



Evaluation of Multimedia Learning to Improve the Quality of Learning Using the Context, Input, Process, and Product (CIPP) Models

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Article History:

Received: Nov 30, 2022
Revised: Jan 07, 2023
Accepted: Jan 10, 2023
Online First: Jan 12, 2023

Keywords:

Evaluation of Learning,
Quality of Learning, CIPP
Model

Kata Kunci:

Evaluasi Pembelajaran,
Kualitas Pembelajaran,
Model CIPP

How to cite:

Zulkifli, Z. (2023). Evaluation of Multimedia Learning to Improve the Quality of Learning Using the Context, Input, Process, and Product (CIPP) Models. *Edunesia: Jurnal Ilmiah Pendidikan*, 4(1), 270-281

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Abstract: Multimedia practicum is a learning that uses a computer to present animated navigation so that users can interact and communicate. To determine the quality of multimedia practicum, an evaluation of the learning is needed to see the effectiveness of the learning and the methods used. Using the Context, Input, Process, product evaluation (CIPP) model, Where the data collection technique uses questioner questionnaires that are distributed to students who have finished participating in multimedia practicum learning as many as 17 students, then also using observation and documentation after the data is collected, it is then analyzed statistically using the SPSS program so that it is obtained that the multimedia practicum in the informatics department at the Payakumbuh College of Technology is relevant to the needs of students, lecturers who teach by their fields and lecturers' teaching activities starting from the preparation, implementation, and closing of learning are in the sound and excellent category and the final score of multimedia practicum which gets A grade as much as 47%, B grade 47% and who gets a C grade as much as 6%. Meanwhile, those who get a D Value and a Fail Value of 0%. Based on the conclusions, it is known that the quality of learning within the scope of Context, Input, Process, and evaluation products is good so that the next multimedia practicum learning with the same method can be continued and improved so that the quality of learning remains good.

Abstrak: Praktikum multimedia merupakan pembelajaran yang menggunakan komputer untuk menyajikan navigasi animasi, sehingga pengguna bisa berinteraksi maupun berkomunikasi, untuk menentukan kualitas pratikum multimedia diperlukan evaluasi terhadap pembelajaran tersebut sehingga terlihat keefektifan pembelajaran dan metode yang dipergunakan. Dengan menggunakan model Konteks, Input, Proses, produk evaluation (CIPP), dimana teknik pengumpulan datanya menggunakan angket quesioner yang disebar kepada mahasiswa yang telah selesai mengikuti pembelajaran praktikum multimedia sebanyak 17 mahasiswa, kemudian juga menggunakan observasi dan dokumentasi, setelah data terkumpul kemudian di analisis secara statistik menggunakan program SPSS sehingga di peroleh bahwa pratikum multimedia pada jurusan informatika di Sekolah Tinggi Teknologi Payakumbuh relevan dengan kebutuhan mahasiswa, dosen yang mengajar sesuai dengan bidangnya dan aktifitas mengajar dosen mulai dari persiapan, pelaksanaan dan menutup pembelajaran berada pada kategori baik dan Sangat baik dan hasil nilai akhir pratikum mulltimedia yang mendapatkan Nilai A sebanyak 47%, Nilai B 47 % dan yang mendapatakan nilai C sebanyak 6%. Sedangkan yang mendapatkan Nilai D dan Nilai Gagal sebanyak 0%. Berdasarkan hasil kesimpulan diketahui kualitas pembelajaran dalam lingkup Konteks, Input, Proses, dan produk evaluation yaitu nya baik sehingga pembelajaran praktikum multimedia selanjutnya dengan metode yang sama dapat dilanjutkan dan ditingkatkan agar kualitas pembelajaran tetap baik.

A. Introduction

The quality of learning is influenced by several factors, namely, students, lecturers, curriculum, learning strategies, learning methods, learning media, supporting facilities, learning environment, and other infrastructure (Prasetya & Harjanto, 2020; Putra, 2019). This states that efforts to improve the quality of education can be taken by improving the quality of learning and the quality of the assessment system (Aiman, 2016; Noor, 2020). A sound learning system, where these two things are closely related, will undoubtedly produce good learning quality. Multimedia Practicum is learning by using a computer to display animations, be it text, image, or video animation, with the help of *tools* so that it can determine navigation, interact or communicate. So far, multimedia practicum learning is carried out in computer labor with 3 credits. The learning process at each meeting begins with an introduction, then the presentation of the material. Then it conducts a practicum, then a discussion in the form of question and answers, giving exercises, and concluding learning as a closing. Meanwhile, grades are taken from attendance scores, assignments, quizzes, UTS, and UAS scores for learning evaluation. So far, the results of the learning evaluation are considered good because many students' scores in multimedia learning have obtained A and B grades. Based on these problems, a method is needed to determine the quality of multimedia learning, which according to (Septian & Nopiyanto, 2020) to obtain data on the quality of learning can be done through the evaluation of *Context, Input, Process, and Product*.

