



Student Motivation Against Using Guided Inquiry-Based Animal Physiology Practicum Guide

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ABSTRACT

Background: Animal physiology lab guide based on guided inquiry has been developed with valid, practical, and effective results. This guide is oriented in a guided inquiry that can help students find their knowledge during practicum activities. The guides developed have been made according to the components of a good and correct guide. This study aimed to see the students' motivation in using a guide to animal physiology practicum based on guided inquiry. **Methods:** This research is a quantitative descriptive study given to 60 students of the Department of Biology, Faculty of Mathematics and Natural Sciences, Padang State University, totalling 60 people. The sample was obtained using total sampling. The instrument is in the form of a questionnaire with indicators of feelings of pleasure, attention, and interest in the use of the practicum guide. The data is processed with a percentage formula. **Results:** The results showed that of the three indicators, students were highly motivated for the indicators of feelings of pleasure and attention and motivated for the indicators of interest in the practicum guide. **Conclusion:** It can be concluded that using a guided inquiry-based animal physiology practicum guide makes students more motivated to do all the practicum activities contained in the guide because the activities contained in the practicum guide students to find their knowledge.

Motivasi Mahasiswa terhadap Penggunaan Penuntun Praktikum Fisiologi Hewan Berbasis Inkuiri Terbimbing

ABSTRAK

Background: Penuntun praktikum fisiologi hewan berbasis inkuiri terbimbing sudah dikembangkan dengan hasil yang valid, praktis dan efektif. Penuntun ini berorientasi inkuiri terbimbing yang dapat membantu mahasiswa untuk menemukan sendiri pengetahuannya sewaktu dilaksanakan kegiatan praktikum. Penuntun yang dikembangkan telah dibuat sesuai dengan komponen penuntun yang baik dan benar. Tujuan penelitian ini adalah melihat motivasi mahasiswa dalam menggunakan penuntun praktikum fisiologi hewan berbasis inkuiri terbimbing. **Metode:** Penelitian ini merupakan penelitian deskriptif kuantitatif yang diberikan kepada mahasiswa jurusan biologi FMIPA Universitas Negeri Padang angkatan 2016 yang berjumlah 60 orang. Sampel diperoleh dengan cara total sampling. Instrumen berupa angket dengan indikator perasaan senang, perhatian dan ketertarikan terhadap penggunaan penuntun praktikum. Data diolah dengan rumus persentase. **Hasil:** Hasil penelitian menunjukkan bahwa dari ketiga indikator tersebut, mahasiswa sangat termotivasi untuk indikator perasaan senang dan perhatian, dan termotivasi untuk indikator ketertarikan terhadap penuntun praktikum. **Kesimpulan:** Dapat disimpulkan bahwa dalam penggunaan penuntun praktikum fisiologi hewan berbasis inkuiri terbimbing membuat mahasiswa menjadi lebih termotivasi untuk melakukan semua kegiatan praktikum yang terdapat dalam penuntun tersebut karena kegiatan yang terdapat dalam penuntun praktikum, membimbing mahasiswa untuk menemukan sendiri pengetahuannya.

Kata kunci:

Fisiologi Hewan

Inkuiri Terbimbing

Motivasi

Penuntun Praktikum



Introduction

The study of animal physiology requires students to explain the basic principles of animal physiology and physiological processes that occur in vertebrates, as well as being able to decompose, assemble, compare and modify several physiological processes. Animal physiology lectures are inseparable from practicum activities that are always carried out to further support student understanding after face-to-face activities are carried out. This activity also trains students to have skills in expressing real knowledge to support material during face-to-face activities. Practical activities that are usually carried out are equipped with practicum guides as teaching materials. Teaching materials can provide skills and enhance student understanding, the practical guiding components used so far are not yet feasible. To get a good practicum guide, the preparation of the practicum guide is adjusted to references, teaching materials, and several components of the previous practicum guide that have been implemented in an educational institution (Mastura et al., 2017). The components of the correct practicum guide include an introduction, objectives, theory, tools and materials, work steps/procedures, data/results of observations, discussion, questions, and conclusions (Amri, 2013).

