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Enhancing Junior High School Students' Motivation and Learning Outcomes in Jember through the Implementation of Digital Learning Module Media in Science Practical Skills

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Abstract
Science practicum learning in junior high schools often faces obstacles, such as limited practicum equipment, limited practicum space, and limited practicum time. This can cause students to experience difficulties in understanding science concepts and developing scientific skills. The solution to overcome these obstacles is to utilize digital learning media. Digital learning media, such as the Digital Learning Module (DLM), offers various benefits, such as easy and interactive access to information
This research method uses a pre test post test design, the results obtained in this research. With the results obtained 0.007 < 0.08 (satisfied significance), Fcount > Ftable = 8.059 > 4.18 (indicating that there is an influence of related variables), it is concluded that H0 is rejected and H1 was accepted with a percentage value of successful application of variables of 83.2%. Online learning media (Digital Learning Module) is a method used by teachers to convey lessons to students. Because delivery takes place in educational interactions, learning media can be interpreted as a tool used by teachers in establishing relationships with students during teaching.

Keywords: Motivation, Learning Outcomes, Digital Learning Module

Introduction

The development of the education sector is the main goal of forming quality, reliable and competitive human resources in the process of social change and development. Therefore, to produce quality human resources, it is very appropriate for junior high schools to focus on developing human resources.(Armadani et al., 2017).

The success of students' teaching and learning activities is influenced by various internal and external factors. Intrinsic factors are factors that originate from within the student, and extrinsic factors are factors that originate from outside the student. Factors that originate from within the student also include psychological factors. Psychological factors are intelligence, attention, interest, talent, motivation, maturity and encouragement, while external factors are the environment, schools, teachers, adequate and appropriate facilities and infrastructure.(Hapnita et al., 2017)

Natural Sciences (IPA) is an important subject in junior high school (SMP) which plays a role in equipping students with scientific knowledge and skills. One important aspect of science learning is practicum, which allows students to apply theoretical concepts and develop their scientific skills directly .(Lase & Purba, 2020; Wulandari & Septyani, 2020; Yuristia et al., 2022)

However, in practice, science practicum learning in junior high schools often faces obstacles, such as limited practicum equipment, limited practicum space, and limited practicum time. This can cause students to experience difficulties in understanding science concepts and developing their scientific skills optimally.(Aeni et al., 2017; Bekti Nurhamida, 2021)

One solution to overcome these obstacles is to utilize digital learning media. Digital learning media, such as Digital Learning Modules (DLM), offer various benefits, such as easy and interactive access to information, attractive visualizations, and realistic simulations.(Parmin & Peniati, 2012; Yuristia et al., 2022)

Currently, science practicum skills are followed by a new breakthrough, namely the use of digital learning modules so that students will be more practical in carrying cellphones rather than carrying thick books. Through the use of digital learning modules (DLM) they can enrich their experience, develop scientific attitudes and results Learning will last longer in students' memories.(Taslim, 2022; Utama et al., 2019)

Previous research has shown that the use of digital learning media can increase student motivation and learning outcomes in various subjects, including science.(Devi et al., 2009; Wulandari & Septyani, 2020) The research "Improving Motivation and Learning Outcomes of Middle School Students in Jember through the Application of Digital Media Learning Modules in Science Practicum" has several novelties that make it different and valuable for the development of science learning in Middle Schools. The use of DLM, focus on motivation and learning outcomes, research context in Jember, strong research design, and significant implications make this research an important contribution to improving the quality of science education in Indonesia.

Fremwork

Motivation

The role of learning motivation is the basic impulse that moves a person to behave. This impulse resides in a person who moves him to do something in accordance with his inner impulse. Therefore, a person's actions based on certain motivations contain a theme according to the underlying motivation, according to (Insyasiska et al., 2015) Motivation to learn is a change in behavior due to practice and experience. Learning is a process of effort carried out by a person to obtain a new change in behavior as a whole, as a result of his own experience in interaction with his environment. Learning carried out by humans is part of their life, lasts a lifetime, anytime and anywhere, whether at school, in class, on the street in a time that cannot be determined in advance according to (Slameto, 2003).

