Integration of Character Values in Teaching-Learning Process of Mathematics at Elementary School of Japan

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The state requires leaders who own intelligence and characters. Indonesia as a developing country is clearly very interested in finding out how to integrate the character values into the learning process in the classroom. Japan becomes a destination because it can provide character education to its students. Research Team of Universitas Negeri Semarang (UNNES) held collaborative research with Prof. Takuya Baba, Ph.D. from Hiroshima University, Japan as the Partner Lecturer. The purpose of this qualitative research was to get input on how elementary school teachers in Japan integrate the character values in learning, especially in math lessons. Its main activities, conducting class observations, interviews, Focus Group Discussion, and triangulation with guidance from the Partner Lecturer. The research site was Miyauchi Elementary School of Hiroshima and at IDEC of Hiroshima University. As a result, the UNNES research team obtained ways to integrate the values of characters in learning, especially in math lessons. The result of this research is expected to be applied at elementary schools in Semarang, Indonesia.

Keywords: character values, mathematics teaching-learning process, elementary school

INTRODUCTION

Background

Character education in the classroom is able to develop discipline with deliberate efforts to optimize good ethical behavior of students (Agboola & Tsai, 2015). In addition, based on Presidential Regulation of Indonesia Republic of Number 87 of 2017 concerning Strengthening of Character Education, written that integration of Character Values in Teaching-Learning Process is very important. Thus, research on the integration of Character Values in Teaching-Learning Process of Mathematics at Elementary School is feasible and needs to be done. It has been proved that the future and progress of a country depends heavily on educational outcomes in its young generation. Kim & Taylor (2017) and Zhuojun & Robert (2018) wrote that educational outcomes would be more beneficial to society, nation, and country if the graduates have good character values. Through character education, young people can be educated and formed so that the young generation has a good sense of nationalism, honesty, discipline, and responsibility. Therefore, character values need to be given to students from an early age. Indonesia as one of the developing countries, obviously very interested to find out how to integrate the values of character into the learning process in the classroom. Japan is known to have the ability to provide character education through the learning process to its students. Therefore, the Research Team from Universitas Negeri Semarang (UNNES) Indonesia, needs to do Research Collaboration with a University in Japan. UNNES Research Team selected Hiroshima University and Prof. Takuya Baba, Ph.D. as an International Partner Lecturer. The Partner Lecturer is a dean of International Development and Cooperation (IDEC) of Hiroshima University. Furthermore, by this International Partner lecturer, the UNNES Research Team was recommended to explore the primary data on how to integrate the values of character in the learning process in an elementary school, especially through math learning. The Partner Lecturer recommended that the UNNES Research Team retrieve data at Miyauchi Elementary School of Hiroshima because this elementary school is under guidance by IDEC of Hiroshima University. From the results of this international collaboration research then this article is compiled. Additionally, this research activity was also attended by several international graduate students of Graduate School of International Development and Cooperation (hereafter abbreviated to IDEC), Hiroshima University. The findings of the primary data in Miyauchi Elementary School were further elaborated in the Focus Group Discussion (FGD), which was followed by the lecturer of international partner and the UNNES Research Team. The FGD was also participated by teachers of Miyauchi Elementary School and several IDEC students at Hiroshima University.

Questions of Research

The research questions were as follows. (1) What kind of character values do teachers integrate into the learning process of mathematics? (2) How did the Miyauchi Elementary School teacher integrate character values in the teaching-learning process of mathematics? (3) What was the effect of assigning character values to social relationships and environmental conditions at Miyauchi Elementary School?
Objectives of Research

The objectives of this research were as follows. (1) To describe the type of character values that teachers integrate into the process of learning mathematics in the classroom. (2) To describe the ways how Miyauchi Elementary School teachers integrate character values in the teaching-learning process of mathematics. (3) To observe the factual conditions about the positive effects of character assignments on the social and environmental relationships of the Miyauchi Elementary School.

