Development of an ICT-based Interactive Training Module in Improving Organizational Development Competencies for Elementary School Principals

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Abstract. The abstract The development of an ICT-based interactive training module to improve organizational development competencies for elementary school principals uses the Kvisoft Flipbook Maker application and Adobe Flash Software, which is an effort for principals to feel stimulation in independent learning. This study aims to produce ICT-based training module products. This type of research is research development known as (Research & Development). The product validity test was conducted by four validators consisting of two material experts and two media experts. The practicality test was carried out on the principal of the Nanggalo subdistrict elementary school. Practicality test subjects were taken as many as 14 principals to test the practicality of ICT-based training module products. The results showed that ICT-based interactive training modules in improving organizational development competencies for elementary school principals were very valid. This means that the training modules for elementary school principals are of good quality to be used based on expert material assessments with an average rating of 82.34% in the very valid category and media expert ratings with an average rating of 83.07% in the very valid category. For the principal's practicality test, categorizing ICT-based interactive training modules is very practical because of its ease of use with an average count of 3.56 and a percentage value of 89%. Thus it can be concluded that ICT-based interactive training modules in improving organizational development competencies for ICT-based primary school principals are declared to be very valid and very practical.

Keywords: an ICT-based interactive, Training Module, Competence, Organizational Development, Principals
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INTRODUCTION ~ Preparation of human resources related to the quality of education is very important. If the quality of education is good, then the quality of human resources will also be good. Therefore, if a nation wants to improve the quality of its human resources, then the nation must pay attention to education.

One of the institutions or organizations where receiving and giving education is the school. Each school certainly has a leader, the principal who will direct its members to achieve the vision and mission of the school. School principals are teachers who are given additional tasks in the form of the ability to lead and manage schools in order to improve the quality of education. Stated leadership is getting organizational members to work together to advance the interests of the organization (Griffin, 2013). The development of an organization needs cooperation, because the aim is to progress together. he diverse duties, authorities, responsibilities, jobs, and activities that exist in every educational organization sometimes demand certain specializations in the process. It is not possible if the whole variety of activities is only done by one person, say the principal. In addition to limited time, the principal also has limited abilities. Therefore, these activities, work, authority, duties and responsibilities must be shared with others. These divisions are known as organizing. For organizational

development, competent principals are needed to do it all.

Based on previous research in the province of West Sumatra, which amounted to 392 public elementary schools with a sample of 124 schools in general illustrates that the implementation of organizational development in public elementary schools based on school management standards has been done well, but there are some indicators of school management standards that have not been implemented properly (Rusdinal & Santoso, 2017). The next statement is that school management is a direct and indirect service that influences the education and learning process. Thus, the management position is very central in educational organizations because it affects the organizational development competency of a school principal (Asmendri et al., 2018).

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management position is very central in educational organizations because it affects the organizational development competency of a school principal (Asmendri et al., 2018).

Principals as managerials must have skills, principal competence refers to abilities or skills in carrying out duties and responsibilities as principal (De Vos at al, 2011). The main competence refers to the ability or skills in carrying out the duties and responsibilities as a principal. One of them is how school principals can utilize Information and Communication Technology (ICT) in education. ICT is a means of interaction between education management and administration that can be utilized to improve competence, quality, productivity, and access to education.

ICT-based interactive training modules are media that can help principals independently in improving organizational development competencies in elementary schools. From preliminary observations in Nanggalo Padang sub-district conducted by previous researchers Febrizon, et al (2019) stated that the training needs for increasing organizational development competencies for school principals' readiness to deal with change are at 74% with the category of need, readiness for organizational structure change is at 67 % with the category of need enough, the division and adjustment of tasks are at 69% with the category of need, and the understanding and application of

information and communication technology is at 86% with the category of need.

Based on this, it means that overall the indicators of organizational development in elementary schools in Nanggalo sub-district need serious attention because organizational development is a complex matter that requires planning to be effective.

