

INTERACTIVE LEARNING MEDIA *MISSION TASK* POWERPOINT BASED AND ITS EFFECTIVENESS ON STUDENT LEARNING OUTCOMES

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Abstracts

The online learning process and the use of instructional media which are still limited to printed books allow students to misunderstand mathematical concepts. This study aims to develop interactive learning media using power point and prove the quality of the media through the analysis of the validity, practicality and effectiveness of the media on student learning outcomes. The type of research used is Research and Development with the ADDIE development model includes Analysis, Design, Development, Implementation, Evaluate. The instruments used in this study were validation sheets, response questionnaires, and mathematics learning achievement test questions. The results of the validation of media and material experts obtained calculations of 269 and 247 with very valid categories. The results of the questionnaire validation obtained a score of 1,924 in the very practical category. The results of the study test after the application of learning media *Mission Task* obtained the percentage of classical completeness of 86.36%, this means that the media is effective on mathematics learning outcomes. if the students' comprehension results are included in the fairly high category on the indicator question number 3b and very high on the other question indicators based on the total scores of all students

Keyword:

Interactive Learning Media, Learning Outcomes, Powerpoint

Introduction

Coronavirus Disease (Covid 19) is a virus that appeared in 2019 and began to spread in Indonesia in early 2020. The existence of the Covid-19 outbreak has had an impact on all areas of life, one of which is education. Since March 2020 the government has implemented teaching and learning activities in a network from home (Pusdiklat Kemdikbud, 2020). With the policy of learning from home, the teaching and learning process which was originally carried out face-to-face was replaced with online teaching and learning activities to anticipate the spread of Covid-19. Online learning is a new innovation in education. Online activities are actually beneficial in terms of time efficiency and transportation costs. In practice, online

learning is not as maximal as learning in the classroom, especially in learning mathematics (Fauzy & Nurfauziah, 2021).

This online learning pattern needs to be readjusted both by educators and students who are educated so that the teacher's learning process has an important role in terms of managing learning activities. To carry out the management of learning activities that are fun and motivate students, teacher creativity is needed in the selection and use of media and learning techniques. The use of appropriate learning media will facilitate students' understanding of the material being taught, especially in mathematics which is essentially an abstract science (Damayanti & Qohar, 2019; Hariyono & Widhi, 2021; Rusmana, 2012; Vitantri dkk., 2020).

There are various kinds of learning media that can be used in the learning process, one of which is media software *Powerpoint*. Software *Powerpoint* is one of the interactive learning media that is easy to use and has several advantages that can be used as a valid and practical learning media (Damayanti & Qohar, 2019). Apart from these advantages, *Powerpoint* can also be developed into interactive CD-based teaching materials *Powerpoint* to improve learning outcomes (Warkintin & Mulyadi, 2019). Ease of use *Powerpoint* This allows the teacher to use it as a learning medium.

Previous research shows that *Powerpoint* is a good interesting presentation and communicative material can help students increase their interest and understanding in learning (Hevitullah, 2016; Yuliansah, 2018). Several researchers developed media-based interactive learning *Powerpoint*, however *Powerpoint* interactive that will be developed by researchers has a different concept in terms of presentation of the material. Presentation of material with the concept of completing a mission like a game who cannot level up if the previous level has not been completed. Completion of this mission is what researchers refer to as mission task, where in using this learning media in a coherent manner in accordance with the basic competencies and core competencies that have been contained in the regulation of the minister of education and culture number 37 of 2018 (Permendikbud, komunikasi pribadi, 2018) which are presented sequentially.

One of the mathematics materials studied from elementary to high school and at the tertiary level is statistics (Maryati & Priatna, 2017). The importance of knowledge related to statistical material, makes this material the core material in mathematics in the Education Unit Level Curriculum (KTSP) up to the 2013 Curriculum (K-13). In addition to this, the low understanding of students in interpreting diagrams and presenting data is also the reason for researchers choosing data presentation material in this research and development, especially in the Class VII Data Presentation Chapter.

Powerpoint interactive media can be used as a teacher's tool in conveying learning material, especially in learning mathematics, especially in this year face-to-face learning trials have begun, so that in the learning process using media *Powerpoint*. This interactive method is effective for students' mathematics learning outcomes, especially in the material for presenting data that will be studied up to the upcoming XI class. Thus, researchers will raise these issues entitled " Interactive Learning Media *Mission Task Powerpoint* Based and Its Effectiveness on Student Learning Outcomes"

Methods

Research and development methods can be interpreted as a scientific way to research, design, produce and validate product results. The test subjects in research and development were media expert validators, material experts, learning outcomes test item validators and MTs Miftahul Huda Silir students. Material validation is carried out with the aim of testing the completeness and feasibility and matters related to the data presentation material. Media validation is carried out to determine the feasibility and practicality of interactive learning media *Mission Task* based *Powerpoint* data presentation material for class VII SMP/MTs.

