# THE EFFECTIVENESS OF DEVELOPING LOCAL CULTURE-BASED FLIPBOOK TEACHING MATERIALS TO INCREASE STUDENTS' LEARNING MOTIVATION

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**Abstract**

This study aims to determine the effectiveness of mathematics teaching materials in the form of flipbooks based on local culture in Percut Sei Tuan District on quadrilateral and triangle material in class VII of Pusaka Junior High School in B. Klippa village to increase students' learning motivation. This type of research is development research that refers to the Hannafin and Peck development model which consists of 3 stages, namely: the needs assessment stage, the design stage, and the development/implementation stage. After the teaching materials are declared valid, they are used in the implementation stage. Based on the measurement of learning motivation before and after using flipbook teaching materials, it can be concluded that the development of flipbook teaching materials can increase student learning motivation with an increase of 8,28% from 78.67% to 86.95%. Based on criteria for the effectiveness of teaching materials, teaching materials effective in increasing students'learning motivation because 80% of the students gave positive responses to teaching materials.

**Keywords**: teaching materials, flipbook, culture-based mathematics, hannafin and peck, learning motivation

**Abstrak**

Penelitian ini bertujuan untuk mengetahui keefektivan bahan ajar matematika berbentuk *flipbook* berbasis budaya lokal di Kecamatan Percut Sei Tuan pada materi segiempat dan segitiga di kelas VII SMP Pusaka desa B. Klippa untuk mengingkatkan motivasi belajar peserta didik. Jenis penelitian ini adalah penelitian pengembangan yang mengacu pada model pengembangan Hannafin dan Peck yang terdiri dari 3 tahap, yaitu: tahap analisis kebutuhan *(needs assesment),* tahap desain *(design)*, dan tahap pengembangan/implementasi *(developmen/implementation)*. Setelah bahan ajar dinyatakan valid, bahan ajar digunakan pada tahap implementasi. Berdasarkan pengukuran motivasi belajar sebelum dan sesudah menggunakan bahan ajar *flipbook* dapat disimpulkan bahwa pengembangan bahan ajar *flipbook* dapat meningkatkan motivasi belajar peserta didik dengan peningkatan 8,28% dari 78,67% menjadi 86,95%. Berdasarkan kriteria keefektifan bahan ajar, bahan ajar efektif dalam meningkatkan motivasi belajar peserta didik karena 80% peserta didik memberikan respon positif terhadap bahan ajar.

**Kata kunci:** bahan ajar; flipbook; matematika berbasis budaya; hannafin dan peck; motivasi belajar

## INTRODUCTION

Education is the main need for humans to develop their potential. Basically education consists of 3 pathways, namely formal education, non-formal education and informal education. In increasing the potential of every human being, humans can do this through formal education. Formal education consists of 3 pathways, namely basic education, secondary education and higher education which are structured and tiered. In general, schools are formal institutions that function as places of learning, one of which is at the Junior High School (SMP) level. In general, education implemented at the junior high school level

aims to increase the competency of each student in the learning process (Fajarsari et al., 2022). Education is rooted in national culture, where the educational process is a process of developing the potential of students so that they are able to become heirs and developers of national culture. Through education, various cultural values and advantages of the past are introduced, studied, and developed into a culture, society, and nation that is appropriate to the era in which students live and develop themselves (Zega, 2022).

Learning mathematics is considered difficult for adults and children. Especially for elementary school level children. Children feel that learning mathematics is confusing because it is full of formulas and numbers (Fatqurhohman, 2016). So that children are not confused when learning mathematics, teachers are needed who have creativity in teaching mathematics learning. Teachers must utilize their talents in planning activities that encourage creativity, produce learning experiences, and increase student resources (Setiawan, 2020). With this activity, students will enjoy learning mathematics and will make students remember what they have learned.

