

Integration of Character Education In Mathematics Learning – Cased Study at Alam Surya Mentari Muhammadiyah Elementary School Surakarta

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Abstract. This study aims to describe the integration of character education in the planning, implementation, and assessment of mathematics learning at the Alam Surya Mentari Muhammadiyah Elementary School Surakarta. This study uses a qualitative-descriptive research methodology where data is collected through observation, interviews, and documentation. Results from this study is the integration of character education in Alam Surya Mentari Muhammadiyah Elementary School Surakarta has done well through teaching and learning activities, extracurricular activities, habituation, and other activities carried out school. The character development of students who are integrated in mathematics learning has also been carried out well by emphasizing on the development of religious, honest, disciplined, brave, care, cooperative, responsible, curious, and creative characters.

Keywords: Values, Character, Nature-based School

INTRODUCTION

The purpose of national education as mandated in Law Number 20 of 2003 is to develop the potential of students to become human beings who believe and fear God Almighty, have noble character, healthy, knowledgeable, capable, creative, independents, become democratic citizens and be responsible. Students as the next generation of the nation are not only intelligent, but also have noble moral and character. Character is a national identity that is needed to strengthen the basic values possessed by a nation. For this reason, character needs to be developed to prepare better quality of the next generation.

On the other hand, there is a lot of moral decadence which is a deviation from moral values and religious values, including: cases of promiscuity, drug abuse, brawls, motorcycle gangs, low respect for parents and teachers, and low sense of responsibility as shoen in Figure 1.

The many declines and moral deviations of the nation's children have made the government take decisive action to restore the identity of the Indonesian nation as a dignified and virtuous nation. Basically, character is the basis of one's self-quality to become a noble human being. If the self-quality of students is good and continuously improved, then these students can become human beings who are beneficial to the surrounding environment and the progress of the nation (Nugraheni, 2016). Growing and developing character values in students must be carried out continuously from an early age to college. In order for the formation and development of the character of students in schools to be optimal, it must be planned as well as possible, starting from planning, implementation, and continuous assessment.

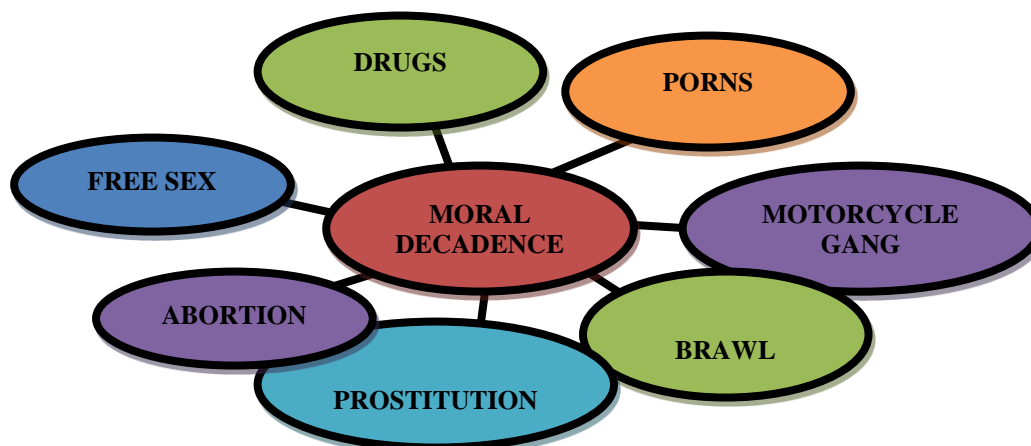


Figure 1. Generation Moral Decadence

Alam Surya Mentari Muhammadiyah Elementary School is one of the elementary schools in Surakarta that has implemented mathematics learning by integrating character education. Based on the results of initial interviews with two teachers at Alam Surya Mentari Muhammadiyah Elementary School Surakarta, information was obtained that this school provides excellence in terms of character building for students through providing quality education and learning based on nature in developing the power of reasoning through optimal interaction with nature to be grateful for God's creation in the natural environment and school activities.