While trials on MTs Miftahul Huda Silir students were carried out to measure the practicality and effectiveness of the developed learning media.

In this study, researchers used the ADDIE development model which consisted of five stages Analysis, Design, Develop, Implement, Evaluate. At the analysis stage, an initial analysis was carried out regarding the availability of learning media in schools, conducting an analysis of similar learning media that had been developed, carrying out an analysis of student characteristics, and mapping the needs of learning media and then looking for solutions related to the development of learning media needed by schools. The results of the media needs analysis at the analysis stage are continued at the design stage, namely by designing learning media and other research instruments including validation sheets and learning outcomes questions. The results of the media design are developed into *Powerpoint* learning media *Misson Task* and then prove its quality to media experts, material experts and validators of learning outcomes test questions. The results of media validation and research instruments were used as material for improvement before being implemented to class VII students of MTs Miftahul Huda Silir. Media implementation is then measured for its effectiveness based on students' responses to the media and student learning outcomes test answers. The following is flowchart instructional *Media Mission Task* developed:

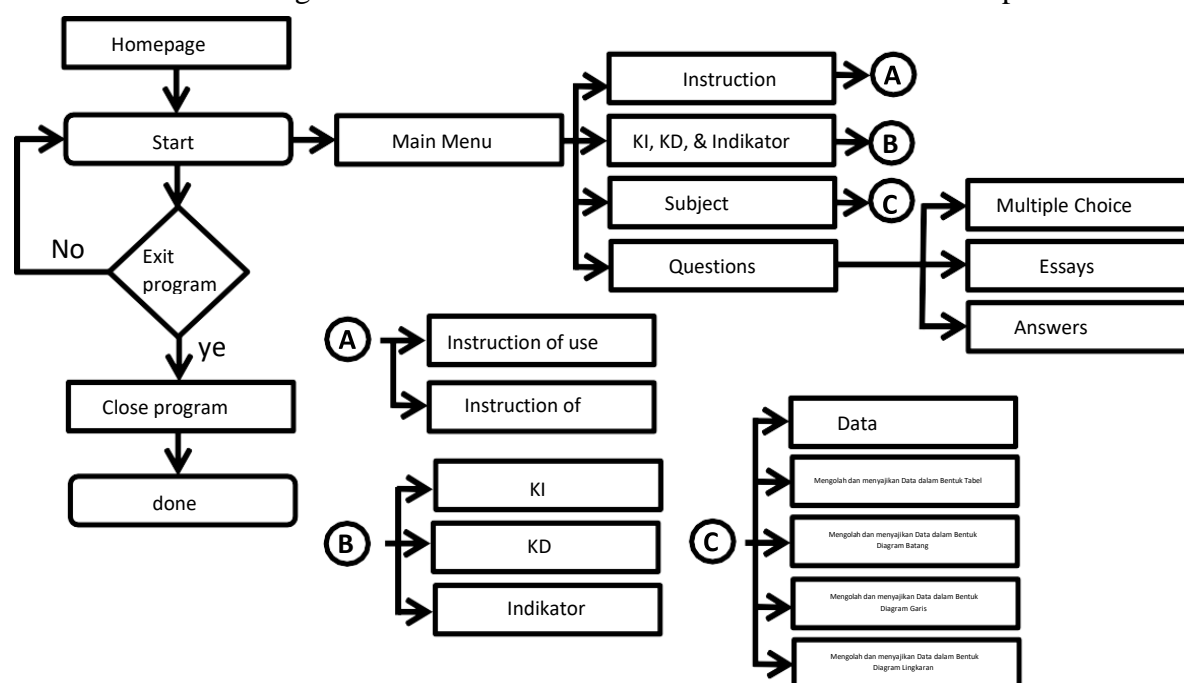


Figure 1. Flowchart of Misson Task Instructional Media

In determining the validity and practicality of the developed learning media, validation sheets were given to several validators. Then from the results of each validator's assessment, an ideal maximum score, ideal minimum score, ideal average (\bar{x}), and ideal standard deviation (SB_i) as follows:

$$\text{Ideal minimum score} = 1 \times n \times m$$

$$\text{Ideal maksimum score} = 5 \times n \times m$$

By:

n = the number of aspects in the validation sheet

m = the number of validator

$$SB_i = \frac{1}{6} (\text{Ideal maximum score} - \text{Ideal minimum score})$$

$$\bar{x} = \frac{\text{Ideal maximum score} + \text{Ideal minimum score}}{2}$$

The results of the assessment from the media and material validation stage obtained the following data criteria:

