

Evaluation Study of Use of Interactive Multimedia 4.0-Based Teaching Materials

Mesterjon¹, Suwarni², Dwi Rulismi³, Sudarwan Danim⁴

^{1,2,3}Universitas Dehasen Bengkulu, Indonesia

⁴Universitas Bengkulu, Indonesia

mesterup@yahoo.co.id, suwarni@unived.ac.id, dwirulismi@unived.ac.id

Abstract

The evaluation carried out on the Utilization of Interactive Multimedia-Based Teaching Materials in student development courses is based on changes in "adaptation to the use of technology 4.0" which tend to change in trend, so this is inline with an interactive learning model, in encouraging student curiosity about knowledge, it becomes important to find out student strategies in using interactive learning media to improve the abilities of these students, the abilities intended include the abilities students use to communicate, both in the form of writing, speech, and the operation of technological devices and applications used. In an effort to reveal the facts from the findings when this research was conducted, the method used in this study was a quantitative method and data analysis techniques in this study the researchers used the CIPP model to evaluate the use of interactive multimedia-based teaching materials with 12 indicators and 53 questions related to utilization interactive multimedia-based teaching materials for early childhood students with an average score of 69%. Declared relevant and can be utilized in learning in early childhood. In its implementation, the samples from this study were tested on a limited scale and also tested on a large scale. For the limited-scale trial, it consisted of two parts of lecturers and one part of the student class, the number of which was randomly sampled, while for the large-scale test, it consisted of two parts of lecturers and two parts of student classes whose numbers were taken randomly. To support the required data iteration, in this study the implementation of collecting data used direct observation and oral tests. The data analysis technique applied uses the average score, percentage and t-test. It was concluded that the development of interactive multimedia-based teaching materials is feasible to use to improve language skills based on limited tests and broad tests. And the development model is effective in improving children's language skills significantly, seen in $t_{hitung} > t_{tabel}$.

Keywords

utilization; teaching materials; evaluation



I. Introduction

From every civilization, students always hold a very fundamental position, because education at this time has a very lasting influence on the mental development and intelligence of students in each of the following phases. Therefore, as a prospective early childhood

education teacher, it is necessary to get serious attention from various parties. Unfortunately, there are still many problems that must be taken seriously.

The education of students, especially early childhood study program students, is education aimed at students from class 2022 to class 2023, referring to the opinion of NAEYC experts as prospective teachers, students who are categorized as students from early age students to school-age students High so that they are entitled to get educational services at every level of education followed by these students. This period is a period of boiling character formation or what is commonly referred to as the golden age where at this time the ability to reason logically in thinking develops rapidly to reach eighty percent (Dewi, 2017).

The use of teaching materials with multi-media tends to be still limited in terms of quantity and accessibility and the groups and parts are still concentrated on traditional patterns. The implementation is more because there are still lecturers who use leaflets from paper and draw manually on the blackboard still using media such as books, magazines, cards, letters, posters, and so on. Therefore, it is necessary to do research to develop interactive multimedia-based teaching materials.

According to the Ministry of National Education (2007) there are 4 types of teaching materials, one of which is interactive multimedia-based teaching materials such as CAI (Computer Assisted Instruction), interactive multi-media Compact disks (CD) and web-based learning materials. Interactive multi-media is a learning program that combines text, images, videos, animations, etc., which is integrated with the help of a computer used to achieve learning objectives and users can actively interact with the program (Surjono, 2017). The use of interactive learning media uses interactive multimedia-based teaching materials using Microsoft PowerPoint applications and benime applications and other applications. The application can combine video, audio and animation at the same time.

Learning media is a tool that can facilitate the process of receiving subject matter delivered and of course will facilitate the achievement of successful learning objectives. (kustiawan ucap, 2016: 8)

Interactive multimedia is interactive media which is one of the audio visual learning media that can be operated using a computer. Interactive media combines several images, sounds, videos and animations in one file so that it is easy to use. Interactive media is a tool for conveying learning messages in the form of knowledge, skills and attitudes so that they can stimulate students' thoughts, feelings, attention and willingness to learn (Ardiansyah:2011).

According to (Join Committe:1994) Evaluation is a systematic assessment of the value or ability of an object. Evaluation also has various models, one of which is the CIPP model. According to Djudju (2008) in the book Muharika and Ambiyar: 2019, the CIPP model was developed by Stufflebeam. Etc. (1967) this evaluation consists of a context, input, process and product evaluation model (context, input, process, and product). As one of the evaluation models that focus on decision making.

