

# Tolerance character building for elementary school learners through mathematics learning

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## Abstract

This research aims to discover the findings of mathematics learning model that build the tolerance character in elementary school students. In the preliminary research, it is found that elementary school teachers are not ready to implement the character building-based mathematics learning process. They have difficulties in changing their mindset of teaching the habit that simply involving students' competence from the moral understanding and moral action but ignoring the moral feeling. Teachers are still teaching subject matter that does not have any relevance with character values. The research method is hypothetical theoretical model, referring to the Research & Development (R&D) method through the following stages: (a) preliminary study; (b) literature study; (c) preparation of model design; (d) content validation; (e) implementation of validation; and (f) learning model preparation. The conclusions are: Mathematics learning model to build the tolerance character is providing knowledge and practicing the habit of behaving and acting tolerance through the mathematics topics. In compiling the mathematics lesson plan that internalizes values to elementary school students, especially to build the character of tolerance, the teacher chooses mathematics topics and compiles the indicators and relevant learning methods with the learning objectives. Mathematics topics that can build the tolerance character, for instance 'Fraction'. In conducting the learning process, the teacher conducts many activities to instill tolerance values, associating mathematics topics to tolerance character, and associating daily life events that are often experienced or seen by the students. Further, to provide assessment to measure the indicators of tolerance character, an instrument of students' observation format during the learning process and providing mathematics questions in the form of contextual or story were used.

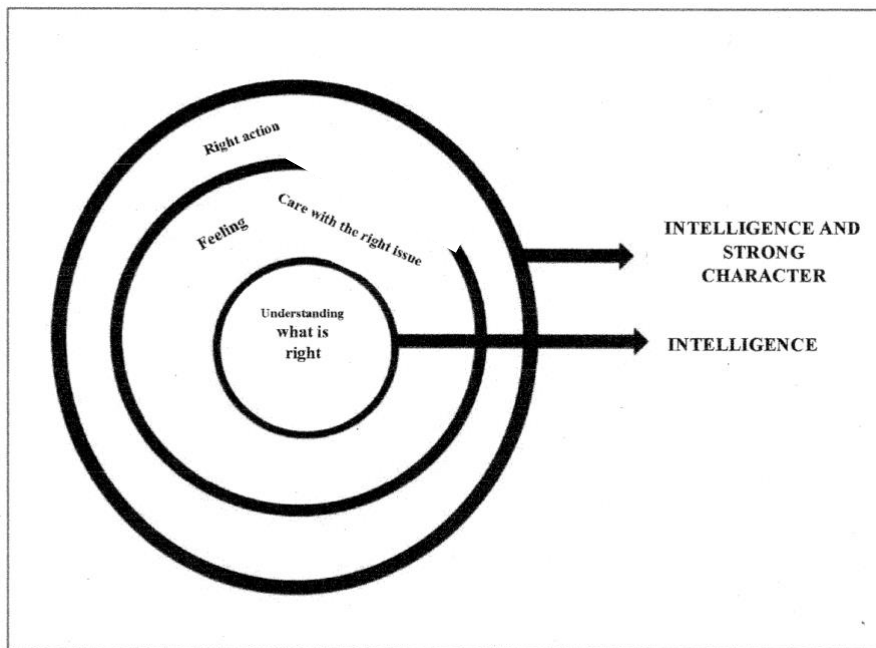
**Keywords:** Mathematics Learning; Character Building; Tolerance; Elementary School

## 1. Introduction

Teachers in educating the students must relate to the goal of education, that is, teaching is not only making the students smart but also promoting the development of students' potential character competencies. Practically, in classroom learning, children must be able to understand what is right and what is wrong, feel and care about the truth, therefore acting based on what they believe to be true.

Referring to Fig.1. the learning process which only provides understanding will only develop students' intelligence. However, if it is intended for students' intelligence and a strong character, they must be provided with habituation learning, so, they are accustomed to feel or make the right decision and in the end, they can act accordingly.

Therefore, the teacher has a great role in building students' character (Astuti, 2010). It is because teacher acts as a learning manager, as a facilitator who tries to create effective teaching and learning conditions (Erwinsyah, 2017).