Table 1. Media And Material Validation Criteria

Interval Skor	Categories
$X_t > 240$	Very Valid
$200 < X_t \leq 240$	Valid
$160 < X_t \leq 200$	Quite Valid
$120 < X_t \leq 160$	Less Valid
$X_t \leq 120$	Invalid

Media practicality analysis was carried out by distributing questionnaires to students. The results of the questionnaire scores are then converted into the practicality category in table 2.

Table 2. Practicality Assessment Criteria

Interval Skor	Categories
$X_t > 1.759,95$	Very practical
$1.446,65 < X_t \leq 1.759,95$	Practical
$1.173,35 < X_t \leq 1.446,65$	Quite Practical
$880,05 < X_t \leq 1.173,35$	Less practical
$X_t \leq 880,05$	Impractical

While the media effectiveness analysis technique is measured using the percentage of learning completeness with the school's minimum mastery criteria (KKM), with the formula:

$$P = \frac{\sum \text{complete student}}{n} \times 100\%$$

By:

P = complete student percentage

n = number of student in one class

The developed media is said to be effective if the student's learning mastery meets the minimum good classification when it reaches 85% students in class who have value ≥ 75 .

Results and Discussion

Findings

At the analysis stage of the results of interviews with teachers of mathematics subjects it is known that the media used in learning mathematics are printed books and blackboards. This resulted in students paying less attention to subject matter and obtaining low scores on daily tests.



The results of this analysis provide reasons for developing alternative mathematics learning media that are interesting and can be effective on students' mathematics learning

outcomes. Follow up the results of the analysis, carried out manufacture *storyboard* instructional Media *Mission Task* which consists of 6 parts namely cover page, main menu, material menu, page *Mission Task*, and material pages. *Storyboard* This media is then developed into learning media *Mission Task* as follows:

Figure 2. Initial Display of Mission Task Learning Media



Figure 3. Display of the Mission Task Learning Media Material Menu

Based on figure 3 above, learning media *Mission Task* consists of 5 main materials namely knowing data, processing and presenting data in the form of tables, bar charts, line charts, and pie charts which were developed based on the basic competencies of the 2013 curriculum. Each menu material must be studied sequentially by students so that students can open material about processing and present data in tabular form if students have studied material about knowing data. In materials 2, 3, 4 and 5 there are missions that must be completed, picture 4 is an example display *Mission Task* on the 2nd material:



Figure 4. Display of Misson Tasks

Each mission consists of interactive material and questions as well as practice questions that must be done by students. Figures 5 and 6 below are media displays in the interactive questions and practice questions:



Figure 5. Display of Interactive Questions



Figure 6. Display of practice questions

The media that has been developed is then validated by media and material experts before being tested. The validation of media and material experts was carried out by 4 experts consisting of 3 lecturers of mathematics at IAIN Kediri and a mathematics teacher at MTs Miftahul Huda Silir. The following are the results of the validation that has been carried out by media experts:

Table 3. Media Validation Result Data

No	Media Expert			
	A1	A2	A3	A4
1	5	5	5	4
2	4	4	5	4
3	4	4	5	5
4	5	4	5	4
5	5	4	4	4
6	5	4	4	4
7	5	4	5	4
8	5	4	4	5
9	4	4	5	4
10	5	4	4	4
11	5	5	4	4
12	5	4	5	4
13	5	3	5	4
14	5	5	5	5
15	5	5	5	5
Total	72	63	70	64
Sum	269			
Criteria	Very Good			

Based on the results of the media expert's assessment as shown in table 3 above, the ideal average result is 180 and the ideal standard deviation is 40. The total media validation score is 269 ($X_t = 269$) which is included in the very valid category. While the data from the material expert validation results can be seen in table 5 below.