Evaluation of learning media is intended to find out whether the media used can achieve the stated goals or not. Sitorus (2020) stated that media and technology function as intermediaries between resource persons and learners, resource persons - writers, academics, and researchers - pour their knowledge and knowledge into a form of media that can be learned by Monday. As for media users - students, readers, and users of library services - utilize media to obtain information and knowledge needed. A variety of media can be used for learning purposes in gaining knowledge of skills and attitudes and can be needed to carry out the learning process. The use of technology media provides benefits for teachers and students to access learning materials and interact directly in learning in the classroom, and also outside the classroom through online media (Prasasti, 2019). In addition, it is also stated

that for teachers, this interactive learning media provides convenience in carrying out learning so that it has an impact on the effectiveness of the learning process and can improve students' skill (Suyono, 2020). This is important to note because in general educators assume that once they use media in learning it is definitely good. For that it needs to be proven again by means of testing.

Adaptation validity level Confirmed students are expected to have the ability and develop according to the adaptation of multimedia technology. Early detection is needed to find out whether a student already has the ability and adaptation according to his student part. The ability to detect earlier is therefore needed by educators and management agencies. The results of the detection of adaptation to the use and application of multimedia teaching materials are the basis for providing appropriate stimulation and intervention according to the needs of the institution and students. This stimulation and intervention is poured into activity programs that are in accordance with the characteristics of adaptation in each of the student sections.

The scope of developing various aspects of student development learning includes moral and religious, physical or motor, cognitive, socio-emotional, sociocultural and artistic. From these various aspects by knowing the development of student adaptation, it can be seen how to deal with learning problems in terms of implementing multimedia-based learning. If there are students whose adaptation to technology is still slow, then it can be overcome and solutions are found in the best ways.

II. Research Method

This study implements the CIPP method. In practice, the researcher places four attribute parts, namely: evaluation: 1) Context, 2) Input, 3) Process 4) Product. As well as in disclosing the package, the researcher places the weight category of the assessment by implementing the Likert Scale instrument with the questionnaire used in the form of 5 answer choices. Objects in product evaluation of interactive multimedia-based teaching materials that will be developed.

The research was conducted by testing the evaluation model. By testing the quality of the model developed is truly tested empirically.

The validation instrument is to determine the feasibility of interactive multimedia-based teaching materials developed for use by Higher Education Institutions. As well as the questionnaire that was made beforehand, it was tested for validity and reliability by experts in their fields. A questionnaire is said to be valid, if the questions on the questionnaire are able to reveal something that will be measured by the questionnaire (Gozali, 2005).

III. Discussion

Analysis of the research results obtained by the evaluators can be seen in table 1:

3.1 Table of Evaluation of the Utilization of Interactive Multimedia-Based Teaching Materials

Table 1. Table of Evaluation of the Utilization of Interactive Multimedia-Based Teaching Materials

No	Fokus	Indikator	Nilai	Komentar
1	Contex	1. Tujuan Bahan Ajar	20	Terkonfermasi
		2. Manfaat Bahan Ajar	17	Terkonfermasi
		3. Sasaran Penerima Bahan Ajar	17	Terkonfermasi
2	Input	1. Kondisi Sumber daya	11	Terkonfermasi
		2. Kondisi Sarana Dan Prasarana	11	Terkonfermasi
		3. RAPBS	11	
3	Proses	1. Penyajian Bahan ajar	12	Terkonfermasi
		2. Pewarnaan Bahan ajar	10	Terkonfermasi
		3. Tampilan pada layar Bahan ajar	21	Terkonfermasi
4	Produk	1. Kelayakan Isi	19	
		2. Kelayakan Penyajian	15	Terkonfermasi
		3. Penilaian Bahasa	19	Terkonfermasi
Total Skor			183	
Rata-rata Skor			69%	

Based on the results of the analysis that has been validated, the average outcome is obtained; 69% are stated to be relevant to be used in a sustainable manner in the implementation of learning at higher education institutions.

The revisions desired by the evaluator are: 1) instructions for using teaching materials are made, because in the manufacture of interactive multimedia-based teaching materials there are no guidelines for operating these interactive multimedia teaching materials. This is what researchers are exposed to with the aim of having a revision of this evaluator, the researcher makes instructions or guidelines for the operation of this interactive multimedia-based teaching material. 2) suitability of the material with the RPPH in interactive multimedia-based teaching materials.