LITERATURE REVIEW

Understanding and Importance of Character Education

Each country may have a slightly different understanding of the meaning of the character. Additionally, the type of character values assigned to students may differ from country to country. Since this research team is from UNNES, a university located in the provincial capital of Central Java of Indonesia, the understanding and character values that will be described in this article are limited to the values of the characters promoted in Indonesia.

The great nation has a strong character alongside with high competence, which grows and develops from an entertaining education and environment that implements good values in all joints of national and state life. With these strong character and high competence, the nation become strong. Furthermore, the collaboration and competitiveness of the nation increased to answer the challenges of the 21st-century era. To that end, education should focus on strengthening the character in addition to the formation of competence.

A character can be interpreted as the nature of psychology, morals, or character that distinguishes a person from the other. Almerico (2014) and Chou et al (2014) wrote that character is characteristic of a person or group of people referring to a set of attitudes, behaviours, motivations, and skills as a manifestation of value, ability, moral capacity, and the ability to solve difficulties and challenges. According to Nishimura et al. (2016), and Budhiman (2017), the character contains good values such as good in knowing the value of goodness, willing to do good, want a goodlife, and good impact on the environment that is innate and manifest in behaviour. The character is also an individual's ability to overcome his physical limitations and his ability to dedicate his life to virtues that benefit both him and others.

Therefore, character education is very important to do, because of people who have good character and strong will from themselves as individuals and actors of change for themselves and the surrounding community (Agboola & Tsai, 2015). This good character coherently radiates from the results of thought, if the heart, the sport, the taste, and the work of a person or a group of people.

Character Values integrated into the Learning Process in Indonesia

Based on the importance of character values to be given to students from an early age, the Indonesian government has issued a Government Regulation related to the
Strengthening of Character Education in schools. According to the Presidential Regulation of Indonesia Republic of Number 87 of 2017 concerning Strengthening of Character Education, written that the following five character values must be given and instilled to Indonesian students. The five character values are (1) religious, (2) nationalism, (3) independently, (4) mutual cooperation, and (5) integrity, which is explained below.

Religious. The value of this religious character encompasses three dimensions of the relationship at once, i.e., the individual relationship with God, the individual with others, and the individual with the universe (environment). The value of this religious character is shown in loving behaviour and maintaining the integrity of creation. It has religious sub-values, among others, the emergence of a sense of peace, tolerance, respecting for religious differences and beliefs, firm stance, self-confidence, non-will, loving environment.

Nationalism. The value of a nationalism character is a way of thinking that places the interests of the nation and the state above the interests of the self and the group. Thus, in thinking, behaving, and acting must show loyalty, care and high appreciation for the language, nation and state while respecting and upholding friendship between countries and sovereignty in each country. This value has sub-values, among others: ready to appreciate the culture of the nation itself, safeguard the nation’s cultural wealth, love the country, protect the environment, obey the rules and laws of the country, respect the cultural diversity, ethnicity and religion in Indonesia.

Independently/autonomy. Independently character values is attitudes and behaviors that do not depend on others and strive to use all the energy, thought, and time to realize the goals independently. It has independent sub-values such as the growth of character to be willing to work hard, resilient, have the power struggle, professional, creative, and become learners for self, community, nation, and country.

Mutual Cooperation. The value of the character mutual cooperation, actually already exist in the earth of Indonesia since in the past. In rural areas, even building homes or working on rice fields are always the pattern of working mutually without wages. The value of Mutual Cooperation character is a character that reflects the act of appreciating the spirit of cooperation and solve problems shoulder to shoulder, assisting/helping the people in need, and establishing good communication. The value has sub-values: ready to cooperate in mutual benefit, commit to a joint decision, ready to deliberate consensus, have a spirit of solidarity, and have a sense of empathy to others.

Integrity. The integrity character is the underlying value of the behavior that makes itself a trustworthy person in speech, action, occupation, commitment and loyalty to human values, and 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 based on truth. The sub-values are an honest attitude, love for truth, faithfulness, moral commitment, anti-corruption, justice, responsibility, exemplary, and respect for the dignity of the individual.
The five main values of these characters interact with each other, and are expected to form the personal unity of students and students. Higher Education as continuing education should be able to nurture a leader of a nation that is smart and character. In this regard, college is an educational vehicle for formation of a characteristic leadership soul, which is an important stage to prepare candidates for intelligent leaders of noble character. Mathematics books for students in Indonesia also have contained of Character Education.

