



Analysis of Student Needs for Bank Microlearning Development in Biology Learning Media Courses

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Abstract: Biology learning media subject taught about what is media, The function of media, and the operating of media. The material taught has not been conveyed properly because it has not been supported by the right media. This makes students untrained in designing appropriate media for the learning process. This study aims to see the needs of students and lecturers in the development of Microlearning Banks for Biology Learning Media Courses. This researched is a development research using a 4D model. This research was only carried out at the definition stage. This stage was carried out to analyze the needs of student lecturers and in developing Microlearning Banks for Biology Learning Media Courses. Processed data with descriptive analysis. The results of the research analysis show that the needs of students and lecturers for the development of Bank Microlearning for Biology learning media courses were in the required criteria with a percentage of 80% and 83%. It can be concluded that it is necessary to develop Microlearning Banks for Biology learning media courses needed by lecturers and students.

Keywords: Learning media; Microlearning Bank; Sudent need

Introduction

The advancement of the times demands renewal in education. Biology learning media courses require students to be able to design, create and apply media in biology learning for Junior High School or Senior High School. This course presents various types of media used in learning, and is a prerequisite for Educational Field Practices for teaching in training schools as young teachers. Lecturers have developed teaching materials in the form of modules, these modules have not been equipped with videos and techniques for designing and making biology learning media. Thus, it does not support students' ability to design, create and use biology learning media. Students seem to be actively using these teaching materials, it's just that there are still many students who have not been creative in creating

and designing media, even though the teaching materials have been used independently.

For this reason, lecturers need to add teaching materials that are able to explain material and make students able to design, create and use biology learning media. Teaching materials that can help with these problems are designed in the form of microlearning banks that are easy to convey in various learning processes.

Microlearning is learning on a small scale containing content designed into small segments through a variety of media formats, so that the available information becomes "short content" which allows a person to quickly understand the material in the content and can learn anywhere and anytime through technology, information and communication devices (Susilana, et al., 2022). Microlearning is made in various formats such as podcasts, PowerPoint slides,

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infographics, motion graphics, explainer videos, as well as interactive video conferencing and gamification (Nugraha et al., 2021). Microlearning makes learning easier to understand, remember for a long time, increases the effectiveness and efficiency of PBM (Mohammed et al., 2018). Microlearning provides sophisticated practical solutions to training and education problems (Dahlan, 2022). Media formats in Microlearning are infographics, interactive infographics, interactive PDFs, ebooks and flipbooks, animated videos, interactive videos, webcasts or podcasts, expert videos or webinars or recorded webinars, mobile apps, and complex branching scenarios (Susilana, et al., 2022).

Microlearning is related to e-learning, content and training presented in smaller sections sequentially, and the application of microlearning using mobile(Zarshenas, et al., 2022) Microlearning has gained popularity in both the training industry and professional study disciplines over the last few years. The implementation of microlearning has the potential to increase the accessibility, efficiency and interactivity of educational content for students who can increase collaboration and discussion between academic institutions (Wakam, et al., 2022). Microlearning changes certain learning objectives into small and easy-to-digest forms to improve student skills (Zhang, et al., 2020). Microlearning provides a clear need to bridge the gap between participation and evaluation (Bannister, et al., 2020).

This study purposed to determine students need analysis for the Bank Microlearning Development in Biology Learning Media Courses

Methods

The researched is used a development 4-D model research. The phase in this researched is the define phase by analyzing the needs of students and lecturers regarding the needs of the developed Microlearning. questions in the questionnaire was modified by Sophia (2017) with the visible criteria being the availability of learning media, availability of learning multimedia, availability of learning videos, the availability of learning videos in the form of microlearning the desire to make micro learning that includes pictures and videos. Data is processed using the percentage formula proposed by Riduwan (2016) as follows:

$$\text{Value of percentage} = \frac{\text{score obtained}}{\text{maximum score}} \times 100\% \quad (1)$$

The needs analysis level is uses the Riduwan, and Akdon (2013) classification as in Table1.