In education, evaluation is always associated with student learning outcomes, although, in essence, it is broader than just the achievement of student learning outcomes. Learning evaluation is a systematic study designed, implemented, and reported to assist parents and learners in deciding and improving the value and benefits of learning (Mahirah, 2017). Experts use many program evaluation models. One of the evaluation models widely used in education is the CIPP (Context-Input-Process-Product) model developed by Stufflebeam. The CIPP model looks at four dimensions, namely the context dimension, input dimension, process dimension, and product dimension (Indriana, 2018). The uniqueness of this model is in each type of evaluation related to decision-making devices that concern the planning and operation of a program. The advantages of the CIPP model provide a comprehensive evaluation format at each stage.

In this regard, because lecturers have a part in the educational process (Zulkifli & Masdar, 2019) So lecturers are required not only to be able to teach well but also to be able to provide good and quality assessments of learning programs such as assessment of learning outcomes, assessment of inputs, learning processes and outputs of learning. Previous research that is relevant to this research is the research conducted by (Septian & Nopiyanto, 2020) where Septian & Nopiyanto also evaluated learning using the CIPP model. However, the condition that learning tools and supporting infrastructure in learning still need to be improved, it is necessary to conduct this research with more good learning device conditions. This is done, of course, aiming to measure or assess the extent to which the effectiveness of teaching experiences, learning activities, and teaching methods used

(Fatonah & Iqbal, 2016; Siregar et al., 2021) so that the results of the evaluation of the multimedia practicum learning program in the informatics department at the Sekolah Tinggi Teknologi Payakumbuh can be used to improve the practicum program in subsequent activities.

The importance of quality of learning and supporting infrastructure to realize educational goals, especially in multimedia practicum learning, is vital for informatics study program students to improve their multimedia knowledge and skills. The results of the information collection found that students learn with supporting devices owned by students to practice independently at home, which is still tiny. So that students in general practicum are only on campus, the learning process on campus runs not optimally, and there is a little repeating, while the expected conditions should be that the multimedia practicum learning runs optimally. Student learning results also get maximum results. Therefore, informatics students need to gain knowledge and skills from multimedia learning because multimedia there are many fields and types, such as graphic design, videography, photography, animation, and even programming, including the field of multimedia itself because programming or coding makes an application there must be a name for communication and exchange of information between users and the application. The application that is made is arguably the medium, and this application is used to communicate information, then programming itself is arguably the field of multimedia utilization.

So that multimedia is not only graphic design, photography, and videography. There are many more and broader in scope. Consciously or not, multimedia has entered human life. Almost every time it can be seen the use of multimedia science, for example, when starting the day by waking up and then continuing with a morning shower, it will meet with bath soap, toothpaste, shampoo, and other toiletries, there will be visible packaging, it is the use of multimedia in the field of graphic design, in this case, packaging design a product packaging. One of the factors a person buys a product is the packaging, the more attractive a product is and looks different from others, the greater the likelihood that consumers purchase the product. Because what consumers see first when buying a product is the packaging. This is one of the reasons why graphic designers are priced expensively for a design. Next, after taking a shower and putting on clothes, you can chain up and watch TV while eating breakfast. This TV also uses multimedia in broadcasting. Then continue to go to work. On the way there are also many things related to the use of multimedia, such as listening to the radio and large billboards that can be found on the highways. We can't get away with what's called multimedia, multimedia is there all the time and we are. Almost all company agencies utilize multimedia. For this reason, learning multimedia science, such as graphic design, photography, videography, and others, is very useful for students because multimedia experts are needed a lot, and students are one step away from the business and industrial worlds. This multimedia science is very important to master.