The following are examples of the application of the integration of character values in mathematics learning in Elementary School of Indonesia. This example is for illustration only. Each teacher can develop or find their way better. Consider Figure 1 and Figure 2 below. The following are examples of character values that are integrated into the Mathematics learning process in textbooks of grade 1 of elementary school (Ministry of Education and Culture of the Republic of Indonesia, 2017).

**Figure 1**
Calculates the Number of Friends Integrated with Character Values

**Quote 2** from a Mathematics Book for Students which contains character values:

**Figure 2**
Calculates the Number of Objects Integrated with Character Values
In Figures 1 and 2 above, actually the sentence is written in Indonesian because it is a quote from a book used in Indonesia. The teacher's instructions written on the lines below show commands reflecting Character Education. In Figure 1, the command reads: Do it by getting acquainted with everyone without looking at their gender, assets, and intelligence. Because true friends will accept all our circumstances. In Figure 2, the command reads: Discuss with your group friends together and help each other so that you can answer quickly and correctly.

METHOD

Research Approach

This article was written based on the results of research with qualitative approaches which main activities were carried out in Japan. This study was research of international collaboration between UNNES research team with Prof. Takuya Baba, Ph.D. from IDEC of Hiroshima University.

Subject and Location

To achieve the purpose of this research, there are several research subjects as follows: (1) Three teachers of Miyauchi Elementary School of Hiroshima. (2) Six students of Miyauchi Elementary School of Hiroshima. The selection of teachers and students as research subjects was based on a decision between the research team, the Partner Lecturer, and the Principal of Miyauchi Elementary School. The location of the research activities was at Miyauchi Elementary School, IDEC of Hiroshima University, Japan, and UNNES of Indonesia. The occurrence of this decision was based on the following considerations. Three teachers of Miyauchi The Elementary School of Hiroshima were involved in the teaching-learning process when the research team carried out classroom observations. Six students from Miyauchi Elementary School of Hiroshima were selected by the Research Team and approved by the teachers. These students were selected based on their activities in the classroom during class observations. The six students consisted of 2 students who were very active in the class, 2 students were quite active in the class, and 2 students were rather passive in class.

Data Analysis and Interpretation

In analysing the incoming qualitative data, the research team analyzed the data using (Miles & Huberman, 2014). The activity in the qualitative data analysis performed interactively and lasted through to the end so that the data is fit for the purpose. Activities of data analysis include data reduction, data display, interpretation of data, and conclusion or verification.

At the stage of data reduction, the researchers do a reduction of data that was less necessary and irrelevant, and added data that was felt to be lacking. At the data presentation stage, the researchers do the process of gathering information compiled based on the categories or groupings needed. At the stage of data interpretation, the researchers process the understanding of the meaning of a series of data or interprets what is implied in the data that has been presented. At the stage of making conclusions, the researchers conduct a process to find the results of research that are expressed in
short, solid, easy to understand sentences, and the conclusion is related to the relevance and consistency of the title, purpose, and formulation of existing problems.

**Main Research Activities**

Implementation of this collaborative research is the retrieval of primary data in Miyauchi Elementary School, Hiroshima. The main activities were as follows. (1) The UNNES research team prepares professional translators to translate directly from Japanese to English. (2) The research team prepared research tools such as earphone for direct translation process and Handycam for recording the learning process. (3) The research team conducted observation in the Grade 1 of Miyauchi Elementary School. (4) Interview with six students during the game, guided by three teachers and the Partner Lecturer. (5) After the observation and interview with the students and teachers, the conducts of Focus Group Discussion (FGD) team at Miyauchi Elementary School, guided by the Partner Lecturer. The members of FGD were the Partner Lecturer, some of the teachers of Miyauchi Elementary School, six persons of the International students of IDEC-Hiroshima University, and Research Team of UNNES. (6) The next day, the research team conducted the Focus Group, Discussion (FGD) activity at IDEC-Hiroshima University.