Table 1. Criteria of Modul Requirement

Percentage	Activities criteria	Conversion
81-100	Very high	Very Need
61-80	High	Need
41-60	Midle	Need Enough
21-40	Low	Not Need
1-20	Very low	Very Not Need

The student needs of the microlearning can describe by the research flow in figure 1

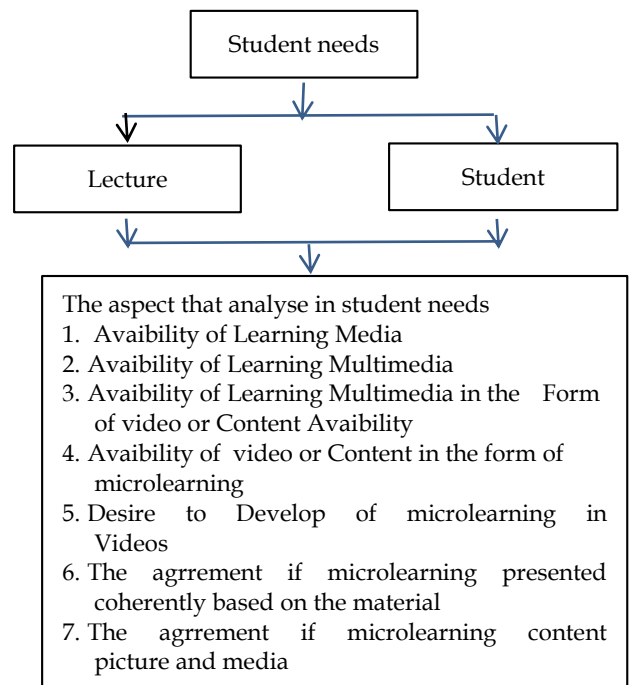


Figure 1. Research Flow

Result and Discussion

The needs analysis questionnaire for microlearning learning media that has been processed from students and lecturers shows that the results of students and lecturers need microlearning in biology learning media courses. The results obtained from students and lecturers will be detailed as follows.

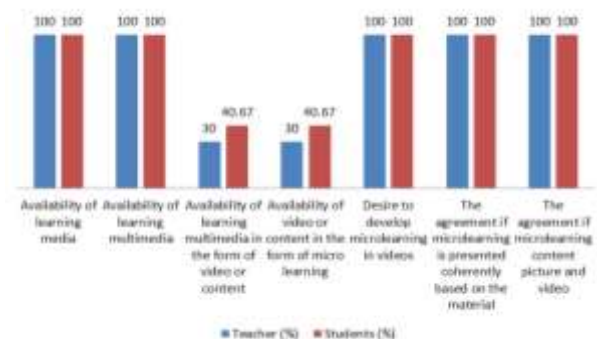


Figure 2. Microlearning Requirements Analysis for Biology Learning Media Subject

The results of the needs of students and lecturers can be seen from the Table 2.

Table 2. The Analysis of Microlearning Needs for Biology Learning Media Subject

Indicator	Teacher	Student
Avaibility of Learning Media	100	100
Avaibility of Learning Multimedia	100	100
Avaibility of Learning Multimedia in the Form of video or Content	30	40.67
Avaibility of video or Content in the form of microlearning	30	40.67
Desire to Develop of microlearning in Videos	100	100
The agrrement if microlearning presented coherently based on the material	100	100
The agrrement if microlearning content picture and media	100	100
Average	80	83.05

Based on Table 2, the need for microlearning in biology learning media courses is very much needed by students and lecturers. This can assist lecturers in explaining material and helping students to understand and create a good biology learning media. Based on Figure 1, it is necessary to develop microlearning biology learning media on the aspect of the availability of learning media with an average score of 100% for lecturers and 100% for students, it very need category. It can be seen that lecturers and students have used the module. The modules used are in accordance with the curriculum but are not equipped with videos so that students are not able to design and develop appropriate learning media according to their creativity, so students do not have the skills to produce biology learning media. Videos really help lecturers in the learning process and increase student creativity (Mador., et al. 2019). The learning process is a complex and fast process, so the use of video can be a solution since the learning process begins, can be explained in detail and observed repeatedly so that it can be properly analyzed (Alindra, 2020). Media is necessary to provide communication between teachers and students (Istyadji., et al, 2022).

One solution is to use learning materials that are perfectly targeted and appropriate to the material being taught (Repelita et al., 2018). Teachers need learning media to assist and support teaching in education (Festiyed dan Ridhatullah, 2023) In addition to using books or teaching methods, teachers also need to have different learning materials and adjust materials and conditions for each student (Muammar et al. , 2018).

