

PROFILE OF PANCASILA STUDENTS THROUGH MATHEMATICS EDUCATION

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Abstract: Education needs to prepare students to face the industrial revolution 4.0 through education that not only prioritizes cognitive abilities (literacy and numeracy) but also attitudes and behaviors (characters) that are in accordance with the identity of the Indonesian nation as well as Indonesian citizens. Learning practices in all learning including Mathematics must be able to facilitate the growth and development of Pancasila student profiles. This article will examine the potential of learning mathematics in growing the profile of Pancasila students.

Keywords: cognitive, character, profile, Pancasila, mathematics education

INTRODUCTION

Education is one of the pillars of the nation's progress. Education is very important to prepare students to face the future and demands of the 21st century to face the industrial revolution 4.0. This is also one of the government's considerations in formulating the vision of education in Indonesia in addition to internal factors related to the identity, ideology, and aim of the Indonesian nation. The vision of education in Indonesia is "to create an advanced Indonesia that is sovereign, independent, and has personality through the creation of Pancasila students who are critical, creative, independent, faithful, devoted to God Almighty, and have noble character, work together, and have global diversity" (Kemendikbud, 2021). Based on this educational vision, the Pancasila Student Profile which consists of six dimensions does not only focus on cognitive abilities (literacy and numeracy), but also on attitudes and behavior (character) according to their identity as Indonesians and citizens of the world.

However, in reality the education unit in our country emphasizes more on cognitive aspects or academic achievement (Agung, 2011). This causes students to have a high level of intellectual but low in terms of good character. Character is the characteristic of every human. The Development Team, defines character as human behavior related to God Almighty, oneself, fellow human beings, environment, and nationality which is manifested in minds, attitudes, feelings, words, and actions based on religious norms, laws, etiquette, culture, and manners (Kemendiknas, 2010).

People with noble character are people whose behavior is in accordance with norms. General characteristics such as honesty, discipline, obeying the rules, or being responsible have faded. As evidence is the number of attempts to cheat or plagiarism in the educational environment shows a lack of awareness to be honest. In addition, the increase in cases of corruption and bribery that are widely reported by the mass media is a sign of the fading attitude of honesty. Anarchic behavior such as brawls, lack of discipline and lack of obedience to rules such as not being orderly in traffic, even in small matters such as throwing garbage in its place are difficult to do. Moral degradation that occurs in Indonesia is caused by inconsistency in applying the values of Pancasila. As we know Pancasila is not only a state ideology, but is the soul and personality of the nation that contains the character of the Indonesian nation. To overcome these problems, character education is something that needs to be pursued as a solution.

Pala (2011) defines character education as a national movement that creates schools that foster ethics, responsibility and care for students by setting an example and teaching good character through an emphasis on common values that we all share. Meanwhile, the Ministry of National Education (2011: 5-6) mentions character education as value education, character education, moral education, character education which aims to develop the ability of all school members to provide good and bad judgments, exemplary, maintain what is good, and realize kindness in everyday life with all my heart. So it can be concluded that character education is education that develops

ethics, responsibility, and care for students by setting an example and teaching good character so that they have good character and apply these values in daily life. Good character education must involve good knowledge (moral knowing), good feelings or loving good (moral feeling) and good behavior (moral action) so that the embodiment of a unified behavior and attitude of life of students is formed (Ministry of National Education, 2011: 6). In addition, it is also necessary to involve the character values contained in each of the Pancasila precepts, that are religious character values, social care, independence, patriotism, togetherness, democracy, and justice. (Octavia & Rube'i, 2017).

In 2021, the government launched a driving school program as a catalyst in realizing the vision of education in Indonesia, specifically realizing the Pancasila Student Profile. It is expected that teachers can collaborate on subjects with various knowledge and values of life which are the original culture of Indonesia. Character education as a mean for developing soft skills needs to be integrated into each subject. Integrating character values in each subject with the aim of incorporating values in students of the importance of character education, so that it is hoped that every student is able to internalize and personalize these values into daily behavior through the learning process, both takes place both inside and outside the classroom. Basically, learning activities, in addition to making students master the targeted competencies (materials), are also designed to make students recognize, realize/care, and internalize and personalize values and make them behavior.