This research activity was always followed by the students of the International Class of IDEC of Hiroshima University, arguing that the students were very interested in the theme studied in this international collaboration research. The graduate students of IDEC come from Rwanda, Laos, Indonesia, Egypt, and Japan. IDEC students were involved in the FGD activities at the IDEC room in Hiroshima University, because they had helped provide research facilities and infrastructure, helped in the class to record all research activities at Miyauchi Elementary School, and they were the Partner Lecturer's students.

**FINDINGS**

**Integrated Character Values in Mathematics Learning**

Character Education Findings in the Classroom

With the permission of the Principal of Miyauchi Elementary School, the observation of the class may be followed by all members of the research team, translators, and some international students of the IDEC did not interfere the course of the learning process. The material presented by the teacher was a math lesson. This observation activity was also guided directly by the Partner Lecturer. For the accuracy of primary data obtained then this observation was also equipped with tools such as Earphone and Handycam. The observation were made in terms of the values of characters that arise during the learning process and how the teacher integrates the values of characters in the process of learning mathematics. Look at Figure 3 below.
In Figure 3, it appears that the Partner Lecturer guided UNNES Research Team (yellow-dressed) to carry out observation activities in class. This activity was equipped with translator, equipment in the form of earphone and handycam. This equipments were provided by IDEC students of Hiroshima University.

Observations were as follows. (1) Students were dressed in uniform. (2) Teachers and students enter to the class on time, so teachers and all students were obedient to school rules. (3) When the teacher explained the subject matter, no one spoke. All pay attention to the teacher's explanation well. Thus, the learning atmosphere became conducive. (4) The value of nationalism character emerged, there was an effort to preserve the nation's culture. Traditional Japanese culture that bows to each other while paying homage to the other person was well-guarded. It happens when the student would answer the teacher's questions. The student stood, bowed to the teacher, and answered the teacher's questions. After finished her/his answer, the student bowed again, after which the student sat back in her/his chair. (5) The value of the character also reappears when the teacher gave the task to the students to do the math problem. The teacher asked the students to do it themselves in their book. All the students do their work independently, honestly, and all work responsibly. Here, integrity values appear. The atmosphere of the class seemed calm. While working on the problem, no students were joking. (6) When a bell sounds because the lesson was ends, the students came out orderly, regularly, and did not find the students crowding out of the classroom. (7) The Lesson Plan made by the teacher did not appear exponentially in character education. However, in its application, character values appeared and integrated fairly with the ongoing learning process of mathematics. (8) All students brought a Mathematics Book, and used the book with the full sense of responsibility. The books still looked good and looked preserved. Anzai (2015), Iwasa (2017), and Nishino (2017) wrote that Japan's nationalism was more directed at safeguarding the nation's culture, unity, and national unity.

Character Education Findings during Games with Students

The following described the research findings when the research team was given the opportunity to be able to interview the students during the game. Look at Figure 4 below.
In figure 4, the research team played with groups of students. Through this mathematical game, the research team got the opportunity to interview directly and could observe the characters of the students related to the value of mutual cooperation and the integrity of the students. In this interview, the research team guided by the teacher.

The research team discovered that (1) students maintain the nation's culture by standing up, then they bowed to the research team when the research team approaches. (2) Students in their group invited the researcher politely to play mathematical games with them by considering the group discipline and time management. The value of mutual-cooperation was instilled very well. (3) All students appear to be active, and they act responsibly. According to Kawai & Moran (2017), Japanese students had been trained to work hard from an early age.