Learning media are considered tools and means used to convey messages (learning materials), through which they can stimulate students' attention, interest,

thoughts and emotions in activities (Monhartini et al, 2023). Learning to achieve learning goals. Using learning media, students will understand abstract elements more easily (Susanto et al, 2023). In addition, the use of learning media must be appropriate to the subjects and teaching materials (Wardana & Adlini, 2022).



Figure 3. Students Fill out the Questionnaire

The availability aspect of of learning multimedia with an average score of 100% for lecturer and 100% for students, it very need category. Lecturers already use learning multimedia such as videos, but the videos used are taken from YouTube, so they are not in accordance with the curriculum. So it is necessary to develop learning videos based on the curriculum in tertiary institutions. Multimedia can be used offline or online because it allows students to provide feedback, respond, carry out trials through interactive multimedia (Putri et al., 2022). Videos developed according to the curriculum can increase motivation and learning outcomes (Handziko, 2015). The use of video in learning also generates interest for students, fun and easy for students to understand (Salsabila, 2020). Videos used should be consistent with learning objective (Azman et al., 2022).

Judging from the aspect of the availability of learning multimedia in the form of video or content with an average score of 30% for lecturers and 40.67% for students. Lecturers have used material teaching in the learning process but the material teaching used have not been equipped with videos or pictures. Even though modules that are equipped with videos or pictures will clarify the material. The advantage of video in the learning process is that it is able to provide learning messages more evenly to students (Ahmad, 2021). Learning videos are also suitable for providing an explanation of a process. Another advantage of learning videos is that they are able to remove the limitations of space and time, so that learning can be done anytime and anywhere (Eric, 2021). In addition, the content of training materials must be related to the daily life and environment of students so that they can easily absorb

it. This is also due to the knowledge that students accumulated during their studies, including foundational knowledge and knowledge acquired in class and more complex knowledge (Fau & Aznam, 2023)

According to the aspect of availability of video or content in the form of micro learning with an average score of 30% for lecturers and 40.67% for students. Lecturers have not used learning media in the form of microlearning. Lecturers in explaining courses only use modules and learning videos taken from YouTube. So it is necessary to develop learning media in the form of microlearning. Microlearning can make learning content easier to understand and can be remembered for a long time, besides that microlearning can increase the effectiveness and efficiency of the learning process (Setiada, 2022).

The analysis data of the desire to create microlearning from lecturers and students are also very high, with a percentage of 100% and the category is very need. This is true for lecturers who have not used microlearning in biology media learning lectures. The learning media used by lecturers is only in the form of video from youtube. The video used is is not in accordance with learning outcomes. This has not been able to help students develop their creativity in producing media suitable for material in biology. Lecturers and students want to make microlearning specifically about learning biology media. Microlearning learning can provide many benefits and advantages, namely being able to provide specific and real knowledge without being bound by time and place in learning (Athiyah, 2018).

Based on the analysis of the agreement if microlearning is presented coherently based on material from lecturers and students with a percentage of 100% and very need category. Learning media that have been made by lecturers are based on the material in the curriculum. The material presented is already messy. Material that is in accordance with the curriculum and coherently will make it easier for students to understand the learning process, this is in accordance with the opinion of Zahwa & Syafi'i, (2022). Media can actually be a channel of information related to material to achieve learning objectives.

According on the analysis of the agreement if microlearning content picture and video from lecturers and students with a percentage of 100%, the category is very need. The learning process already uses video, but the videos used are taken from YouTube and are not in accordance with the curriculum. When learning by using video students are more interested and easy to understand the material. Kurniawan (2019) also argues that learning videos can be used to guide students to understand a material through visualization. Agustini et al (2020) said that learning videos also have several

benefits including, they can increase learning motivation so that the material is easy to understand, change students' behavior to be more concentrated, bring freshness, more meaningful learning outcomes, provide feedback, add experience, and can add insight

Conclusion

The results of the study obtained the average value of student needs for Microlearning learning media for Biology courses with very high need criteria. It can be concluded that students need Microlearning for Biology course learning media.

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Author Contributions

Diana Susanti, Vivi Fitriani, Rahayu Trisetyowati Untari, Bambang Surpiatno, Riandi: writing-original draft preparation, result, discussion, methodology, conclusion; Rahmi Insanniatul Khairah, Muhammad Yahya: analysis, proofreading, and editing

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Conflicts of Interest

The authors declare that there is no conflict of interest regarding the publication of this paper.

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