In addition, based on observations made by researchers, the module is less interesting, difficult to carry anywhere, and is not interactive, so that more books are displayed or only as archives. By providing principals' experience in developing ICT-based interactive training modules to improve organizational development competencies for elementary school principals, principals will more easily master the contents of the module because it is interesting to learn.

For this reason, it is necessary to develop an interactive ICT based training module to improve organizational development competencies for elementary school principals with the aim of improving the quality of school principals in organizational development.

In the process of education and training there are materials that must be mastered by the school principal, including organizational development competencies that will automatically impact on educational organizations. Because organizational development is a

planned effort at the organizational level to achieve a strategic goal more effectively and efficiently (Kenzie et al., 2016). Based on this, then to anticipate and overcome the problem, it is deemed necessary to hold a study that can produce an innovation to improve the ability of principals in organizational development competencies, namely through the development of ICT-based interactive training modules.

In organizational development managerial competence is very urgent in comprehensive research that produces many innovative findings. However, in-depth studies of organizational development competencies especially for elementary school principals have not been done by many researchers, this is what distinguishes this research from other similar research.

The use of ICT-based interactive training modules will greatly assist primary school principals in improving organizational development competency at this time. In addition to increasing motivation, the training module can help elementary school principals develop their organizations according to their needs independently. Based on this description, the researchers felt the need to conduct research under the title "Development of ICT-based interactive training modules to improve organizational development competencies for elementary school principals".

METHOD

A. Development Model

The Research and Development (RnD) method is a research method used to produce a particular product and test the effectiveness of the product. Research is carried out in stages / longitudinally so that the results of these products can benefit the wider community. (Sugiyono, 2015) Development research is research that examines a theory, concept, or model to create or create a new product or perfect an existing product. (Irfandi: 2015)

Based on these explanations, this research is used to produce ICT-based interactive training modules based on pre-existing modules but with different content and content, namely managerial competency of primary school principals, especially the second indicator "school / madrasah organization development in accordance with needs". This is intended to increase organizational development competencies for elementary school principals.

B. Research Procedures

The research and development model to produce this ICT-based module is the ADDIE model. The ADDIE model is generic, ADDIE stands for Analysis, Design, Development, Implementation, and Evaluation. Stages of research and development that will be carried out see in the picture.

Based on the ADDIE development model, the steps undertaken by researchers in the preparation of ICT-based interactive training modules to improve organizational development competencies for elementary school principals are:

ADDIE Development Model

Fase 1 Analysis a. Conduct a needs analysis in developing ICT-based interactive training modules

b. Identify the problem

c. Analyze the planning of an ICT-based interactive training module

Fase 2 Design a. Formulate the preparation of ICT-based interactive training modules

b. Compilation of steps for designing an ICT-based interactive training module

Fase 3 Development a. Develop ICT-based interactive training modules

b. Validation of ICT-based interactive training modules by experts.

c. Revise sections that need improvement from ICT-based interactive training modules

d. Do a trial run.

Fase 4 Implementation a. Demonstrating how to use ICT-based interactive training modules to the principal.

b. Fill out the post-training module eligibility questionnaire

Evaluation a. Analyze results

b. Improve the training module if needed.

c. Obtain ICT based interactive training modules

Fase 5 Evaluation Phase, the researcher will evaluate step by step and thoroughly. Researchers will use instruments to collect data in order to obtain information. The information will be used by researchers to feedback on the contents of modules that have been designed.

Product Testing

The trial was conducted in two stages, namely:

1. Experiments by experts,

2. Limited testing, conducted to determine the strengths, weaknesses, and input from the audience to improve the module.

C. Test Subjects

The determination of Nanggalo District is based on consideration of the ease of access to data and information that researchers need when conducting research.

Trial respondents in this study were elementary school principals in Nanggalo Subdistrict, Padang City, namely principals of 27 elementary schools in Nanggalo Subdistrict, Padang City, with a total sample of 14 headmasters. Where out of the 14 school principals were taken from 5 cluster I principals, 4 cluster II principals, and 5 cluster III principals.

