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Development Mathematics Teaching Materials Based on Sway 365 for Student Class IV School Basics - Practicality

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Abstract

This research is a development research. The purpose of this study was to reveal the level of practicality of Microsoft Sway 365 -based mathematics teaching materials for fourth grade elementary school students. The research instrument used was a practical questionnaire sheet for student responses and teacher responses. The research subjects were fourth grade students of SD Plus Marhamah. The results of the practicality test, namely the student response obtained a score of 4.23 in the very good category and the results of the teacher's response obtained a score of 4.4 in the good category. So it can be decided that Microsoft Sway 365 - based mathematics teaching materials are practical to use for fourth grade elementary school students.

Keywords
Ingredients _ Ajar Sway 365; Mathematics

I. Introduction

Technology massive develop along running development era . New know and venom with the term revolution era 4.0 however moment this appear term new era of society 5.0. Technology dominate all aspect life moment this . Life as if blend in with technology as characteristic main digital modernization , convenience get and spread information as well as desire life practical man the more increase (AMaulana & Firdian, 2020; Salsabila, et al, 2020.) . sophistication technology the also used for create style and field work new , like youtuber , online seller and online motorcycle taxi (ojol). Appearance various digital platforms used for fulfil need life as application online shopping , online driver , health info application nor application education online based like google classroom, shoology , microsoft sway 365 dan flipbook. By because it can _ said development era is catalyst development technology and development technology walk straight with development knowledge knowledge (Ajizah.I , 2021). This thing prove development era no can discontinued as needed is strategy in face it .

Utilization technology in learning as part from learning in the 21st century is wrong one challenge in field education . Existence global spread of covid -19 especially in the city of Padang strengthen existence and urgency technology in various field especially in the field education . Limit activities at school is effort stop and deduction Covid-19 transmission carried out government . This thing cause re - learning done by face to face and limited room and time , be learning without limit . Student could study everywhere and anytime via _ online learning Noviansyah , W., & Mujiono , C. (2021). This reminds us that educators must always be ready in any situation. It has become a guide that education must be able to respond and adapt to the times. So that this can be realized, it is necessary to increase the competence and creativity of teachers. Skills and knowledge can affect students if teachers master the knowledge and ability to adapt to new technologies and global challenges (Agusta, AR, & Sa'dijah, C. (2021).

Based on the facts in the field, the teacher's knowledge of digital applications is still low that can assist him in designing learning devices such as the development of teaching materials. One of the most important parts in the learning process is the availability of teaching materials. The development of teaching materials can be implemented in the form of printed products, audio-visual technology, computer-based technology (Angelica, 2021; Arofah & Cahyadi, 2019) . The teaching materials used should not only help the learning process but also see the complete achievement of the basic competencies developed. The use of technology-based teaching materials has many impacts on students and reflects the progress of an education (Maskar & Dewi, 2020).

Microsoft sway 365 is a free platform that can be used to develop teaching materials digitally. Sway 365 is a product from Microsoft as a digital story telling application that can be used in making presentation materials, summaries and other interesting documents (Mujahidin, 2021). Sway 365 has complete learning facilities such as videos and virtual lever giving features (Itsyaniyah & Lestyanto, 2021). Microsoft Sway 365 , which makes communication between teachers and students easier, makes it easier for teachers to deliver lessons, is document fidelity which provides access for users to store their work in the cloud , share them with other users, access documents stored anywhere and anytime without fear of losing documents even without them. storage media as long as it is connected to the internet, based on easy collaboration where users can work on things together with other users and share easily between users, even though the program has been upgraded but has buttons, tools, or features that are familiar to users. Its use is due to the resemblance to previous versions of Microsoft and can be accessed with smartphones , tablets and laptops (Angelica, 2021) . Therefore, in creating teaching materials that can be used by students and teachers, one of them must meet the requirements for the practicality of teaching materials. Teaching materials are said to be practical if they meet the criteria for assessing teaching materials, namely product attractiveness and ease of use (Maulana, 2020; Maulana & Firdian, 2020) . Thus, this study aims to determine the level of practicality of using microsft sway 365-based mathematics teaching materials for fourth grade elementary school students.

II. Research Method

This research is a causal associative research using a quantitative approach. Causal associative research is research that aims to determine the contribution between two or more variables (2015). This study explains the influence and contribution of the variables to be studied. Using a quantitative approach because the data that will be used to analyze the relationship between variables is expressed by numbers or a numerical scale (Kuncoro, 2013). This study analyzes the contribution of transformational leadership, education and training, digital education innovation to teacher performance.

This research is research and development using a procedural model. The procedural model is a descriptive model that describes the procedural steps that must be followed to produce a product (Setyosari, 2016) . Development research aims to produce products based on trials. The product that will be developed in this development research is a learning device that focuses on the components of learning media.