Mathematics is one of the subjects studied by students at Alam Surya Mentari Muhammadiyah Elementary School Surakarta. There are many opportunities to shape and develop character education through the integration of character education in mathematics learning. On the other hand, there are still many teachers who have not optimized character development through mathematics learning. The impact of this, many negative characters that still occur in students, for example: shady, undisciplined, less independent, less creative in solving problems, and others. What about the implementation of character education programs for students at Alam Surya Mentari Muhammadiyah Elementary School Surakarta, researchers tried to conduct research related to the integration of character education in learning mathematics.

For this reason, researchers tried to conduct research with the aim of describing the planning, implementation, and assessment of character education in learning mathematics at Alam Surya Mentari Muhammadiyah Elementary School Surakarta. Data collection techniques were carried out using observation, interviews, and documentation methods. The data analysis technique used is data reduction, data presentation, and conclusion drawing. The results of this study can be used as input for other schools to carry out student character development programs through character integration in mathematics learning, extra-curricular activities, and other activities held in schools.

THEORITICAL FRAME

1. THE VALUE OF CHARACTER EDUCATION

In an effort to build the nation's character, the Ministry of National Education has formulated 18 character values that will be instilled or developed in students. Tabel 1 presented 18 Values in the Ministry of National Education's version of Character Education.

Table 1. Character Version of the Ministry of National Education

No	The value of character education	Indicator
1	Religious	obedient attitude and behavior in carrying out the teachings of his/ her religion, tolerance of the implementation of other religions, and living in harmony with adherents of other religions

No	The value of character education	Indicator
2	Honest	behavior based on efforts to make himself a person who can always be trusted in words, actions and work
3	Tolerance	attitudes and actions that respect differences in religion, ethnicity, ethnicity, opinions, attitudes, and actions of other people who are different from themselves
4	Discipline	actions that show orderly behavior and comply with various rules and regulations
5	Hard work	behavior that shows genuine efforts in overcoming various learning and task barriers, as well as completing tasks as well as possible
6	Creative	think and do something to produce a new way or result from what already have
7	Independent	attitudes and behaviors that are not easy to depend on others to complete tasks
8	Democratic	a way of thinking, behaving, and acting that evaluates the rights and obligations of himself and others equally
9	Curiosity	attitudes and actions that always seek to know more deeply and widely from what they have learned, seen, and heard
10	Spirit of nationality	a way of thinking, acting, and insight that places the interests of the nation and state above the interests of themselves and their groups
11	Love the country	a way of thinking, behaving, and acting that shows loyalty, care, and high respect for the language, physical, social, cultural, economic, and political environment of the nation
12	Appreciate Achievement	attitudes and actions that encourage him to produce something useful for society, and recognize, and respect the success of others
13	Friendly and communicative	actions that show pleasure in talking, socializing, and collaborating with others
14	Love peace	attitudes, words, and actions that cause others to feel happy and secure in their presence
15	Like to read	the habit of making time to read various readings that give him virtue
16	Environmental care	attitudes and actions that always try to prevent damage to the surrounding natural environment, and develop efforts to repair the natural damage that has occurred
17	Social care	attitudes and actions that always want to help others and communities in need
18	Responsible	attitude and behavior of a person to carry out his duties and obligations that he should do, towards himself, society, the natural, social and cultural environment), the state and God

The eighteen character values above will be the focus for teachers to instill character values in every subject in the school. There are indications that must be considered in developing the character values of students, for example greeting and praying together before the lesson begins as an indication of religious character. Do not cheat on tests as an indication of the value of honest characters, and so on. Furthermore, the character values that will be developed or integrated in the subject can be selected according to the characteristics of a subject. Furthermore, the government (Kemendikbud) carried out a revolution in character strengthening through the SCE (Strengthening Character Education) movement. There are five main character values sourced from Pancasila which was launched in 2016, as can be seen in Table 2.