The problem that the researchers found in implementing practicum in the animal physiology course was that the practicum guide used only consisted of introducing the material, work steps, and questions. In the work step section, the display presented does not lead students to discover their knowledge. Then a guide is developed that demands understanding, unraveling, arranging, comparing, and modifying the physiological processes of the verbose animal body through an inquiry approach and has components of a good guide. Guided inquiry can increase student creativity and learning outcomes (Purwati et al., 2018). Practicum guides can activate students, help students find/manage the results of their observations, and develop student process skills (Trisnawati, 2011).

An inquiry approach is an approach that requires students to find concepts through instructions as needed from a lecturer. These clues are generally in the form of questions that are guiding (Zuryani, 2012). One method that can make students active in learning is the guided discovery method. Guided inquiry is a process that students take to solve problems, conduct experiments, collect and analyze data and draw conclusions with teacher learning activities providing guidance or guidance that is broad enough to students (Kusuma, 2010). Guided inquiry learning aims to make students better understand basic concepts and ideas, helps in using memory and transfer in new learning process situations, encourages students to think and work hard on their initiative, encourages

students to think intuitively and formulate their hypotheses itself, provides intrinsic satisfaction and motivates to be active in the learning process.

A practicum guide has been developed, and the results of research that have been carried out in the first year, namely the define stage, obtained a curriculum analysis, namely the existing practicum guide has referred to the 2013 Higher Education Curriculum, which is integrated with KKNI. The validation results show that the design of the Animal Physiology practicum guide based on the guided inquiry approach developed is very valid, with an average validity of 95.95% (Widiana et al., 2019). In the second year, the development stage was carried out. The practical results obtained from the lecturers were 79.43% (practical), while from students 77% (practical) (Widiana et al., 2019). Assessment in the realm of attitude 79.69 (B), knowledge domain 79.71 (B), and psychomotor domain 79.15 (B). In contrast, the results of student learning activities are 98.22 (very effective) (Rina Widiana et al., 2018). Continuing previous research, it is necessary to review students' motivation in the application of animal physiology lab guides based on guided inquiry.

This study aimed to see the results of student motivation in using a practical guide of animal physiology based on guided inquiry.

Method

This research is a quantitative descriptive study, namely research that seeks to describe a symptom, event, event that is happening at the moment, which seeks to reveal universal truth and principles in the form of relationships between variables or phenomena (Larry B Christensen, 2007) (Nenty, 2009). The method is carried out by distributing a motivational questionnaire with the questionnaire indicators that are assessed, namely: feelings of pleasure, attention, and interest (Afza, 2018). The questionnaire assessment is described using a Likert scale, namely the choice of options, namely always, sometimes, rarely, rarely, and never. The assessment range is 0-4.

The research procedure began with the provision of a motivation questionnaire for two classes. The first class is a class that uses a guided inquiry-based animal physiology lab writer and the second class uses a practicum guide that students usually use. Both classes were given a motivational questionnaire on the use of the practicum guide. Then complete the questionnaire.

The data is processed using a percentage formula using the formula proposed by (Riduwan 2010) as follows:

$$\text{Percentage} = \frac{\text{Score obtained}}{\text{Max score}} \times 100\%$$

To determine the level of student motivation using a modified assessment standard from (Riduwan, 2010).

Table 1. Criteria for Stucets Learning Activities

| (%) | conversion |
|----------|-----------------|
| 81 – 100 | very motivated |
| 61 – 80 | motivated |
| 41 – 60 | quite motivated |
| 21 – 40 | less motivated |
| 1 – 20 | not motivated |

Result

Filling in the questionnaire was given to students of the Department of Biology, Faculty of Mathematics and Natural Sciences, class of Padang State University. The students ranged in age from 19-21 years. Judging from the gender of students, 70% are female and the rest are male. The results of the research questionnaire data processing can be seen in the following figure.

