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**Submission date:** 29-Aug-2023 03:09PM (UTC+0700)

**Submission ID:** 2153340362

**File name:** Artikel\_Penelitian\_rev\_nw\_2\_bing\_non\_dapus.docx (411.73K)

**Word count:** 3490

**Character count:** 18448

## Calistung-Based SMART BOOK Media to Increase Student Interest in Learning Mathematics

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### ARTICLE INFORMATION

#### Keywords:

Learning Media;  
Calistung;  
Learning Interest

#### Article history:

Received 14-08-2021  
Revision 12-11-2021  
Received 17-01-2022

### ABSTRAK

The learning interest of Hulu Langat Guidance Studio students is still relatively low based on observations made. This study aims to increase students' interest in learning through SMART BOOK media. This research uses the type of classroom action research by carrying out stages, namely the planning stage, the implementation stage, the observation stage, and finally the reflection stage. This research was conducted at the Hulu Langat Malaysia Guidance Studio with a sample size of 10 students who became the research sample. Data collection instruments using observation and questionnaires. The research was carried out 2 cycles with the use of SMART BOOK media, seen from the results of the questionnaire after the use of SMART BOOK media, all students were included in the "Very Interested" category. Based on the research conducted, SMART BOOK media can increase students' interest in learning.

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## 1. INTRODUCTION

Improving community welfare through education is one of the government's solutions. Education is a pillar in overcoming the future, because it is prioritized for youth who play a role in building the future. Community efforts in facing future educational challenges are through the development of abilities and personalities both inside and outside the school (Utami, 2020).

School is a place to develop expertise, both knowledge and skills. Knowledge is found through the learning system, one of the learning that must be followed in schools in general is mathematics. Mathematics is an abstract science, so it is often considered that mathematics is a difficult, scary, and boring learning (Nisa et al., 2021).

Realizing the importance of learning mathematics, (Ikhsan, 2019) said that learning mathematics cannot be separated from various daily activities. (Rachmantika & Wardono, 2019) Mathematics is a

science that guides students in thinking logically, critically, initiatively, creatively, and diligently which is expected to build the characteristics of students who learn mathematics.

The success of students in learning mathematics has many factors, both internal factors and external factors. The *internal* itself is in the form of attitudes, talents, interests, intelligence, and self-motivation while *external* can be from the outside environment such as teachers, family, and peers. External factors such as teachers have a role in managing teaching and learning activities, to explore the learning potential of students in achieving learning success. (Raharjo et al., 2021)

Interest is attraction without cause (Khairial et al., 2022). Based on the understanding of interest that has been quoted, the interest in learning in the world of education is a situation where students have an interest in learning. Interest in learning has a relationship with the success of student learning because interest in learning has indicators that can support the success of student learning, thus causing encouragement or desire for teaching and learning activities (Yolanda & Meilana, 2021; Khairial et al., 2022). There is a relationship between interest in learning and the achievement of teaching and learning activities, teachers have a role in maintain the interest in learning students (Lazarides et al., 2019). The role of teachers in maintaining students' interest in learning through innovative and varied learning activities, adequate learning facilities, and the use of learning media (Sobron et al., 2021). The use of learning media can overcome the low interest in learning students who are influenced by the many types of *games* and TV shows that divert students from books (Charli et al., 2019). Sukiman (Farihah, 2021) Tools used to convey information or messages to others with the aim of arousing thoughts, feelings, and interest in learning so as to achieve learning objectives are learning media. Through the media, the delivery of information or messages can be conveyed easily and precisely (Siregar et al., 2023). The characteristics of learning media are practical, critical, effective, and varied (Dwijayani, 2019).

Learning baca, tulis, hitung (CALISTUNG) is part of learning mathematics which is one of the beginnings of the basic learning process (Kurniawati, 2021). The selection of learning media for basic education needs to be considered by the character and development of the times. Selection of calistung-based learning media (to increase interest in learning, it is necessary to meet the indicators of interest in learning. Indicators of interest in learning are interest, pleasure, attention, and involvement (Yunitasari & Hanifah, 2020). Fulfillment of learning interest indicators can increase students' interest in learning.

Malaysia is a country that has quite a lot of Indonesian migrant workers (Fikri, 2022). The large number of migrant workers resulted in the birth of more than 50,000 Indonesian children which then became a new problem in relations between Indonesia and Malaysia (Wulandari et al., 2022). The problem is in the form of children's limited actions by Indonesian migrant workers (PMI) To obtain education, this is one of the problems in the world of Indonesian education in Malaysia (Udhwalalita & Hakim, 2023). Limited access to education for migrant workers is a problem of children's interest in learning being low or even losing the desire to study further. With this problem, researchers design interesting and fun learning media (Yeh et al., 2019) based on CALISTUNG.

