

# Math for Character Building in Elementary Schools: Drama-Based Thematic Learning Management

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## Issue Details

**Issue Title:** Issue 1

**Received:** 15 January, 2021

**Accepted:** 08 February, 2021

**Published:** 31 March, 2021

**Pages:** 2807 - 2816

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## Abstract

This paper presents math for character building in primary school which is drama-based thematic learning management. In this study, a learning model is constructed through several stages namely: (1) preliminary study: needs assessment; (2) literature study; (3) preparation of theoretical-hypothetical model design; (4) content validation and implementation validation. Facing the current 'moral crisis' issue, Indonesia decides to use the concept of character education in its national education curriculum. It is a new challenge for teachers to immediately change the mind set who previously taught only to bring forth intelligent humans, into prioritizing teaching to build characters. Characteristics of mathematics is an abstract science, but the process of understanding must be conveyed through concrete media. This is well understood because the students' cognitive development, especially in elementary school is still at a concrete stage. In addition, the psychological development of elementary school students is at the thrust of wanting to play and do fun activities. This study aims at finding learning management that could serve as guidelines for teachers, especially in primary schools, in order to teach math to build students' character. The methodology of study used is theoretical-hypothetical method, with the stages of needs assessment, literature study, validation by experts, and implementation validation by elementary school teachers. In the implementation level 30 participants were selected among primary school's students. The results show that the thematic teaching management based on drama education can be used in mathematics learning for character formation of students in elementary school. Stages in the management of this learning include planning, execution, and assessment. At the planning stage, teachers prepare drama texts with theme of the events of daily life related to the mathematical topic and the competence of character values to be developed. At the stage of implementation, students play a role in accordance with the theme of the drama script. As for the assessment stage, the teacher conducts the assessment during the learning process or during the student activities. All 30 participants scored more than 11 which is start to be consistent range. This study provides an example to teachers of one of the methods of teaching mathematics that at the same time takes into account students' character building.

## Keywords

Mathematics Learning, Character Building, Drama Education.

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## 1. Introduction

There should be four policies of the Government of the Republic of Indonesia that should be studied and understood by teachers, namely: (1) *Law of the Republic of Indonesia Number 20 of 2003 on National Education System*; (2) *National Policy on Nation Character Development of 2010-2025, Coordinating Ministry for People's Welfare*; (3) *Master Design of Character Building 2010*; and (4) *Development of Cultural Education & Character of the Nation 2010*. As a result of being uninformed of the four policies as mentioned, they do not understand in detail how to carry out classroom learning that can shape the characters.

Actually, the government of the Republic of Indonesia through the Ministry of National Education has arranged coaching for all education units since 2010, such as: (1) system of training for the stakeholders. Such as basic level training, national level training, provisional level training, district and city level training, school level training; (2) employing trainers, trained principals, supervisors as part of developing competencies in managing, leading, and supervising teachers in developing character-based learning; and (3) inputting the value of character education into the socialization of curriculum preparation.

Although there are many programs of socialization and training activities for teachers, especially in primary schools, in fact teachers are still incompetent in implementing mathematics learning for character building. This is deemed necessary for learning management model that can be a teacher guide to take place, especially in teaching mathematics for character building. Developing character-integrated mathematics teaching materials in elementary school is needed (Firmansyah et al., 2020). Therefore, teacher needs to be creative in considering certain strategies and methods in the learning process so that character values are conveyed to students through the learning materials (Zafirah et al., 2018).

This paper presents mathematics for character building in primary school which is drama-based thematic learning management. This research uses theoretical-hypothetical model method. All 30 participants scored more than 11 which is start to be consistent range. This study provides an example to teachers of one of the methods of teaching mathematics that at the same time takes into account the character building of students.

## 2. Literature Review

### 2.1 Mathematics learning for character building

According to Berkowitz & Bier (2005), character education is the creation of a school environment that helps students developing ethics, responsibility through models, and teaching good character through universal values (Santika, 2020). Therefore, mathematics learning in elementary schools can be improved by learning that is linked to the real world context of the students (Sulistiyani & Deviana, 2019).

The survey that has been performed on preliminary study indicates that elementary school teachers are not ready to implement the process of learning mathematics for character building of students. A study found that teachers who are effective at improving test scores often are not equally effective at improving students' attitudes and behaviors (Blazar & Kraft, 2017). They have difficulties in changing the mindset of conventional teaching, which is the habit of teaching by only involving students' competence into the competence aspect of moral knowledge and ignoring the aspect of competence of moral feelings and the competence of moral actions. Teachers' unpreparedness is seen from the lack of knowledge of character education, managing the learning process that has been done, and there are some obstacles they find during learning process.

