

ANDROID LEARNING MEDIA TRAINING EVALUATION WITH THE KIRKPATRICK ANALYSIS METHOD IN ELEMENTARY SCHOOL

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Abstrak: Dunia telah memasuki era yang semakin canggih. Semua sector mulai berlomba-lomba meng-upgrade kemampuan digital supaya mampu bersaing di tingkat global, tidak ketinggalan pula pada sektor pendidikan. Perkembangan teknologi yang semakin pesat mengharuskan dunia pendidikan untuk upgrade keilmuan guna dapat meningkatkan mutunya. Maka dari itu, dibutuhkan metode pembelajaran baru yang sesuai dengan perkembangan zaman, contohnya yaitu menggunakan media pembelajaran berbasis IT. Akan tetapi pemanfaatan media pembelajaran berbasis IT di SDN Ngaliyan 01 belum optimal dikarenakan kurangnya sumber daya manusia yang ahli di bidang tersebut. Pada penelitian ini membahas tentang pemanfaatan media pembelajaran berbasis android (game guess image and find words), dengan tujuan untuk meningkatkan kompetensi teknologi informasi di bidang pendidikan bagi guru dan memberikan pengalaman belajar yang menyenangkan bagi siswa supaya lebih mudah dalam memahami pelajaran, karena pada dasarnya media visual mudah dimengerti dibanding media konvensional. Kemudian game tersebut juga dapat meningkatkan kemampuan analisis siswa melalui penyelesaian masalah dengan game guess image and find words. Metode yang digunakan dalam penelitian ini adalah metode deskriptif analisis yang mana data-data yang didapatkan selanjutnya diolah, dijabarkan dan dianalisis. Adapun tahapan pelatihan ini terdiri dari 4 tahap yaitu: persiapan yang meliputi observasi, pelaksanaan yang meliputi (pembuatan konten aplikasi android, pelatihan media pembelajaran android, pembuatan aplikasi pembelajaran dengan android), dan evaluasi menggunakan metode Krickpatrick analisis, meliputi (pengukuran level 1 (reaksi) dan pengukuran level 2 (pembelajaran)). Hasil dari evaluasi pelatihan media pembelajaran berbasis android ini, kompetensi Guru SDN Ngaliyan 01 Semarang meningkat dibuktikan dengan hasil pengukuran kompetensi melalui metode Kirkpatrick Analysis level 1 (reaksi) yang mana para peserta memahami proses pembuatan aplikasi android game guess image & find words, dan pengukuran level 2 (pembelajaran) yang mana terdapat peningkatan hasil rata-rata pre-test dan post-test yang artinya para peserta mendapatkan pengetahuan baru terkait pembuatan aplikasi media pembelajaran berbasis android.

Keywords: Android Training, Learning Media, Kirkpatrick Analysis

Abstract: The world has entered an increasingly sophisticated era. All sectors are competing to upgrade their digital capabilities to be able to compete globally, including the education sector. The rapid development of technology requires the education world to upgrade its knowledge in order to improve its quality. Therefore, new learning methods are needed that are in line with the times, such as using IT-based learning media. However, the utilization of IT-based learning media at SDN Ngaliyan 01 is not yet optimal due to a lack of human resources skilled in that field. This research discusses the use of android-based learning media (guess image and find words game), with the aim of improving information technology competence in the field of education for teachers and providing a fun learning experience for students to make it easier to understand the lessons, because visual media is generally easier to understand than conventional media. Then, the game can also improve students' analytical skills through problem-solving with the guess image and find words game. The method used in this study is descriptive analysis method, in which the data obtained is processed, described, and analyzed. The stages of this training consist of 4 stages: preparation which includes observation, implementation which includes (making android application content, android learning media training, making learning applications with android), and evaluation using Krickpatrick analysis method, including (measurement of level 1 (reaction) and measurement of level 2 (learning)). The results of this android-based learning media training evaluation showed that the competence of the SDN Ngaliyan 01 Semarang teachers increased, as evidenced by the

measurement of competence through the Kirkpatrick Analysis method at level 1 (reaction), where the participants understood the process of making the android application guess image & find words game, and measurement of level 2 (learning), where there was an increase in the average pre-test and post-test results, which means that the participants gained new knowledge related to the making of android-based learning media applications.