**Character Education Findings Based on FGD Results in Miyauchi Elementary School**

After visiting the class, interviewing teachers and some students, then the research team went around the classroom and school environment. Researchers also observed the cleanliness, arrangement of school facilities and infrastructure, and the environment outside the school. After that, Focus Group Discussion (FGD) was conducted at Miyauchi Elementary School, Hiroshima. Participants who attended FGD were UNNES Research Team, principal, three teachers, the Partner Lecturer, and several graduate students of IDEC. The findings of the research team focus on the values of the characters in Miyauchi Elementary School, Hiroshima. In the initial observation, the FGD implementation were as follows: (1) All FGD participants arrived on time at the FGD room. (2) FGDs ran smoothly, regularly, actively, and in a conducive way. (3) All FGD participants were active in giving their thoughts about the critical and active learning of mathematics.

FGDs at Miyauchi Elementary School were recorded and analyzed as follows: Firstly, the types of values instilled by the teachers in the process of learning mathematics were nationalism, independence, cooperation, and integrity. Nationalism arose when teachers and students continue to preserve Japan's national culture by bowing. The children had learned Japanese history well. Standalone values occur when students do the teacher's
work. When the teacher requests that the task was done alone and would be discussed ten minutes later, the students work independently and have energy to complete the task on time. The value of mutual cooperation also appears when they interview and play in a group with members of the research team. Cooperation among students looks good, compact in sharing tasks, and completes the game in time based on the instructions. The value of integrity arises in this learning when students do the work. The students work responsibly, honestly, and are faithful to their work. They are not joking while doing the task.

The second result is that the ways teachers Miyauchi Elementary School in integrating the values of characters in the process of learning mathematics are reasonable and smooth. The teacher assigns individual tasks to create the value of self-reliance and assigns group tasks to generate mutual-cooperation values. To cultivate a sense of nationalism, teachers and students together perform mutual respect by bending the body. There was no sense of awkwardness due to age differences. Teachers also observe students work on assignments honestly, responsibly, and in a disciplined way.

The third result is that it was good that the factual conditions were associated with the positive effects of character values on social relationships and environmental conditions at Miyauchi Elementary School. The bathroom was clean. There were nice plastic slippers. In class, bags, shoes, and supplies were set neatly. There was no garbage scattered in the classroom or outside the classroom. Students were trained to maintain cleanliness including bathrooms and toilets. In addition to the findings, in the Lesson Plan developed by the teacher, the characters' values were not explicitly written by the teacher. In a student math book, character education was also not found apparently. Teacher actions to train students in applying the character values were through questioning.

The results above were in accordance with the objectives of this research. Next, it was presented in Table 1 which summarizes the relationship between the results of the research and the achievement of objectives.

### Table 1

<table>
<thead>
<tr>
<th>No.</th>
<th>Target of objectives:</th>
<th>Achievement</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>The type of character that was integrated</td>
<td>Discipline, including: uniformity of students in dressing, enter to the class on time, and the learning atmosphere was conducive.</td>
</tr>
<tr>
<td>2</td>
<td>The way of teachers integrate the character values.</td>
<td>The teacher gave examples of good attitude models so that students look polite, respectful, active, and responsible.</td>
</tr>
<tr>
<td>3</td>
<td>Positive effects of character assignments.</td>
<td>The bathroom was clean. In class, bags, shoes, and supplies were set neatly. There was no garbage scattered in the classroom or outside the classroom.</td>
</tr>
</tbody>
</table>

**Character Education Findings based on FGD Results at Hiroshima University**

Based on the agreement between UNNES research team and the Partner Lecturer, then on the next day, FGD-2 was held in the lecture room of IDEC of Hiroshima University.
FGD participants consisted of UNNES Research Team, the Partner Lecturer, and graduate students of IDEC of Hiroshima University. Students who participated in FGD were quite a lot. There were students from various countries, namely: Students from Indonesia, Philippines, Cambodia, Laos, Egypt, Rwanda, and Japan. Figure 5 below illustrates the atmosphere of the FGD path, where an IDEC graduate student was giving her opinion.

Figure 5
FGD Participant

In figure 5, FGD participants from local students of Japan was providing inputs related to the integration of character values in teaching-learning process of Mathematics Learning. The participants from local students of Japan very active in joining every steps of the FGD activity.