Nina Karlina Noviana et al., (2023) in his research explained that there was an increase in literacy and literacy (CALISTUNG) through *the Busy Book media*. Fadilah et al., (2022) Suggest that the use of media *powtoon* can increase the interest in learning students in thematic learning grade V SDN Karang Tengah 11 Tangerang City. Next Ardiansyah, (2020) states the use of the learning media *Google Forms* can increase the interest and learning outcomes of mathematics students grade X MM in Mathematics subjects. Based on the findings of previous research, it can be seen that learning media can increase students' interest in learning. In this study, learning media was used in the form of SMART BOOK, a companion book containing "Tracing the dots" and calculation operations with objects made differently by researchers. This SMART BOOK media is different from previous learning media, where it contains animations of Indonesian culture, with the aim that children do not forget Indonesian culture.

## 2. METHODS

This study is a classroom action research. The method of classroom action is carried out directly in the field or classroom as an option to improve the quality of learning activities. The purpose of this research is to increase students' interest in learning through SMART BOOK media. This research was conducted on grade 1 students of SB Hulu Langat, located in Selangor, Malaysia in February 2023. The classroom action research procedure goes through stages, namely, the planning stage to plan learning activities using SMART BOOK media to be carried out in class, the implementation stage is the stage of carrying out activities using the planned SMART BOOK media, the observation stage to see the results of implementation using SMART BOOK media after learning takes place, and the reflection stage is to see the feedback response from the use of SMART media BOOK. The following is a scheme of classroom action research design according to Stephen Kemmis and Robyn McTaggart :

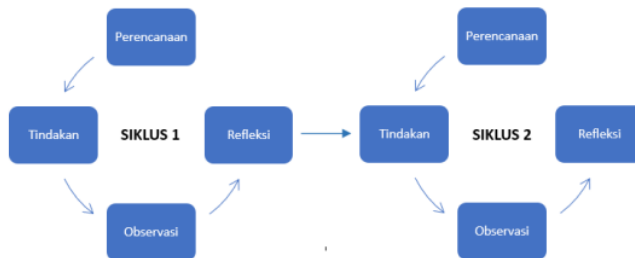


Figure 1. Scheme of Classroom Action Research Design by Stephen Kemmis and Robyn McTaggart

The instrument used in data collection is a questionnaire of students' learning interests. Data collection techniques in this study used observation, questionnaires, and documentation while in the field. Observation is carried out to see, and observe directly when learning takes place during media use (Mashuri et al., 2019). Questionnaires are used to get responses related to the results of media use (Fahmi & SS, 2019). The questionnaire refers to indicators of student interest in learning adapted from (Yunitasari & Hanifah, 2020). Data analysis techniques in this study use quantitative descriptive analysis. The function of quantitative descriptive analysis is to determine the usefulness of media (Kehnia & Darwis, 2021) "SMART BOOK" on the interest of learning participants in SB Hulu Langat.

The implementation of the research was carried out face-to-face with meetings four times, twice in cycle 1 and twice in cycle 2. The time used for each meeting is 30 minutes. In this study, SMART BOOK media was used containing *Tracing*, and addition and subtraction calculation operations with colorful visuals.



Figure 2. SMART BOOK Media Used in Cycle 1 and Cycle 2, (a) tracing the dots design, (b) object matching design, (c) addition operation design, and (d) subtraction operation design

The questionnaire contains 20 questions related to the mathematics learning process. The category of learning interest can be seen from the determination of data classification in the results of the questionnaire into 4 groups. The questionnaire category uses the Likert scale to measure responses in

the form of attitudes and opinions of an individual (Taluke et al., 2019) with the level of interest, namely Very Interest (SM), Interest (M), Lack of Interest (KM), Not Interest (TM). Interest categories can be obtained from the following formula:

$$\text{Interval Scale} = \frac{\text{Maximum value} - \text{Minimum Value}}{4}$$

Hereby obtained,

$$\text{Interval Scale} = \frac{80 - 20}{4} = \frac{60}{4} = 15$$

Based on this formula, the classification of learning interests is presented through **Table 1**.

**Table 1.** Classification of Student Learning Interests

Classification	Interval (M)
Very Interested	$65 \leq M \leq 80$
Interest	$50 \leq M \leq 64$
Lack of Interest	$35 \leq M \leq 49$
Lack of Interest	$20 \leq M \leq 34$

The classification of student learning interest will be processed into a frequency distribution of student learning interest after going through the classroom action research (PTK) process, the results of the frequency distribution will show indicators of student interest success. The success indicator of this success is that all learners have an interest in the "Very Interest" category or score  $M \geq 65$

### 3. FINDINGS AND DISCUSSION

#### 3.1 Findings

The increase in the percentage of student interest in learning is seen through the results of pre-cycle, cycle 1, and cycle 2 presentations. The quantitatively analyzed data are shown in **Table 2**.