For multimedia science to be known how well mastered by students, it is necessary to evaluate multimedia practicum learning with the CIPP model to determine the quality of learning. Evaluation with the CIPP model is efficient within the scope of its functions since

it is fundamental, thorough, and integrated. It is fundamental because it includes the core learning objects, namely the objectives, materials, learning process, and evaluation. It is comprehensive because the evaluation is focused on all parties involved in the learning process. It is integrated because this evaluation process involves all parties involved in the learning process, especially students.

B. Method

This study uses evaluative research methods that explain research activities that evaluate a program of activities that are activities of an activity plan. So evaluative research is a study that aims to collect information about what is happening, which is an actual condition regarding implementing plans that require evaluation (Kantun, 2017; Nizarman, 2015). The thing that was evaluated was the program teaching and learning of multimedia practicum in the Sekolah Tinggi Teknologi Payakumbuh.

Based on the objectives to be achieved in the study, the CIPP model consists of four stages of evaluation which can be seen in figure 1 below:

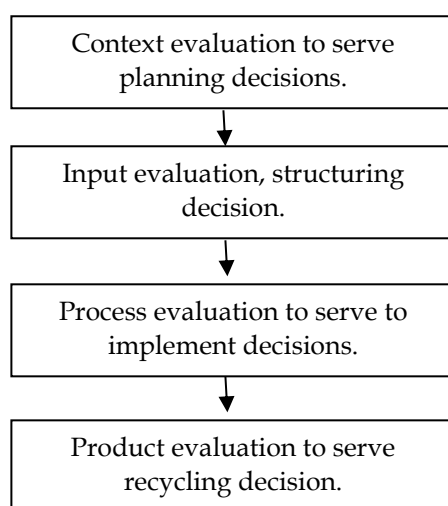


Figure 1. CIPP evaluation model (Warju, 2016)

Population and Sample

Population

A population is a territory consisting of subject objects with qualities and characteristics determined by the researcher (Nugroho, 2018). So the population is not only human but also other objects and objects of nature (Sugiyono, 2012). The population of this study is students who have taken multimedia practicum in the informatics department at the Sekolah Tinggi Teknologi Payakumbuh, which numbers 17 students.

Sample

A sample is part of the number and characteristics possessed by the population (Sugiyono, 2005). According to Suharsimi Arikunto, if the subject or population is less than

100 people, it is better to take all of them so that the research is a population study. Furthermore, if the number of subjects or the population is more than 100, it is taken between 10-15% or 20-25% (Arikunto, 2002). So that in this study, the samples taken were 17 students using the *purposive sampling* technique, which is a sample taking of specific objectives in the evaluation of multimedia practicum learning programs.

Data Processing Techniques

The techniques used by researchers in collecting data are the following methods:

1. Documentation method to find out the student's attendance, the lecturer's educational background, and student values,
2. Then researchers also use observation methods to find out the activities of the teaching and learning process and the availability of facilities and infrastructure for the teaching and learning process.
3. Questionnaire method to collect data on the teaching and learning process of multimedia practicum

In order to get the actual statement, the statement is used using a Likert scale with 4 options, as can be seen in table 1 below:

Table 1. Scala Likert Value Criteria (Permen, 2014)

No	Alternative Answers	Value
1	Less	1
2	Enough	2
3	Good	3
4	Excellent	4

The indicators of the research questionnaire related to the evaluation of the multimedia practicum program in the informatics department at the Sekolah Tinggi Teknologi Payakumbuh were made based on several items as outlined in table 2 below:

Table 2. Indicators and methods of evaluation of the multimedia practicum

Variable	Sub Variable	Indicator	Metode		
			A	D	O
Evaluation	Contact	Relevance to program with needs	√		
		Educational background of lecturers		√	
	Input	Infrastructure		√	√
		Teaching activities of Lecturers	√	√	
	Process	Student learning activities	√	√	

Product	Valuation	$\sqrt{\quad}$
evaluation		

Information:

A: Questionnaire, D: Documentation, O: observation

4. Tabulation is the process of placing data into tables coded or scored according to data analysis needs.

C. Result and Discussion

Result

Instrument Validity and Reliability

Validity is a measure that shows the validity of an instrument (Arikunto, 1999; Setyosari, 2012). If the instrument's validity is high, then the instrument is said to be valid, and vice versa. If the validity of the instrument is low, then the validity of the instrument is also low. The following is a description of the results of its validity and reality.