**Fig.1.** Educating Learning Process for Character Building

In addition, a teacher is required to design properly and seriously chosen various methods and media, so, the character values that have been integrated become permanent behaviors for students in the future (Zafirah et al., 2018). Among the character values that are urgent to be integrated with elementary school students is tolerance. This is due to the recent condition in Indonesia which is experiencing a crisis of intolerance. It can be seen from the growing incidents of clashes between ethnic groups and religions, including the violence among the public and students.

Every Indonesian citizen must have a tolerant attitude and behavior in the society and mainly as a state because this is a necessity. The attitude and behavior of tolerance are one of the character values that must be instilled since early or when children are at elementary school age. In the learning process in the classroom, the development of tolerance character values can be integrated into several topics in each subject, including mathematics for elementary school.

In fact, elementary school teachers in implementing the learning process based on character building are not ready to change the mindset from conventional teaching, that is teaching by only involving students' competencies from the moral knowing (cognitive) aspect and ignoring the moral feeling (affective) and moral action (psychomotor) (Ramlan & Hermawan, 2017). Many studies have been carried out and stated that teachers are still conducting learning in conventional ways. According to them, implementing learning as required according to the new curriculum policy is not easy; there are many obstacles, including the limited knowledge in determining relevant learning models to curriculum objectives (Ramlan & Permana, 2016).

This research aims to discover the findings of mathematics learning model to internalize values, especially building of tolerance character in elementary school students. Mathematics learning model for character building is integrating character values through a process of habituation. The pattern of habituation is conducted by repeating the values in mathematics topics which will be internalized to the students. So, gradually, the character will be built as the provision for acting and behaving in the school, family and social environment.

## 2. Literature Review

### 2.1 Character Building in Mathematics Learning for Elementary School

Mathematics learning requires a modeling manipulation in a concrete form, so it can be received well by the students (Rachmawati et al., 2020). Therefore, the learning process needs to be adjusted so the abstract objects in mathematics can be represented through concrete objects as a bridge to enter the knowledge that they have acquired (Saleh et al., 2018). In addition, teachers must demonstrate to students that mathematical theory can be applied to solve real-life problems (Tarasenkova et al., 2019). Character-building education in mathematics learning for elementary schools can be achieved through the concept of humanitarian values, including truth, virtue, peace, love, and non-violence behavior (Khamidah, 2013). In fact, elementary school students are weak in connecting mathematical concepts with concepts outside mathematics comprehensively (Kenedi et al., 2019). Therefore, in mathematics learning for character building, linking mathematics concepts to real-life events should be emphasized.

### 2.2 Tolerance Character-Building for Learners

Tolerance is a moral quality that indicates attitude on the interest, belief, habit, behavior to others, expressed in an effort to achieve mutual understanding and agreement in various interests without any pressure, and at the same time, building tolerance is a very complex process involving the intellectual, emotional, motivation and will (Tektibayeva & Absatova, 2015). Everyone has a different physical condition, personality and perspective. There are two sides of diversity impacts, negative and positive. The negative impact is conflicts that occur from the inability to accept differences to even self-destructive behavior. On the other hand, the positive impact indicates the existence of a more unique and diverse culture and national identity (Juwita et al., 2018). Therefore, tolerance character building for elementary school students as the future generation is a necessity.

The reality of tolerance demonstrated by students is characterized by appreciating others' opinions, being friendly without differentiating the ethnicity and religion, mutual respect, controlling emotion, not mocking friends, designing and conducting various social activities, respecting school officials, helping each other, visiting sick friends, and paying a visit if there is friend's parent who passed away (Sari, 2016). Therefore, the implementation of learning model for tolerance character requires improvement, increasing the competence and professionalism of teachers through training and assistance in the preparation and development of character education-based lesson plans, and involving the role of parents as a source to promote life and cultural values that support character building-based education (Andayani, 2013).

## 3. Methods

The method for obtaining the research findings was a theoretical-hypothetical model referred to the Research and Development (R&D) method developed by Borg and Gall (1983), Educational research and development is a process to develop and validate educational products. According to Borg and Gall, basically, R&D in education is research that produces a product to be validated (Silalahi, 2018). The theoretical-hypothetical model was used to develop theories that referred to the findings of previous research.