In teaching mathematics, teachers should not just teach how to make students understand that  $2 \times 5 = 10$ . Instead, through the process of learning multiplication, students' character

should be able to develop or build. For example, through the process of mathematics learning with the topics of integer multiplication, it is expected to form careful, honest, hard work, or tolerance characters. It really depends on how teachers use learning management. The table below illustrates the incompetence of teachers in teaching mathematics in primary schools. Teachers must have to be able to hear and see expressions of students. The approach in mathematics education based on action learning in conjunction with the natural motivation stemming from common sense is effective (Grinshpan & Milligan, 2019).

**Table 1.** Teacher inconsistency on teaching Mathematics in elementary school

Learning Stage	Learning Activity
Planning	Teachers do not set up learning guidelines for character building of students, such as creative, honest, or critical characters.
Implementation	Teachers only give an example of how to answer math problems, for example $\frac{1}{2} + \frac{1}{4} = \frac{2}{4} + \frac{1}{4} = \frac{3}{4}$ and students memorize the ways teachers solve the problems.
Assessment & Follow-up	The teacher only gave mathematics topics fractions, such as $\frac{1}{3} + \frac{1}{6} = \dots$ , $\frac{2}{3} + \frac{2}{5} = \dots$ or $\frac{3}{4} + \frac{1}{5} = \dots$

## 2.2 Drama as a learning medium that is fun and building character

Drama can be used as a medium to form social awareness, as seen in the process of extracting story ideas. In addition, it can generate responsibility as a member of society, as seen in production processing that cooperation is needed for the success of a drama performance (Suprajitno, 2017). Thus drama plays an important role in building the character of students because it is a form life depiction that is witnessed directly, acted out, and able to be implemented by students in everyday life (Huda et al., 2015). Drama is a more effective mathematics learning media, as it is relevant to the objectives of mathematics education at the basic level, that is to prepare the students to be able to face changes in life and in this ever-changing world through training to act on the basis of logic, reason, creative, accurate, honest, effective, and efficient (Bahari, 2018).

According to Srisudarso & Nurhasan (2018), drama as a learning medium is very strategic because it is a game that provides new meaning, practices rhythmic movements, connects words to thoughts, feelings, wills, and energies, teaches customary manners and so on (Purnama et al., 2020). Therefore, drama which is used as a medium for learning mathematics, besides being able to build character, it is also able to make learning more fun for students, especially for elementary school students.

## 2.3 Learning Management

Teacher has a very important role in determining the quantity and quality of learning. Teacher must consider and plan the learning carefully to increase learning opportunities for students and improving the quality of learning. It is because the teacher acts as a learning manager, acts as a facilitator who tries to create effective teaching and learning conditions, develops good learning materials, and improves students' ability to listen to lessons and master learning objectives for improving the quality of education (Erwinsyah, 2017). The results of Faradilla's research (2018) found that the lesson plans of elementary school teachers is not well-planned, only a few number of teachers are able to plan and make their own Lesson Plans. Likewise, the implementation of learning carried out by teachers encountered problems in the supporting factors, particularly those related to fund, time, and facilities (Faradilla et al., 2018).

According to research findings by Nora (2017), the problems of teachers in managing learning are: (a) Teacher's lesson plan has not been properly programmed, there are some teachers who have not been able to prepare mapping properly, prepare theme networks, and prepare syllabus as a tool that must be prepared before compiling a lesson plan; (b) Implementation of the learning is based on the Unit Level Curriculum. The