The development model that will be used in this research is the Plomp model. The use of the plomp model that the author will do in research is because the plomp model serves to develop educational products, which uses formative evaluation in each prototype development for product improvement to produce good products and semi-summative evaluation as a project termination stage that proves the effectiveness of educational

products so that the product can used. preliminary research (preliminary study), development or prototyping phase (prototyping development or design phase), and assessment phase phase (assessment phase) (Plomp, et al 2013) .

2.1 Preliminary Research

This stage is in the form of needs and context analysis, literature review, developing conceptual and theoretical framework for research. (Plomp, et al. 2013; Pudhito, 2019) . Preliminary studies are a number of activities consisting of analysis and exploration of contexts and needs (problems), literature studies and the development of a theoretical framework for design activities (Putrawarsya, 2018) . In this development research, an initial investigation will be carried out that focuses on identifying the problems and needs needed and studying the characteristics of learning.

2.2 Development or Prototyping Phase

This stage is the creation and testing of prototypes which includes a cyclical and sequential design process in the form of a more micro research process and using formative evaluation to improve and improve the intervention model. (Plomp et al., 2013; Pudhito, 2019).

Table 1. Quality criteria of developed prototype

Relevant	There is a need for prototype development and its design based on the novelty of scientific knowledge called content validity
Consistency	The logically designed prototype is called construct validity.
Practicality	The designed prototype can be used.
Effectiveness	Can achieve the desired result.

Source: Plomp, et al (2013)

Intervention development activities which are still in the form of prototypes through trial activities carried out repeatedly on a micro scale. During the process, a formative evaluation was carried out as a basis for improving the quality of the intervention. (Putrawarsya, 2018).

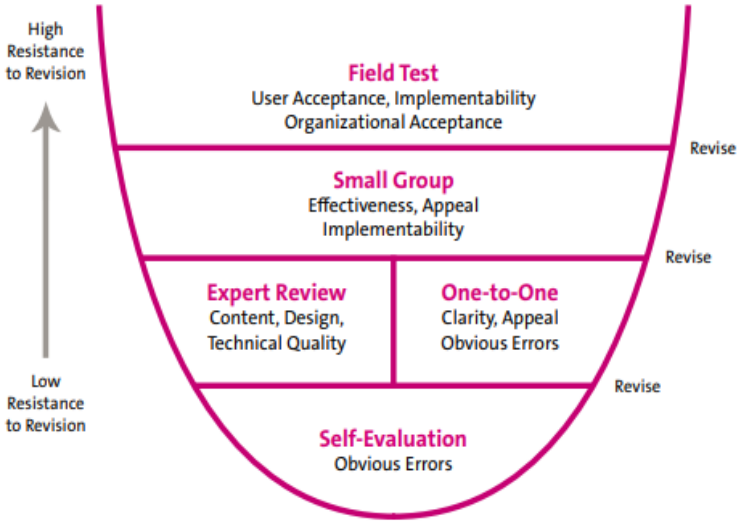

Figure 1. *Plomp model development stage*

From Figure 1 above, product trials are carried out repeatedly starting with self-evaluation, validation by expert reviews , one-by-one trials, small group trials and field tests. The subjects of this study were fourth grade students of SD Plus Marhamah, Padang City, which were representative, which was seen from the low, medium and high ability levels of students. At this trial stage, the level of practicality of mathematics teaching materials based on Microsoft Sway 365 is determined.

2.3 Assessment Phase

At this stage, a final evaluation is carried out to see how far the results or achievements of the development of mathematics teaching materials based on Microsoft Sway 365 in grade IV Elementary School are.

2.4 Data Analysis Instruments and Techniques

The research instrument used is a teacher and student practicality questionnaire. The practicality of a product can be measured by the ease and presentation of a product by users (Agustyaningrum & Gusmania, 2017). The data analysis technique is using the Likerts scale of assessment which is converted into a rubric as shown in Table 2 below:

Table 2. Assessing student and teacher response questionnaires

score	Conversion
1	Strongly Disagree
2	Don't agree
3	Just agree
4	Agree
5	Strongly agree

The practical category of using mathematics teaching materials based on final grade calculations can be seen in table 3 below:

Table 3. Student and teacher questionnaire assessment scale formula

Score range	Conversion
$X > \bar{X}_i + 1.8\ sbi$	Very Practical
$\bar{X}_i + 0.6\ sbi < X\_\bar{X}_i + 1.8$ sbi	Practical
$\bar{X}_i - 0.6\ sbi < X\_\bar{X}_i + 0.6$ sbi	Practical enough
$\bar{X}_i - 1.8\ sbi < X\_\bar{X}_i - 0.6$ sbi	Not Practical
Xsbi $\bar{X}_i -$ 1,8_	Very Impractical

Information

$\bar{X}_i$ = $\frac{1}{2}x$ (maximum score + minimum score)

