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Development of Interactive *Power Point Based Learning Media* on Principles of Land Measurement for Construction

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Abstract

The problem found by researchers through observations of the learning process at SMK Negeri 1 Mandrehe Barat, namely that the learning process using media is still not optimal. The aim is to develop *power -based learning media for class X DPIB I n t e r a c t i v e Point* on the material Principles of Land Measurement for Construction Work to determine the Feasibility, Practicality and Effectiveness of Media Products.This type of research uses the ADDIE (*Analize, Design, Development, Implementation, Evaluation*) model. The instruments used in this research were validation questionnaires for feasibility tests, student response questionnaires for practicality tests, and essay tests to test the effectiveness of learning outcomes. *Power Point* -based media on material on Principles of Land Measurement for Construction Work. Very Eligible Criteria based on 90% material expert assessment. Based on 98% language expert assessment. Based on a Design expert assessment of 92%. Media Practicality is categorized as very practical based on 90% individual trials and 91% field trials. The criteria are very effective with an effective media percentage of 94%. So it can be concluded that the *Power Point- based learning media* developed is very feasible, practical and effective for use in the learning process. suggestions from researchers (1) for students it is hoped that with *Power Point-based media* to increase effectiveness and critical thinking in the material Principles of Land Measurement for Construction Work, (2) for teaching staff it can add innovation in using media (3) for researchers , can use this research as subsequent research to determine the feasibility of the product.

***Keywords: Power Point,* Learning Media**

Introduction

According to Hidayat (2019) Education is a conscious and planned effort to provide guidance or assistance in developing physical and spiritual potential given by adults to students to achieve maturity and achieve goals so that students are able to carry out their life tasks independently. The entire process by which a person develops abilities, attitudes and other forms of behavior that have positive value in the society where he is life. A social process in which people are exposed to selected and controlled environmental influences (especially those attending school) so as to obtain or experience the development of optimal social and individual abilities. National Education System Law number 20 of 2003 (in Muhammadiyah, 2022) states that vocational education is education that prepares students to work in a certain field. Vocational High School (SMK) is an educational institution formal which aims to prepare participant educate in mastering certain knowledge and skills to enter the workforce while providing provisions for continuing higher vocational education. Vocational Schools are educational institutions that have several expertise programs and students are trained in their skills to become professionals in their field of expertise. Very influential on class students' skills X DPIB West Mandrehe Vocational School N 1 2022/2023 academic year.

A teacher is someone who provides facilities for the process of transferring knowledge from learning sources to students. According to Law Number 14 of 2005 concerning Teachers and Lecturers article 1 states that "Teacher is educator professional with task main educate, teach, guide, direct, train, assess and evaluate students in early childhood education through formal education, basic education and secondary education. According to Yohana (2020) "a teacher is an adult who is responsible for providing guidance or assistance to students in their physical and spiritual development so that they reach maturity."

According to Safitri (2019) "A teacher is an educator who educates, teaches knowledge, guides, trains, provides assessments and evaluates students." The definition of a teacher is someone who has dedicated himself to teaching a science, educating, directing and training his students to understand the science he is teaching. Apart from that, teachers must also provide suitable media to support the learning process.

Media helps students convey learning messages in a principled or consistent manner, because the subject matter does not deviate from what has been programmed and can be repeated in full. This will be different if the learning material messages are delivered through the lecture method (M. Ramli, 2012).

Learning media is anything that is used as an intermediary or liaison from the provider of information, namely the teacher, to the recipient of the information or student, which aims to stimulate students to be motivated and able to follow the process. learning in a way intact And meaningful. It means, there is five component in the sense of learning media. First, as an intermediary for messages or materials in the learning process. Second, as a learning resource. Third, as a tool to stimulate student motivation in learning. Fourth, as an effective tool to achieve complete and meaningful learning outcomes. Fifth, tools for acquiring and improving skills. These five components collaborating well will have implications for the successful achievement of learning in accordance with the expected targets (M. Hasan, 2021).

Learning media is anything that can be used to convey messages (learning materials), so that it can stimulate attention, interest, motivation, thought, And feeling participant educate in learning activities For reach objective Study. Use media very help participant students to more easily understand and understand the material being studied.