So far, students have faced problems in participating in learning because the teaching materials used from textbooks only contain material, example questions and questions that are still monotonous and do not suit the needs of students, meaning they do not contain learning activities that involve students. directly in discovering and applying mathematical concepts (Mardiah et al., 2018). Apart from that, there are also a lack of examples of real applications of mathematics in everyday life, one of which is that it has not been linked to existing and developing culture in society. This causes students to be less motivated in studying mathematics

According to Nuryasana & Desiningrum (2020), teaching materials are materials or subject matter that are arranged systematically, which are used in the learning process by teachers and students. Teaching materials have many functions, including being able to be used to increase knowledge and experience), cognitive learning outcomes and improve the quality and effectiveness of students' learning (Pratiwi et al., 2014). It is very important for educators to develop teaching materials so that the learning process is more effective, efficient and does not deviate from the competencies to be achieved (Amaliah et al., 2016).

Thus, the researcher wants to know the effectiveness of the teaching materials that the author has designed in increasing students' learning motivation in class VII on quadrilaterals and triangles.

**METHODS**

The method used in this research is the Research & Development (R&D) method, where this research method produces a product in a certain field of expertise, which has by-products and there are practical elements to the product being developed (Budiyono, 2017).

This research will be carried out in the Pusaka Middle School class located at Jalan Pusaka Dusun XVIII, B. Klippa Village, Percut Sei Tuan District, Deli Serdang Regency. This research will be carried out in February-March 2024, Odd Semester TP 2021/2022. The population in this study were all students in class VII of SMP Pusaka Bandar Klippa TP 2023/2024, while the sample in this study was students in class VII-1.

In carrying out this research, there were several stages that the researcher carried out in developing the product that would be used later.

The stages are as follows.

1. At the needs assessment stage, a needs analysis is carried out in developing learning products. The main thing in this stage is the formation of initial ideas about learning products so that they suit the circumstances and characteristics of the target.

2. The next stage is the design stage. The important thing that must be done in this step is to determine the strategy for delivering digital messages. The activities at the design stage are: a) selecting material (theme), b) designing the type of digital content to be developed, and c) creating a digital content script by adopting information processing theory.

3. In the development and implementation stage, activities are carried out to translate the design into physical form so that this activity produces a development product prototype in the form of digital content. Everything that has been done at the design stage, namely selecting materials, selecting learning strategies, and designing teaching materials is realized in the form of a prototype in the form of digital content. The results of the development in the form of digital

content will then proceed to the implementation stage, which is validated by experts and tested on targets (students). Validation and testing aim to obtain input to correct deficiencies that still exist in teaching materials. After the teaching materials are declared valid, field trials are then carried out to determine the effectiveness of the teaching materials in increasing students' learning motivation. The design of this research can be seen in Table 1.

**Table 1. Research Design**

| Class | Initial Motivation Questionnaire | Treatment | Final Motivation Questionnaire |
|-------|----------------------------------|-----------|--------------------------------|
| VII-1 | T1 | Flipbook teaching materials | T2 |

Information :

X-MIA 1: Class treated with flipbook teaching materials.

T1: Giving a motivation questionnaire before using flipbook teaching materials.

T2: GivingMotivational questionnaire after using flipbook teaching materials.

The population in this study were all class VII students at Pusaka Middle School for the 2023/2024 academic year, consisting of 3 classes with a total of 90 students. The sample in this study was selected using simple random sampling which was determined based on a lottery and the sample in this study consisted of 1 class, namely students in class VII-1 with a total of 32 students.

The data collection technique used in this research is a questionnaire, this test technique is used to determine the level of student motivation.Filling out the initial learning motivation questionnaire is carried out on Saturday 3 February 2024 at the 3rd lesson hour before learning begins. Then students learn using flipbook teaching materials. Then the final Mathematics learning motivation questionnaire was completed after two meetings using flipbook teaching materials. Filling out the questionnaire was carried out on Saturday 17 February 2024, 5th Class Hour.

Teaching materials are said to be effective in increasing students' learning motivation if 80% of students give a positive response to the teaching materials. The data obtained from this checklist was then analyzed using a Likert scale. Quantitative data on Mathematics learning motivation questionnaire scores were analyzed with reference to the value conversion table in the following table.

