

## Practicality of Development of Jigsaw Type Cooperative Model Learning Module in Scientific Publication and Forum

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### INTISARI

Penelitian ini berkenaan dengan praktikalitas pengembangan modul pembelajaran model kooperatif tipe jigsaw pada mata kuliah tata tulis karya ilmiah dan seminar jurusan teknik mesin fakultas teknik universitas negeri padang. Tujuan dari penelitian ini adalah untuk mengidentifikasi praktikalitas pengembangan modul pembelajaran Model kooperatif Tipe jigsaw pada mata kuliah Tata Tulis Karya Ilmiah dan Seminar. Jenis penelitian yang digunakan adalah penelitian eksperimen yang bersifat semu (quasi experiment). Subjek penelitian ini berjumlah 67 mahasiswa tingkat 4 pada mata kuliah Tata Tulis Karya Ilmiah dan Seminar. Jenis data yang dipakai berupa data primer yang disebarkan kepada dosen ahli dan mahasiswa. Teknik pengumpulan data pada penelitian ini berupa kuesioner. Teknik analisis data penelitian untuk mendeskripsikan kepraktisan pengembangan modul kooperatif tipe jigsaw mata kuliah Tata Tulis Karya Ilmiah dan Seminar. Berdasarkan hasil uji praktikalitas yang disebarkan kepada dosen diperoleh data respon dosen dengan persentase penilaian yaitu sebesar 97,50% dengan kategori “sangat praktis” sedangkan hasil uji praktikalitas yang disebarkan kepada mahasiswa diperoleh data respon dengan persentase penilaian yaitu sebesar 81,12% dengan kategori “sangat praktis”.

**Kata Kunci:** Praktikalitas, Pengembangan Modul, Kooperatif Tipe Jigsaw, Tata Tulis Karya Ilmiah dan Seminar, Quasi Experiment

### ABSTRACT

This research is concerned with the practicality of developing a jigsaw-type cooperative learning module in the course of Scientific Publication and Seminar in the mechanical engineering department, Faculty of Engineering, Padang State University. The purpose of this study was to identify the practicality of developing a jigsaw-type cooperative learning module in the course of Scientific Publication and Seminar. The type of research used is quasi-experimental. The subjects of this study amounted to 67 levels 4 students in the course of Scientific Publication and Seminar. The type of data used is primary data which is distributed to expert lecturers and students. The data collection technique in this study was in the form of a questionnaire. Research data analysis techniques to describe the practicality of developing a jigsaw-type cooperative module for Scientific Publication and Seminar courses. Based on the results of the practicality test that was distributed to the lecturers, the lecturer response data were obtained with an assessment percentage of 97.50% in the "very practical" category while the results of the practicality test distributed to students obtained response data with an assessment percentage of 81.12% with the category "very practical."

**Keywords:** Practicality, Module Development, Jigsaw Type Cooperative, Scientific Publication and Seminar, Quasi Experiment



### INTRODUCTION

The lack of facilities needed in the learning process causes the learning objectives to be less optimally accepted by students [1]. Lack of facilities

means that the learning media used by lecturers are inadequate. The selection of learning media is a material needed by lecturers in interacting with students.

An important element that must exist in learning media [2]. Learning media affects the process carried out by students [3]. Generally, students only focus on studying on campus, the focus on student learning will decrease after being at home this is caused by other factors such as work, play and others. So that it has an impact on student learning outcomes [4].

Another factor that causes the students' understanding process to be less than optimal in the Scientific Publication and Ceminar courses is that there are too few teaching materials or learning resources obtained by students. For this reason, references and teaching materials need to be reproduced in Scientific Publication and Ceminar courses to support students' ability to understand the lesson.

The results of the January–June 2017 Semester scores, which contained two course sections, namely section 104676 and section 104677, the student competencies achieved were also not maximal as shown in Table 1.

Table 1. Semester Values for January – June 2017 for Scientific Publication and Ceminar Courses

Number	Section Code	Score	Frequency	Percentage (%)
1		A	0	0,00
2		A-	6	10,17
3		B+	11	18,64
4	10467	B	13	22,03
5	6 &	B-	13	22,03
6	10467	C+	5	8,47
7	7	C	5	8,47
8		C-	1	1,69
9		D	0	0,0
10		E	5	8,47
Jumlah			59	100,00

Sumber : <http://sia.unp.ac.id>

Based on Table 1 of 59 students, only 43 students (72.88%) scored 65 and above or B- and above. Meanwhile, of the students whose scores were below 65, there were 16 students (27.12%), meaning that almost a third of the number of first semester students of the 2016 class were below 65 and there were scores below 40 or an E score of 8.47%.