Method

This research uses the type of research and development. According to Sugiyono (2019:396) research and development methods can be interpreted as a scientific way to research, design, produce and test the validity of products that have been produced. The series of steps in development research are carried out in stages, and each step that is taken or carried out always refers to the results of the previous step until at the final stage a new educational product is obtained.

This research develops a product in the form of interactive PowerPoint learning media on measurement principles for construction work. The product development carried out in this research is based on the ADDIE model flow (Analysis, Design, Development, Implementation, Evaluation).

The development procedure in this research includes five steps of the ADDIE model, namely as follows: (1) analysis, (2) design, (3) development, (4) implementation, and (5) evaluation. This research and development procedure has the aim of developing a product, seeing the feasibility of the product, and seeing the response to the product being developed.

According to Hamzah (2020:33) ADDIE (Analysis, Design, Development, Implementation, Evaluation) is a class-oriented development model. One of its characteristics, namely the ADDIE model, is a generic learning design model that provides an organized process in developing learning materials or materials. Process its development sequentially However interactive, that is the evaluation results of each stage can be used for development to the next stage. The cyclical process carried out develops over time and is continuous throughout the learning planning and implementation process.

1. Stage Analyze _ _ _

Qualitative data analysis is inductive in nature , that is , an analysis based on data that has been extracted , then developed into a hypothesis . _ _ _ _ _ _ _ _ _ _ Based on the hypothesis that was formulated based on the data mentioned , the data was then searched again and again so that it did not fail _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ Basically , it can be concluded whether the hypothesis is accepted or rejected_____based on _ da t a Which t er I gathered. Bi la based on _ _ _ _ _ data Which If it is collected repeatedly using triangulation techniques , it turns out that the hypothesis is accepted , then the hypothesis develops into a theory . _ _ _ _ _

a. Needs Analysis

At this stage the researcher conducted interviews with teachers of Basics of Building Construction and Land Measurement Techniques and also to students regarding the material they have studied so far regarding the principles of land measurement for construction work. The following are the results of the researcher's interview:

1) Teacher

Process Study teach at school done with method stare

face where the teacher has provided teaching materials in the form of books about the Basics of Building Construction and Land Measurement Techniques. Media often used are books and board write, and less media can be used, such as technological media, due to limited time and teachers' ability to operate technology.

2) Student

Students learn only using books and blackboards as teaching materials, so students' understanding of Building Construction and Utilities subjects is still not comprehensive.

b. Analysis characteristics

participant educate

At this stage, after the researcher conducted a preliminary study, the results were obtained that in the target school the teaching materials used did not motivate students because the design and methods did not motivate learners. So the media to be developed must be in accordance with students' interests and learning abilities. With the results of the characteristic analysis, the researcher concluded what to do d e v e l o p m e n t o f interactive *power point* based learning media .

c. Curriculum Analysis

The curriculum analysis carried out aims to identify the curriculum used in schools.
Researchers analyze curriculum Which used by Teacher eye lesson in vocational school

Country 1 Mandrehe West class X-DPIB use curriculum 2013 where the learning process is more student-centered.

2. Stage Design _ _ _

This stage is the stage of designing a product. Products that The design is an interactive *power point* that will be used as a learning medium for students. This design stage is carried out through several stages as follows:

a. Planning *power* interactive *points*

This design was created as a media design and consists of the following elements:

1) Opener

This section begins with an introduction to the identity of the researcher (name, university of origin) and the objectives of the research being conducted.

2) Contents

This section consists of material that is described systematicallyin accordance with interactive *power points* .

3) Closing

Student finish practice questions (essay), as a test how much they understand the material that has been presented.