**Table 2. Likert Scale Assessment Criteria for Learning Motivation Questionnaire**

| Answer Choices | Question Score | |
|---|---|---|
| | **Positive** | **Negative** |
| Strongly Agree/Always | 4 | 1 |
| Agree/ Often | 3 | 2 |
| Disagree/Sometimes | 2 | 3 |
| Strongly Disagree/Never | 1 | 4 |

The data is then calculated as the percentage of item scores for each response to each questionnaire question using the following formula.

P =$\frac{\sum x}{\sum x1}$ $x$ $100$

Information :

P       : Percentage of motivation score

∑x      : Total number of answer scores (real value)

∑x1 : Total maximum score (expected value)

Then calculate the average percentage of motivation score using the following formula.

$$\bar{x} = \frac{\sum P}{n}$$

Information :

$\bar{x}$               : Average percentage of motivation scores

$\sum P$    : Total motivation score

$n$       : Number of students

Next, decision making at the level of learning motivation uses the following table scale qualification guidelines.

Table 3. Qualification Level of Learning Motivation Based on Percentage

| Achievement Level | Criteria |
|---|---|
| 80 100%< $\bar{x} \leq$ | Very good |
| 65 80%< $\bar{x} \leq$ | Good |
| 55 65%< $\bar{x} \leq$ | Pretty good |
| 40 55%< $\bar{x} \leq$ | Not good |
| $\bar{x} \leq$40% | Very Not Good |

(Arikunto, 2012)


**RESULTS AND DISCUSSION**

Increased learning motivation can be seen from the results of measuring initial learning motivation before using flipbook teaching materials and final learning motivation after using flipbook teaching materials using a Likert scale. Researchers determine the achievement of

product development goals by measuring learning motivation. The achievement of product development objectives can be determined by using a questionnaire before using flipbook teaching materials compared to a questionnaire after using flipbook teaching materials so that the score for increasing learning motivation can be determined.

The results of the learning motivation score before and after using flipbook teaching materials can be determined through the following calculation: Learning motivation score before and after using flipbook teaching materials:

**Table 4.Total Learning Motivation Score**

| No. | Before | After |
|-----|--------|-------|
| 1 | 83,75 | 86,25 |
| 2 | 90,00 | 86,25 |
| 3 | 81,25 | 88,75 |
| 4 | 81,25 | 87,50 |
| 5 | 82,50 | 90,00 |
| 6 | 76,25 | 86,25 |
| 7 | 85,00 | 86,25 |
| 8 | 96,25 | 88,75 |
| 9 | 80,00 | 81,25 |
| 10 | 77,50 | 86,25 |
| 11 | 81,25 | 82,50 |
| 12 | 80,00 | 85,00 |
| 13 | 75,00 | 92,50 |
| 14 | 72,50 | 92,50 |
| 15 | 73,75 | 81,25 |
| 16 | 86,25 | 88,75 |
| 17 | 86,25 | 87,50 |
| 18 | 78,75 | 91,25 |
| 19 | 80,00 | 88,75 |
| 20 | 83,75 | 85,00 |
| 21 | 78,75 | 90,00 |
| 22 | 81,25 | 85,00 |
| 23 | 75,00 | 86,25 |
| 24 | 73,75 | 87,50 |
| 25 | 73,75 | 87,50 |
| 26 | 76,25 | 85,00 |
| 27 | 65,00 | 87,50 |
| 28 | 71,25 | 86,25 |
| 29 | 72,50 | 85,00 |
| 30 | 73,75 | 87,50 |
| 31 | 73,75 | 87,50 |
| 32 | 71,25 | 85,00 |
| **Total** | 2517,50 | 2782,50 |
| **Mean** | 78,67 | 86,95 |

Based on measuring learning motivation before and after using flipbook teaching materials, it can be concluded that the development of flipbook teaching materials can increase students' learning motivation with an increase of 8.28% from 78,67% to 86.95%.

Based on criteria for the effectiveness of teaching materials, teaching materials effective in increasing students'learning motivation because 86.95% of the students gave positive responses to teaching materials.

## CONCLUSION

Based on measuring learning motivation before and after using flipbook teaching materials, it was found that there was an increase in students' learning motivation questionnaire scores. And 86.95% of the students gave positive responses to teaching materials. So it can be concluded that the local culture-based flipbook teaching materials developed effective increase students' learning motivation.

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