The design of learning model was content-validated by mathematics education experts and implementation-validated by Focus Group Discussion (FGD) with elementary school teachers. The FGD technique was used to determine the validity of the compiled learning model, mainly to find its advantages and disadvantages, by exploring input from teachers as the subject of model users.

The research procedure was conducted through the following stages: (a) preliminary study /need assessment; (b) literature study; (c) designing a theoretical-hypothetical model; (d) content validation;

(e) implementation validation; and (f) learning model product preparation. The preliminary study/need assessment aims at obtaining data from facts in the field related to the implementation of character-based education learning process.

At the literature review stage, the researcher conducted a value theory study, character building theory and mathematics learning theory. The design of learning model contains a conceptual framework describing a systematic procedure in organizing mathematics learning process for elementary schools to internalize the values, especially to build the character of tolerance. The validation stage contains two main activities, which are validating the content and validating the implementation. The purpose of these activities is the formulation of a valid learning model, so, it is suitable to be used by teachers in elementary school for mathematics learning process in building the tolerance character.

## 4. Results

### 4.1 Findings of Preliminary Study

From the findings of preliminary study, it is clear that elementary school teachers are not ready to implement the character-building-based mathematics learning process. They have difficulties in changing their mindset in teaching habits that only involving the students' competence from the aspect of moral understanding and moral action, but ignoring moral feeling. Practically, in the classroom, the teacher is still teaching subject matters that do not have any relevant issue with character values.

In teaching mathematics, the teachers do not only have to teach that  $2 \times 5 = 10$ , but also through the process of learning multiplication operations, the character of students will be developed or built. Through the learning process of mathematics, for example, with the topic of number operations, it is expected that it built their characters of accurate, honest, hard-worker, or tolerance. As referring to Firmansyah, the integration of character building in mathematics curriculum needs to be conducted in tier and spiral, so the students are accustomed to the process of internalizing the indicators of character value (Firmansyah et al., 2020).

According to the data collected through interviews and surveys on respondents from elementary school teachers, various information has been found in implementing mathematics learning in elementary school, those are: (a) Most of the teachers are still conducting mathematics learning in stages of providing mathematical theory, providing examples of questions, and then providing questions to be worked on by students. Some teachers even do not check the results of students' work on exercises, but immediately giving them homework. (b) From all observed teachers, only a few of the teaching mathematics topics that are related to daily life events, that is by providing examples and math problems in the form of world problems. They taught mathematics topics with abstract material presentation, even though the cognitive development of students in elementary school is still at a concrete stage. For example, in teaching the topic of division operation, they immediately explain that  $40 : 4 = 10$  by giving a method of using  $4\sqrt{40} = \dots$  (division in parentheses). Only a few teachers explain it concretely, by starting it with an illustration of events in real life, such as "A teacher has 40 candies to be distributed to 4 people, so each child gets 10 candies". (c) Most of the teachers observed in this research are not teaching in accordance with the Lesson Plan (RPP) they have prepared, for example in the RPP it is written that the mathematics topic is 'fraction operations', so, it is expected that the students build their characters to be independent, confident, tolerance, and honest. However, when conducting the learning process, they only teach how to solve math problems, without any habitual learning process associated with the mathematics topic of 'fraction operations'.

## 4.2 Internalization of Tolerance Character in Mathematics Learning Model

In conducting each mathematics learning process, the topics must be related to daily life problems. It is because the goal of mathematics learning is expected to be a foundation for students, so, in the future, this subject will be useful for solving problems in society, through correct actions.

The characteristics of mathematics learning model for the tolerance character-building, especially in elementary school are: internalizing the tolerance character; involving the competence of moral knowledge, moral feeling, and moral action; habitual learning and related to daily life events; emphasizing the aspect of good attitude; strategies by using guided discovery method through small group discussion; using audio-visual learning media; the roles of teacher in making observation during the learning process; and the final assessment prioritizes the development of tolerance character. According to Sugandi, during group discussions, teachers can indirectly intervene by asking students to explain their performance in solving a problem. Through this intervention, students are directed to have the ability to reflect on a number of mental processes that have been conducted, so, they are able to summarize them into a new mental object (Sugandi, 2013).