Keywords: Android Training, Learning Media, Kirkpatrick Analysis

Introduction

Education is one aspect that becomes a benchmark for the progress of a nation. The development of increasingly sophisticated technology requires the world of education to upgrade knowledge in order to improve its quality. Advances in science and technology can be seen in the rapid dissemination of information and communication processes that take only seconds. the appearance and form of information and communication itself is digital, that is, it is active and interactive. (Hartono et al. 2018)

In the era of the industrial revolution 4.0, the creation of technology and information is used to achieve maximum effectiveness and efficiency, so it is hoped that many digital-based innovations will emerge, including in the world of education. Effective learning can also be seen from the use of learning media. The learning material provided can also use digital-based media. This digital-based learning media also has many advantages in the professional development of teachers.

This rapid development encourages teachers and the world of education to be able to adapt to the times in order to adjust and create new technology-based learning media models, such as the example of Android-based learning media. The development of this media is based on the perception that fun learning is supported by learning media that attracts students' interest and attention. (Myori et al. 2019)

Therefore, this is where the important role of schools is to improve the quality of the nation's next generation who are competent, adaptive, innovative, and creative, one of which is by using new learning media in accordance with the times. Because the demands of learning in the current era are driven by the use of technology. This cannot be realized if there is no good cooperation from teachers, therefore to achieve good quality learning requires teachers who are proficient in technology.

Training is a series of actions carried out systematically with continuous stages. The existence of a training in a school or an organization, it needs funds, time, and a lot of energy. Therefore, in the management of decision-making by the authorities, it is necessary to know that training activities are an investment issued by the school or organization. (Widiyastuti and Purwana ES. 2015)

A training program is a program to improve mastery of skills and certain work execution techniques for needs and development with the aim of preparing employees to hold certain positions in the future. Training is provided based on need. The type of training provided must be in accordance with the type of ability required. Training will take place optimally when it is designed according to the right method, time and needs. (Yama 2015)

Training is a process of teaching and learning towards certain knowledge or skills and attitudes of participants so that participants become more skilled and able to carry out their responsibilities properly. (Setyanti 2009) Training is a series of processes to change the work behavior of a person or a group of employees in improving performance in an organization. Training is synonymous with the skills and abilities needed for the work being done. Training is an investment that is used for the present and will help employees achieve job success.

A training is carried out because a company aims to have employees who are also in accordance with company goals. There are several objectives of the training, namely:

1. Improving employee skills and expertise so that they are able to complete tasks more quickly and effectively.
2. Increase understanding so that tasks can be completed logically and rationally.
3. Develop an attitude capable of creating a sense of good cooperation between employees and leaders.

Some of the benefits of the training are as follows:

1. Helps achieve development and self-confidence.
2. Assist employees in making decisions and solving problems appropriately.
3. Reducing fear in doing new assignments.
4. Increase the sense of job satisfaction. (Utomo, AP. and Priskila 2014)

Effective training can be done in several ways, namely as follows:

1. Analysis of needs to develop specific knowledge aimed at improving employee performance.
2. Designing instructions for deciding and compiling the contents of a training program using training techniques.
3. Conduct validation to present training to several representative employees.
4. Implementation of validated training.
5. Evaluation and follow-up by assessing the effectiveness of the training and it is necessary to find the cause if it is less effective and provide input for future improvements. (Barnawi 2014)

According to Kirkpatrick, D.L. and Hamblin, training evaluation is a structured effort to collect information to evaluate the results of training. Training evaluation must be planned together with training design, including in the formulation of goals and objectives to be achieved. In training evaluation, the information collected will be evaluated to determine whether the training objectives have been achieved. The results of the training evaluation will provide feedback to participants and assist in making decisions for training improvements.

The evaluation model that is commonly used to conduct training evaluations is Kirkpatrick's analysis which was developed by Daniel L. Kirkpatrick in 1959. In this evaluation, Kirkpatrick's analysis mentions four different levels for conducting training evaluations. The four levels include:

1. Level 1 - Reaction

At this initial level, an assessment of the satisfaction of the training participants is carried out using certain criteria as a reference for measurement. These criteria include the content of the material, the facilities provided, the food and drinks available, and the quality of the training instructors.

2. Level 2 - Learning

At the second level, an evaluation is carried out to find out whether the participants have paid attention and understood the material presented. The method used is to compare the results of the pre-training test with the post-training test results to obtain accurate data.

3. Level 3 - Behavior

At the third level, an evaluation is carried out to ensure that the skills, knowledge and attitudes taught during the training are actually applied and visible in the participants' daily work behavior. In addition, this is also expected to have a significant impact on improving participant performance.