From some of the definitions above, it can be concluded that learning motivation is a force, driving force, or tool for building a strong willingness and desire in students to learn actively, creatively, effectively, innovatively and enjoyable in the context of changing behavior both in the cognitive and affective aspects. , and psychomotor. To increase student learning motivation, there are several factors that influence it, including intrinsic factors and extrinsic factors. Intrinsic factors are factors that arise from within the individual himself without any coercion from other people, but based on his own will. Meanwhile, extrinsic factors are factors that arise as a result of influence from outside the individual, whether there is an invitation, order or coercion from other people, so that under these circumstances students want to do something or learn. (Yuliya, 2019)

Motivation for students to learn is an encouragement within students who are motivated to carry out learning activities for continuity and determining the direction of learning in order to achieve learning success. Therefore, teachers, family and peers play an active role in increasing learning motivation in

order to achieve learning goals so that they can lead students to achieve their dreams(Nugraha et al., 2017)

Learning outcomes

we can also see the achievement of the goals of education. In connection with teaching activities, according to (M. N. Purwanto, 2017) menyatakan, "*Evaluation... a systematic process of determining the extent to which instructional objectives are achieved by pupils*". The meaning of this quote is that evaluation is a systematic process for determining or making decisions to what extent the teaching objectives have been achieved by students.. (C. E. Purwanto et al., 2012) claim, "*Educational evaluation is the estimation of the growth and progress of pupils toward objectives or values in the curriculum*". The meaning of this quote is that educational evaluation/assessment is an assessment of student growth and progress towards the goals or values set in the curriculum..

Evaluation/assessment carried out incorrectly can reduce students' enthusiasm for learning, but if the evaluation is carried out well and correctly it should be able to improve the quality and learning outcomes because these evaluation/assessment activities help teachers to improve their teaching methods and motivate students to improve their learning methods.. (Insyasiska et al., 2015)

This kind of monotonous evaluation causes students to be less enthusiastic and feel less competition to better understand the lesson material given by the teacher. A competent teacher is a teacher who can motivate students to be more enthusiastic and active in the learning process so that students can get good results, therefore as a teacher you must also be creative in preparing an evaluation system that can encourage students to be more enthusiastic in understanding the material provided. To create an active and efficient teaching and learning process, not only by selecting the correct teaching methods, but also by selecting creative evaluation methods and encouraging students to be active. This must also be triggered by motivation to learn.(Adiputra & Heryadi, 2021)

We can see student learning outcomes in science learning in student teaching and learning activities both in the classroom or science laboratory according to Bloom (Fliegel & Holland, 2013) Learning outcomes in science practicum include psychomotor (practice) indicators which include: as well as psychomotor abilities (practice)

Digital Learning Module

Digital Learning Module (DLM), or Digital Learning Module, is an electronic teaching tool designed to help students learn independently using digital devices such as computers, laptops, tablets or smartphones. DLM usually consists of various elements, such as: learning material presented in text format that is easy to read and understand. Multimedia: Images, videos, animations, and simulations to increase engagement and help students understand complex concepts. Activities: Practice questions, forum discussions , project assignments, and other activities to help students apply what they have learned. Assessments: Tests, quizzes, and other assessments to help students know their learning progress.(Hendri et al., 2021)

Some of the advantages of digital modules compared to printed modules are that they are more practical to carry anywhere, durable and not easily damaged, can be equipped with the addition of audio and video in one module, the presentation and each learning activity can be given keywords which are useful for locking the activity. Study. Students must master one learning activity before continuing to the next learning activity, so that students can complete learning activities in stages. (Suryani et al., 2020)