The mathematics learning model for building tolerance character contains three components; those are planning, implementation and assessment. The preparation of planning refers to the characteristics of learning model, and in the learning process it cannot be separated from the preparation of plan, as well as assessment on students by prioritizing attitude assessment, that is by measuring indicators of tolerance behavior competence.

## 4.3 Mathematics Lesson Planning for Tolerance Character Building

The function of Lesson Plan (RPP) is to describe the procedure and organization of learning to achieve the Basic Competencies (KD) defined in content standards and described in learning whether in class, laboratory or field for each KD. Therefore, RPP contains some materials that are directly relevant (Supinah, 2017). Particularly, regarding mathematics learning to build tolerant character, RPP describes a strategic plan that will be used by the teacher in providing knowledge and training the habit of behaving and acting tolerance through the mathematics topics. So, it is relevant to the learning objectives that do not only create students who are competent in mathematics knowledge but also build their characters as a logical result of the learning process. The most important component in the lesson plan is developing indicators and choosing learning methods.

### 4.3.1 Indicators

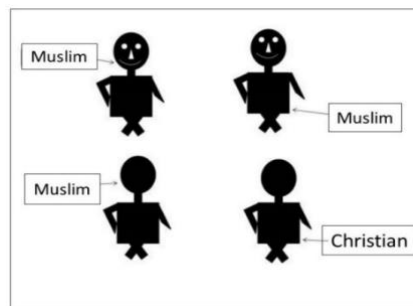
Table 1. illustrates that in order for the results of learning mathematics to reach the goal so that students become intelligent and have tolerance character, they must develop knowledge, skills and attitudes competencies. In learning with the topic 'Fraction, to develop knowledge competence, students only need to know that the form of numbers  $a/b$  is a fractional number and sharing life without distinction of ethnicity, religion, family status is an attitude of tolerance. However, so that children are indicated to have tolerance characters or not, they must be given math problems in the form of word problems related to tolerance and intolerance, for example, events about the conflicts between tribes in a particular place.

**Table 1:** Mathematics Learning Indicators for Tolerance Characters-Building in the Topic: Fraction

No	Indicators	Competencies
<b>Learners</b>		
1	Understand the meaning of fraction $\frac{a}{b}$ , such as $\frac{1}{2}$ ; $\frac{3}{4}$ ; $\frac{1}{4}$ and so on.	Knowledge
2	Understand the benefits and the beauty of sharing without differentiating ethnicity, religion, family status, etc. through fraction questions in word problems.	Knowledge
3	Skilled in calculating fraction of $\frac{a}{b} + \frac{c}{d} = \dots$ such as $\frac{1}{4} + \frac{3}{4} = \dots$ ; $\frac{1}{8} + \frac{1}{4} = \dots$ ..; etc.	Skill
4	Skilled in solving word problems about sharing by using knowledge in adding two fractions.	Skill
5	Indicated of acting or behaving intolerance, when solving real-life problems presented in mathematical word problems, by using their mathematics knowledge on the topic of fractions.	Attitude

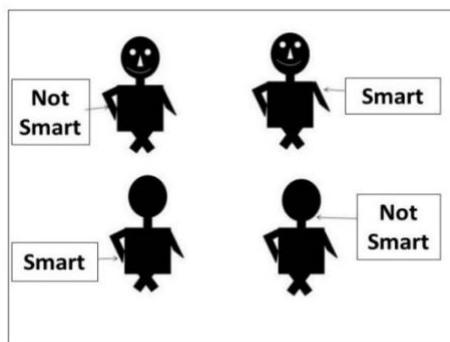
#### 4.3.2 Learning Method

Guided discovery learning method was conducted through small group discussion in which the teacher divided the students into small groups, for example as many as 40 children into ten groups, so each group consisted of 4 children. Previously, the teacher had a record of students' characteristics related to social status, ethnicity, religion, and intellectual potential, etc. So, each small group had heterogeneous students. For more details, it is illustrated in the following figure.