4. Level 4 - Result

The last level to evaluate whether there is an increase in performance in an organization after conducting training is level 4. The purpose of gathering information at level 4 is to measure the overall impact on a group of organizations. (Utomo, AP. and Priskila 2014)

Evaluation aims to provide accurate data on the implementation of a training program, so that the training provider can make an informed decision about whether to continue the training. Training evaluation also functions to evaluate the progress of training implementation, identify factors that encourage or hinder training, detect deviations or errors in training implementation, and provide materials needed to formulate suggestions for improvement, change, termination, or expansion of the training program. (Setyanti 2009)

Implementation of training on making Android-based learning media consists of two activities, namely:

1. Android application content creation

The process of creating android application content is adjusted to the material/subjects studied at school so that it can be used in making android applications, in this case the application is in the form of guess games and find words (guess games and find words).

2. Training and making learning applications with Android

The implementation of this training was given face to face to teachers of SD Negeri Ngaliyan 01 Semarang. The training is carried out through presentation of material by presenters as well as questions and answers to deepen knowledge regarding android applications and guess image and find word games. Making and adjusting the guess image & find words game is done to ensure that the teachers do not experience difficulties. This stage is also an effort so that the teachers are really able to adjust the subject matter and are able to make guess image & find words games after what is being taught.

Evaluation activities are carried out to monitor training that has been carried out with the aim of teachers gaining competency in the form of mastery of information technology in the process of making android-based learning media. Evaluation was carried out using Kirkpatrick analysis (Prasetyo et al., n.d.), which consists of:

1. Measurement Level 1 (Reaction)
Develop questionnaires related to the implementation of training in terms of preparation, material, implementation, and understanding during the training. This questionnaire is also used as feedback on the training that has been carried out.
2. Measurement Level 2 (Learning)
Using the pre-test and post-test to find out the participants' understanding before and after the training. Questions made about android applications and how to make android applications.

Based on a brief interview with the principal of SD Negeri Ngaliyan 01 Semarang, Mrs. Ngatiningsih, that the not optimal use of IT (Information and Technology) at SD Negeri Ngaliyan 01 is caused by a lack of human resources who are experts in technology and information. Therefore, this research aims to improve information technology competence in the field of education for teachers at SD Negeri Ngaliyan 01 through Android-Based Learning Media training (Guess Image & Find Words Game), which is a learning model by playing guessing games and finding words based on android. With this method students will find it easier to understand the material because basically visual media is easier to understand than conventional media. The game can improve students' analytical skills through problem solving using the guess the picture feature and find the words. The hope is that this research will provide an enjoyable learning experience for students and improve information technology competence in the field of education for teachers.

Method

The method used in this study is a descriptive analysis method in which the data obtained is then processed, described and analyzed. The stages of this training consist of 4 stages, namely: preparation which includes observation, implementation which includes (creating android application content, android learning media training, making learning applications with android), and evaluation using the Kirkpatrick analysis method, including (level 1 measurement (reaction)) and level 2 measurement (learning).

Findings and Discussion

1. Execution
 - a. Android Application Content Creation
An important activity before creating an Android application is creating content where the content will be displayed when playing an Android application. Users intended for this android game are SD Negeri Ngaliyan 01 Semarang children, therefore it is necessary to adjust the subject matter to the content to be made. In this research, we have created some content for guess image and find words games.
 - b. Creating Learning Application Content with Android
The results of making guess images & find words games. Implementation of the training begins with the presentation of material on the Utilization of Android-Based Learning Media (Game Guess Image & Find Words) accompanied by practice, then the mentoring process for making guess image games is carried out directly in training and mentoring through wa groups, where elementary school teachers in ngaliyan 01 and the author can interact and consult regarding the process of making the guess image game that will be made.
2. Evaluation
Evaluation of the training uses Kirkpatrick Analysis to measure level 1 (reaction), researchers have made a questionnaire whose contents are to get an overview of participants' satisfaction with the implementation of the training on the use of android applications as android-based learning media in terms of preparation, implementation, and understanding while attending the training. While the evaluation is to measure level 2 (learning), the authors use the pre-test and post-test to determine the extent to which the participants understand the training. The questions asked were related to knowledge about android applications, learning media and how to make android applications.
 - a. Level 1 Measurement (Reaction)
The learning program is considered successful if it starts from the preparation, implementation, and teacher's understanding of the material, learning media, and also the assessment that the teacher uses for learning. (Badu 2013) The measurement of this stage is aimed at the teachers of SD Negeri Ngaliyan 01 in the hope of knowing the reactions related training which includes the preparation, implementation, and understanding of the teachers of the material presented. From the questions asked to find out whether the participants had previously attended training on making Android-based learning media, most of the answers from the teachers had never attended the training.