Mathematics learning is still dominated by the introduction of formulas and concepts. So that learning mathematics is considered only to be emphasized on the cognitive aspect, even though learning mathematics can create and develop a person's personality for the better and can build character. This is in line with the opinion of Swadener and Saedjadi (1988), which states that mathematics as a subject can be used in applying student personality values.

Based on the above explanation, this article examines about mathematics education in order to create a Pancasila Student Profile. The focus of the study is on the relationship between values, morals and norms on mathematics learning in creating the Pancasila Student Profile.

MATERIALS AND METHODS

A literature study was implemented to find out the answers to the research question. The design was chosen because it attempted to seek a general overview of the studies that have been conducted to discuss the topics about profile of Pancasila Students Through Mathematics Education. This aimed to demonstrate to the readers what was already known about the topic and what was not known, seek rationale from research that has been done, and give information for following research notions (Denney & Tewksbury, 2013).

This study scrutinized the articles from diverse contexts in Indonesia to ensure that the findings were equivalent and representative to document the attempts of high school educators in implementing Mathematics Education to boost Profile of Pancasila Student. In search of the data, the researcher employed computerized literature scrutiny. At the outset, the researcher used random information gathered from two different sources, namely Google Scholar and Researchgate. The researcher used several terms to find out the articles which involved Profile Student of Pancasila. After finding several articles published mainly in national journals accredited by the national accreditation organization, the researcher classified them based on the settings of the studies as well as the journals that published the articles.

After completely obtaining the data, the researcher applied thematic analysis to segregate the data into the display. The data was qualitatively analyzed by thematic analysis (Braun and Clarke, 2006). The thematic analysis aims to identify, analyze, and report the patterns (themes) within the research data (Braun and Clarke, 2006). These are the following steps: Familiarizing the data is critical to comprehend the data. The researcher understands the data by reading and re-reading the data corpus. Familiarization also includes noticing and documenting noteworthy characteristics of the data related to the research topic. In this research, the data used is the selected writings from the articles. Then, the researcher reads and re-reads all data until he finds familiarity with it.

Secondly, the researcher generated initial codes to gather interesting aspects from the data. This process was done by giving colours to the intended data as a mark. After that, they reviewed themes to examine the themes and codes to see whether they function in connection to the entire datasets and if they are cohesive and significant with a clear organizing idea. These second last was defining and naming themes. And the last was producing reports and displaying them in an article.

RESULTS AND DISCUSSION

1. Profile Of Pancasila Students

Character can be interpreted as a psychological or moral trait that distinguishes a person from others (Suyitno, Zaenuri, Sugiharti, Suyitno, & Baba, 2019). More specifically Lickona (1991) defines character as a disposition that can be relied upon to respond to situations in a morally good manner. In line with Lickona's opinion, Berkowitz (2002) defines character as a collection of individual psychological characteristics that have an impact on one's abilities and the improvement of moral functions. Meanwhile, according to the Development Team of Ministry of National Education (2010) wrote that character is human behavior related to God Almighty, oneself, fellow humans, the environment, and nationality which is manifested in thoughts, attitudes, feelings, words, and actions based on norms, religion, law, manners, culture, and customs. Character in education is defined as moral qualities, ethnic values, and responsibility for oneself and others in society (Kim et al., 2019). Based on some of the opinions above, it can be concluded that character is a human characteristic that shows moral qualities, ethnic values and responsibilities based on applicable norms, where these characteristics distinguish a person from others.

According to Lickona (1996: 96), noble character (good character) includes knowledge of goodness, then creates a commitment (intention) to goodness, and finally actually does good. In other words, character refers to a set of knowledge (cognitives), attitudes and motivations, as well as behaviors and skills.

National character is the identity of a nation which is an accumulation of the characters of the citizens of a nation (Ghufron, 2010). The character of the Indonesian nation is reflected in Pancasila. Pancasila is found in the Preamble of the UUD 1945 and is further elaborated in the articles contained in the UUD 1945. This means that the values contained in Pancasila become values that regulate political, legal, economic, social, and arts and cultural life. Cultural and national character education aims to prepare students to become better citizens, specifically citizens who have the ability, awareness, and apply the values of Pancasila in their lives as citizens (Ministry of National Education, 2010: 8).