Table 2. Five Main Characters of the Ministry of National Education

No	The main value of character education	Indicator
1	Independent	The value of independent character is the attitude and behavior of not depending on others and using all energy, thought, time to realize hopes, dreams and ideals. Independent sub-values include work ethic (hard work), resilience, fighting power, professionalism, creativity, courage, and being a lifelong learner. a. Train students to be able to work independently b. Build student independence through individual tasks
2	Religious	Religious character values reflect faith in God Almighty which is manifested in the behavior of carrying out religious teachings and beliefs, respecting religious differences, upholding a tolerant attitude towards the implementation of religious worship and other beliefs, living in harmony and peace with adherents of other religions. The value of this religious character includes three dimensions of relations at once, namely the relationship of the individual with God, the individual with others, and the individual with the universe (environment). The value of this religious character is shown in the behavior of loving and maintaining the integrity of creation. Religious sub-values include peace-loving, tolerance, respect for differences in religion and belief, firm stance, self-confidence, Cooperative between adherents of religions and beliefs, anti-bullying and violence, friendship, sincerity, not imposing will, loving the environment, protecting the small and marginalized.
3	Integrity	Integrity character values are values that underlie behavior based on efforts to make themselves as people who can always be trusted in words, actions, and work, have commitment and loyalty to human and moral values (moral integrity). The character of integrity includes an attitude of responsibility as a citizen, actively involved in social life, through the consistency of actions and words that are based on the truth. Integrity sub-values include honesty, love for the truth, loyalty, moral commitment, anti-corruption, justice, responsibility, role model, and respect for individual dignity (especially persons with disabilities).
4	Nationalist	The value of nationalist character is a way of thinking, behaving, and acting that shows loyalty, concern, and high appreciation for the language, physical, social, cultural, economic, and political environment of the nation, placing the interests of the nation and 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.
5	Mutual cooperation	The value of the gotong royong character reflects the act of appreciating the spirit of cooperation and working together to solve common problems, establish communication and friendship, provide assistance/help to people in need. The sub-values of gotong royong include respect, cooperation, inclusion, commitment to joint decisions, deliberation, consensus, mutual assistance, solidarity, empathy, anti-discrimination, anti-violence, and volunteerism.

2. CHARACTER EDUCATION IN ALAM SURYA MENTARI MUHAMMADIYAH ELEMENTARY SCHOOL SURAKARTA

Alam Surya Mentari Muhammadiyah Elementary School, which is located in Mangga III street, Jajar, Laweyan, Surakarta, Central Java, is a environmental perspective nature school. In 2008 this school was founded on the idea of a muslim woman Sri Sularni with the four pillars spirit, namely: Religion, Art, Science, and Outbound (learning all applied sciences that are simulated and carried out in an open or closed nature with an effective game form, which combines intelligence, physical, and mental). Furthermore, The Vision of Alam Surya Mentari Muhammadiyah Elementary School is to become a nature-based educational institution with a healthy environmental perspective to prepare a generation of noble character with strong character, broad knowledge, and excellence in achievement.

To fulfill the vision there were six missions ran by Alam Surya Mentari Muhammadiyah Elementary School, they are: 1) Organizing a nature based quality education in developing the power of reason through optimal interaction with nature to be grateful for God's creation, 2) Cultivate a sense of concern of the environment and natural surroundings, 3) Prepare students to become human with strong character who has an honest, polite, brave, and caring attitude, 4) Growing appreciation and experience of Islamic values in order to be able to become khalifah fil ardl, 5) Become a generation that has an entrepreneurial spirit and ready to compete in the global era, and 6) Optimizing efforts to guide students towards superior, competitive, and productive outputs.

From the vision and mission of HR Alam Surya Mentari Muhammadiyah Elementary School, this school develops character values in students to prepare a generation with noble character, strong character, broad knowledge, and excellence in achievement through providing quality education based on nature in developing reasoning power through optimal interaction. with nature to be grateful for God's creation. The development of character values in this school does not stand alone as a subject, but is integrated into every subject. The integration of character in subjects at this school not only develops one dimension of character values, but also develops several characters related to the environment and the natural surroundings. The same thing was stated by Lickona (in Cubukcu: 2012) stating that in implementing character education in schools, schools should not only teach one dimension (value) of existing characters, but should teach all character values related to the social life of the community.