3. Stage Development _ _ _

The supervising lecturer directs the product that has been prepared by the researcher, to validate the product to three field experts in Media, namely material experts, language experts, and design experts:

a. The content and material expert validator in this research is a lecturer in the Building Engineering Education Study Program at Nias University.

c. The language expert validator in this research is the Study Program lecturer Indonesian Language and Literature Education at Nias University.

d. Validator expert design on research This that is, lecturer Program Educational Studies Building Engineering at Nias University.

a. Data Results Validation Expert Material

Validation of material expert, lecturer in the Building Engineering Education Study Program, Faculty of Teacher Training and Education, Nias University. Validation is carried out to obtain information that can be used as a guide to revise the product that has been produced. The assessment method is through a validation sheet. Media Validation was carried out twice. So the assessment from material experts can be seen in the following table:

Table 4.1 Results Questionnaire Evaluation Appropriateness Media Interactive *Power Point* Based Learning by Material Expert Validators

NO	INDICATOR	Score	
		Revision I	Revision II
	STRAIGHT		
1	Type fonts Which used in accordance with the media	**3**	**5**
2	Size text Which used in instructional Media	**4**	**5**
3	Appearance videos learning Already clear	**3**	**4**
4	Media learning seen clear	**4**	**4**
5	Language easy understood by participant educate	**3**	**5**
6	Media learning Which served clear	**3**	**4**
7	Animation Which used can explain the material	**3**	**5**
8	Charging slides in accordance with learning	**4**	**4**
9	Background behind voice Which used according to the content	**3**	**5**
10	Media learning Which served in accordance with the	**4**	**4**
11	Presentation appearance slides learning interesting	**3**	**5**
Amount Each Aspect		**37**	**50**
Amount Score Each Aspect		**67%**	**91%**
	ASPECT MEDIA		
12	Duration media in accordance with learning	**3**	**4**
13	Channel slides learning interesting	**4**	**5**
14	Media learning easy For operated	**3**	**4**

15	Media learning simple in operation	**3**	**5**
16	Media learning can used back in another	**4**	**4**
17	Media learning can developed for material	**4**	**5**
Amount Each Aspect		**21**	**27**
Amount Score Each Aspect		**70%**	**90%**
	ASPECT BENEFIT		
18	Media learning makes it easier participant educate deeply	**3**	**4**
19	Media learning can used anytime _	**3**	**4**
20	Media learning can used anywhere _	**3**	**5**
21	Participant educate capable Study in a way independently with learning media	**4**	**4**
22	Give rise to flavor want to know	**4**	**5**
23	Material Which served clear so that easy to accept	**3**	**4**
Amount Each Aspect		**20**	**26**
Amount Score Each Aspect		**67%**	**87%**
Amount Score Entire Aspect		**78**	**103**
Presentation Achievement		**68%**	**90%**

The results of the material expert's validation of the product are in the form of *power i n t e r a c t i v e point* for the first revision after calculating, getting a percentage of 68% from 3 aspects, namely the straightforward aspect 67% from 11 indicators, aspect media 70% from 6 indicators, benefit aspects 67% from

6 indicators. Meanwhile, the second revision after calculating obtained a percentage of 85% from 3 aspects, namely the straightforward aspect 91% from 11 indicators, aspect media 90% from 6 indicator, aspect benefit 87% of 6 indicators.

The results of material expert validation from five aspects from revision I to revision II can be seen in the following graph:

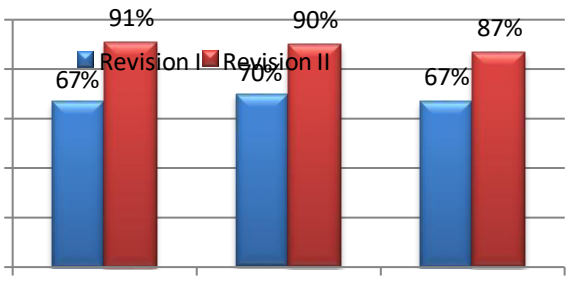


Chart 4.1 : Results Validation Product Every Aspect By Materials Expert

Information:

Straightforward : Revision I 67% And Revision II 91% Material : Revision I 70% And Revision II 90% Benefits : Revision I 67% And Revision II 87%

The average results of material experts on learning media products with an achievement of 90% can be seen in the following graph:

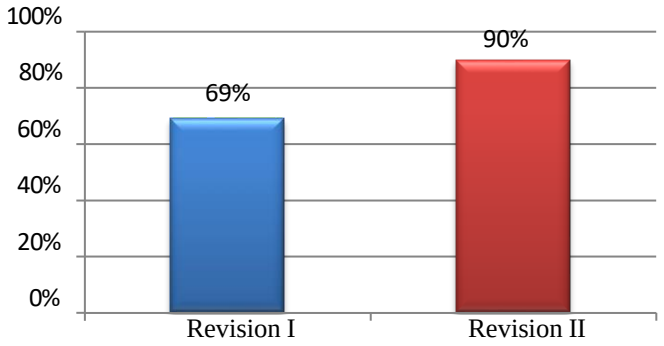


Chart 4.2 : Results average Revision I And Revision II by Expert Material

Information:

Revision I : 69% Revision II : 90%

b. Data Results Validation Expert Language

Validation by linguist, lecturer in the Indonesian Language and Literature Education Study Program, Faculty of Teacher Training and Education, Nias University. Validation is carried out to obtain information Which made as guide revise the products that have been produced. The assessment method is through a validation sheet. Media Validation was carried out twice. So the assessment from material experts can be seen in the following table:

Table 4.2 Results of the Learning Media Appropriateness Assessment Questionnaire Based *power point* interactive by Linguist Validator

NO	INDICATOR	SCORE	
		Revision I	Revision II
	STRAIGHT		
1	Accuracy of sentence structure to represent the message And information Which want to be delivered	3	5
2	Effectiveness sentence Which used	3	5
3	Standardity term Which used according to function	4	4
Amount Each Aspect		10	14
Amount Score Each Aspect		67%	93%
	COMMUNICATIVE		
4	Makes it easy understanding to message or information	3	5
Amount Each Aspect		3	5
Amount Score Each Aspect		60%	100%
	DIALOGIC AND INTERACTIVE		
5	Capable motivating participant educate	3	5
6	Capable push participant educate to think critically	3	5
Amount Each Aspect		6	10
Amount Score Each Aspect		60%	100%
	COMPATIBILITY WITH STUDENT DEVELOPMENT		
7	Conformity with students' intellectual development	3	5
8	Suitability with level emotional participant	4	5
Amount Each Aspect		7	10
Amount Score Each Aspect		70%	100%
	COMPATIBILITY WITH RULE LANGUAGE		
9	Accuracy system Language Which used	3	5
10	Precision system Language Which used	3	5
11	Use terma Which appropriate And doesn't change	3	5
12	Use symbols or icon Which appropriate and doesn't change	3	5
Amount Each Aspect		12	20
Amount Score Each Aspect		60%	100%
Amount Score Entire Aspect		38	59
Presentation Achievement		63%	98%

The results of the linguist's validation of the product in the form of a 3D Animation Video for the 1st revision after the calculation obtained a percentage of 63% from 5 aspects, namely the Straightforward aspect 67% from 3 indicators, the Communicative aspect 60% of 3 indicators, dialogical and interactive aspects 60% from 2 indicators, the aspect of conformity with student development 70% from 2 indicators, the aspect of conformity to language rules 60% from 4 indicators, while the second revision after calculating got a percentage of 92% from 6 aspects, namely the straightforward aspect 93% from 6 aspects, namely the Straightforward aspect 67% of the 3 indicators, the Communicative aspect 100% of 3 indicators, dialogical and interactive aspects 100% of 2 indicators, aspect of conformity with student development 100% of 2 indicators, aspect of conformity with language rules 100% of 4 indicators.

Linguist validation results from six aspects can be seen in the following graph:

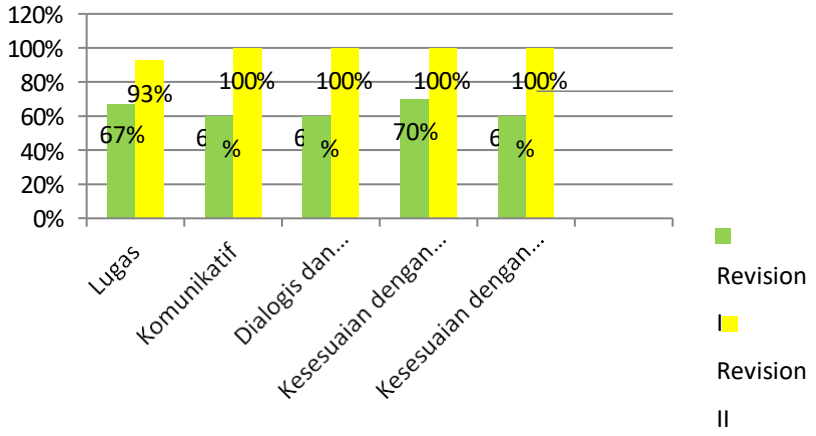


Chart 4.3 : Results Validation Product Each Aspect Revision I And II By Linguists