**Table 2.** Increased Learning Interest of Pre-Cycle to Cycle 1 Students

Subject	Pra - Cycle		Cycle 1	
	Score	%	Score	%
1.	36	45%	54	67,5%
2.	22	27,5%	49	61,25%
3.	30	37,5%	50	62,5%
4.	31	38,75%	53	66,25%
5.	26	32,5%	52	65%
6.	34	42,5%	52	65%
7.	31	38,75%	52	65%
8.	23	28,75%	48	60%
9.	24	30%	52	65%
10.	31	38,75%	52	65%
Average	28,8	36%	51,4	64,25%

Based on observations of the situation there, researchers found that grade 1 students at SB Hulu Langat mostly have low interest. This low interest is caused by the lack of use of media, so learning still uses monotonous methods, resulting in children getting bored easily. In the pre-cycle student interest in learning is still low, with an average score of 28,8.

The first meeting in cycle 1 was carried out in mathematics learning with SMART BOOK media. There are still many students who feel unfamiliar with learning media, especially SMART BOOK

media. In the second meeting in cycle 1 students began to feel enthusiastic about the use of media. This enthusiasm is seen through the enthusiasm of students when learning using SMART BOOK media. At the end of each cycle meeting, researchers provide questionnaires to see follow-up student interest after using SMART BOOK media. Based on Table. 2 . In cycle 1 students still do not meet the success indicators, it is necessary to make improvements in cycle 2.

**Table 3.** Increased Interest in Learning Students Cycle 1 to Cycle 2

Subjek	Siklus 1		Siklus 2	
	Skor	%	Skor	%
1.	54	67,5%	69	86,25%
2.	49	61,25%	65	81,5%
3.	50	62,5%	67	83,75%
4.	53	66,25%	68	85%
5.	52	65%	67	83,75%
6.	52	65%	66	82,5%
7.	52	65%	67	83,75%
8.	48	60%	66	82,5%
9.	52	65%	67	83,75%
10.	52	65%	67	83,75%
Average	51,4	64,25%	66,9	83,625%

In the first meeting in the second cycle, the enthusiasm of students continued with the interest and pleasure of students when researchers showed the SMART BOOK media. In this last meeting, which was the second meeting in cycle 2, was enthusiastic about the involvement of students in using SMART BOOK media, this last meeting researchers gave a questionnaire to see an increase in interest in learning. Due to the low interest in learning at the beginning of learning, researchers used SMART BOOK media within four meetings, the results of using SMART BOOK media showed an increase in student interest in learning in cycle 1 and cycle 2. To Table.3 . Referring to cycle 1, students who have not reached the research success indicator experience an increase in score in cycle 2, and the overall student score, where the learning interest classification has been categorized as "Very Interest", so there is no need to continue to cycle 3  $M \geq 65$

### 3.2 Discussion

Media development with a basic calistung base for children aged 6-7 years is an activity to read, write, and count to start learning. Given that in mathematics learning, calistung is a basic science, calistung learning needs to be packaged well, innovative, and fun so that learning in children can increase. The Development of SMART BOOK media is due to the problems that exist in Hulu Langat. Researchers choose to use the dots tracing method for the beginning of the book, it is hoped that students will be able to recognize numbers by turning points of a certain number pattern. Tracing the dots is a method of fine motor activities carried out for children to train, try, and prove their smooth motor skills (Nurkholisoh et al., 2021). Next, the researchers interspersed with a game of pulling the line of attachment of a certain number of objects. After students have been able to recognize numbers, students begin to be given counting operations, in addition operations, researchers use objects in addition, then in subtraction operations, researchers use how to cross out objects to find out the answers asked. SMART BOOK media is presented in hard file form with A5 size. The material used is Artpaper260 paper. The selection of materials to be used by researchers chose to coat Artpaper260 paper with laminate. The use of laminate where coating paper with special paper to make it more durable (Kautsar et al., 2022). The use of lamination here so that the SMART BOOK media can be used repeatedly and

can be crossed out with a marker and then erased again. The selection of cover designs and images is tailored to the preferences of children aged 6-7 years.