D. Data Types

The data in this study were sourced from primary data and secondary data. Data needed in this study are:

1. Data on the analysis of the need for the preparation of ICT-based interactive training modules This data was obtained through an initial observation sheet, interview guidelines that were asked to principals in Nanggalo District, Padang City.

2. Data regarding the revision of the design of ICT-based interactive training module Data is obtained through a validation program design sheet that is consulted through expert judgment.

3. Data regarding the implementation of ICT-based interactive training modules. This data was obtained through observation sheets and interviews about organizational development competency activities for elementary school principals and their implementation through training.

4. Data on the results of the organizational development competency module for school principals. This data is intended to see the practicality of ICT-based interactive training module design organizational development competencies for principals that are designed. This data was obtained through on job training training in schools and as a test subject for ICT based interactive training modules the organizational development competency was the principal.

E. Data Collection Instruments

The instruments used for data collection in this study are:

1. Observation

Observation using the observation sheet (initial and after the training), to record and record the required data. training in improving organizational development competencies for elementary school principals.

2. Interview

Conducting interviews using interview guidelines. Collecting data through interviews to obtain information directly from data sources directly involved in the development of ICT-based interactive training modules to improve organizational

development competencies for elementary school principals.

3. Training Module Validation Instruments

The researcher used data collection techniques by giving an ICT-based interactive training module validation questionnaire. to lecturers or experts and school principals in accordance with predetermined criteria. The questionnaire was arranged according to a modified Likert scale. (Arikunto, 2012) There are four alternative answers, namely:

Criteria and Scores in Module Validation(Likert Scale)Score Criteria

Strongly Agree (SS) 4 Agree (S) 3 Disagree (ST) 2 Strongly Disagree (STS) 1

4. The Practicality Instrument of the Training Module

Used to determine the principal's response regarding the practicality of the product being developed. This instrument is in the form of a practicality questionnaire that must be filled in by the school principal after carrying out the training using an ICT-based interactive module. Module Practicality Criteria (Likert Scale)

Very Practical> 80% - 100%

Practical> 60% - 80%

Pretty Practical> 40% - 60%

Less Practical> 20% - 40%

Inappropriate 0% - 20%

Descriptive analysis is carried out with the following calculation:

"Percentage of Practicality" ("%") "=" "score obtained" / "maximum score" "× 100%"

G. Data Analysis Techniques

Data analysis techniques used to test the validity of ICT-based interactive training

modules to improve organizational development competencies for elementary school principals were analyzed descriptively, quantitatively, and qualitatively. The calculation results are used to determine the level of validity or feasibility of the module in accordance with the aspects studied. The feasibility classification is divided equally according to 5 categories on a Likert scale.

Module Validity or Eligibility Criteria

(Likert Scale)Presentation Category

Very Eligible> 80% - 100%

Eligible> 60% - 80%

Quite Eligible> 40% - 60%

Not Eligible> 20% - 40%

Very Inadequate 0% - 20%

Descriptive analysis is carried out with the following calculation:

"Percentage of Eligibility" ("%") "=" "score obtained" / "maximum score" "× 100%"

RESULTS

Data description

The application of training modules based on the ADDIE phases is carried out on an ongoing basis and collaborates between researchers, principals, K3SD leaders, and supervisors.

Analysis, the results of the initial analysis of the preparation of ICT-based interactive training modules to improve organizational development competencies for elementary school principals need to be carried out in Nanggalo Padang sub-district. Description of Competency Development Data for Elementary School Principals in Nanggalo District

Readiness of the Principal of HR in facing 74% change,Readiness of new structural changes to changes that occur 67%, Distribution and adjustment of tasks due to 69% change, dan Understanding and applying new technology in schools 86%.

Based on the description of the data, the organizational development competency for elementary school principals in Nanggalo sub-district on each indicator needs improvement. For this reason, researchers plan to conduct an ICT-based interactive training module.