Table 4. Data from Media Expert Validation Results

No	Media Expert			
	A1	A2	A3	A4
1	4	4	5	3
2	4	4	5	4
3	4	4	5	4
4	4	4	5	3
5	4	4	4	2
6	4	4	4	3
7	4	4	5	3
8	4	4	5	4
9	4	4	5	4
10	4	4	5	4
11	4	4	5	2
12	4	4	4	4
13	5	4	5	5

14	5	4	4	4
15	5	4	5	4
Total	63	60	71	53
Sum	247			
Criteria	Very Good			

Based on the results of the material expert's assessment as shown in table 4 above, the ideal average result is 180 and the ideal standard deviation is 40. The total material validation score is 247 ($X_t = 247$) which is included in the very valid category.

Next, to find out the practicality of the media Mission Task the results of the student response questionnaire were analyzed. This questionnaire was given to 22 class VII students of MTs Miftahul Huda. There are 20 statements on the questionnaire sheet with a minimum score of 1 and a maximum of 5. In addition to giving an assessment, students are asked to provide suggestions and comments on the media used. Table 5 is the result of a student response questionnaire to the media *Mission Task* developed:

Table 5. Practicality Questionnaire Results by Students

Respondent	Number of statement items	Total score gain	Ideal average	Ideal Standard Deviation (S_{bi})
22	20	1924	1320	293,33

Based on the table above, the ideal average of 22 respondents is 1,320, the ideal standard deviation (S_{bi}) of 293.33 and a total score of 1.924 ($X_t = 1.924$) in the very practical category. This means that based on the student response questionnaire learning media *Mission Task* practical to use in learning mathematics, especially statistics material.

Product effectiveness is measured based on the results of learning tests after using the developed learning media. The results of the analysis of the effectiveness of this media were obtained from a small-scale trial involving 4 students and 18 students at MTs Miftahul Huda Silir for a large scale. The test results of the learning outcomes test questions can be seen from the following table:

Table 6. Learning Outcome Test Data

Table 8: Learning Outcome Test Data												
Question	1	2	3		4			5			Mark	
Name			a	b	a	b	c	a	b	c	d	
ARS	16	20	5	0	12	4	2	8	2	4	4	77
CNA	16	20	15	5	12	4	4	8	4	2	3	93
CFO	20	20	15	5	12	4	4	8	4	4	4	100
EPS	20	20	14	5	12	4	4	8	4	4	2	97
FI	20	10	10	3	5	4	4	8	4	3	4	75
GSA	16	8	14	5	10	0	0	8	4	3	4	72
HFA	16	20	12	0	10	2	2	8	3	4	2	79
KF	20	18	11	5	12	4	4	8	4	2	3	91
MSA	20	20	15	5	12	4	4	8	4	4	4	100
MAF	20	20	11	0	12	4	4	8	4	4	2	89
MRT	20	20	15	0	10	2	2	8	3	3	2	85

NFS	20	20	15	5	12	4	4	8	4	4	4	100
RDA	20	14	12	0	10	4	4	8	4	3	4	83
SPM	16	18	15	0	12	4	4	8	3	3	3	86
SZN	20	20	13	5	10	3	3	8	4	4	4	94
TAR	20	20	3	0	10	0	0	8	4	4	4	73
VNHS	20	20	15	5	10	4	4	8	4	3	3	96
YRF	20	16	12	0	10	2	2	8	3	4	2	79
MHA	16	14	12	5	10	0	0	8	3	3	2	73
TMK	20	18	11	0	12	4	4	8	4	4	3	88
RCL	16	10	10	3	10	4	4	8	4	4	4	77
HAH	20	10	15	5	10	4	4	8	3	3	3	85
Sum	412	388	270	61	235	69	67	176	80	76	70	1892
Average												86

In small-scale trials the percentage of classical completeness was 75% and in large-scale trials it reached 88%. Meanwhile, based on the results of the overall trial, it was obtained that a percentage of 86.36% of students scored above the KKM (meeting the classical completeness criteria). The average student is 86, higher than the KKM that has been set by the school, which is 75. From this presentation it can be concluded that interactive learning media *Mission Task* effective on student learning outcomes.

in addition, based on the total score for each indicator in table 6 above, the level of student understanding on several indicators of the questions is in a very high category, namely the indicators determining how to collect data (question number 1) have $X_t = 412$ with range $X_t > 329,995$; determine how to present data (question number 2) with $X_t = 388$ and range $X_t > 329,995$; interpreting the pie chart (problem number 3a) has values $X_t = 270$ with a range $X_t > 247,5$; the indicator for making a bar chart (problem number 4a) has $X_t = 69$ with range $X_t > 198$; the indicator interprets the data table (problem numbers 4b and 4c) has a range $X_t > 66,005$ with $X_t = 69$ with for question number 4b and $X_t = 67$ for question number 4c, the indicator creates a data table (problem number 5a) with a range $X_t > 131,995$ with $X_t = 176$; and interpreting line diagrams for questions 5b, 5c and 5d each have a value of X_t 86, 76, 70. Meanwhile, in the question with indicators it concludes that question number 3b is included in the fairly high category with values $X_t = 61$ and ranges $51,335 < X_t \leq 66,005$.