There are five main characters originating from Pancasila which are priorities for the development of the character education strengthening movement, that are: religious, nationalism, integrity, independence and mutual cooperation (Ministry of Education and Culture of the Republic of Indonesia, 2016: 7-8). The five main values of the national character in question are as follows:

1. Religion is a value that reflects faith in God Almighty. This value includes a three-dimensional relationship, that are the individual's relationship with God, the individual with others, and the individual's relationship with the universe (environment). Religious sub-values: love of peace, tolerance, respect for religious differences, firm stance, self-confidence, interfaith cooperation, anti-bullying and violence, friendship, sincerity, not imposing will, protecting the small and marginalized.
2. Nationalism is a way of thinking, behaving and acting that places the interests of the nation and the state above the interests of themselves and their groups. Nationalist sub-values include appreciation of the nation's own culture, maintaining the nation's cultural wealth, being willing to sacrifice, excelling and achieving, loving the homeland, protecting the environment, obeying the law, discipline, respecting cultural, ethnic and religious diversity.
3. Independent is an attitude and action that does not depend on others and uses what he has to realize his goals. The sub-values of independence include work ethic (hard work), resilient, fighting power, professional, creative, courageous, and being a lifelong learner.

4. Communal work is an act of appreciating the spirit of cooperation and solving problems by working hand in hand, happy to communicate and provide assistance to those in need. The sub-values of communal work include respect, cooperation, inclusiveness, commitment to joint decisions, deliberation, mutual assistance, solidarity, empathy, anti-discrimination, anti-violence, volunteerism.
5. Integrity is a person's behavior so that others believe that he or she is trusted in speaking, acting, doing work, commitment and loyalty to human and moral values. Integrity sub-values include honesty, love of truth, loyalty, moral commitment, anti-corruption, justice, responsibility, role model, respecting individual dignity (especially persons with disabilities).

The profile of Pancasila students is focused on six elements, that are (1) faith, fear of God Almighty, and noble character, (2) global diversity, (3) independence, (4) communal work, (5) critical reasoning, and (6) creative. The six elements must be viewed as a single unit that supports and is continuous with each other. The formation of a Pancasila Student Profile who believes, fears God Almighty, and has a noble character has a fairly broad scope. In this case, not only in the dimension of students with God related to their respective religions and beliefs, but includes the dimensions of students with themselves, and students with fellow humans. Indonesian students with global diversity are students who are able to understand and appreciate cultural diversity (both regional, national, and global cultural diversity), are able to interact positively with each other, and have intercultural communication skills, as well as reflectively and responsibly make the experience of diversity a strength to build an inclusive, just, and sustainable society. Students with global diversity are built through strengthening personal, interpersonal, and social knowledge and skills (Curriculum and Books Center, 2020). Furthermore, the next Pancasila Student Profile is having the ability to communal work, which means being able to carry out activities together, collaborating to achieve the welfare and happiness of the people around them. This communal work profile indicates that Indonesian students care about their environment and are committed to being able to contribute to alleviating the problems faced by those around them (Curriculum and Books Center, 2020). The next element is independent. Independent is meant to be responsible for the process and learning outcomes. In other words, independent students must have several key elements, including awareness of themselves and the situation at hand, as well as the ability to carry out self-regulation, specifically regulating their thoughts, feelings, and behavior to achieve learning objectives. Next, Indonesian students who think critically are students who are able to see things from various perspectives and are open to new evidence. To fulfill this ability, students must first be able to think systematically and scientifically, draw conclusions from existing facts, and solve problems. Several elements must be met to fulfill this profile, including being able to obtain and process information and ideas, analyze and evaluate reasoning, reflect on thoughts and thought processes, and make decisions. Finally, creative Indonesian students must be able to modify and produce something original, meaningful, useful, and impactful. The results of this creative process can be in the form of ideas, actions, or real works. Starting from this, the key elements of creative students include: first, being able to generate original ideas and second, being able to produce original works and actions (Curriculum and Books Center, 2020).