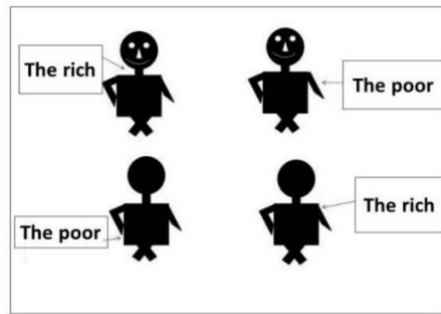
**Fig.2.** Group discussion of students with different religions

Figure 2 shows if a class consists of Muslims and Christian, they are combined into one group.



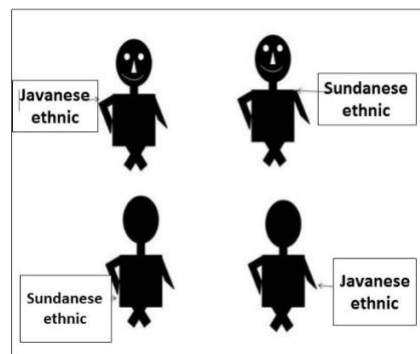
**Fig.3.** Group discussion of students with different intellectual/intelligence levels

Figure 3 shows if a class consists of children with different intellectual/ intelligence levels, the smart and less smart students are combined in one group.



**Fig.4.** Group discussion of students with different social status

Figure 4 shows if a class consists of children from rich families, poor families, and middle-class families, they are combined into one group.



**Fig.5.** Group discussion of students from different ethnicities

Figure 5 shows if a class consists of Sundanese and Javanese children, they are combined in one group. During the learning activities, the teacher conducts an observation of each student, especially related to the attitude and action or behavior of student (Ramlan et al., 2019). This is specifically conducted to see their character development related to tolerance behavior.

#### 4.4 Mathematics Learning Implementation for Tolerance Characters-Building

The stages of process in implementing mathematics learning for tolerance character-building on the topic of 'Fractions' are as follows:

1. Students observe or watch a video facilitated by the teacher, with the theme of intolerant people that is detrimental to the society. This learning process aims at making the students understand what is meant by tolerant and intolerant behavior; understanding that with so many people who are intolerant, the community becomes an unsafe environment, feeling if they were the victims of an intolerant person or group of people; and motivating them to be tolerant.
2. Students search for information by reading books and collecting data from the internet or social media about the losses due to the emergence of radicalism as a result of many intolerant societies. This learning process aims to make the students understand how lucky they are to be tolerant and sinful to be intolerant and motivating them to get used to being tolerant.
3. Students observe or listen when the teacher is explaining the topic "fractions". This learning process aims to make the students understand the concept of fractions; skilled at adding fractions; and understand the relationship between learning concepts and adding fractions with habitual behavior or acting tolerantly.

4. The teacher in presenting the mathematics topic 'fractions', provides more illustrations in the form of stories associated with real-life events about tolerance behavior.
5. The teacher conducts an observation of each student, especially related to their attitude and behavior during the learning activities. The attitude and behavior observed by the teacher are particularly those related to the indicators of tolerance character.

#### 4.5 Assessment of Process and Mathematics Learning Outcomes for Tolerance Character Building

During the learning process, the teacher conducts an assessment, especially those related to the students' attitude competence. This is conducted to observe the character development, whether or not the students' motivation is indicated to individuals with tolerant characteristics. The assessment instrument is in the form of an 'Observation Format' as follows.

**Table 2:** Observation format learners' tolerance character development

Name of Student: .....

No	Indicator	Activities	Teacher's Notes
1	Students share their feelings of concern, if many people are intolerant, it will result in chaos in the society	Students watch/ observe/ listen to a story that describes chaos and threats to society, as a result of radicalism by intolerant people.	..... ..... .....
2	Aspired to be a tolerant person		..... .....
3	Respectful of fellow friends.	Discuss in small groups.	..... .....

The observation format as shown in Table 2. is an assessment tool used by teachers to assess the development of the tolerance character of students. In point no.1, the teacher will record the students' attitudes when they see the events of community chaos caused by acts of radicalism using audio-visual media. The attitude in question can be seen from the students' expressions, for example, they do not care, stay silent, or maybe even cry. In point no. 2, the teacher can see the attitude of wanting to be a tolerant person by asking questions to students. While the behavior of students in respecting their friends as in point no. 3, the teacher supervises when students are discussing activities in their groups. All attitudes and behaviors of individual students are recorded in an observation format as shown in Table 2. All notes related to the attitudes and behavior of these students will be a reference in taking action to carry out the next learning process. Table 3 is an example of teacher notes when students listen to audio-visual learning media shows.