Conclusion

Research and development using the ADDIE research model produces an Interactive Learning Media product *Mission Task* based *Powerpoint* in class VII mathematics subject, especially the material for presenting data on student learning outcomes. From the material and media feasibility test process, the data is obtained in a very valid category. Based on the results of the small and large class trials, the total score (X_t) which is quite high in the very practical category. While the results of student learning tests showed a higher average compared to the average given by the school. The percentage of student learning outcomes is also above the classical completeness limit. In addition, the results of the analysis of the level of student understanding are included in the very high category based on the total scores of all students on the indicator questions number 1, 2, 3a, 4 (a, b and c), and 5 (a, b, c, and d). while students' understanding of the indicators for question number 3b is included in the fairly high category. This proves that the media developed is practical and effective for student learning outcomes. the products developed by researchers are still limited to data presentation material, it is hoped that teachers will be able to develop products with a wider

scope, as well as develop media with other innovations in order to foster student interest in learning by utilizing technology.

References

- Damayanti, P. A., & Qohar, Abd. (2019). Pengembangan Media Pembelajaran Matematika Interaktif Berbasis Powerpoint pada Materi Kerucut. *Kreano Jurnal Matematika Kreatif-Inofatif*, 2, 119–124.
- Fauzy, A., & Nurfauziah, P. (2021). Kesulitan Pembelajaran Daring Matematika Pada Masa Pandemi COVID- 19 di SMP Muslimin Cililin. *Jurnal Cendekia: Jurnal Pendidikan Matematika*, 5, 551–561.
- Hariyono, M., & Widhi, E. N. (2021). Geoshape Digital: Media Pembelajaran dalam Meningkatkan Pemahaman Konsep Matematika SD. *Jurnal Ilmiah "Pendidikan Dasar," VIII No. 1*, 35–50.
- Hevitullah, E. (2016). *Pengaruh Penggunaan Media Powerpoint Terhadap Hasil Belajar Matematika Kelas VIII di SMP Negeri 3 Palembang*. Universitas Islam Negeri Raden Fatah Palembang.
- Maryati, I., & Priatna, N. (2017). Analisis Kesulitan dalam Materi Statistika Ditinjau dari Kemampuan Penalaran dan Komunikasi Statis. *Prisma*, VI, No. 2, 173–179.
- Permendikbud. (2018). *Peraturan Menteri Pendidikan dan Kebudayaan Nomor 37 Tahun 2018 tentang Kompetensi Inti dan Kompetensi Dasar Pelajaran pada Kurikulum 2013 pada Pendidikan Dasar dan Pendidikan Menengah* [Komunikasi pribadi].
- Pusdiklat Kemdikbud. (2020). *Surat Edaran Nomor 4 Tahun 2020 Tentang Pelaksanaan Kebijakan Pendidikan dalam Masa Darurat Penyebaran Corona Virus Disease (COVID-19)*. Pusat Pendidikan dan Pelatihan Pegawai Kementrian Pendidikan, Kebudayaan, Riset, dan Teknologi.
- Rusmana, I. M. (2012). Efektivitas Penggunaan Media ICTdalam Peningkatan Pemahaman Konsep Matematika. *Jurnal Formatif*, 2(3), 198–205.
- Vitantri, C. A., Himmatul 'Ulya, Jayus, & Mashfiyatus Sholihah. (2020). Pengembangan Lembar Kerja Siswa untuk Memfasilitasi Pemahaman Konsep Matematis Siswa pada Materi Aljabar. *Jurnal Derivat*, 7 No. 1, 21–30.
- Warkintin, & Mulyadi, Y. B. (2019). Pengembangan Bahan Ajar Berbasis CD Interaktif Powerpoint untuk Meningkatkan Hasil Belajar Siswa. *Scholaria: Jurnal Pendidikan dan Kebudayaan*, 9 No. 1, 82–92.
- Yuliansah. (2018). Eektivitas Media Pembelajaran Powerpoint Berbasis Animasi dalam Meningkatkan Motivasi dan Prestasi Belajar. *Jurnal Efisiensi-Kajian Ilmu Administrasi*, XV No. 2, 24–32.