Design, Furthermore, researcher began to develop products using the Kvisoft Flip Book Maker application with software supporting Adobe Flash CS6. Results from the initial product development of this training module include: Results from the initial product development of this training module include:

a. Designing flowcharts and storyboards

b. Designing media

The media is designed according to steps like the following:

1) Designing ICT-based training modules

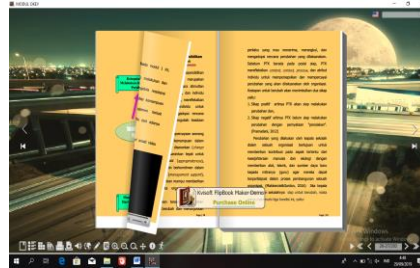The Microsoft Word application is extracted into a PDF file.
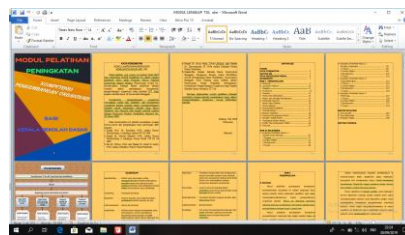
Use the Kvisoft Flip Book Maker application with Adobe Flash CS6 supporting software to create new projects, in the add file or import PDF section
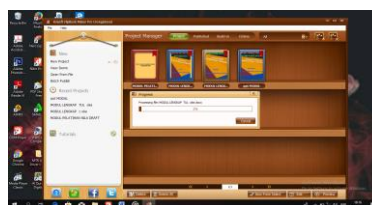
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Display Training Module Materials after Publish

Development, so that the materials and media of the training modules can be used by the principal of the Nanggalo subdistrict elementary school. After the researchers carried out the revision, the researcher consulted the material experts and the media experts to find out whether the training modules were appropriate or valid. Following are some revision of ICT-based interactive training module, including;

a. Revision on the position map Module

b. Revision to material

Material experts suggest that the module material needs to bring up the business that should be done by the principal in relation to organizational development in schools.

c. Revision to the media used

In making media, researcher initially used the web but were advised by media experts to use Kvisoft Flip Book Maker.

d. Revision on the use of advance settings

Media experts suggest that in the table of contents section, you can select pages by pressing the words in the table of contents, the reader goes directly to the desired page.

Implementation, The module testing was carried out at SDN 16 Nanggalo District.

Principals were involved as many as 14 principals who were sampled from researcher.

Evaluation, Test the validity of the ICT-based interactive training module with the practicality test:

a. Test the validity or feasibility of the training module

The requirements for using the material for the validity category have been fulfilled, because based on the validity test by the material experts the average validity value obtained is 82.34%, which means the material in the training module is included in the Very Valid category.

media usage requirements for the validity category have been met, because the average value of validity is 83.07%, which means the media used in the training module is included in the category of Very Valid.

The results of the analysis of the practicality test by the principal of the Nanggalo subdistrict elementary school in the preparation of an interactive ICT training module for increasing organizational development competency for the primary school principals obtained from 14 primary school principals of the Nanggalo subdistrict can be seen in table 1.

Table 1. ICT interactive training module practicality test results

Assessment Aspects	Average	Score %	Category

| indicator	rating		
Display	3,5	87,5	very practical
Interesting	3,5	87,5	very practical
Efficient	3,7	92,5	very practical

Based on table 1 the results of the practicality analysis can be explained that:

a. The evaluation of the test subjects on the display aspects of the training modules on each indicator is very practical, with an average value of 3.5. After doing the practicality calculation it turns out that 3.5 percentage of the practicality value is 87.5% with a very practical category.

b. The evaluation of the test subjects on the interesting aspects of the training modules on each indicator is very practical, with an average rating of 3.5. After doing the practicality calculation it turns out that 3.5 percentage of the practicality value is 87.5% with a very practical category.

c. The evaluation of the test subjects on the display aspects of the training modules on each indicator is very practical, with an average rating of 3.7. After doing the practicality calculation it turns out 3.7 percentage of the practicality value is 92.5% with a very practical category.