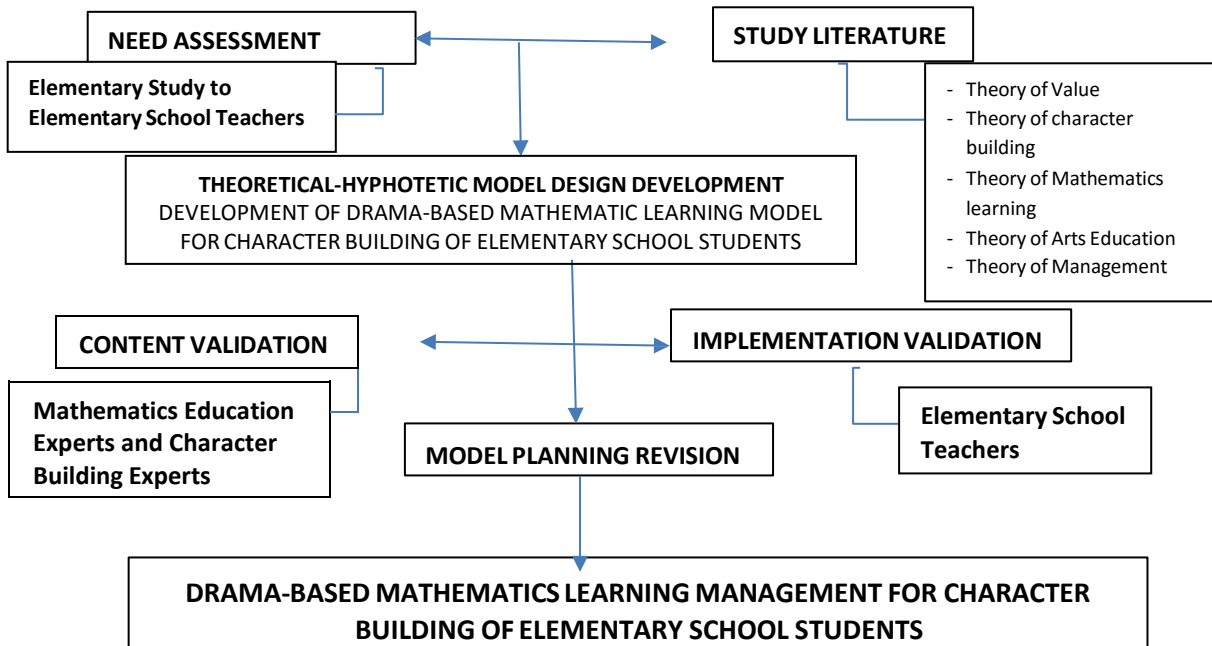
implementation is not optimal. Teachers have insufficient knowledge about the procedure for implementing the learning effectively, and there are some teachers for early elementary students who use subjects clearly and do not use themes; (c) The learning evaluation refers to by prepared lesson plan. Evaluation is carried out to improve teacher learning activities in oral and written evaluation; and (d) The supporting factor is the supervision activities carried out by the principal to improve and foster the ability of teachers in implementing learning management. The constraints in planning for teacher training are due to the availability of time, facilities, and personnel. Lack of training for teachers has resulted in the inactivity of some teachers in cluster activities, seminars, and activities to improve the teaching profession (Feri et al., 2017).

In each learning process, it should be: (a) Learning management planning is carried out by teachers by preparing a number of students' needs by taking into account the development of science, technology, and art as a whole and continuously; (b) The implementation of learning management is carried out by formulating the objectives of subjects to be taught, establishing competency standards, formulating basic competencies, determining teaching materials in the form of subject and sub-topics, teaching and learning strategies, learning media, learning activities, evaluation technique, time allocation, and Learning Resources; and (c) Assessment of learning management is carried out through evaluation of the mastery of learning material at the beginning of each meeting which aims to determine students' understanding and insight to the material that is being and has been delivered, then adjusted to the learning needs (Mutia et al., 2016).

### 3. Methodology

This research uses theoretical-hypothetical model method, which is aimed at obtaining findings of mathematics-based learning management education for character formation of elementary school students. The development of this learning model refers to the concept of theories about values, character formation, mathematical learning, management, and art education. In order to achieve the intended purpose, the stages of the study are conducted through systematic procedures and meet scientific feasibility.

Respondents in this study were the primary school teachers who served in the Subang regency, West Java province, Indonesia. The research procedure was performed through the stages of: (1) preliminary study: needs assessment; (2) literature study; (3) preparation of theoretical-hypothetical model design; (4) content validation and implementation validation; and (5) preparation of learning model. For more details, illustrated as in the figure 1. In implementation validation, 30 elementary school students were participated.



**Figure 1.** Study Procedure of Drama-Based Mathematics Learning Management for Character Building of Primary School Students

#### 4. Results and Discussion

##### 4.1 Mathematics Learning Process for Character Building

There is a tendency that people without character will face various problems in living their lives, both those related to their personal life and their social life (Astuti D S I; Purbani W, 2012). In the process of learning mathematics for the character building of students, especially in primary schools should consider the following important aspects:

- (a) internalize the character values in accordance with students' needs and the needs in the community; and
- (b) integrate mathematical topics on issues related to the life of the community around the school, family and community environments.