The next question is what are the expectations of the teachers after attending this training, Ms. Widiyantini Tri Handayatik stated that:

"My hope is that in the future I will understand more and be able to add more insight for the progress of students at school." The same answer was given by Intan Nugraheni, who hoped "You can take advantage of Android-based learning media (guess image & find words game)".

A different answer was given by Mr. Arif Iswahyudi, who stated that "I hope this training can broaden my horizons because it is very interesting and can be programmed for activities among teachers and students."

The next question is if in the future there will be more training on what topic do you want to get, the answer from Mr. Wahyu Agus Salim, wants:

"Alternative offline games are provided which can be played simply with a computer, so that elementary school children can use them on a computer sky." Likewise with Mr. Arif Iswahyudi, expecting:

"The topic I want is one that is appropriate to everyday learning, so it can be applied in learning activities so that students are more enthusiastic." Meanwhile, the Principal, Mrs. Ngatiningsih, wanted training that was in line with the independent curriculum, she said:

"Implementation of the independent curriculum through an IT-based learning model at the elementary school level".

From the description above, the implementation of training for the use of Android-based learning media is suitable and relevant to the needs of SD Negeri Ngaliyan 01 Semarang teachers.

b. Level 2 Measurement (Learning)

Evaluation at this second level of measurement is related to improving the ability of participants, which includes increasing knowledge, skills, and attitudes in accordance with training objectives. (Ramadhon 2016) This measurement is carried out to measure the extent to which participants understand the learning process in this case the training carried out. The questions given relate to android applications, tools for creating android applications, android operating systems, and learning media which consists of 10 questions.

Before the activity started, the researcher distributed the pre-test to the teachers and the results of the pre-test can be seen in figure.

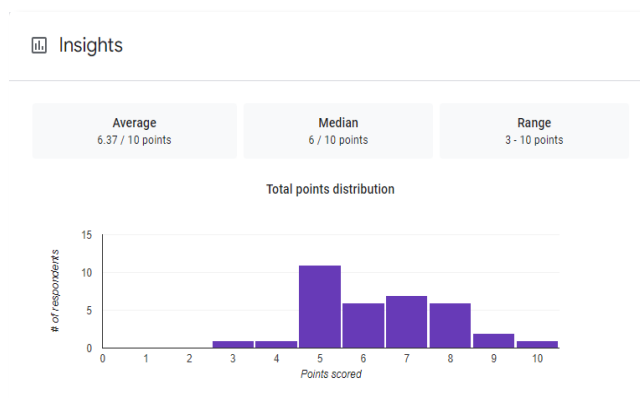


Figure . Average pre-test results
Image Source: Author documentation, 2022

When viewed from the results of the pre-test, the 35 teachers who did the pre-test already had sufficient knowledge about making applications and the Android operating system, which from the average results obtained a score of 6.37 out of a total of 10 questions, this means that the average teacher has a value of 6 or out of 10 questions answered correctly 6 questions.

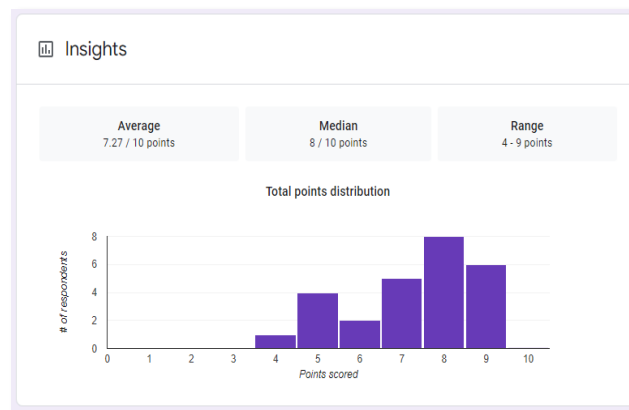


Figure . Average post-test results
Image Source: Author documentation, 2022

Meanwhile, the results of the post-test which can be seen in Figure 52 show the results of improvements which, if seen by the average score, is 7.27 out of 10, which means that the teachers in answering have progress and additional knowledge as indicated by the average teachers answering 7. correct answer of the 10 questions given.

Table 1. Pre-test and post-test results

Evaluate	Average Training Evaluation Score
Pre-test	6,37
Post-test	7,27

Conclusion

The competence of teachers at SDN Ngaliyan 01 Semarang has increased as evidenced by the results of competency measurement through the Kirkpatrick Analysis level 1 method (reactions) in which participants understand the process of making the android game guess image & find words application, and level 2 measurements (learning) where there is an increase in average results - average pre-test and post-test, which means the participants gain new knowledge related to making Android-based learning media applications.

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