having difficulty in finishing project tasks from the teacher.

Project Based Learning focuses on the students are very useful for education interpretation which pulls the content, obtain new knowledge, and makes it possible to students for learning by looking out the solution, designing the planning, and communicating with other people (Choi et al., 2019; Greenier, 2020) makes the

strong relationship among students' participation in their own projects (Maros et al., 2021; Pedersen & Hoby, 2020) because students will learn to work independent and creative, prepare and finish the work, responsibility to their project and overcome the obstacles, work with information, collaboration, communication, tolerance, accept another opinion, and evaluate their projects and other people projects. Many project-based learning is applied in the newest curriculum such as Merdeka Curriculum. The evidence of project-based learning can increase many aspects of the gotong royong dimension such as collaboration (Desyarti Safarini, 2019; Kurniawati et al., 2019; Mariamah et al., 2021; Rasyid & Khoirunnisa, 2021) scientific attitude and positive character (Alawiyah et al., 2015; Duman & Yavuz, 2018; Sukiawati & Nurfaidah, 2020). Scientific attitude and positive character which meant such as curious, active, open to feedback, communicative, appreciative of friends' opinions, and accepting different opinions (Tarita et al., 2022).

The result of every dimension in the student's gotong royong attitude has almost similar values among collaboration, sharing, and care. The collaboration dimension is the approach to teamwork learning. It assists students to produce many ideas and solve problems through discussions with their friends. Familiar collaboration increases communication skills, leadership, and thinking in the class activity (Azar et al., 2021; Octavia Rosa & Rahman, 2021). The meant sharing attitude is assisting students to answer question, solve the problem, learn new thing, obtain the quick solution, increase understanding about specific subject, or act solely as the means to assist each other (Högberg & Edvinsson, 1998). The class situation will be comfortable when students have care attitude. The caring of students is with appreciating each other, help each other, respect each other, and no bustling during teaching and learning activity (Amaniyah & Nasith, 2022). Care attitude is showed with helping them who are weak to overcome the suffering and difficult to be faced by other people (Sulistianingrum & Humaisi, 2022; Tabi'in, 2017; Wahyudin & Pettalongi, 2022).

The implementation of learning materials on renewable energy to find out students' mutual cooperation attitudes is found in the 2 lowest indicator points regarding mutual cooperation attitudes. First, students give opinions even though they are unsure of their abilities. Confidence is very important for students because it makes students believe in their own abilities and not give up easily in facing every problem. Thus, students can carry out many tasks given independently and achieve maximum results (Akbari & Sahibzada, 2020; Nurhayati & Buyung, 2017) with confidence, people will believe in their abilities and dare to take the necessary actions in certain situations. They are still

willing to admit mistakes if they do. Equally important is self-confidence, which can affect student learning (Katiandagho & Sengkey, 2022). Two students disrupted their group and other groups did not function and concentrate in learning. Concentration plays an important role in the learning process. Individuals can learn well when they can concentrate well (Rahayu et al., 2022). Concentration determines the success of the learning process and the achievement of student learning goals. Following the learning process with good concentration in learning can make it easier for students to understand and store information obtained in long-term memory (Setyani & Ismah, 2018; Simbolon & Simbolon, 2022).

### Conclusion

Based on the observation of gotong royong attitude to students SMA Grade X IPA 1 SMA Al Azhar Syifa Budi is obtained the result that gotong royong attitude obtains enough good category with the highest score is 3 and the lowest score is 1. Gotong royong attitude based on the aspect obtains good category (3 aspects) and enough good (1 aspect). Although gotong royong aspect based on the dimensions obtains the highest presentation in the all of scores in the collaboration dimension. Score 1 is 42%, score 2 43%, and score 3 85%, and score 4 is 38%.

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### Author Contribution

Iin Nashihah: preparation of the original manuscript, results, methodology, conclusions, perform analysis, and editing; Elvin Yusliana and Dewanto Harjunowibowo: validation, review, and supervision.

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### Conflicts of Interest

The author declare no conflict of interest

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