X = ideal score

Sbi = $\frac{1}{6}x$ (maximum score – minimum score)

III. Result and Discussion

3.1 Result

Study this implemented in grade IV SD Plus Marhamah Padang City. Study this focus on development ingredients teach mathematics based on *Microsoft sway 365* on Theory data presentation . On study previously this teaching material has been validly used based on test validity teaching materials . Following this displayed results from test advanced from study previously that is test practicality ingredients teach mathematics based on *microsoft sway 365* . Test try practicality use instrument questionnaire practicality response student and teacher. Criteria taking decision refers to on range mark on table 4 below this :

Table 4. Student and teacher questionnaire assessment scale

Range (%)	Conversion
X> 4.2	Very good
3,4 < X4.2	Well
2.6 < X3.4	Pretty good
1.8 < X2.6	Not good
X1.8	Very Not Good

From the table above math teaching materials based on *Microsoft sway 365* said practical if earn mark the questionnaire above 3,4 . _ In accordance with objective and procedure development used _ in research that has been researcher do it , then result data obtained practicality for 22 respondents as following :

Table 5. Practical results of student responses

Criteria	Average Score	Category
Interesting	4.4	Very good
Convenience	4.2	Very good
Efficiency	3.9	Well

Based on the table above there is three category evaluation practicality math teaching materials based *on Microsoft Sway 365* where score for category attractiveness teaching materials are 4.4 categories very good , convenience usage 4.2 categories very good and category efficiency 3.9 with category good . Average response student to teaching materials mathematics based on *Microsoft sway 365* achieve a value above 3.4 . This thing could said ingredients teach mathematics based on *Microsoft sway 365* practical used by students .

Results questionnaire teacher 's response to math teaching materials based on *Microsoft sway 365* as table below _ this :

Table 6. The results of the practicality of the teacher's response

Criteria	Average Score	Category
Interesting	4.25	Very good
Convenience	3.57	Well
Efficiency	4.0	Very good

Based on table VI above there is three category evaluation teacher 's practicality towards math teaching materials based on *Microsoft sway 365* where score for category attractiveness teaching materials are 4.25 categories very good , convenience usage 3.57 categories good and category efficiency 4.0 with category very good . The average teacher response to each criteria evaluation to teaching materials mathematics based on *Microsoft sway 365* get score above 3.4 . This thing could said math teaching materials based on *Microsoft sway 365* help the teacher in teach and practical used by the teacher.

By more detail total score and the average rating practicality response student and teacher as following:

Table 7. The results of the recapitulation of the average practicality of student and teacher responses

Practicality	Total score	Average Score	Category
Student	**12.7**	**4.23**	**Very good**
Teacher	**8.25**	**4.13**	**Well**

From table 7 above total score practicality student is 12, 7 and the average is 4,23 practical used with category very good . Amount score teacher 's practicality is 8,25 and an average of 4.13 practical teaching materials used with category good . From the table in the bag could decided that math teaching materials based on *Microsoft sway 365* for student fourth grade elementary school has fulfil condition practicality so that said practical for used by student and teacher.

3.2 Discussion

Data analysis of the practicality test results for fourth grade students at SD Plus Marhamah, Padang City, showed that mathematics teaching materials were based on *Microsoft Sway 365* . obtained a result of 4.23 with a very good category. The student practicality questionnaire contains three aspects of assessment, namely aspects of attractiveness, ease of use and efficiency of teaching materials. In the aspect of the attractiveness of teaching materials, the score is 4.4 categories very good , convenience usage 4.2 categories very good and category efficiency 3.9 with category good . Average response student to teaching materials mathematics based on *Microsoft sway 365* reach value above 3.4 . This thing could said ingredients teach mathematics based on *Microsoft sway 365* practical used by students . That thing show ingredients ajr developed math _ own good practicality _ so that could used by student for study independent . Sejlan with opinion that benefit from bye teach is help student and practice learning bias independent . The teaching materials developed can help students and teachers in the learning process. Students feel more understanding of the content of the learning material and are happy to learn. As the opinion of teaching materials can activate students in independent learning, enthusiastic and understand the content of the material well (Anissa, 2021). Besides that, something quality teaching materials should communicative , meaning contents from easy teaching materials digestible , systematic , clear and no contain error language (Yanto , 2019) anditasari , 2018

Judging from the results of the teacher's response questionnaire analysis that mathematics teaching materials are based on *Microsoft Sway 365* obtained an overall score of 4.13 in the good category. The teacher's practicality questionnaire contains three aspects of assessment, namely aspects of attractiveness, ease of use and efficiency of teaching materials. In the aspect of the attractiveness of teaching materials, the score is 4.25 categories very good , convenience usage 3.57 categories good and category efficiency 4.0

with category very good . The average teacher's response to teaching materials mathematics based on *Microsoft sway 365* reach value above 3.4 . The level of practicality of the teacher's response is in the good category. It can be concluded that practical teaching materials are used and could help the teacher in teach as well as make it easy student in understand learning . Practical means that the problem-based learning media is in accordance with predetermined criteria (Maulana, 2020)

IV. Conclusion

Microsoft sway 365 sw-based math teaching materials for fourth grade elementary school students that have been used by students and teachers are declared practical to use with a score of 4.23 very good category used by students and getting a score of 4.13 good category used by teachers. This means that Sway 365-based mathematics teaching materials for fourth grade elementary school students can already be used by students and teachers.