Information:

Straightforward : Revise I 67% And Revision II 93%

Communicative : Revision I 60% And Revision II 100%

Dialogic And Interactive : Revision I 60% And Revision II

100%

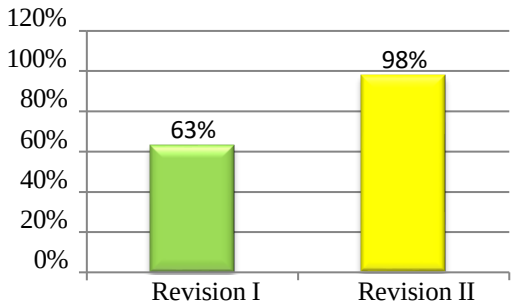
Revision II

100%

Suitability with Language Rules : Revision I 60% And Revision II

100%

The average results of linguists on learning media products with the achievement of Revision I Percentage 63 and revision II 98% can be seen in the following graph:



Graph 4.4 : Results average revision I And II by Linguist _

Information:

Revision I : 63%

Revision II : 98%

c. Data Results Validation Expert Design

Validation of design experts, lecturers in the Building Engineering Education Study Program, Faculty of Teacher Training and Education, Nias University. Validation is carried out to obtain information used as a guide for revision products that have been produced. The assessment method is through a validation sheet. So the assessment from design experts can be seen in the following table:

Table 4.3 Results Questionnaire Evaluation Appropriateness Media Interactive *power point* based learning by Design Expert Validators

NO	INDICATOR	Score	
		Revision I	Revision II
	STRAIGHT		
1	Type fonts Which used in accordance with the media	**3**	**5**
2	Size text Which used in instructional Media	**4**	**5**
3	Appearance videos learning Already clear	**3**	**4**
4	Media learning seen clear	**4**	**5**
5	Language easy understood by participant educate	**3**	**4**
6	Media learning Which served clear	**3**	**4**
7	Animation Which used can explain the material	**3**	**5**
8	Charging slides in accordance with learning	**4**	**4**
9	Background behind voice Which used according to the content	**3**	**5**
10	Media learning Which served in accordance with the	**4**	**5**
11	Presentation appearance slides learning interesting	**3**	**5**
Amount Each Aspect		**37**	**51**
Amount Score Each Aspect		**67%**	**93%**
	ASPECT MEDIA		
12	Duration media in accordance with learning	**3**	**4**
13	Channel slides learning interesting	**4**	**5**
14	Media learning easy For operated	**3**	**4**
15	Media learning simple in operation	**3**	**5**
16	Media learning can used return in another	**4**	**5**
17	Media learning can developed for material	**4**	**4**
Amount Each Aspect		**21**	**27**
Amount Score Each Aspect		**70%**	**90%**
	ASPECT BENEFIT		

18	Media learning makes it easier participant educate deeply	**3**	**5**
19	Media learning can used anytime _	**3**	**4**
20	Media learning can used Where just	**3**	**5**
21	Participants educate capable Study in a way independent with media learning	**4**	**5**
22	Give rise to flavor want to know	**4**	**4**
23	Material Which served clear so that easy accepted	**3**	**5**
Amount Each Aspect		**20**	**28**
Amount Score Each Aspect		**67%**	**93%**
Amount Score Entire Aspect		**78**	**106**
Presentation Achievement		**68%**	**92%**

Results validation design expert towards the product form *Power Point* Based Media interactive got the 1st revision percentage after calculated to get a percentage of 68% from 3 aspects, namely the *Power Point Slide aspect* 67% of 11 indicators, Media aspect 70% of 6 indicators, aspect Benefit 67% from 6 indicator, while revision II after calculating got a percentage of 92% from 3 aspects, namely the *Power Point Slide aspect* 93% of 11 indicators, Media aspect 90% of 6 indicators, Benefit aspect 93% of 6 indicators

The validation results of design experts from three aspects from revision I to revision II can be seen in the following graph:

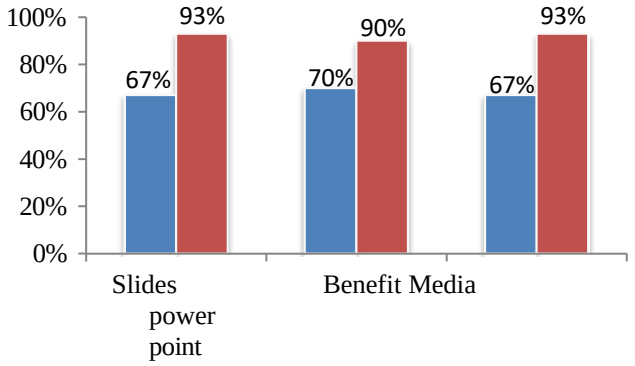


Chart 4.5 : Results Average by Expert Design

Results average from expert design on product media learning with an achievement of 92% can be seen in the following graph:

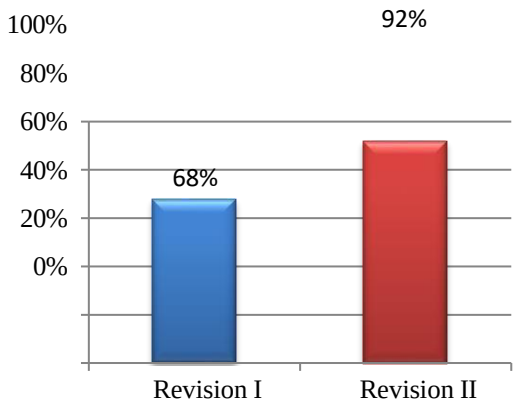


Chart 4.6 : Results Average by Expert Design

The image above shows some information that will be added to each step of the line drawing work.

4. Stage Implementation _ _ _

Implementation Stage Media effectiveness Based on Interactive *Power Point* Media, product trials were carried out at SMK Negeri 1 Mandrehe Barat, individual trials at carried out in class X DPIB as many as 4 people and field trials were carried out in class X DPIB as many as 6 people. This trial aims to determine the abilities achieved by students in the material on the principles of land measurement for construction work. After getting the effectiveness results on student learning outcomes, then in get yield 82%, learning outcomes participant educate reach completeness that is "Very Effective".

a. Results Test Try Individual

After being validated by experts, it was then tested at SMK Negeri 1 West Mandrehe X-DPIB, totaling 4 people. In individual trials, researchers distributed student response questionnaires to determine the practicality of the media. The individual trial assessments can be seen in the table below:

Table 4.4 Results Test Try Individual

No	Name Student	Score	Percentage	Practicality Criteria
1	Efirman Zai	99	90%	Very Practical
2	Fandi Syaputra Zebua	102	93%	Very Practical
3	Herdianto Zai	99	90%	Very Practical
4	Linus Lisiduhu Zai	99	90%	Very Practical
Amount Score				**399**
Percentage				**91%**
Criteria Practicality				**Very Practical**

b. Results Test Try Field

After being validated by experts, it was then tested in the field at SMK Negeri 1 Mandrehe Barat X-DPIB, totaling 6 people. In the field trials, researchers distributed student response questionnaires to determine the practicality of the media. The individual trial assessments can be seen in the table below:

Table 4.5 Results Test Try Field

No	Name Student	Score	Percentage	Practicality Criteria
1	Serafinus Zebua	106	96%	Very Practical
2	Taufikman Zebua	100	91%	Very Practical
3	Hero Christian Zebua	99	90%	Very Practical
4	Yaniari Zebua	99	90%	Very Practical
5	Justin Zebua	102	93%	Very Practical
6	Faith Son Zai	99	90%	Very Practical
Amount Score				**605**
Percentage				**92%**
Criteria Practicality				**Very Practical**

5. Stage Evaluation _ _ _

Evaluation Stage (*Evaluation*) The activities carried out at this stage are evaluating responses to the media test questions given to learners in end material, as well as fill in questionnaire students' responses and answers to the test questions given. In the evaluation there are participant educate Which No complete there is 1 person And Which complete

amount 6 person mark the in get it on test test Which given at the end of learning, namely the competency test.