RESULTS AND DISCUSSION

From the results of observations, document analysis, and interviews of researchers with mathematics teachers at Alam Surya Mentari Muhammadiyah Elementary School Surakarta, the results of the research can be described as follows:

1. Character Education Planning at Alam Surya Mentari Muhammadiyah Elementary School

From the interview with teachers, data were obtained about how teachers or schools designing the character education. Firstly, the curriculum that is used as a reference or basis for planning mathematics learning that integrates character education is the 2013 curriculum (Diknas curriculum) and the Muhammadiyah curriculum (religion). In the religion pillar, there are several subjects, namely: Aqidah, Al-Qur'an, Worship, Verbal Hijaiyah, Arabic, Dates, and Muhammadiyah. Furthermore, curriculum development at SD M Surya Mentari is carried out based on 4 pillars as the pillars that have been carried out when Alam Surya Mentari Muhammadiyah Elementary School was established in 2008. Table 3 tell the pillar base and the related supporting activities.

Table 3. Alam Surya Mentari Muhammadiyah Elementary School Pillar Supporting Subjects

No	Pillar base	Supporting Subjects
1	Religious	Aqidah, Al Qur'an, Ibadah, Hijaiyah, Verbal-Arabic Language, Tarikh, Kemuhammadiyah.
2	Art	Music, Dancing, Singing, Drama, and many more.
3	Sains	Social, Civic Education, Verbal-Indonesian Language, Numeric, Natural Sciences, Social -Social Sciences, Verbal-Javanese Language, Verbal-English, Environmental Education.
4	Outbond	Physical Activity, Both Gross Motor Skills (Running, Jumping, Climbing, And Fine Motor Skills (Assembly Puzzles, Balance Games). Students Learn About Several Aspects Of Growth And Development. This Pillar Is Also Related To Health.

Secondly, Planning for mathematics learning that integrates characters in accordance with curriculum developments based on the National Education and Religion. Planning for mathematics learning that integrates character, carried out by a mathematics teacher and assisted by the principal. Character development in mathematics learning at Alam Surya Mentari Muhammadiyah Elementary School Surakarta is carried out by teachers, assisted by the principal and employees. They help and remind each other in developing the character of students. In the mathematics lesson planning that integrates the character of students, there are also infrastructure facilities planning, such as: study rooms, gardens, gardens, gazebos, pavilions, outbound facilities, and math props. The selection of characters that are integrated in mathematics learning is adjusted to the characteristics of the Alam Surya Mentari Muhammadiyah Elementary School students. In the mathematics lesson planning at Alam Surya Mentari Muhammadiyah Elementary School Surakarta, the characters of the students that will be emphasized in their development are: religious, honest, disciplined, brave, care, and creative. The character education program for students is also planned to be integrated through extra-curricular activities and other school activities. The character integrated in the learning activities in every phase of mathematics learning as shown in Table 4.

2. Implementation of Character Education in Alam Surya Mentari Muhammadiyah Elementary School Surakarta

The implementation of mathematics learning that integrates the character of students at in Alam Surya Mentari Muhammadiyah Elementary School Surakarta is adjusted to the planning so that there are no errors in educating the character of students. Lesson Plan (RPP) is a minimal plan that will be implemented in learning activities. Therefore, a teacher has a great opportunity to make variations and innovations in learning so that students are active and happy to take part in learning mathematics.

Mathematics learning activities that integrate characters at Alam Surya Mentari Muhammadiyah Elementary School Surakarta are carried out inside and outside the classroom. Mathematics learning activities outside the classroom are adjusted to the conditions of students. If students are getting bored in the classroom, the teacher takes alternatives to carry out learning outside the classroom. Learning mathematics outside the classroom is done by inviting students to take advantage of what is around the school as a medium for learning mathematics. The saturation of students learning mathematics in the classroom will be reduced by variations in learning outside the classroom.