Based on the results of the practicality test analysis of the training modules, it can be concluded that the practicality level of the training modules for improving organizational development competencies for ICT-based primary school principals is in the category of "Very Practical" with an average calculation of 3.56 and the percentage value is 89%.
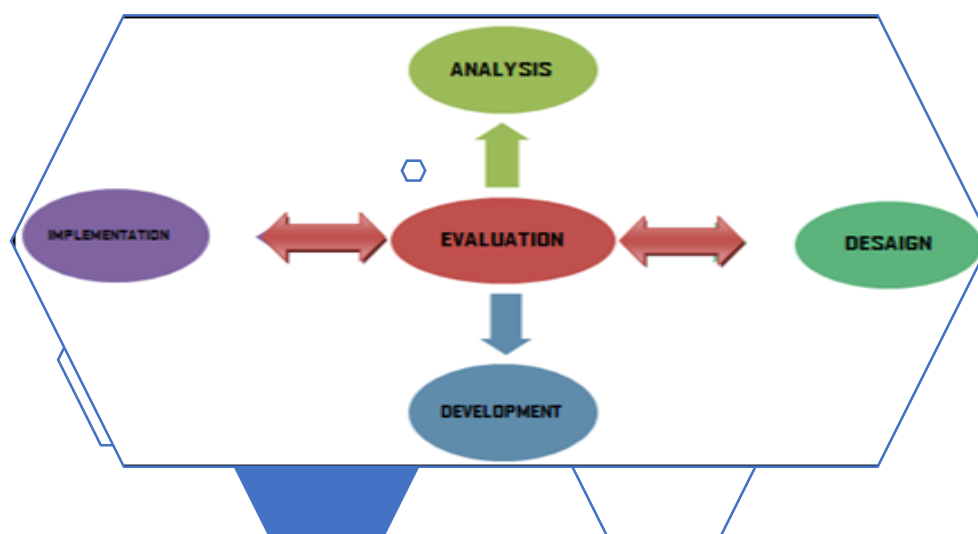
Figure 1. ADDIE Development Mode

ICEE-2

DISCUSSION

In the discussion section, there is a link between the results obtained and the basic concepts and/or hypotheses, and there is a match or conflict with the research results of other researchers. It can also be written the implications of the research results from both in theory and implementation. Based on previous research which is in line with this research is the Development of ICT-Based Interactive Modules for Principal Materials with Scientific Approaches with the aim of this development research are: (1) making ICT-based interactive modules the subject matter of waves with a scientific approach and (2) expressing the attractiveness and effectiveness of modules ICT-based interactive developed as a learning resource. The development method covers eleven stages of development, namely; analysis of needs, objectives, subject matter, treatment, initial manuscript, prototype production, evaluation (material expert test, design expert test and one-on-one test), revisions, final manuscript, trial and final program. The study population was students of class XI IPA at SMAN 1 Kebun Cane, totaling 29 students. The effectiveness test results show that the interactive module is effective to be used as a learning resource with the percentage of students who complete the KKM as much as 79.31%.(Sahri, 2015)

CONCLUSION

Based on research that researchers have carried out, it can be concluded:

The results of the validation of the preparation of ICT-based interactive training modules for improving organizational development competencies for elementary school principals by material experts, obtained training modules in the very valid category. This assessment is based on four aspects, namely the suitability of the material, the presentation of the material, the language, and evaluation. 2. The results of the validation of the preparation of ICT-based interactive training modules to improve organizational development competencies for elementary school principals by media experts, obtained training modules with a very valid category. This assessment is based on four aspects, namely appearance, presentation of material, usefulness, and attractiveness.

3. The results of the practicality assessment carried out by the school principal were obtained by the compilation of an ICT-based interactive training module to improve organizational development competency for elementary school principals in a very practical category. The assessment of practicality is based on three aspects: easy to understand, interesting, and efficient. Obtaining results from easy to understand is 87.5% with a very practical category, presentation of material is 87.5% with a very practical category, and 92.5% with a very practical category.

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