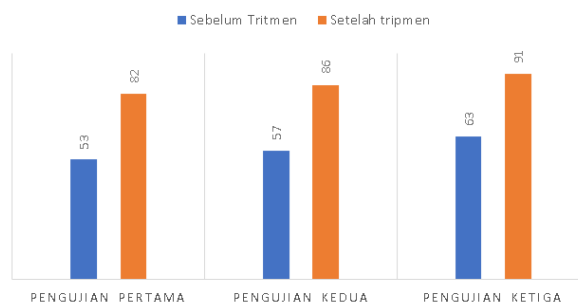
The material in this interactive multimedia-based multimedia teaching material has previously passed the validation test stage first by material experts before researchers make interactive multimedia-based teaching materials that can be utilized by early childhood.

From the evaluation findings at the advanced analysis stage, the results of a limited scale trial were obtained in this study. In this activity, the researcher involved sampling several students from Part B2, pretesting and posttesting some of the partial sampling of the B2 students.

From the initial allegations it was found that there was an increase in student abilities after the implementation of the learner model using interactive multimedia, researchers found facts by looking at the average increase in student success, in table 2 below:

Table 2. The Average Increase in Student Success

X	Sebelum Tritmen	Setelah tripmen
Pengujian Pertama	53	82
Pengujian Kedua	57	86
Pengujian Ketiga	63	91
Rerata	57,67	86,33
Peningkatan	28,66	

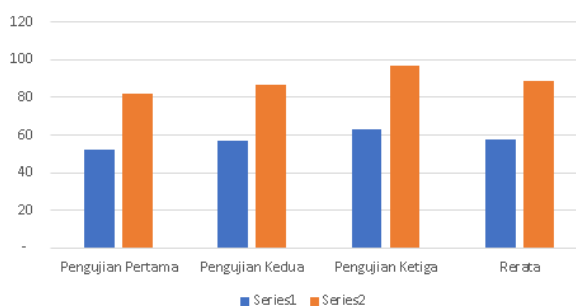


The success of the pretest of students in the limited scale test, the researcher can say that the average value range is at 47%, which means that students are starting to understand the pattern of multi-media learning and after being given learning with media by the researcher, the results of the reng score on the posttest are 71%, which means students really understand and this is in accordance with expectations from this study, while the difference between pre and post-test is 25% which means there is a significant increase. This is also illustrated by the results of the calculation of the t-test results obtained by a t-count value of 7.4978 from t-table 2.145, then based on the statement at the level there is an increase in changes in students' ability after a limited scale trial is carried out.

This wide-scale product trial involved several well-confirmed samplings, so it was obtained that students from Part B1 and Part B2 were pretested and posttested on these students regularly. So from the results obtained there is an increase in children's abilities and cognitive after learning to use the developed teaching materials by looking at the average increase in children's success, in the following table 3:

Table 3. The Average Increase in Children's Success

X	Sebelum Tritmen	Setelah tripmen
Pengujian Pertama	5,2	8,2
Pengujian Kedua	5,7	8,7
Pengujian Ketiga	6,3	9,2
Rerata	13	19,9
Peningkatan	6,9	



Based on table 3 and Graph, above it can be explained that the ability from the results of success before the tripmen is in the range of an average value of 57%, meaning that students have not shown to be in accordance with what is expected, and the posttest average value is in the range of 86%, meaning students have very good adaptability (SB) while the difference between before and after the test trip is 28%, this means that there is a significant change in the students from Part B1 and Part B2 after being given learning materials by applying interactive multimedia with sociocultural themes that the researchers have tried to develop. The results of the t-test obtained a t-count value of 8.551 from t-table 2.048, then based on the statement at the level where there is an acceptable influence from the ability of students when seen from the smaller average pretest results, after being treated with multi media interactive, there is a change in the average value of the posttest results, it can be seen from the t-count that is greater than the t-table and these results are at an acceptable level.

3.2 Discussion

The role of lecturers/educators in activities to improve students' abilities in the use of multimedia-based interactive learning media designed using a combination of Microsoft PowerPoint applications, benime and other supporting applications, which are equipped with text, images, videos and animations related to learning. It can be equated with the assumption that the use of interactive multimedia on the subject of the problem that researchers found that there is an influence in increasing the ability of students significantly.

The results of the evaluation carried out on the listening aspect can be seen from the students' side in listening to the learning material being discussed, listening to stories, capturing factual content, understanding the content of the material, it was found that students were able to follow the contents of the story in the learning video. and can answer questions in interactive learning media.