1. Based on the validity test results obtained values from item 1 to item 40 in a row sebagai berikut: 0.612, 0.705, 0.787, 0.404, 0.132, 0.519, 0.342, 0.474, -0.115, -0.221, 0.251, 0.678, 0.565, 0.838, 0.624, 0.282, 0.545, 0.695, 0.748, 0.846, 0.556, 0.511, 0.639, 0.322, 0.438, 0.511, 0.474, 0.383, 0.263, 0.729, 0.630, 0.418, 0.404, 0.072, 0.041, 0.317, 0.446, 0.504, 0.387, 0.353, 1. Based on the data above, there are 8 invalid items because the calculated r-value is smaller than 0.3 (minimum r).
2. The reliability Test is the accuracy or accuracy of the assessment tool in assessing what is valued (Matondang, 2009; Sudjana, 2004). Based on the results of reliability tests using the SPSS program, it is known that Alpha Cronbach is 0.927, which can be seen in table 3 below,

Table 3 Reliability Statistics

Reliability Statistics	
Cronbach's Alpha	N of Items
.927	32

Based on the calculation of the reliability value obtained, it shows $0.927 > 0.312$ at a significance level of 5%. Thus, the instruments used in this study are reliable.

Based on the results of the evaluation of the multimedia Practicum teaching and learning process, it will be described according to the components of each indicator as follows:

1. Relevance of the Program to needs

Based on data obtained from lecturers and students, the multimedia practicum is by student needs because this multimedia skill is needed by students nantinya regarding finding a job. Currently, many jobs require multimedia services, such as Photographer,

Game developer, 3-D modeler, photo studio, printing business, and many others related to multimedia skills.

2. Lecturer's Educational Background

Related to the achievement of multimedia practicum learning programs need to be supported by lecturers as facilitators in the *knowledge transfer process*. The characteristics of lecturers in terms of education and teaching experience are 2 lecturers who have master's education and have 2 years and 10 years of teaching experience.

3. Lecturer Teaching Activities

Data on lecturers' teaching activities are obtained from the results of observation and dissemination of questionnaires, data obtained starting from teaching preparation, activities to open lessons, teaching objectives, teaching materials, use of media, use of sourcebooks, the interaction of lecturers and students, Methods used, utilization of learning time and activities to close lessons.

The results of the assessment of the multimedia teaching and learning process can be seen in the following tables 4:

Tabel 4.
Calculation results of the Multimedia Teaching and Learning Process

No	Indicator	Mean	%	Category
1	Teaching Preparation			
	RPS	3	75	B
	PPT	3	75	B
2	Teaching Implementation			
	Open a lesson	3	75	B
	Delivery of basic competencies	3.2	79	SB
	Method Usage	3.4	85	SB
	Use of Media	3.23	80	SB
	Material Mastery	3.35	84	SB
3	Interaction of Lecturers and students	3.7	92	SB
	Students have the opportunity to ask questions.	3.35	84	SB
	Learning Evaluation	3.29	82	SB
3	Closing a Lesson	3.23	80	SB

Information:

SB: Excellent, B: Good, K: Less, SK: Very Less

Based on table 5 above, it can be seen that the teaching preparation indicator has a score of 3 with a Good category (B) with a percentage value of 75%, and the learning implementation indicator gets an average score in the Excellent category (SB) with a percentage value between 75%-94%. While the indicator closes, the learning gets a score of 3.23 with a percentage value of 80%

4. Student Learning Activities

Based on data on the documentation of the attendance of Multimedia Practicum students, there is student attendance that meets 100% attendance, as many as 8 students, and students who meet attendance above 75%, as many as 9 students. In comparison, student attendance below 75% needs to be present. More details can be seen in table 5 below:

Table 5. Frequency Distribution Student Attendance

Attendance	Frequency	Relative
100% (15 x Be present)	8	47 %
93.3% (14 x Be present)	4	24 %
86.7% (13 x Be present)	1	6 %
80% (12 x Be present)	2	12%
73,3 (11 x Be present)	2	12%
Sum	17	100%

5. Evaluation

Based on the final score data of the Multimedia Practicum, some students got an A grade of 8 students with a percentage of 47% and got a B grade of 8 people with a percentage of 47%, and who get a C grade of 1 person with a percentage of 6%. More details can be seen in table 6 Following:

Table 6.
Frequency Distribution of Multimedia Practicum values

Value	Category	Freq	Relative
A (80-100)	Excellent	8	47 %
B (66-79)	Good	8	47 %
C (55-65)	Enough	1	6 %
D (40-54)	Less	0	0
E (0-39)	Fail	0	0
Sum		17	100%

Discussion

Evaluation of Multimedia Practicum Learning in Terms of Context

In the context aspect, 83% of the average number of all indicators is obtained. These indicators include (1) learning objectives (CPMK), (2) learning environment conditions, (3) Student needs and characteristics, (4) Linkage of learning objectives with practicum (5) Mutual support between teaching material and practicum. The evaluation results of context variables show that multimedia practicum lectures have very appropriate criteria. Multimedia subject lecturers make learning objectives (CPMK) as follows: "Students can build multimedia products for the needs of small and medium-sized industries."

In this aspect, the identification and acquisition of the value of the needs underlying the preparation of a program, [Djuanda \(2020\)](#) dan [Kaharuddin & Rusli \(2021\)](#) also mentions

that the context evaluation model is a comprehensive framework to direct the implementation of formative and summative evaluations of program objects, projects, products and systems.

Evaluation of Multimedia Practicum Learning in Review from the Input Aspect

In the input aspect, 78% of the average number of all indicators is obtained. These indicators include (1) the educational background of lecturers and (2). Students' initial knowledge, (3) Creativity in the practicum process, (4) student behavior, (5) Concentration on practicum material, (6) Learning Resources, (7) Facilities and Infrastructure. The evaluation of input variables shows that multimedia practicum lectures **have appropriate criteria**. Students participating in the practicum are very supportive. Some students tried independent learning exercises before the practicum was carried out.

Evaluation of Multimedia Practicum Learning in Review from The Process Aspect

In the Process Aspect, a percentage of 85% is obtained from the average number of all indicators. These indicators include (1) teaching activities carried out by lecturers and (2) practicum activities participated by students. By the RPS set before, lecturers implement *synchronous* and *asynchronous learning*. Both of these models are implemented so that the CPMK created can be achieved and completed. [Irmawati \(2017\)](#) added that practicum courses require meetings between teachers and students so that the learning design is designed with a portion of face-to-face synchronous learning in combination with asynchronous learning. *Synchronous* and *asynchronous* learning are two effective learning models implemented in multimedia practicum learning so that practicum materials are conveyed entirely to students.

Evaluation of Multimedia Practicum Learning in Terms of Product

In the product aspect, a percentage of 92% is good from the average number of all indicators. These indicators include the expected ability after participating in multimedia practicum learning which can be seen from student scores.

D. Conclusion

Based on the evaluation of the multimedia practicum of 3rd-semester students in the Informatics department at the Payakumbuh College of Technology for the 2018/2019 academic year, it can be concluded that learning in the scope of Context, Input, Proses, and evaluation products is good where (1) The relevance of the program is by the needs of students because this multimedia skill is needed by students later such as in terms of finding a job, currently there are very many jobs that need services engaged in the multimedia field. (2) Lecturers who teach Multimedia Practicum in their fields and already have teaching experience of up to 10 years, (3) In terms of teaching activities, lecturers get the following indicators: teaching preparation gets a score of 3 with a suitable category (B) with a percentage value of 75%, and indicators of learning implementation get an average score in

the Excellent category (SB) with a percentage value between 75%-94%. While the closing indicator of learning got a score of 3.23 with a percentage value of 80%, (4) Student Learning Attendance Activities are obtained by students whose attendance is 100%. There are as many as 47% of all students, students whose attendance is 93.3%, there are as many as 24%, students whose attendance is 86.7%, and there are as many as 6% of students whose attendance is 80%, there are as many as 12%, (5) Based on the final results of the Multimedia Practicum Student Score, 8 students who got an A grade and got a B grade of 8 people and got a C grade of 1 person, so based on the results of the multimedia practicum evaluation using the CIPP model, the quality of Learning including Good with an average score of 3.4 on a scale of 4. Based on the above, the learning implementation process is primarily determined by the regularity of practicum learning planning carried out by lecturers and the curriculum. Therefore it is necessary to hold a unique activity to increase lecturers' understanding of the multimedia practicum process so that the quality of education is maintained.

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