



# Exploring the Impact of Tutorial Learning Media on Vocational High School Students: An Evaluation of Content, Display and Application

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**Abstract.** This study aimed to develop tutorial learning media in Graphic Design subjects for students who take part in tutorial learning, knowing the practicality and effectiveness of the tutorial learning media that has been produced. This type of research was research and development. The development model used in this study was the ADDE model, which consists of four stages: analysis, design, development, and evaluation. This model is the result of ADDIE and Borg & Gall modification. Data were analyzed using descriptive statistics by describing the data collected from the development results, validator assessments, and observation results through instruments. Instrument data was obtained from the results of product trials that were divided into three categories; one to one Trial with three subjects is the first stage. The results showed that based on the results of expert validation with an average percentage of 100%, showing the results of the development of tutorial learning media at vocational high school are in the very valid category, the results of the analysis of teacher responses mean a percentage of 94.44% and students with an average percentage of 84.18% show the development of tutorial learning media in Graphic Design subjects is in the practical category of use. Meanwhile, tutorial learning media shows that it is effectively used at vocational high schools based on students' increased learning test results.

**Keywords:** Learning Media · Tutorial Development · Effectiveness · Practical

## 1 Introduction

Many things affect student learning motivation, including the facilities and infrastructure used [1]. An educator also uses various media to attract his students' attention so they are always enthusiastic about following the lessons taught [2]. One example used is learning media. There are various types of learning media, such as lectures, discussions, problem-solving media, and other media. Meanwhile, as we know that learning media has an important role. Learning media is a tool for the teaching and learning process. Everything can stimulate the learners' thoughts, feelings, attention, and abilities or skills to encourage learning [3, 4].

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This comprehensive and profound limitation covers understanding sources, environment, people, and media used for learning/training purposes. Learning media is a physical means to convey learning content/materials such as books, films, and videos [5]. The National Education Association revealed that media is a means of communication in print and hearing-view forms, including hardware technology [6]. The implementation of learning in schools hopes that teachers can provide learning innovations that can encourage and facilitate students in carrying out their learning process and not only in the cognitive realm but also from attitudes and confidence in facing various challenges and not being afraid of competition [7, 8].

The tutorial learning media is the focus of discussion in this research. Because the media is a very supportive component to understanding the characteristics of students in order to achieve learning objectives, the learning process will run effectively if educators understand, know, and understand learning media, especially tutorial learning media. This tutorial learning media is one of the media that will be used and support the implementation of learning following the competencies and characteristics of students [9]. Tutorials are one of the alternatives that can be observed to improve the quality of learning. Tutorials will provide an opportunity to develop a learning process that can be a vehicle for actualizing the creativity of teachers and students to become successful learners [10]. The tutorial will provide a learning environment conducive to developing the potential of teachers and students in various aspects, Such as the learning environment.

Motivation means driving the students' activities in learning the material, doing assignments, participating in mentorship assessments, and helping students solve learning problems. The tutorial program is a learning program used in the learning process using software in the form of a computer program that contains subject matter and practice questions. The development of computer technology brings many changes to a learning program that should be designed, especially to make this technology capable of engineering the actual situation. The emphasis is on continuous efforts to maximize learning activities, such as cognitive interactions between students, subject matter, and programmed computer devices. The results of research on the previous tutorial learning media show that students can achieve the expected competencies. Learning like this requires realizing learning that involves all students with cooperation in interaction.

The results of the author's observations at Vocational High School show that Graphic Design learning still uses face-to-face media, lectures, and collaboration using power points on each basic competency in one meeting, after explaining the material then directly practiced by students using three applications because it is still the basis of graphic design, starting with using Microsoft publisher, Photoshop applications, and PowerPoints that are collaborated depending on what tasks are given. Where at the early stages of using Microsoft Publisher, if it has entered the realm of photo editing, images. Also combined into two or three dimensions, then using photoshop when the material is about designing logos or on bitmaps making images whose difficulty level is difficult, it is given the Corel draw application. For student assignment media systems used via android or laptop, the task is to design; personally, the teacher only guides and adds or corrects existing shortcomings, such as background, typography, background, color, and image merging system, positioning of writing and images, how total the size of the

paper and slides. Once complete, students can print or print proof of their work in the form of student assignment works from the subject.

