



Proceeding

ICOMSET



The 3rd ICOMSET & AMLI 2018

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“Current Advances in Research on Mathematics, Sciences, Education and Technology for Fulfilling Global Needs”

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Preface

The Third International Conference on Mathematics, Science, Education and Engineering (ICOMSET 2018) was held in Padang, Indonesia on 4-5 October 2018 at Main Auditorium and the Faculty of Mathematics and Natural Sciences Building of Universitas Negeri Padang. The 3rd ICOMSET 2018 is organized by the Faculty of Mathematics and Natural Sciences, Universitas Negeri Padang. The conference was sponsored jointly by the Association of Science Teacher Training Institution (AMLI) which consists of 12 teacher training institutions.

The primary objective of this conference is to provide an international platform for researchers, academicians as well as industrial professionals from all over the world to present their research results in Mathematics, Science, Education, Technology, and other related fields. The theme of current ICOMSET 2019 is "Current Advances in Research on mathematics, Sciences, Education, and Technology for Fulfilling Global Needs". This conference also provides opportunities for the delegates to exchange new ideas and application experiences, to establish research relations and to find partners for future collaboration.

I want to express my sincere appreciation to all the participants, financial sponsors, exhibitors, supporting organizations and all the committee members who have made ICOMSET 2018 successful. Grateful acknowledgments are also extended to the staff of Universitas Negeri Padang for their devoted assistance.

We are looking forward to meeting you at our next ICOMSET.



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Practicality of student worksheet based on concept and problem solving approach to improve student's ability to understand concept and high-level thinking in animal development

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Abstract. The learning process requires a media that can be used as an intermediary to deliver material to students. Learning media that can be used are worksheets. This research is a development research on product (student worksheet) practicality test stage. Student Worksheets developed based on concepts and problem solving to improve students' ability to understand high-level concepts and thinking in animal development courses. This Student Worksheet tried out to student of Biology Department in animal development courses. The results showed the student worksheet practicality value of 4.16 (practical). Based on the results of this study can be concluded student worksheet based on concept approach and problem solving to improve students' ability to understand the concept and high-level thinking in the course of animal development is practical.

1. Introduction

Natural Sciences has an important role to improve the quality of education, especially to produce qualified students. One factor that determines the quality of education, especially the quality of the learning process is the educator. Arsyad [1] states that in the learning process there are two very important elements, namely the method and media of learning. Selection of learning methods will affect the learning media that will be used by educators. The majority of educators do not develop the media for various reasons. Rahmy [2] also states that valid, practical, and effective learning media can be used to encourage student activities and generate motivation and improve student learning outcomes.

The role of the teacher in presenting information and learning material to students can be replaced with the learning media. One effort that can and continues to be carried out by educators to improve the quality of learning processes and outcomes is to develop and innovate in learning media. the development and use of learning media is one skill that must be possessed by an educator. Murni et al. [3] said that the activities of teachers to develop learning media are needed to improve the quality and skills of educators.

Based on the analysis and discussion of previous data, student worksheets (problem solving and concept maps) have been produced for students in the process of lecturing animal development in a very valid category. Student worksheets that have been developed will create a pleasant nuance of



learning and can realize satisfying learning outcomes [4]. Next to find out the practicality level of this student worksheet it is necessary to test the practicality of the media.

2. Method

The method used in the research is development research. The data collecting instrument in the study used a practical questionnaire. Questionnaire has 5 scales with criteria strongly agree, agree, average, quite agree, and disagree. This student worksheet tested on students who attend lectures animal development. Practicality data obtained has been processed using an average analysis for the final results to interpret the practicality of student worksheets. Practical data interpretation values are (1) 1-1.79 very impractical, (2) 1.8-2.59 is impractical, (3) 2.6-3.39 is quite practical, (4) 3,4- 4.19 practical and (5) 4.2-5 very practical.

3. Result and Discussion

The practicality test of the student worksheets was carried out on 40 students who attended animal development lectures (17 students of biology education study programs and 23 students of biology study programs). The results of the questionnaire analysis of the practicality test of student worksheets can be seen in Table.

Table 1. Analysis of Practical Test of Student Worksheets

No.	Criteria	Average Values and Criteria per Class				Average Overall Values and Criteria	
		Biology Education		Biology			
1	Ease of Use	4,28	Very Practical	4,19	Practical	4,23	Very Practical
2	Learning Time Efficiency	4,10	Practical	4,04	Practical	4,07	Practical
3	Utility	4,11	Practical	4,10	Practical	4,10	Practical
	Average Practicality	4,20	Practical	4,14	Practical	4,16	Practical

Practicality means it is practical, meaning easy and happy to use it. In this study, practicality is related the use of student worksheets by students [5]. Worksheets are said to be practical if students and lecturers can use the worksheet to carry out learning logically and continuously, without many problems. Practical considerations can be seen from the following aspects [6].

Ease of use.

The time needed in the implementation should be short, fast, and appropriate.

The attractiveness of the device towards student interest.

Easy to interpret by expert lecturers and other lecturers.

Have the same equivalence, so that it can be used as a substitute or variation.

Yanti et al. [7] said that good media is useful media in the learning process. Learning media can also make students more active and interested in following the learning process. Jaya et al. [8] also said that the learning instrument to be practical if students have an interest in the instrument in the learning process.

Fitri et al. [9] states that student worksheets that have been tested on students have practical criteria. This is because students have an interest in using the worksheet in the learning process. This interest is due to the attractive appearance of worksheets, explanation of material assisted by the pictures, and the material presented has relevance to the lives of students.

Nurlatipah et al. [10] also states that learning media are good and practical if the media has good assessment and response from students. Students also feel the utility of the media in the learning process. According Lestari [11] the importance of knowing the practicality of media. The practicality

of this media can be known through trials to students as media users. If the media declared practical, the researcher can find out the effectiveness of the media

Practical student worksheets show that the media can facilitate and assist students in carrying out the learning process. Students can use the worksheet to better understand the material of animal development lectures. Nengsi [12] said that good media is a medium that facilitates and helps students in the learning process.

Knowing the level of practicality of a media, media trials can be done many times so that the results obtained are more valid. Keep in mind the practicality of a media. Practical media means that the media suitable to be used to support the learning process. The media can help educators and students in the learning process. If the media is not practical, the media cannot help educators and students in the learning process. The media cannot provide convenience in learning. The media also cannot be an attraction for students to follow the learning process. So, one of the criteria for good media is practical media. The media has utility, convenience and attractiveness for educators and students. Haviz et al. [13] stated that it was necessary to improve the media after the practicality test because there could be errors and the presence of confounding variables during the trial. This improvement is done so that the media produced has more reliable practicality.

Practical learning media is very necessary in learning because the media can help teachers deliver subject matter. Sudjana and Rivai[14] stated that the main role of a media is its ability to create student interest. One of the criteria for media that can create student interest is the media that has an attractive appearance. An attractive media display will increase students' interest in reading and learning subject matter in the media. Purwanto[15] stated that the appearance of letters and the selection of good media colours will create students' interest in learning the subject matter.

According to some previous research results, practical media are media that have ease of use, time effectiveness, and attractiveness for educators and students [16][17][18][19].The practicality of learning media is very important to know so that the media can be useful for further learning.

4. Conclusion

Based on the results of this study it can be concluded that student worksheets are based on conceptual approaches and problem solving to improve students' ability to understand high-level concepts and thinking in the course of practical animal development. The research team suggested to be able to use this student worksheet in the next course of animal development. This is useful to know how practically this student worksheet is absolutely.

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