The results of research in Cycle 1, the use of SMART BOOK media increases students' interest in learning during learning activities supported by questionnaire results and documentation. Based on the findings in Cycle 1, students still feel unfamiliar with the media. However, at each learning meeting lasting 30 minutes, researchers provide stimulus or stimulation in the form of the use of SMART BOOK learning media related to basic calistung. During the learning activities, students began to use SMART BOOK media. The first cycle produces an average increase of pre-cycle.22,6 These results are seen through questionnaire scores consisting of indicators of student interest in learning according to Slamet (Dewi & Rohmalina, 2023) that is, the interest, feelings of pleasure, attention, and involvement of learners. In cycle 1 the sequence of success indicators of interest in learning is interest, pleasure, involvement, and attention. Learners' interest in learning is a situation in which an individual has a willingness to learn (Nurhana & Winata, 2019), This interest is the beginning of students having the desire to learn further.

The results of research in Cycle 2, the use of SMART BOOK media increases students' interest in learning during learning activities supported by questionnaire results and documentation. Based on the findings in Cycle 2, researchers have seen an increase in student enthusiasm for learning using SMART BOOK media. During learning, students can participate in using SMART BOOK media. Researchers first explain numbers through objects, as in SMART BOOK media, researchers use images of one apple object. The stimulus results in students when tracing immediately write numbers without returning first, because they have recognized that one apple means one. Not only writing, researchers in the chapter on counting operations provide a stimulus for addition with objects, making it easier for students to calculate on calculation operations, in addition to addition, researchers also provide a stimulus to cross out objects on subtraction problems. 30 minutes for them is now only short because their enthusiasm for learning makes the learning activity process feel very short. In cycle 2, it was found that the SMART BOOK media had met the indicators of student interest in learning, felt happy when learning was carried out, participated in the use of SMART BOOK media, student interest when learning, and students who paid attention to learning using SMART BOOK media. The fulfillment of indicators on the SMART BOOK media plus visualization and interesting colors on the calistung questions increase the interest in learning students. The average increase in score from cycle 1 to cycle 2 was 15,5, while the average increase in score from pre-cycle to cycle 2 was 38,1

Tabel 4. Frequency Distribution of Student Learning Interest

Classification	Interval (M)	Frequency	Presented
Very Interested	$65 \leq M \leq 80$	10	100 %
Interest	$50 \leq M \leq 64$	0	0 %
Lack of Interest	$35 \leq M \leq 49$	0	0 %
No Interest	$20 \leq M \leq 34$	0	0 %
<b>Total</b>		10	100 %

The increase in interest in learning in each cycle shows that learning media can increase the desire of students to learn calistung using SMART BOOK media. The increasing desire or interest in learning students through the SMART BOOK media that researchers use can help students in learning basic mathematics, namely calistung (read, write, count). This result can be seen from the questionnaire answer scores that have been filled in by students. According to the frequency distribution of students' learning interests using SMART BOOK media, a total of 10 students whose interest in learning increased after using SMART BOOK media. In the use of SMART BOOK media, students are trained according to the process, researchers also carry out activities as their response by providing assignment

sheets related to the content of the SMART BOOK media, the purpose of this activity is none other than increase students' interest in learning to continue learning even though they are not at school.

Based on research, calistung-based SMART BOOK learning media (read, write, count) can increase students' interest in learning. With an increase in the average score of students before and after using SMART BOOK learning media of 38.1 or as much as 47,625 %. The percentage results are also shown by the frequency distribution table that all students have increased interest after using SMART BOOK learning media. The results of this study are in line with Nina Karlina Noviana et al., (2023) in her research explained that there is an increase in literacy and literacy (CALISTUNG) through *the Busy Book media*. Fadilah et al., (2022) stated that the use of *powtoon* media can increase the interest in learning students in class V thematic learning at SDN Karang Tengah 11 Tangerang City. Next Ardiansyah, (2020) states that the use of *Google Form learning media* can increase the interest and learning outcomes of mathematics students in grade X MM in Mathematics subjects.

#### 4. Conclusion

Interest in learning is an involuntary desire to do learning activities. The importance of interest in learning in the learning process is important for every student because a high interest in learning can produce good learning results.

SMART BOOK media is a development media created to generate numbers for students before they enter the calculation operation. SMART BOOK media is a calistung-based development media. Based on the research that has been done, the results of the discussion can be concluded, among others:

1. Learning using learning media can increase interest in learning. This shows that interest in learning before using SMART BOOK learning media is still very low. Then researchers use SMART BOOK media in learning activities. The use of SMART BOOK media that has met the indicators of interest in learning is expected to increase the interest in learning students
2. The increase in student interest in learning can be seen from the scores and percentages obtained by researchers based on questionnaires that have been filled out by students. With this increase, it shows that SMART BOOK media gets a positive response in its use to increase students' interest in learning.

The researcher has no conflict in the implementation with the aim of misusing the research. Researchers' gratitude is given to people who have helped researchers and contributed to the implementation and preparation of this research. May your kindness and contribution in helping researchers be rewarded with thousands of kindnesses from Allah SWT

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