4.2 Results Test Try Products

1. *PowerPoint*- based media by teachers and students
   a. Student

Product trials were carried out at West Mandrehe 1 Vocational School, individual trials were carried out in class X DPIB and field trials were carried out in class X DPIB. Individual trials were carried out by 4 people and field trials were carried out in class X DPIB with a total of 6 students. The aim of this trial is to determine students' responses to interactive *Power Point- based media* through an assessment sheet in the form of a student response questionnaire.

Trial results can be obtained by assessing students' response questionnaires. The student questionnaire assessment can be seen in the following table:

Table 4.6 Evaluation Practicality Media

No	Test Try Products	Many Samples	Earned Score	Maximum Score	Achievement Level	Category
1	Individual trials	4 People	399	440	90.68%	Very Practical
2	Test try the field	6 people	605	660	91.67%	Very Practical

Product testing has been carried out in individual trials and trials field. In individual trials, the achievement level was 90% in the very practical category, then the researchers conducted field trials and achieved an achievement level of 91% in the very practical category.

After conducting two trials of interactive *Power Point Based Media products* , including individual trials and field trials. So the achievement results were obtained with each being categorized as "Very Practical". The results of product trials that have been tested on students can be seen from the following graph:

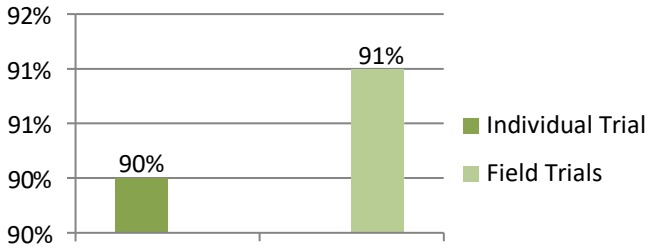


Chart 4.7 : Results Average Test Try Individual And Test Try Field

Information:

Individual Trial : 90%

Trial Field : 91%

b. Teacher

Teacher eye lesson The Basics Construction Building And Land Measurement Techniques by Mr. Steven Gulo, S.Pd. is as a teacher State Vocational School 1 West Mandrehe. So Evaluation from subject teachers can be seen in the table below:

Table 4.7 Questionnaire Observer Practicality by Teachers

No	Aspect Which Rated	Score
	Practicality	
1	Teacher No feel difficulty carry out learning using media.	5
2	Teacher fluent operate media.	5
3	Media can used in a way over and over again by Teacher and students.	5
4	Suitability time Which available in learning with ease of media operation.	4

5	Media help student understand information in learning process .	5
6	Media in trigger creativity student.	4
7	Ability media For activate student in building your own knowledge.	5
8	Suitability media with world student Which currently taught.	5
9	Student fluent operate media *power point Interactive* .	3
10	Process learning use media in accordance with student activities	5
11	Media in accordance with fill material learning thematic	5
12	Atmosphere process learning walk conducive and fun.	5
13	Student more fast understand material with media.	4
14	Media makes it easier Teacher in teach.	5
15	Student more fast finish task individual And groups with media learning resources	5
	Total Score	**70**
	Percentage	**93%**
	Practicality	**Very Practical**

2. Effectiveness Media Based *power point* Interactive

a. Trials Individual

The effectiveness of student learning outcomes is carried out by testing learning outcomes based on the material that has been presented in the form of essay questions in Media. This stage was carried out to determine the level of effectiveness of interactive *Power Point- based media* based on student learning outcomes. Individual trials were carried out at West Mandrehe 1 Vocational School in class X DPIB, taking a sample of 6 students, learning activities using interactive *power point* . The results of the effectiveness of students in individual trials averaged a score of 100%.

b. Trials Field

The effectiveness of this media is carried out using student learning outcomes tests in the form of essay questions that have been published in the media and students' answers are written on the answer sheets that have been provided. The effectiveness trial was carried out at West Mandrehe 1 State Vocational School Class X DPIB with take sample 6 person participant educate.

Learning activities using interactive *PowerPoint- based* results obtained 90.29%. This effectiveness test is to determine the effectiveness of interactive *PowerPoint- based media* through student learning outcomes.