This research develops mathematics teaching materials based on Microsoft Sway 365 for fourth grade elementary school students, mathematics teaching materials are limited and conduct practicality tests for students and teachers. Therefore, in further research to test the effectiveness and can develop teaching materials with other methods or fields.

References

Anditasari, R., Martutik, & Andajani, K. 2018. Development of Educational Game-Based Media in Learning to Write Description Texts. Journal of Education: Theory, Research, and Development, 3(1), 107–144

Agusta, AR, & Sa'dijah, C. (2021). Teacher Readiness in Implementing HOTS-Based Learning in terms of Knowledge and Ability to Package Learning Tools. PADARINGAN (Journal of Anthropological Sociology Education), 3(2), 402-424Agustyaningrum, N., & Gusmania, Y. (2017). Practicality And Effectiveness Of Geometry Analysis Module. Dimensions, 6(3), 412-20Ajizah, I. (2021). Development of digital-based al-ghoyah wat-taqrib teaching materials to improve understanding of fiqh subjects for class XI SMA Khadijah Surabaya (Doctoral dissertation, UIN Sunan Ampel Surabaya).

Angelica, DE (2021). Development of Microsoft 365-Based PAI Learning Design in Improving Students' Independent Learning.

Annisa, IS, & Fitria, Y. (2021). Development of Problem-Based Mathematics Integrated Material Classification Teaching Materials to Improve Critical Thinking Skills for PGSD Students. Basicedu Journal, 5(4), 1754-1765 Maulana, IT, & Firdian, F. (2020). Development of Problem-Based Basic Computer Network Course Teaching Equipment. Journal of Education: Theory, Research, And Development, 5, 671–676.

Arofah, R., & Cahyadi, H. (2019). Development of ADDIE Model-Based Teaching Materials. 3(1), 35–43. https://doi.org/10.21070/halaqa.v3i1.2124

Itsnaniyah, N., & Lestyanto, LM (2021). Guided discovery-based online worksheets using Microsoft Sway on prisms and pyramids. AKSIOMA: Journal of Mathematics and Mathematics Education, 12(2), 287-298. Mujahidin, AA, Salsabila, UH, Hasanah, AL, Andani, M., & Aprillia, W. (2021). Utilization of Online Learning Media (Quizizz, Sway, and Wordwall) Grade 5 at SD Muhammadiyah 2 Wonopeti. INNOVATIVE: Journal Of Social Science Research, 1(2), 552-560.

Noviansyah, W., & Mujiono, C. (2021). Analysis of the readiness and barriers of

vocational students in facing online learning during the pandemic. Journal of Teacher Studies and Learning, 4(1), 82-88.
Plomp, T., Akker, J. Van Den, Bannan, B., Kelly, AE, & Nieveen, N. (2013). Educational Design Research (T. Plomp & N. Nieveen (eds.)).
Pudhito, MA (2019). Fundamentals of Design Research for Education. Main Budi.
Putrawarsya, S. (2018). Learning Design Design Research as an Approach to Learning Design. Amerta's creations.
Ramadhani, R., Hs, W., & Harsiati, T. 2016. Development of Indonesian Speaking Skills Teaching Materials for
Beginner Level Foreign Speaker. Journal of Education-Theory, Research, And Development, 1(3), 326–337. https://doi.org/10.17977/jp.v1i3.6155
Raswel, H., Hakim, R., Amini, R., & Bentri, A. (2021). Development of Integrated Thematic Textbooks Based on the Discovery Learning Model for Grade IV Elementary School. Genta Mulia: Scientific Journal of Education, 12(2)
Salsabila, UH, Endi, RP, Saputra, S., & Diyanah, IT (nd). The urgency of educational technology in the era of disruption.
Setyosari, P. (2016). educational research and development methods. DATE . Yanto, Doni. Tri. Son. (2019). Practicality of Interactive Learning Media in the Electric Circuit Learning Process. INVOTEK: Journal of Vocational Innovation and Technology, 19(1), 75-82.
Sugeng, W., & Helmy, F. (2021). Development of Smart School-Based Mathematics Teaching Materials in Field Work Practice Activities at Vocational Schools. educative: journal of education science, 3(4)..