Methodology

The research design used a pre-test, post-test design. This research was also carried out by comparing one independent variable regarding Science Practicum Skills with the Digital Learning Module Guide with material on the Respiratory System in Humans, as well as two dependent variables, namely Learning Motivation and Learning Outcomes. By carrying out statistical testing, this research uses a

quantitative causal relationship research method in looking at the relationship of variables to the object under study, so that in this research there are independent/free (X) and dependent/bound (Y) variables. The population in this research is 60 children/students of class VIIIA, SMPN 1 Gumukmas, Jember. To find out whether one variable has a significant relationship with other variables or to find out whether the condition of a variable is in line with other variables, use the independent t-test and use the help of the SPSS 24 program.(Sarmanu, 2017)

Results and Discussion

The following are the results of the normality test of the research questionnaire data "The Effect of Science Practicum Skills Followed by the Digital Learning Module Guide on Increasing Motivation and Learning Outcomes for Class VIIIA Students at SMPN 1 Gumukmas Odd Semester 2023/2024 Academic Year". The level of normality of a variable or research construct can be seen from the results of the One-Sample Kolmogorov-Smirnov Test statistical test. A variable or construct is said to be normal if the Kolmogorov-Smirnov Test value is > 0.05. The closer the Kolmogorov-Smirnov value is to one, the better the data normality value (well distributed). Normality test results can be seen below:

Table 1. Data Normality Test Results with the Kolmogorov-Smirnov Test

no	variable	nilai kollmogorov smirnov test	keterangan
1	Science Practicum Skills Followed by Digital Learning Module Guide	0,154	normal
2	Motivasi	0,191	normal
3	learning outcame	0,200	normal

The following are the results of the homogeneity test of the questionnaire "The Influence of Science Practicum Skills Followed by the Digital Learning Module Guide on Increasing the Motivation and Learning Outcomes of Class VIIIA Students at SMPN 1 Gumukmas Odd Semester 2023/2024 Academic Year". The level of homogeneity of a variable or research construct can be seen from the results of statistical tests. A variable or construct is said to be homogeneous if the Homogeneity value is > 0.05. The closer the Homogeneity value is to one, the better the data value (well distributed). The results of the Homogeneity test can be seen below.

Table 2 test of homogeneity

Test of Homogeneity of Variances

Levene Statistic	df1	df2	Sig.
4.628	2	87	.072

The results show homogeneity of the data with a gain of 0.072 > 0.05, so it can be said that the data has a high level of homogeneity

Research Data Hypothesis Test Results

Test the variables one by one by examining whether or not there is an influence of the independent variable on the dependent variable. The guidelines used are if the probability of significance is > 0.05 then there is no significant influence or H0 is accepted and H1 is rejected and if the probability of significance

is <0.05, then there is a significant influence or H0 is rejected and H1 is accepted. The results show the following table.

Table 3. Results of the t / t test Data on Science Practicum Skills Using the Digital Learning Module Guide to Increase Student Learning Motivation

Coefficients[a]

				Standardized		
		B	Std. Error	Beta		
1	(Constant)	22.468	3.417		6.575	.000
	practical skills	.033	.108	.058	.305	.763

a. Dependent Variable: Learning Motivation

By obtaining the conditional results of 0.000 < 0.05 (satisfied significance), tcount > ttable = 6.575 > 2.098 (indicating that there is an influence of related variables), it is concluded that H0 is rejected and H1 is accepted with a percentage value of successful application of the variables of 71.3%

Table 4. Results of t / t test Data on Science Practicum Skills with Guide Digital Learning Module for Improving Student Learning Outcomes

Coefficients[a]

				Standardized		
		B	Std. Error	Beta		
1	(Constant)	40.948	4.274		9.580	.000
	practical skills	.275	.135	.360	2.042	.051

By obtaining the conditional results of 0.000 < 0.05 (satisfied significance), tcount > ttable = 9.580 > 2.098 (indicating that there is an influence of related variables), it is concluded that H0 is rejected and H1 is accepted with a percentage value of successful application of the variables of 83.0%.