As shown in table 3, through notes from the observation during the learning process, it is possible to make criteria for students who are indicated to want and do not want to be tolerant people. This can be seen by the teacher when students appreciate life events in audio-visual media as shown by their physical expressions.

**Table 3 :**Assessment Criteria



Predicate	Teacher's Notes
Students are indicated as "willing" to be tolerant	When watching/observing a video, the students are 'demonstrating physical expressions' that describe feelings of concern.
Students are indicated as "unwilling" to be tolerant	When watching/observing a drama film, the students "do not demonstrate physical expressions" that describe feelings of concern.

For students who are indicated not to be motivated to become tolerant, the teacher pays special attention by giving them an understanding and instilling of how much they will lose to be intolerant for themselves and others. Giving understanding and appreciation is what we called as internalizing character values. Furthermore, at the end of the lesson, the teacher provides questions to measure the indicators of whether or not students' tolerant behavior is indicated as presented in the following question sample.

#### 4.6 Question sample

A class is conducting captain election. The candidates for class captain are Ahmad who is Muslim, Salsa who is Christian, and Ketut who is Hindu. The number of students in the class is 60 students. The election result is as follows: Ahmad gets  $\frac{1}{4}$  votes from the total votes; Salsa gets  $\frac{1}{2}$  vote; and Ketut  $\frac{1}{4}$  vote. If you are Muslim, do you agree if Ahmad becomes the class captain? What is the reason? If you are Hindu, do you agree if Ketut becomes the class captain? What is the reason? From the example, if there are Muslim students who agree that Ahmad should be the class captain because Ahmad is Muslim, then these students are indicated as intolerant. However, if there are Muslim students who agree that Salsa becomes the class captain because she gets the most votes, then the student is indicated as having a tolerant character.

#### 5. Conclusion

Mathematics learning model to build tolerance character is by providing knowledge and training the habit of behaving and acting tolerant through mathematics topics. In preparing a mathematics lesson plan that internalizes the values in elementary school students, especially building tolerance character, the teacher should select mathematics topics, develop indicators and relevant learning methods to the learning objectives. For example, one of Mathematics topics that build the tolerance character is 'Fraction'. In conducting the learning process, the teacher conducts activities of instilling tolerance value, associates mathematics topics to tolerance character values, and also associates it with daily life events that are often experienced or seen by the students. Further, providing an assessment to measure the indicators of tolerance character is by using an instrument of students' behavior observation format during the learning and giving math problems in the form of contextual or word problems.

#### Reference:

- Andayani, T. R. (2013). Peningkatan Toleransi melalui Budaya Tepa Sarira ( Pengembangan Model Pendidikan Karakter Berbasis Kearifan Lokal). *Prosiding Seminar Nasional Parenting 2013*, 397–406.
- Astuti, D. S. I. (2010). Pendekatan Holistik Dan Kontekstual Dalam Mengatasi Krisis Karakter Di Indonesia. *Cakrawala Pendidikan*, 1(3), 41–58. Retrieved from <https://doi.org/10.21831/cp.v1i3.234>
- Erwinsyah, A. (2017). Manajemen Pembelajaran dalam Kaitannya dengan Peningkatan Kualitas Guru. *Tadbir: Jurnal Manajemen Pendidikan Islam*, 5(1), 69–84.
- Firmansyah, Purwati, Siregar, N. N., & Irandi, I. (2020). Integrasi Pendidikan Karakter Rasa Ingin Tahu pada Pengembangan Bahan Ajar Matematika SD. *Jurnal Cakrawala Pendas*, 6(2), 143–155.