FGD results at IDEC of Hiroshima University were as follows: First, the five main values of the characters performed at schools in Indonesia, also appear in schools of Japan, especially in Miyauchi Elementary School. It means that the character education in schools was universal and needs to be given to students from an early age, either directly or indirectly. Religious values also appear in Japanese students, communities, and governments who appreciate and allow for places of worship in Japan.

Second, character education had been given to children from childhood through education in the family. Character education in Japanese schools tends to stay on and preserve the traditions of character values that already exist in Japanese society. Third, personal hygiene and environment were the values of character that were directly applied in everyday life. In the classroom, in the complex of the school environment, as well as outside the school, the cleanliness was maintained and done by the students themselves. Fourth, culture queuing, obedience to the rules, and honesty were strongly held. Fifth, the direct application of the character education outcomes in Japan was also appropriate for the implementation of school community members in Indonesia, both within the classroom, within the school environment, and outside the school through a clean culture and regulatory culture.
DISCUSSION

Character education is very necessary to be integrated into the learning process. Novianti (2017) and Komalasari & Saripudin (2018) also wrote about the importance of character values for given to students through learning in the school. Furthermore, there are also many ways that can be done to realize the character education in school. Character education is not enough to be the subject of instruction and is included in the implementation plan of learning in school. However, it should be more than what needs to be applied or practiced. The application of character education can begin by learning to obey the rules of the school, following traffic rules, discussing with friends warmly and friendly and enforcing discipline inside and outside the school. Elementary Schools, should be able to make this character education well-developed and to grow value in exemplary and appeals by principals, teachers, and school staff in daily schooling at elementary school.

Zhuojun & Robert (2018) wrote that character education should involve all interests in education, both the family, the school, the school environment, and the broader community. Therefore, the first step is to rebuild a close and harmonious partnership so that we can re-realize the educational network between the school environment including teachers, family, and society. Character education, formation, and implementation will not work, as long as there is no sustainability and harmony. Thus, family harmony and education in the family as a first and foremost character building and education environment must be more empowered which is then supported by the school environment and conditions that strengthen the process of formation.

The overseas collaboration research between the UNNES research team and the partner lecturers from Hiroshima University further expands our knowledge horizons that character education for students needs to begin with the formation and character education through the family line first. Family members, teachers, and education personnel at school should be able to be exemplary figures in applying the values of the noble character. These findings are in line with the writings of Phan (2013), Gusarova (2015), and Junaedi & Syukur (2017) who wrote that Japanese students have a good character through exemplary teachers and education personnel in schools.

CONCLUSION AND RECOMMENDATION

Based on the results of the research above, we can conclude as follows. (1) The type of character values assigned and implemented to schools in Indonesia, also appeared in schools in Japan, especially in Miyauchi Elementary School. The interpret of this result, cultural awareness such as queuing, obedient to the rules, and honesty are also trained to the students well. (2) Character education has been given to children from childhood through education in the family. The interpret of this result, the integration of character education with the provision of lessons in Japanese schools tends to stay on and preserve the traditions of character values that already exist in Japanese society. (3) The factual condition about the positive effect of assigning character values to the association and environmental conditions in Miyauchi Elementary School. The interpret
of this result are as follows. In the classroom, in the school complex, or outside the school, the cleanliness is maintained and done by the students themselves.

The application of character education in Japan is very good because it is applied directly in the middle of social life, such as cultural awareness in queuing, obedient to the rules, and honesty. Therefore, character education through integration in the learning process of mathematics needs to be applied in the community through exemplary actions of teachers and students.

The state limitations with the present study are as follows. The primary data retrieval of this research was done in an elementary school, namely at Miyauchi Elementary School of Hiroshima. If data collection was extended to several schools, other findings on integration of character values in the teaching-learning process of mathematics may be somewhat different and become more varied.

The identify future areas of this research are doing a further research in high class of Miyauchi Elementary School of Hiroshima and a further research on the application of the results of this research to be applied at Elementary Schools in Semarang, Indonesia.

REFERENCES