Simultaneous Test (F Test) is used to test simultaneously whether or not there is an influence of the independent variable on the dependent variable. The guidelines used are if the probability of significance is > 0.05 then there is no significant influence or H0 is accepted and H1 is rejected and if the probability of significance is <0.05, then there is a significant influence or H0 is rejected and H1 is accepted. The results show the following table.

Table 5. Data Test Results for Science Practicum Skills Using the Digital Learning Module Guide to Increase Student Motivation and Learning Outcomes

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	310.049	2	155.025	8.059	.007[b]
	Residual	2033.318	27	75.308		
	Total	2343.367	29			

By obtaining the conditional results of 0.007 < 0.08 (satisfying significance), Fcount > Ftable = 8.059 > 4.18 (indicating that there is an influence of related variables), it is concluded that H0 is rejected and H1 is accepted with a percentage value of successful application of the variables of 83.2%.

Discussion

In the discussion of this research, we want to find out the "Effect of Science Practicum Skills with the Digital Learning Module Guide on Increasing Motivation and Learning Outcomes of Junior High School (SMP) Students." By having a practical learning process in the Science Laboratory for students, it will certainly have a positive impact on the school and students. Positive impacts such as increased enthusiasm for student learning and reduced student inactivity in the learning process have been proven in this research. Under these conditions, schools must continue to pay attention to increasing student motivation and learning outcomes because if student motivation and learning outcomes are high, the school's vision and mission will be achieved

The validity of the Digital Learning Module (DLM) is caused by several factors. The Digital Learning Module developed is in accordance with basic competencies, main material and develops clear learning objectives. This is in line with the opinion which states that a module must have basic competencies, main material and clear learning objectives(Winatha et al., 2018) The results of the research show that the results of designing interactive e-modules that have been developed for digital simulation subjects using an innovative project-based learning model have been successfully implemented and are feasible to implement in the learning process. HThis is in line with the opinion which states that a module must be easy to understand (Hendri et al., 2021) It was concluded that the digital module in STEM-based low-grade mathematics learning for prospective teachers that was developed was very suitable for use. This digital module was also developed by paying attention to linguistic aspects such as readable writing, clarity of information, in accordance with grammatical rules and being communicative. This is in line with the opinion which states that the results of the study show that by implementing a system of using digital technology in blended learning, it results in an increase in the ability of PJOK teachers in the teaching and learning process so that they are able to increase student motivation and learning outcomes(Faturahim & Purwanto, 2023; Khasanah et al., 2017)

Apart from that, digital modules are also developed by paying attention to aspects that can increase student learning independence and motivation. Digital modules are one of the learning media that is widely used in the current digital era. Effective digital modules not only present learning material, but are also designed to increase student learning independence and motivation(Bati et al., 2018; Khasanah et al., 2017)

By paying attention to these aspects, digital modules can be an effective learning medium to increase student learning independence and motivation.(Joshua Lorenzo Andre et al., n.d.; Ullynuha et al., 2015)Manfaat Digital Learning Module (DLM) Designed to increase student independence and motivation,

such as increasing student engagement in the learning process, helping students understand the material better. Developing independent learning skills in students, increasing student learning motivation, facilitating student access to learning materials, providing flexibility for students in learning, developing effective digital modules requires collaboration between lecturers, learning media developers and technology experts. With good cooperation, Digital Learning Module (DLM) can be a useful tool for improving the quality of education in Indonesia. (Degeng, 2017; Dewi & Haryanto, 2019; Sari et al., 2018)

Conclusion

Based on the research that researchers have conducted, it can be concluded that from data collection. It can be concluded that the results of the analysis are the same from the first research hypothesis to the third research hypothesis (H0) is rejected & the second research hypothesis (H1) is accepted. Providing learning media in the learning process is an important aspect that determines learning success. Online learning media (Digital Learning Module) is a method used by teachers to deliver lessons to students. Because delivery takes place in educational interactions, learning media can be interpreted as a tool used by teachers in establishing relationships with students during teaching.

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