Meanwhile, in the Graphic Design subject, the face-to-face and lecture media used before are still less effective and efficient. Class Computer and Network Engineering students find it challenging to understand existing learning concepts and are less motivated to learn Graphic Design lessons, this can be seen in students who look less focused, and the scores obtained in these subjects are less than optimal. Therefore, the tutorial development media is highly expected to develop in the Graphic Design subject to motivate students in the learning process.

The results of other studies say that the learning outcomes of students who use b-learning media are higher than students who use c-learning media. These findings provide empirical evidence that online learning is excellent for supporting the success of face-to-face learning.

## 2 Method

### 2.1 Research Approach

The approach used in this study is qualitative. In addition, through research, it can also develop and apply new things that are more innovative in education. Several types can be carried out, one of which is research and development or research and development. The research and development studies include organization and management, financing, quality/ learning, and teachers. Problems related to learning quality include, among others, the effectiveness of program performance (acceleration, development, culture, excellence, final exams), curriculum implementation, and active and culture-based learning media (Fig. 1).

Research and development (R&D) is a research approach to produce new products or improve existing products. The resulting product can be in the form of software or hardware. From the ten steps of the development research procedure, according to Borg and Gall [11], it can be carried out more simply into three main steps, namely (a) Preliminary study, (b) Planning stage, and (c) Development.

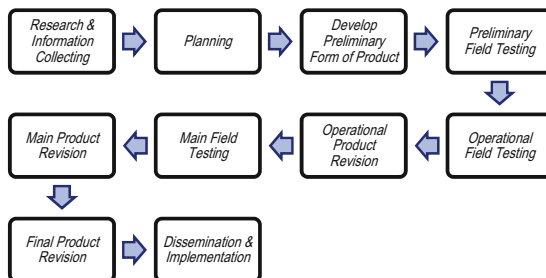


Fig. 1. Research and Development Borg and Gall [11].

## 2.2 Population and Sample

The population is all members of a group of humans, animals, events, or objects that live together in one place and are planned to be the target of conclusions from the final results of a study. Based on this explanation, the population in this study were 10th-grade Computer and Network Engineering Students at Vocational High School 2, Gowa Regency, totaling 31 people (1 teacher and 30 students). The sample is part or representative of the population that the researcher sampled. From the population that has been determined above, the sample used in the study amounted to 15 students.

## 2.3 Data Analysis

The analysis method employed is modified depending on the nature of the data being gathered. Results from the pilot study and the validation survey questionnaires are analyzed using descriptive and reflective methods. Narratives will be provided for data obtained via descriptive analysis, and percentage descriptive techniques will be used to process data obtained via questionnaires with reflective analysis [12, 13]. Quantitative and qualitative data, respectively, are the results of research conducted by experts and experiments conducted by instructors of Graphic Design. Comments and suggestions made on the test questionnaire sheet constitute qualitative data.

Quantitative information is typically presented as a mean and standard deviation of scores on a Likert-type scale from one to five. Then, the completed product was put through a more extensive scale test with faculty and students, with data analyzed to produce percentages. The results of the feasibility study were analyzed using a descriptive analysis approach.