1. The Values Of Mathematic Education

Ernest (1991: 179) states mathematics as the highest achievement of mankind, the “queen of knowledge”, a perfection, a body of clarity of absolute truth, the result of a group of geniuses. While Khan (2015: 98), states that mathematics is not only related to everyday life but also uses imagination, intuition and reasoning to find new ideas and solve confusing problems. More specifically, Suyitno (2016: 10) states that mathematics can be considered as a process and problem solving, communication processes and tools, processes and reasoning tools.

There are many definitions of mathematics formulated by mathematicians, but there is no agreed definition. Based on several statements submitted by experts, Suyitno (2016) concluded that mathematics has the following characteristics: (1) mathematical objects are abstract; (2) axiomatic deductive; (3) self evident epistemological concept; (4) artificial; (5) absolute and coherent truth

based on agreement; (6) not empirical; (7) profit as a source of thought; (8); advantage as a deductive tool. Based on several statements and characteristics of mathematics, mathematics apart from being a mean to achieve cognitive learning goals is expected to be a mean for character building for Indonesian students, specifically students who have personal characteristics such as honesty, tolerance, discipline, hard work, creative, independent, democratic, curiosity, appreciate achievement, friendly / communicative, responsibility, in addition to the ability to think mathematically based on logical and systematic thinking.

Bishop, FitzSimons, Seah, & Clarkson (1999) define values in mathematics learning as deep affective qualities that are fostered through mathematics in schools. Therefore, the value of mathematics and the value of mathematics material grow together through the process of learning mathematics. In more detail, Roulet (1995) mentions that several things that can produce values are class conditions, administrative rules and procedures, the language used by teachers and students, and learning models. The value contained in mathematics is conveyed by the teacher through the learning process, both explicitly and implicitly, the integration is explicitly arranged deliberately listed in the syllabus, lesson plan (Lesson Plan), and teaching materials. Examples of explicitly integrating values are the values of accuracy, logical and rational, systematic, and consistent. Integration is not implicitly listed in the syllabus, lesson plans, and teaching materials. For example, integrating the values of never giving up, being independent and respecting each other.

The values contained in mathematics learning are grouped into three categories, that are general education values, mathematics values and mathematics education values (Bishop, FitzSimons, Seah, & Clarkson (1999). General education values are values that teachers want to instill, school and or society to their students, but they are not mathematical. Generally, the value of general education contains ethical values such as good behavior, integrity, obedience, kindness, and decency (FitzSimons et. al., 2000). The value of mathematics is the value of related to mathematical knowledge itself. Bishop, FitzSimons, Seah, & Clarkson (1999) identified three pairs of complementary mathematical values, that are rationalism/objectivity, control/progress, and openness/mystery. While the value of mathematics education is a value that reflects between education and mathematics that can be grown through the implementation of the mathematics teaching and learning process conveyed by the teacher through the interaction between the teacher and students.

2. The Relationship between value of mathematics education and Profile of Pancasila student

Learning mathematics requires everyone to have the ability to understand formulas, count, analyze, classify objects, make props, create mathematical models, and others. The standard of content for primary and secondary education units in mathematics according to the Ministry of National Education (2006) states that mathematics needs to be given to all students starting from elementary school to prepare students with the ability to think logically, systematically, critically and creatively as well as the ability to work together. This is also reinforced in the 2013 curriculum which also aims to prepare Indonesian people to have the ability to live as individuals and citizens who are faithful, productive, creative, innovative, and affective and able to contribute to the life of society, nation, state, and world civilization.

Based on the definition of mathematics stated by Suyitno (2016: 10) states that mathematics can be considered as a process and problem solving, communication processes and tools, processes and reasoning tools. According to this definition, course in the process and problem solving will provide opportunities for students to be creative. This is in accordance with the opinion of Cahyati, Muin, and Musyrifah (2018), Huang (2016), Wahyudi, et al (2018), Huang (2020) said that creativity arises because of conditions (atmosphere, environment and community) which supports to do something creative. In the process and problem solving, students collaborate and discuss with their friends to produce solutions to the problems given so that the communal work profile of Pancasila students will grow in mathematics learning. The definition that mathematics can be considered as a process and a tool of reasoning makes mathematics a means in growing the profile of Pancasila students

who think critically. Both in the process and problem solving, communication processes and tools, reasoning processes and tools, of course students do self-regulation, is to regulate their thoughts, feelings, and behavior to achieve learning goals so that the independent elements of the Pancasila student profile will grow as well.