So in learning process to build character, process is highly prioritized. Math teachers do not think that they have achieved the learning objectives when the students have memorized the triangle formula is  $\frac{1}{2}$  Base x Height, but how the process toward the formula is memorized impacts on the building of characters, such as meticulous, diligent or curiosity character. Thus, to develop the competencies of both aspects of the competence, effective management and which is going toward learning objectives is required.

##### 4.2 Mathematics Learning using Drama Media

Considering children are at the age to play, then any approach should be in fun game. Through drama, the children are trained to practice together, interpreting the roles played, including its characterization, and train all parts of their bodies as a presenting medium in the drama. Interpreting habits will impact, for example, on empathy habituation, especially on the emotional aspects of the characters played.

The subject of drama is highly potential in building children's character. Through the process of learning on these subjects, it is believed children are not just receiving knowledge, but also will do exercises sense sharpening repeatedly through performances.

Eventually they will have a "permanent" habit, which is nothing but an accumulation of values in character education. Drama is a miniature of life. By studying drama, they indirectly study the life of the artist who is the sub-structure of the social life of their society. The things that appear in a drama, is a reflection of the life behind it. Drama is not only a show, but there is also a mission and vision behind the show, namely a set of values. Values, promoted through drama performances, are models of life performances as reflections of real life and do not rule out the possibility of being the next model of life.

#### 4.3 Management of Drama-Based Mathematics Learning

Basically, management of drama-based mathematics learning for the character building of students in elementary school is learning by using drama script as the main media. The manuscript may be composed by the teacher or in collaboration with the drama-script-making expert. However, it is unlike the drama script in general, because the theme of the script should contain some aspects relevant to the learning objectives. When playing drama using the script, the psychological condition of the students feels they are fun playing. When children are exercising dramas, they are unaware that they are actually in the process of understanding the concepts of mathematics as well as internalizing the values of the characters. In addition, the drama theme tells the story of everyday life events that are often experienced or seen by children of the school age. Below is an example of a simple drama script.

<p><b>Play script</b></p> <p style="text-align: center;">Title: <b>DO NOT DO DISHONEST</b></p> <p>The cast:</p> <ol style="list-style-type: none"><li>1. Mother</li><li>2. Dani as the first child</li><li>3. Rani as the second child</li><li>4. Ravli as the third child</li><li>5. Indah as the fourth child</li></ol> <p><i>In a front room in a house were gathered 5 people consisting of a mother and four children, named Dani, Rani, Ravli, and Indah.</i></p> <p>Mother: Kids... Mom has cake, you all go to the dining room and eat it for breakfast. And you Dani as the biggest brother must divide the cake into the same sizes.</p> <p>Dani: Okay, mom... I will divide the cake into the same sizes.</p> <p><i>Then all the kids went to the dining room. In the dining room Dani cut the pie into four pieces, distributed to his siblings and all the kids eat it. After eating, all the children were back to see his mother.</i></p> <p>Mother: Dani... did you share the cake into the same size?</p> <p>Dani: That's right. I had already, mom...</p>
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*Suddenly Dani held his stomach, and repeatedly went to the bathroom and his stomach hurt.*

Mom: Dani, I want to ask you again ... is it true that you shared the cake  
    Into the same sizes?

Dani: Sorry, Mom. I was lying. I actually cut it not into the same sizes ... but Dani got biggest slice.  
(crying)

Mother: That's the consequence if you are not honest... Next time when I  
ask you, you must be honest so your stomach won't hurt.

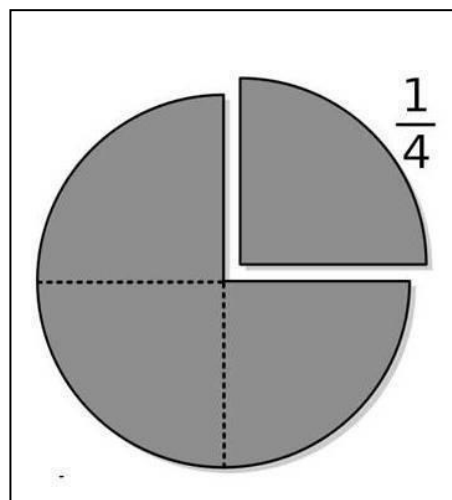
END

**Figure 2.** An example of a simple drama script

The learning process, when the students play the drama, is to achieve learning objectives with the following targets:

- (a) By playing drama, learning is fun;
- (b) Students are given attitude learning, i.e. sense sharpening
- (c) The concept of a topic of math is in relation to the events of everyday life;
- (d) Students are given the knowledge that 'dishonest is a bad deed that can harm yourself and others; and
- (e) Students are given knowledge about the concept of a mathematical topic that is a fractional number.