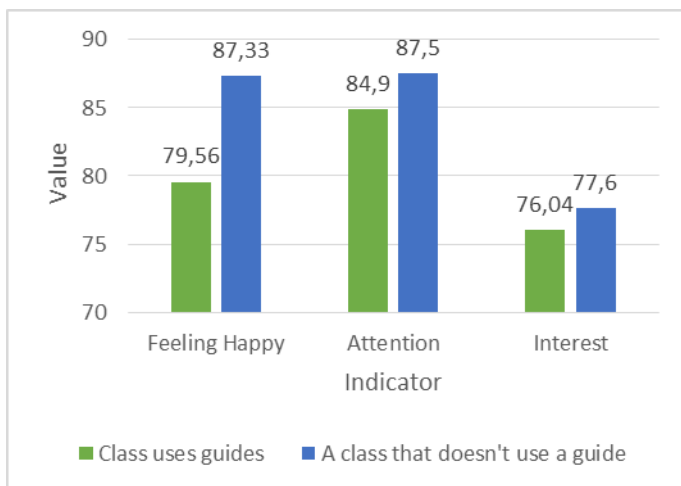


Figure 1. Student Motivation Toward Guidance of Animal Physiology Practicum Based on Guided Inquiry.

From the results of the data analysis above, it can be seen that from the three indicators, namely indicators of feeling happy, attention and interest, it is seen that students who use a guide and do not use a practical guide for animal physiology are equally motivated in its use. If it is seen from the comparison of the percentage of students who do not use the animal physiology lab guide based on guided inquiry, they are more motivated than students who use the guide. The difference in comparison between classes using a practicum guide and not using a practicum guide is 7.77%, while for the attention, it is 2.6%, and interest is 1.56%. In comparison, the overall average of motivation results for using an animal physiology practicum guide is 80.17 for classes using practicum guides and 84.14% for classes that do not use practical guides. And the overall average result of student motivation in using guided inquiry-based animal physiology lab guides is 82.16%.

Discussion

Based on the study results, it can be seen that students are highly motivated in using guided inquiry-based practicum guides with an average result of 82.16% with highly motivated criteria. Judging from feeling happy about the practicum guide, classes that use the practicum guide get lower scores than those who do not use the practicum guide. This happens because students feel enthusiastic about practicum in using these guides. Besides that, they also think that practicum guides can make it easier for them to read and understand the material in practicum activities and help them understand practicum activities. Using a practicum guide, students will be more regular in carrying out practicum (Syamsu, 2017). The components of the practicum guide compile the student in carrying out activities. The practicum component consists of an introduction, problem formulation, hypotheses, tools and materials, work documents, observational data and data analysis and conclusions (Waluyo, 2014). All of these components must be in a practical guide (Wayan, 2010).

In a class that has used a practicum guide, they think that they can help students in practicum activities by using a practicum guide because the guide fits the practicum activity being carried out. Practicum activities have five objectives, namely: (1) increasing scientific knowledge; (2) teach experimental skills; (3) developing a 'scientific attitude' such as being open-minded, being objective, and willing to suspend judgment; (4) develop skills, and can provide assessments and (5) motivate students, with exciting and fun simulations (Abrahams, 2011). On the other hand, practicum supports lectures in finding principles and explaining them (Sastria et al., 2020). Therefore, a practicum guide is needed as a guide so that the practicum is carried out perfectly (Siwi, 2016).

Inattention to the class, good practicum guides who use the guides and those who do not use the practicum guides are very motivated to use the practicum guides. This happens because students listen seriously and earnestly when the lecturer explains the practicum activities by using a practicum guide. They also easily understand the material on practicum activities when using a guided inquiry-based practicum guide. Because this guided inquiry-based practicum guide allows students to move step by step from identifying problems, defining hypotheses, formulating problems, collecting data, verifying results, and generalizing conclusions from the activities carried out (Matthew, 2013).

In the aspect of interest, students are also very motivated to use practicum guides. Students feel that guided inquiry-based practicum guides are efficient to use during practicum activities, students can make conclusions

after completing animal physiology practicum activities, and students give opinions during practicum activities. This activity is in line with the guided inquiry steps contained in the guide. Because practicum with guided inquiry activates students in problem-solving, thus making students learn from direct experience and have hopes of improving practicum results (Masruri, 2019). Guided inquiry can develop student motivation to study material related to principles and concepts (Yeritia et al., 2017).

Thus the guided inquiry-based practicum guide can create student learning motivation during practicum activities. (Thomas L. Good, 1990) said that motivation includes concepts, such as the need for achievement, the need for affiliation, habits and one's curiosity about something.

Conclusion

The use of a guided inquiry-based animal physiology practical guide makes students more motivated to do all the practicum activities contained in the guide, because the activities contained in the practicum guide guide students to find their own knowledge.

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