Apart from being based on the definition of mathematics, one of the properties and characteristics of mathematics is the deductive axiom. This is reinforced by Suyitno (2019) which states that mathematics is a collection of axiomatic deductive systems. Axiomatic deductive is a process of determining the definition of a concept, where the concepts that have been defined become the basis for reasoning, conclusions are derived from a number of definitions and axioms using very thorough and precise logic (Suyitno, 2016: 77). The deductive nature of this axiom shows that students are asked to do critical reasoning based on existing definitions as a basis. The process of reasoning provides opportunities for students to creatively use definitions of existing concepts so that they can prove other concepts. This process will certainly make students produce original ideas, works and steps.

The deductive nature and characteristics of axioms in addition to developing a profile of critical and creative reasoning can also grow a profile of noble character. Where we know that in every mathematical system puts axioms at the top of the system and is a statement that is true and cannot be disputed. Based on the epistemological concept of mathematics, which puts the axioms at the top of the system and is evident trust (Wittgenstein, 1978). Axioms are sources of truth in a system. Meanwhile, Pancasila is a source of values and a source of law in the life of the nation and state in Indonesia. If through learning mathematics it is also stated by the teacher that in social and state life, Pancasila is positioned like an axiom in mathematics, then all Indonesian behavior and character will be in accordance with Pancasila. This is as stated by Swadener and Saedjadi (1998) that in order to maintain student personality values, education in Indonesia needs to be consistent in applying Pancasila values. If the value of obedience to principles and consistency as in mathematics is found in students, there will also be adherence to rules, principles and discipline in the students so that they can grow elements of faith, fear of God Almighty, and noble character found in the Pancasila student profile.

Learning mathematics is considered only to be emphasized on the cognitive aspect, even though learning mathematics can create and develop a person's personality for the better and can build character as described above. In accordance with the opinion of Swadener and Saedjadi (1988), which states that mathematics as a subject can be used in applying student personality values.

In every problem in mathematics it is always associated with the universe of speech or the set of universes. The universal set of mathematical problems can be used to support the development of tolerance and wisdom. Suyitno (2019) gives an example of the following questions.

Determine the set of solutions from:

- $(x + 2)(x - \frac{1}{2}) = 0$, $U = \{x \mid x \text{ natural number}\}$,
- $(x + 2)(x - \frac{1}{2}) = 0$, $U = \{x \mid x \text{ positive number}\}$,
- $(x + 2)(x - \frac{1}{2}) = 0$, $U = \{x \mid x \text{ integer number}\}$,
- $(x + 2)(x - \frac{1}{2}) = 0$, $U = \{x \mid x \text{ real number}\}$.

The answers are $\{\}$, $\{\frac{1}{2}\}$, $\{-2\}$, and $\{-2, \frac{1}{2}\}$, respectively. The problem formula is the same but the solution depends on the context (universe set). So answering a question must pay attention to the context. This can be used to build the first and second elements of the Pancasila student profile, specifically faith, piety to God Almighty, and noble character, as well as global diversity. The problem formula above shows how students have noble character towards fellow human beings because they realize that the position of humans before God is the same so that students need to tolerate and respect each other regarding existing differences.

CONCLUSION

Education plays an important role in the development of a nation. The purpose of education in Indonesia not only emphasizes cognitive abilities, but also on character building as stated in the

vision of Indonesian education, specifically the creation of Pancasila students who think critically, creatively, independently, have faith, fear God Almighty, and have noble character, work together, and global diversity. However, in the education unit, cognitive abilities are prioritized. This happens because the elements of the Pancasila student profile have not been integrated in each lesson, especially mathematics learning. Mathematics as one of the subjects taught in every educational unit has the potential to grow the profile of Pancasila students in students. In the objectives of learning mathematics, it is clearly stated that learning mathematics is about reasoning, creativity and character building. Mathematics has three values, that are general values, mathematics values and mathematics learning values. The three values are closely related to the profile of Pancasila students.

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