# 3 Results and Discussion

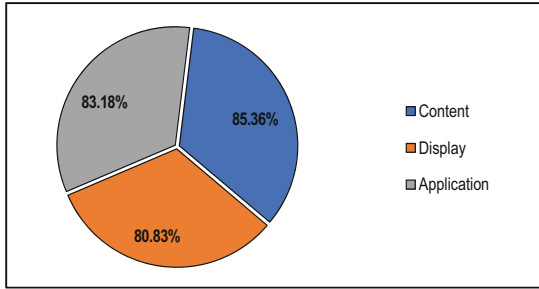
## 3.1 Small Group Trials

After making improvements to the Learning Media Tutorial, the trial's second phase was carried out. In this Trial, 10 (ten) students were involved. As in the first Trial, in this second Trial, the teacher explained the *graphic design* material through a Learning Media Tutorial, and the student's attention to the teacher's explanation. After the teacher explains the material, students can use Learning Media Tutorials as an application in learning media (Fig. 2).

Based on the small group trial results, students' responses obtained a percentage of three aspects: the application aspect at 85.36%, the display aspect (media) at 80.83%, and the content (content) at 83.18%. The average percentage is 83.18%, indicating tutorial learning media is in the excellent category. Subsequently, revisions were made for the expanded Trial.

## 3.2 Expanded Trial

After making improvements to the Learning Media Tutorial, the trial's second phase was carried out. In this Trial, 25 (twenty-five) students were involved. As in the second Trial,



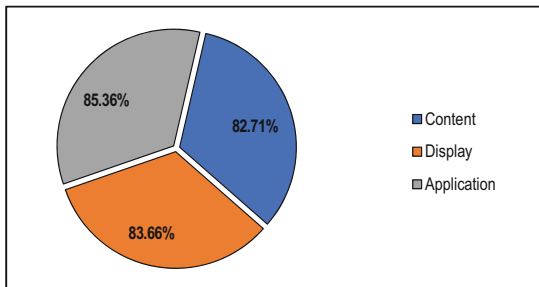
**Fig. 2.** Small Group Trial Results

in this third Trial, the teacher explained the graphic design material through a Learning Media Tutorial then the students paid attention to the teacher’s explanation. After the teacher explains the material and how to use the media, students can use the Learning Media Tutorial as a guide to learn graphic design (Fig. 3).

Based on the results of the expanded Trial, students’ responses obtained a percentage of three aspects: the application aspect at 82.71%, the display aspect (media) at 83.66%, and the content (content) at 85.36%. The average percentage result of 83.91% shows that tutorial learning media is in the excellent category.

The evaluation stage was conducted after the analysis that had been carried out previously. The evaluation continued to know the practicality of the learning media that has been made and the effectiveness of the tutorial learning media. In general, the results of the Trial have met the practicality requirements with a general assessment of all components that experts have validated. All validators provide an assessment that the assessed component is declared usable with minor revisions. The questionnaire is distributed to all students in the trial class. This aims to measure the practicality or not of the Tutorial Learning Media developed for student learning. As for practicality, we can see from:

The teacher’s response was carried out by involving one teacher of graphic design subjects. Teachers are given a questionnaire regarding Learning Media Tutorials. The results of the teacher’s response were in the excellent category: seven aspects obtained a score of four, 94.44%.



**Fig. 3.** Expanded Trial Results

The information from the aspects of assessing educators' responses includes:

- a. Ease of using Learning Media Tutorials
- b. Accuracy in choosing templates and content Learning Media Tutorials
- c. It has an attractive look
- d. It can be used as a reference for independent learning, according to the speed of students
- e. Have the accuracy and clarity of the material presented
- f. The order of the material is consistent and systematic
- g. Level of student interactivity with Learning Media Tutorials
- h. Eligibility of the proposed examples
- i. Clarity of the language used in the material

Based on the responses, the students carried out three stages: one to one trial involving 3 students and small group trials involving 10 students who were then allowed to use the Tutorial Learning Media that had been developed. Furthermore, field trials are carried out after testing the Learning Media Tutorial has been completed and revised. The expanded Trial was conducted using a sample of 25 learners close to actual learning conditions.