The evaluation was carried out by looking at the feasibility of the researcher carrying out a limited scale test and a wide-scale test of the teaching materials that the researcher had developed, which the researcher then presented from both the pre-test and post-test results, and t-tests on products both on a limited scale and on a large scale.

IV. Conclusion

The implementation of interactive multimedia to improve the ability of students who have passed a limited scale and large scale test, confirmed the results evaluated by researchers in their application, it was found that in implementing interactive multimedia researchers used Microsoft PowerPoint and binime applications. From the findings that have been confirmed, in this study the researchers concluded that the use of learning media with multi-media tools in the range of 78% to 91% can be implemented and used on an ongoing basis to support the learning process, to be significant in the use of which is more flexible because it is supported by with the advantages of developing media in the form of animation, video and sound which are made more attractive, flexible, can be used online through the links provided, can also be operated offline using discs, as well as applying cartoon animations that are attractive, easy to operate and will be easier for students to understand. This interactive learning multimedia can also attract the attention and interest of students in the range of 78% to 89% which is confirmed to be able to increase learning motivation in the teaching and learning process and student learning outcomes with an increasing trend, so as to improve students' abilities in learning adaptation. This interactive learning media can also be operated by the user so that the user can choose what he wants for the learning process, and interactive multimedia can also be used as a presentation of material using words as well

as pictures. What is meant by the word here is that the material is presented in verbal form. or verbal form.

Feasibility of interactive multi-media to improve early childhood abilities. In the evaluation of limited scale and wide scale. To see an increase in ability, it can be seen from a limited scale test where the average child testing result is 71% in the "developing as expected" category. And the wide-scale test results of 99% with the category "Very well developed". This shows that the use of interactive multimedia-based teaching materials can improve students' abilities, especially in learning from the listening side.

Educators' efforts in terms of using interactive multi-media can be the best choice in terms of helping higher education institutions and institutions to improve students' abilities as well as being the best choice for students and lecturers to be able to achieve the learning indicators expected by the curriculum..

References

- Agus Suheri. (2006). Learning Multimedia Animation. Jakarta : Elec Media Komputindo
- Ariani, F., & Slamet, A. (2009). Listening learning. Jakarta: Ministry of National Education. Learning for Early Childhood.
- Dewi, K. (2017). The Importance of Learning Media for Early Childhood. Raudhatul Atfal, 1.
- Maruloh. (2016). The Effect of Using Interactive Multimultimedia on Results. Journal of Informatics Engineering, II(2), 136–142.
- Masitoh, et al. 2005. Kindergarten Learning Strategies. Jakarta: The Open University.
- Prasasti, T.I., Solin, M., and Hadi, W. (2019). The Effectiveness of Learning Media Folklore Text of North Sumatera Based on Blended Learning by 10th Grade Students of Vocational High SchoolHarapan Mekar-1 Medan. Budapest International Research and Critics in Linguistics and Education (BirLE) Journal Vol 2 (4): 480-490.
- Raudhatul Atfal, Ministry of National Education. 2007. Development of Teaching Materials; KTSP socialization. www.depdiknas.go.id.
- Rusman, 2011. Computer-based learning and learning. Jakarta: Alphabet.
- Sitorus, L.S., Mardianto, and Matsum, H. (2020). Development of Powerpoint-Based Learning Media on Learning Aqeedah Morals. Budapest International Research and Critics in Linguistics and Education (BirLE) Journal Vol 3 (2): 958-964.
- Suardiman, S. P. (2003). Methods for developing intellect and creativity for early childhood. Yogyakarta: FIP UNY.
- Suyono, Simbolon, N., and Ampera, D. (2021). The Development of Flash Interactive Learning Media in Improving English Speaking Skills of Grade X at SMA Negeri 16 Medan. Budapest International Research and Critics in Linguistics and Education (BirLE) Journal Vol 4 (1): 145-157.
- Sugiyono, 2018. Quantitative, Qualitative and R&D Research Methods, Bandung: Alfabeta
- Surjono, D. H. (2017). Interactive multimultimedia Concept and Development.
- Yulsyofriend, Y., Anggraini, V., & Yeni, I. (2019). Gadget's Impact on Early Childhood Development. Pedagogy: Journal of Early Childhood and Early Childhood Education, 5(1), 25. <https://doi.org/10.30651/pedagogi.v5i1.2889>
- Yus, A. (2011). Models of early childhood education. Kencana.