Table 4.8 Evaluation Completeness Effectiveness Media *Power Points*
Interactive on Test Try Individual and Field

No	Bag Effectiveness Test	Number of Students Completed KKM	The number of all students	Result Kk%	Level of success	Information
1	Try Individual	4 people	4	90%	P>89	Very effective
2	Try Field	6 people	6	94%	P>89	Very effective

Student learning outcomes in individual trials and trials field can be seen from the graph below

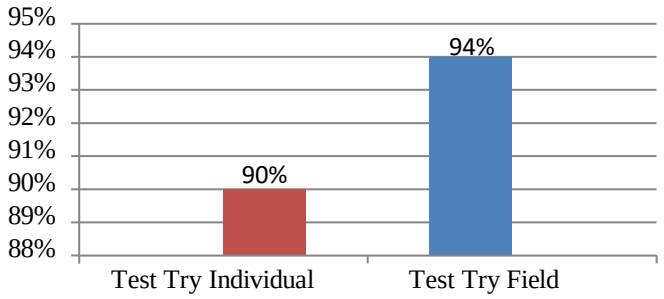


Chart 4.8 : Results Average _
Test Try Individual And Test Try Field

4.3 Data analysis

1. Appropriateness Instructional Media

   a. Materials Expert

      Results evaluation appropriateness Media learning by expert There are three aspects of material, namely, straightforward aspect, material aspect, Benefit aspect. And obtained 90% with Very Decent criteria from three aspect, each get score aspect learning 91%, score aspect material 90%, aspect score benefit 87%.

      From the results of the content and material expert validator above, it shows that the learning media on the principles of land measurement for construction work in terms of content and material is very feasible. to use.

   b. Linguist _

      Conformity of language with Indonesian language rules good and correct, reaching a percentage of 98% with very decent criteria, with a total score of 59 from 5 aspects each getting a score for the Straightforward aspect of 93%, the Communicative aspect 100%, Dialogical and interactive aspects 100%, aspects of conformity with student development 100%, aspects of conformity with language rules 100%.

      From the results of the language expert validator, it shows that the learning media on the principles of land measurement for construction work in terms of language use is very feasible.

   c. Design Expert

The results of the assessment of the feasibility of learning media by design experts for the straightforward aspect, media aspect, and benefit aspect obtained a percentage of 92% according to the criteria very worthy with amount a score of 106 from 3 aspects respectively got a straightforward aspect score of 93%, a media aspect score of 90%, a benefit aspect score of 93%.

From the results of the design expert validator, it shows the learning media The Basics Construction Building And Technique

Land measurements in terms of use are categorized (Very Appropriate).

From the results of the design expert validator, it shows that the learning media for Basics of Building Construction and Land Measurement Techniques in terms of media use is very feasible.

2. Practicality instructional Media

   a. Trials Individual

      Student responses in individual trials were carried out at the West Mandrehe 1 Vocational School, in class X by taking a sample of 4 students. Student responses include linguistic aspects, programming aspects, display aspects, and implementation aspects. The results of individual trials show that the media can be used in learning. The results

of the student response questionnaire obtained a score of 106. maximum 110 with level percentage 91% category (Very Practical).

b. Trials Field

Field trial student responses at West Mandrehe 1 Vocational School in class The results of field trials show that the learning media has can be used in learning, the results of the student response questionnaire obtained a score of 166 out of a maximum score of 105 with a percentage level of 92% in the category (Very Practical).

Based on the two trials above, it shows that there is an increase in results in each practical test. By range evaluation that percentage 81-100% category very practical. So the achievement at the field test stage with a percentage level of 82% is very practical for use in the learning process.

Conclusion

Based on results study And media development *interactive power point* based learning on the subjects Basics of Building Construction and Land Surveying Techniques, the researchers are interested conclusions are:

1. Feasibility of interactive *power point* based media on the principles of land measurement for construction work, material experts obtained 90% of the criteria as very feasible, language experts obtained 98% of the criteria as very feasible, and design experts obtained 92% of the criteria as very feasible.
2. *interactive power point* based media on the principles of land measurement for construction work, on test Individually, 90.68% of the criteria were very practical, and in field trials 91.67% of the criteria were very practical.
3. *interactive power point*- based media on the principles of land measurement for construction work, reached the very effective criteria with a completion percentage of 92

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