The percentage of instrument assessment is said to be very valid or very good if the overall instrument acquisition value is 85.00%–100%. Based on this, it is said to be adequate because all student activities during the three trials showed a significant increase showing an excellent category average.

The findings of this research are a development of tutorial learning media at vocational high schools that are valid, practical, and effective so that they are suitable for use to support the learning process of Graphic Design subjects, especially in class computer & network engineering at vocational high schools. This section is stated to discuss the results of development research on the achievement of research objectives, namely based on the results of the analysis of teacher activities and student activities with an average percentage of 83.91%, the development of tutorial learning media in Graphic Design subjects is in the practical category used in vocational high schools. The results of the development of tutorial learning media in Graphic Design subjects are effectively used in vocational high schools based on the results of the analysis of the responses of teachers and students who are in the excellent category, as well as student learning outcomes that are above the Minimum Completion Criteria score of 86.50.

The results of this study followed the previous research and said that the learning outcomes of students who use blended learning media are higher than those who use conventional learning media [14]. These findings provide empirical evidence that learning is excellent for supporting the success of face-to-face learning [15, 16]. Combining the two learning media (conventional learning and online learning) equipped with a tutorial provides opportunities for students to have more time to engage in learning activities while what was stated in the previous tutorial learning media shows that students can achieve the expected competencies, learning like this requires the realization of learning that involves all students with cooperation in interaction.

In general, the results of the Trial have met the practicality requirements with a general assessment of all components that experts have validated. All validators provide an assessment that the assessed component is declared usable with minor revisions. Based

on the responses, the students have carried out three stages, n: one-to-one trials involving 3 students, t and Meanwhile, field trials were carried out after testing the Tutorial Learning Media in revision. The expanded Trial was conducted involving 25 learners or approaching actual learning conditions. The fifth stage is to disseminate and apply to class computer & network engineering at vocational high schools' primary classes by testing the final product in the form of Learning Media Tutorials. The dissemination of Learning Media Tutorials from the development was conducted on a limited basis, given to class computer & network engineering at vocational high schools.

Based on the observations that have been carried out, all teacher activities have been carried out, especially teacher activities to open lessons, teacher activities to make perceptions, teacher activities to motivate students, and teaching activities to convey a brief description of tutorial learning media in graphic design subjects. The results of observations on practicality are reviewed from the teacher's activities on video tutorials.

Tutorial media can be an effective learning method for increasing academic achievement and student involvement in learning [17]. However, it is essential to consider students' needs and preferences and integrate tutorial media with direct interaction between students and teachers to help students understand the material in greater depth [18, 19].

However, some teachers may not be familiar with or feel uncomfortable using tutorial media as a learning method. Some reasons might include lacking technical skills or experience in producing quality video tutorials. In addition, there are also concerns about the effectiveness of tutorial media in facilitating in-depth learning and strengthening social interactions between students and teachers. To address this concern, training and technical support can be provided to help teachers make more effective use of the potential of tutorial media in their lessons. In addition, teachers can integrate the use of tutorial media with direct interaction with students and collaboration between students.

## 4 Conclusion

Based on the research results, it can be concluded that the tutorial learning media created contains learning tools, materials, video tutorials, and questions. After the learning media was completed, a validation stage was carried out to see whether the learning media created was feasible to be developed. The obstacle faced during the research process was gathering students to join classes made via Zoom (e-learning). The results of data analysis of the response of students and educators to the learning media show that the learning media tutorials are practical and worthy of development. Likewise, the effectiveness of the products developed is seen from the aspects of (a) the achievement of learning outcomes that increase from the Minimum Completion Criteria value and (b) the implementation of student and educator activities according to the indicators set. The pre & post-test data analysis results showed an increase in scores. This means that using tutorial learning media can increase student learning achievement.

Meanwhile, the results of data analysis of the response of students and educators during the developing tutorial. Learning media are in the excellent category. Based on these data, it was concluded that multimedia learning using video tutorials was developed practically for use at Vocational High Schools.

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