- Juwita, W., Salim, A., & Winarno, W. (2018). Students' Tolerance Behavior in Religious-Based Primary School: Gender Perspective. *International Journal of Educational Research Review*, 3(3), 51–58. Retrieved from <https://doi.org/10.24331/ijere.426255>
- Kenedi, A. K., Helsa, Y., Ariani, Y., Zainil, M., & Hendri, S. (2019). Mathematical connection of elementary school students to solve mathematical problems. *Journal on Mathematics Education*, 10(1), 69–79. Retrieved from <https://doi.org/10.22342/jme.10.1.5416.69-80>
- Khamidah, N. (2013). Pendidikan Karakter dalam Pembelajaran Matematika di SD. *Insania*, 18(2), 2015–2230.
- Rachmawati, Wijayanti, R., & Anugraini, A. P. (2020). Pengembangan eksplorasi MAR ( Matematika Augmented Reality ) dengan penguatan karakter pada materi bangun ruang sekolah dasar. *Delta-Pi: Jurnal Matematika Dan Pendidikan Matematika*, 9(2), 92–105.
- Ramlan;Sanusi, A., Gintings, A., & Sauri, R. S. (2019). Development Model of Mathematics Learning in Prymary School to Form Honest Character. *International Journal of Research in Social Sciences*, 32(1), 1–9. Retrieved from <http://www.ijsk.org/ijrs-volume-32/>
- Ramlan, & Hermawan, V. (2017). Kesiapan Guru Sekolah Dasar Dalam Pelaksanaan. *Journal of Research in Mathematics Learning and Education*, 2(1), 67–77.
- Ramlan, & Permana, J. (2016). Pendidikan Budaya dan Karakter Bangsa Pada Proses Pembelajaran Seni Tari & Drama. *Pendas: Jurnal Ilmiah Pendidikan Dasar*, 1(1), 39–50.
- Saleh, M., Prahmana, R. C. I., Isa, M., & Murni. (2018). Improving the reasoning ability of elementary school student through the Indonesian realistic mathematics education. *Journal on Mathematics Education*, 9(1), 41–53. Retrieved from <https://doi.org/10.22342/jme.9.1.5049.41-54>
- Sari, Y. M. (2016). Pembinaan Toleransi Dan Peduli Sosial Dalam Upaya Memantapkan Watak Kewarganegaraan (Civic Disposition) Siswa. *Jurnal Pendidikan Ilmu Sosial*, 23(1), 15–26. Retrieved from <https://doi.org/10.17509/jpis.v23i1.2059>
- Silalahi, A. (2018). Development Research (Penelitian Pengembangan) dan Research & Development (Penelitian & Pengembangan) dalam Bidang Pendidikan/Pembelajaran. *Seminar & Workshop Penelitian Desertasi Program Doktor Pasca Sarjana*, June, 1–13. Retrieved from <https://doi.org/10.13140/RG.2.2.13429.88803/1>
- Sugandi, A. I. (2013). Peranan Matematika dalam Menumbuhkan Karakter Siswa. In A. Nurjaman, R. Sariningsih, I. P. Sari, & G. Kadarisma (Eds.), *Prosiding Seminar Nasional Matematika dan Pendidikan Matematika STKIP Siliwangi Bandung* (pp. 88–95).
- Supinah. (2017). *Modul Pengembangan Keprofesian Berkelanjutan*. Kementerian Pendidikan Nasional.
- Taraskenkova, N., Akulenko, I., Hnezdilova, K., & Lovyanova, I. (2019). Challenges and prospective directions of enhancing teaching mathematics theorems in school. *Universal Journal of Educational Research*, 7(12), 2584–2596. Retrieved from <https://doi.org/10.13189/ujer.2019.071205>
- Tektibayeva, D. D., & Absatova, M. A. (2015). Tolerance as the Basis of the Polycultural Education Development. *European Journal of Sustainable Development*, 4(2), 213–220. Retrieved from <https://doi.org/10.14207/ejsd.2015.v4n2p213>
- Zafirah, A., Agusti, F. A., Engkijar, Anwar, F., Alvi, A. F., & Ernawati. (2018). Penanaman nilai-nilai karakter terhadap peserta didik Melalui permainan congkak sebagai media pembelajaran. *Jurnal Pendidikan Karakter*, 8(1), 95–104. Retrieved from <https://doi.org/10.21831/jpk.v8i1.21678>