In the implementation of mathematics learning, it integrates religious, honest, disciplined, courageous, care, cooperative, responsible, curious, and creative characters. The description of each value shown in Figure 2.

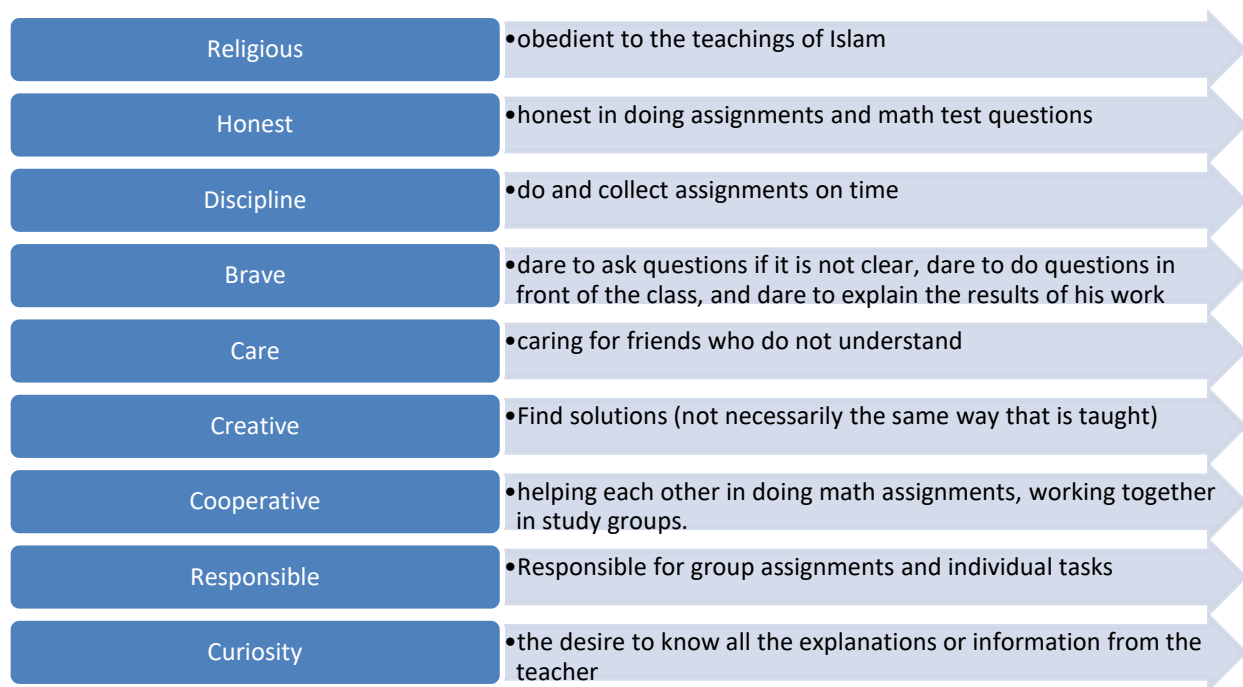


FIGURE 2. Description of the value integrated in mathematics learning

Table 4. Stages of Mathematics Learning that Integrates Characters

Learning Stages	Learning Activities That Integrate Character	Integrated Characters
Opening of the learning	a) Students come and then recite Al-Qur'an first (read iqro' or Al-Qur'an)	Religious
	b) Stretching (pledge, and brain games)	Cooperative
	c) Duha prayer	Religious
	d) Pray before studying (read Al Fatihah's, then continue reading prayer before study (<i>rodhi dhubillah hirobba wabil islami Dina wabi muhammaddinnabiyaw warosulah, Robbi Zidni ilma war zukni Fahma</i>))	Religious
	e) Students answer greetings and start the activity by praying.	Curiosity
	f) Students listen to the teacher's explanation about the objectives and learning models used	