Regarding the concept of fractional numbers, students come to understand that the definition of the number  $\frac{1}{4}$  is "one of four parts". For more details, it is illustrated in the picture below.



**Figure 3.** Illustrated the definition of the number  $\frac{1}{4}$  is "one of four parts"

Management of drama-based mathematics learning for character building of students in elementary school involves stages of planning, implementation, and assessment. All three stages are a system. Learning objectives will not be achieved if one stage is not performed.

#### 4.3.1 Planning Stage

Teachers formulate the competence of students' character to be developed; develop indicators of competence achievement; select a mathematical topic relevant to the

competence to be developed; preparing assessment instruments; and preparing dramascript to be given to each group of students. In one class, for example, with the total of 40students, it is divided into 8 groups of 5 students.

#### 4.3.2 Implementation Stage

At the beginning of the learning process, the teacher assigned students play drama activities in their group. Each group is given a drama script with a different theme. In the process of implementation of this learning there are the following stages:

- (a) Students discuss to play roles and study the contents of the text.
- (b) Students start acting in a role appropriate to the content of the manuscript. At this stage they try to act according to the character actors in the script. For example, showingthe expression of a sense of regretexperienced by a child who has behaved dishonestly to his/her mother.
- (c) While students are busy playing drama, teachers observe and record the behavior ofthe students individually or in groups, mainly focused on the attitude and behavior in accordance with the indicators of competence character values developed and formulated in learning goals.
- (d) Students are given exercises of math problems with topics relevant to the character values developed in accordance with the learning objectives. For example, to develop anhonest character and student tolerance, the relevant topic is 'Fractional Numbers'.

#### 4.3.3 Assessment Stage

To assess the development of student character, we use observationtechnique. Assessment is performed duringthe learning process, when the students do drama activities and solve mathematics problems.

The following is an example of the results of teacher assessment to one student during Mathematics learning process takes place. The purpose of this assessment is to recognizethe development of character of discipline. The Score is determined as follows.

Score 1 - 5	: Not yet Appeared (BM)
Score 6 - 10	: Starts to Appear (MM)
Scores 11 - 20	: Start to be Consistent (MK)
Score 21 - 25	: Already Consistent (SK)

Dani Setiawan is a sample that involves in this study. The details of the sample asfollow.

Name of Learners	: <i>Dani Setiawan</i>
Attitude Competence	: Character of Discipline
Mathematics Topics	: <i>Operation on Fractional Numbers</i>
Date and time	: <i>Thursday, January 1, 2018</i>

**Table 2.** Sample form of assessment of development of students' character (Dani Setiawan)

NO	INDICATOR	SCORE SCALE					TOT
		1	2	3	4	5	
1	Performing activities according to instructions from teachers and group leader			V			3
2	Obeying all rules made based on the agreement of the group members		V				2
3	Dressing up neatly according to school rules		V				2
4	Working on the task according to the teacher's instructions					V	5



Paying close attention to something explained by the teacher		
5	V	3
TOTAL SCORES		15

Conclusion of Assessment: Discipline character development of student named Dani is atStart to be Consistent (MK) range.

At the evaluation stage in this study, all 30 participants scored more than 11 which is startto be consistent range. A small number of them get a score of 21 and above which is already consistent and has a very good level of disciplinary character development.

## 5. Conclusion

Characteristics of mathematics is abstract, but the process of its understanding must be conveyed through concrete media. This is well understood as the cognitive development of students, especially in primary schools, is still at a concrete stage. In addition, the psychological development of elementary school students is at the thrust of wanting to play and do fun activities. Mathematics learning for character building of students in elementary school can be implemented using thematic education management based on drama education. The learning process involves the stages of planning, implementation, and assessment. At the planning stage, teachers prepare script with themes of events of daily life related to the mathematical topic and the competence of character values to be developed. At implementation stage, students play a role in accordance with the theme ofthe play. As for the assessment stage, the teacher assesses during the learning process or when students do activities. The results of the drama-based thematic learning management model in mathematics learning showed that students were at leaststart to beconsistent, rather than starts to appear or not yet appeared in character building.

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