The low student learning outcomes cannot be separated from the role of the learning media used, therefore it is necessary to design learning activities as well as possible so that they can attract students' interest and focus in learning. One way to

increase student interest in learning is to develop a jigsaw type cooperative learning media.

Jigsaw is a multifunctional structure of cooperative learning structure. Jigsaw can be used in several ways to achieve various goals but is mainly used for presentations and obtaining new material, this structure creates interdependence [5]. Jigsaw cooperative learning is a learning method based on the form of a multi-functional study group structure that can be used on all subjects and at all levels to develop the expertise and skills of each group [6]. Jigsaw cooperative learning is a that encourages students to be active and help each other in mastering the subject matter to achieve maximum achievement [7].

The development of the jigsaw type cooperative learning module should need to be studied further in terms of validity, practicality and effectiveness. In the research, the researcher identified the practicality of the development of the jigsaw type cooperative learning module.

Practicality in the big Indonesian dictionary can be interpreted as something that is practical. Practicality in educational evaluation is the convenience that exists in evaluation instruments both in preparing, using, interpreting/obtaining results, as well as convenience in storing them [8]. Practicality refers to the degree that users (or other experts) consider an intervention to be usable and preferable under normal conditions [9].

To measure the level of practicality related to the development of the instrument in the form of learning materials, to measure its practicality by seeing whether teachers (and other experts) consider that the material is easy and can be used by teachers and students [10].

Especially for the development of models developed in research, the model is said to be practical if the experts and practitioners state that theoretically the model can be applied in the field and the level of implementation of the model is in the "good" category. The term "good" still requires the necessary indicators to determine the level of "goodness" from the implementation of the developed model [11].

The purpose of this study was to see the practicality of the jigsaw type cooperative learning module in the course of Scientific Publication and Ceminar.

## METHOD

### A. Types of Research

This research is using experimental method, quasi-experimental research. Quasi-experimental research is a research method used to find certain effects on others under controlled conditions. Quasi-experimental research aims to examine the cause and effect relationship by giving one or more treatment conditions to one or more experimental groups and comparing the results to one or more control groups that do not receive treatment.

### B. Time and Place of Research

The research was conducted on 4th grade students of the Mechanical Engineering Department, Faculty of Engineering, Padang State University. The research was conducted in the semester of July – December 2018.

### C. Population

Population means the generalization of the entire research subject [12]. The population of this study amounted to 67 level 4 students in the Scientific Publication and Ceminar course consisting of 2 sections, namely section code 1 is 201810720076 totaling 35 students and section code 2 201810720077 totaling 32 students.

### D. Sample

The sample is part of the research population [13]. Sampling used random sampling, so the section 201810720077 was obtained with a total of 32 students.

### E. Data Collection Instruments

The data collection technique is to calculate the data that will be used by researchers [14]. The data collection technique in this study was in the form of a questionnaire.

### F. Research Procedure

Practical test of the module for Scientific Publication and Ceminar Jigsaw Type Cooperative in the form of a questionnaire. The practicality of the module is requested by the lecturer and. The purpose of filling out the questionnaire by lecturers and students is to see the practicality of the module for Scientific Publication and Ceminar Jigsaw Type Cooperative.

The module practicality demands 1 lecturer, namely Prof. Dr. Suparno, M.Pd. the number of instrument grids to see the practicality of the

module according to the lecturer is 8 instrument grids.

The module practicality require 32 students, namely section 201810720077. The number of instrument grids to see the practicality of the module according to students is 13 instrument grids.

### G. Practical Analysis of Module

The questionnaire to see the practicality of the module consists of statements. The practicality of the module is analyzed as follows:

1. Score answers with the following criteria:

5 = Strongly agree

4 = Agree

3 = Hesitating

2 = Disagree

1 = Disagree

2. Determine the average score obtained by adding up the values obtained from many indicators.

3. The value of practicality with the formula:

$$NA = \frac{S}{M} \times 100\%$$

Information :

NA = Final Score

S = Score obtained

SM = Maximum Score

4. To determine the level of practicality of android-based learning media with the criteria in Table 2.

5.

Table 2. Practicality Category

Number	Achievement Rate (%)	Category
1	90 – 100	Very Practical
2	80 – 89	Practical
3	65 – 79	Practical enough
4	55 – 65	Less Practical
5	0 – 54	Not Practical

## RESULTS AND DISCUSSION

A. Lecturer's Response to the Practicality of the Learning Module for Scientific Publication and Ceminar Jigsaw Type Cooperative

Practicality relates to the ease of use of the Scientific Publication and Ceminar Jigsaw Type

Cooperative module that was developed. The practicality data that the lecturer demands is obtained through a questionnaire and filled in by a practitioner. The results of the assessment of the practicality of the module according to the lecturer can be seen in table 3.