Core Learning	Exploration Stage:		
	a. Students work in groups with 4-5 different abilities.	Cooperative, care	
	b. Students identify problems in Worksheet 3	Curiosity, Cooperative, Responsible	
	c. Students can ask if there is something that is not understood.	Fear	
	d. Students carry out activities on the worksheet	Responsible, Cooperative, creative, care	
	e. Students compile reports from the results of their activities under the guidance of the teacher (inquiry).	Responsible, Cooperative, discipline, creative	
	Presentation Stage:		
	a. Students write down the results of group discussions and present them in front of the class.	Curiosity, Cooperative	Brave,
	b. Groups that do not make presentations must respond to the results of other groups' presentations.	Cooperative, Brave	
	c. Students and teachers discuss the results of problem solving.	Brave	
End of Learning	Wrap Up Stage:		
	Students answer questions from the teacher so they will be more understand about what they have found.		Creative, Responsible
	Exercise Stage:		
	a. Students are given another problem to find a solution by using the formula they have found.	Responsible, Creative	
	b. Students are guided by the teacher to find solutions to these problems		
	a) At the end of the lesson, conduct a review of the lessons that have been implemented, there are problems or not, hold games (or quizzes)	Brave , Cooperative	
	b) Then read the prayer out of class, the prayer for riding the vehicle, the closing prayer for the assembly	Religious	

Apart from teaching and learning activities, the implementation of character education at Alam Surya Mentari Muhammadiyah Elementary School Surakarta is also carried out through extra-curricular activities (music, scouting, tapak suci) and habituation, which includes activities: setting the sandals, PuSaT, ant operations, libra, market day, OTFA.

Table 5. Character of Students Developed Through Extra-Curricular and Habituation Activities

Extra-curricular activities	Integrated character		Habituation	Integrated character	
Music, drum band	Creative,	Discipline,	Setting the sandals	Discipline,	Responsible,
Scouting (HW)	Cooperative			Care	
	Responsible,		<i>PuSaT</i> (picking up trash)	Discipline,	Responsible,
	Cooperative,	Brave,		Care, Cooperative	
	Care,	Creative,			
	Discipline				
Tapak Suci (Pencak silat)	Brave,	Discipline,	Ant operation (looking for non-organic waste)	Discipline,	Responsible,
Journalism	Responsible		<i>LiBRa</i> (<i>Lihat Berantakan, Rapikan</i>)	Care, Cooperative	
	Creative,	Responsible,	Look, Mess, Tidy	Discipline,	Responsible,
	Cooperative, Brave			Care, Cooperative	

Market day (train students' entrepreneurship) Creative, Cooperative Responsible,

OTFA (Out Tracking Fun Adventure Independent, Brave, Care (practice independence, courage, care, manners in nature)

3. Character Education Assessment in Alam Surya Mentari Muhammadiyah Elementary School Surakarta

The assessment of character education in mathematics learning is carried out by classroom teachers, while the assessment of the character of other students is carried out by class teachers and school principals. The assessment of the character of students at SD M Alam Surya Mentari Surakarta is carried out by observing or seeing directly at school, and in collaboration with teachers and parents face-to-face or via cellphone/ Whatsapp. Character education assessment instruments have been designed well before mathematics learning is implemented, but the rubric for assessing student character education still needs to be completed.

CONCLUSION

The integration of character education at Alam Surya Mentari Muhammadiyah Elementary School Surakarta has been carried out well through teaching and learning activities, extracurricular activities, habituation, and other activities carried out by the school. The character development of students who are integrated in mathematics learning has also been carried out well by emphasizing on the development of religious, honest, disciplined, brave, Care, cooperative, responsible, curious, and creative characters. Character education assessment instruments have been well designed in the lesson plan, but there are still some that need to be completed with character education assessment rubrics to be measured. In general, the character education program for students at Alam Surya Mentari Muhammadiyah Elementary School Surakarta has been implemented well.

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