Table 3. Lecturer Response Data About the Practicality of the Scientific Publication and Ceminar Jigsaw Type Cooperative module

No	Indicator	Score	Catagory
1	This learning module is easy to use according to the user's wishes.	5	Very Practical
2	The Scientific Publication and Ceminar Jigsaw Type Cooperative module can generate student interest in learning.	5	Very Practical
3	Using the Scientific Publication and Ceminar Jigsaw Type Cooperative module makes students understand the material faster.	5	Very Practical
4	The use of this Jigsaw Type Cooperative Writing Study and Cooperative-Based Seminar learning module can save Lecturers' time and energy in presenting learning materials	5	Very Practical
5	The learning module for Scientific Publication and Ceminar Jigsaw Type Cooperative module used can be interpreted by the Lecturer	5	Very Practical
6	The use of the Scientific Publication and Ceminar Jigsaw Type Cooperative module can make learning more interesting	4	Very Practical

7	Learning for Scientific Publication and Ceminar Jigsaw Type Cooperative module are designed according to the material	5	Very Practical
8	The learning Scientific Publication and Ceminar Jigsaw Type Cooperative module can be used as a means of independent learning	5	Very Practical
Amount		39	
Final Score		97,50	Very Practical

The result of the practicality test of the module according to the lecturer is 97.50%, so it can be concluded that the module is in the Very Practical category.

B. Student Responses to the Practicality of the Scientific Publication and Ceminar Jigsaw Type Cooperative module

The practicality of the Scientific Publication and Ceminar Jigsaw Type Cooperative module was also seen from the student responses. This data was obtained through a questionnaire given to students after learning using the module. The results of practicality require students as follows:

Table 4. Data on Student Responses to the Practicality of Scientific Publication and Ceminar Type Jigsaw Cooperative

No	Rated Aspect	Average	Description
1	By using the learning module for Scientific Publication and Ceminar Jigsaw Type Cooperative , I can find out the objectives of the learning that I am doing.	82,42	Very Practical
2	I can learn Scientific Publication and Ceminar with modules.	81,21	Very Practical
3	By using the Scientific Publication and Ceminar Jigsaw Type	84,24	Very Practical

4	Cooperative, it can help me study independently. It's easy for me to use the learning module for Scientific Publication and Ceminar Jigsaw Type Cooperative	78,18	Very Practical	1 2	The learning module for Scientific Publication and Ceminar Jigsaw Type Cooperative attracted me to study.	80,00	Very Practical
5	The explanations/pictures/tables in the module can make it easier for me to understand the concept of learning activities.	83,64	Very Practical	1 3	The learning module for Scientific Publication and Ceminar Jigsaw Type Cooperative makes me more active in learning	81,21	Very Practical
				Rating Presentation		81,12	Very Practical
6	It is easy for me to read the text and sentences in Scientific Publication and Ceminar Jigsaw Type Cooperative Learning module.	79,39	Very Practical	The average practicality of the learning module for Scientific Publication and Ceminar Jigsaw Type Cooperative according to students is 81.12%, so it can be concluded that the module is in the "Very Practical" category.			
<b>CONCLUSION</b>							
7	It is easy for me to understand the language used in this Scientific Publication and Ceminar Jigsaw Type Cooperative learning module.	80,00	Very Practical	The practicality test is carried out by asking for opinions from lecturers and students through a practicality questionnaire sheet. Based on the data from the lecturer's response to the practicality of the learning module for Scientific Publication and Ceminar Jigsaw Type Cooperative, it was obtained at 97.50% so that it can be concluded that the module is in the very practical category. Meanwhile, based on the data of the module for Scientific Publication and Ceminar Type , it was obtained at 81.20% so that it can be concluded that the module is categorized as very practical.			
8	The module is designed according to the learning material.	81,21	Very Practical				
9	The Scientific Publication and Ceminar Jigsaw Type Cooperative Module that was developed could improve my reasoning to understand the learning material	83,64	Very Practical				
10	This Jigsaw Type Cooperative Scientific Publication and Ceminar Learning module helps me make it easier to understand the material.	80,00	Very Practical				
11	The learning module for Scientific Publication and Ceminar Jigsaw Type Cooperative motivates me to learn.	79,39	Very Practical				
<b>SUGGESTION</b>							
The conclusion on the practicality research on the development of the jigsaw type cooperative learning module in the for Scientific Publication and Ceminar, mechanical engineering department, Padang State University, is based on the lecturer's response to the practicality of the Scientific Publication and Ceminar learning module and the jigsaw cooperative is very practical with percentage of 97.50%. Meanwhile, based on the data on student responses to the practicality of the writing module of Scientific Publication and Ceminar Jigsaw Type Cooperative, it is "very practical" with a percentage of 81.12%.							



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