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#### Implementation Of Discovery Learning Based On Sensory Data Insane Ai To Improve Learning Outcomes Of Anatomy Courses For Pe Students

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#### **Article Info**

#### Abstract

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#### **Keywords:**

AI, Anatomy, Discovery Learning, Outcomes. This study aims to improve learning outcomes in the human anatomy course for Penas students with the Implementation of Discovery Learning based on Sensory Data Insane Artificial Intelligence (AI). The specific objective of this study is to improve students' critical thinking and problem-solving skills through technological developments. The method in this study is a 2-cycle classroom action research method with the research procedure used in this study consisting of planning, implementing actions, observation, and reflection. This study uses qualitative descriptive, where the practice of implementing the Discovery Learning learning approach based on Sensory Data Insane Artificial Intelligence (AI) is explained in each context. Where data collection is carried out through test and non-test techniques. As a result, the achievement target was achieved in cycle II with the following details; 16 students or 44% obtained category A, 18 students or 50% obtained category B, 2 students or 6% obtained category C, and none or 0 students obtained category D. The results of the response questionnaire issued to students showed a final score of 24.71 or an average of 4.2, which means that the category most often chosen by students is agree. The results show that the implementation of Discovery Learning based on Sensory Data Insane Artificial Intelligence (AI) in Semester I students of the Physical Education Study Program, FKIP, Bengkulu University is of interest to students. It not only covers the aspect of knowledge implementation but also increases students' creativity and interest in learning activities.

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#### INTRODUCTION

Learning outcomes refer to the achievements accomplishments or achieved by an individual after participating in a learning process. This includes the knowledge, skills, attitudes, and understanding acquired by students or learners after going through a series of learning activities. The definition of learning outcomes is not only limited to academic achievements, such as grades or test scores, but also includes the ability to apply knowledge in everyday life, develop practical skills, and form positive attitudes. It is important to remember that learning outcomes can be measured and evaluated in a variety of ways, depending on the learning context, and evaluation objectives, methods used. Evaluation of learning outcomes is an important part of the educational process to ensure the effectiveness of learning and help students achieve their maximum potential. Increasing students' interest in learning has an impact on the achievement of learning outcomes. Increasing students' interest in learning can be achieved through the use of innovative learning approaches (Mustakim et al., 2023). One of the important courses in the physical education study program (prodi penjas) to facilitate students in developing knowledge about the structure of the human body and its functions is the anatomy course. the physical In education study program, the Anatomy course is the study of the structure and function of the human body. Anatomy is

a discipline that studies how organs, tissues, and systems of the human body are structured and interact with each other. Anatomy courses are essential in physical education study programs because provide they а deep understanding of the structure of the human body that is needed to plan and implement training programs, understand injuries anatomical or abnormalities, and improve athlete performance and general physical health. The difficulty of teaching course material to students is a challenge in itself because it requires global knowledge that continues to develop. For this reason, innovation is needed that can improve student learning outcomes..

Based on the results of observations made in the learning process of the anatomy course, several problems can be identified. The first problem is the low level of student understanding, which is reflected in students who have difficulty answering questions about previous material reviews that are given to them. The second problem is the low ability of students to draw conclusions. This can be seen from the arguments given by students which are less accurate, the ability of students to analyze a problem into several simpler problems is still very difficult to do. Students solve problems directly without first identifying the assumptions needed to solve the problem. The third problem is that students have not been able to recognize, identify, describe problems through current technology such as

content in a question, and are still confused about providing solutions that will be used to solve a case. The low level of student learning outcomes is due to the learning model applied being conventional, namely through lecture and assignment methods. Therefore, it is appropriate for this problem to be resolved immediately by implementing the Discovery Learning learning model. The Discovery Learning learning method is an approach that focuses on active and exploratory learning, where students are encouraged to independently find and understand certain concepts or principles through experiments, investigations, and reflections. In the context of improving student learning outcomes. Asking, observing, collecting, processing, and drawing conclusions are all skills given to students in the discovery learning model. Discovery learning can improve students' motivation and learning outcomes (Bagja & Yuliana in Winarti et al., 2021). Thus, the Discovery Learning method can be effective in improving student learning outcomes by promoting deep understanding, critical thinking skills. intrinsic motivation, and significant learning experiences. So that it is not only a learning model but also technological innovation is needed in the learning process that adapts to the 21st century, including Sensory Data Insane Artificial Intelligence (AI).

Artificial Intelligence (AI) is a new field of technical science that focuses on research and development of theories, methods, technologies, and application systems that aim to imitate and enhance human intellectual abilities (Noviyanti et al., 2023). Students in the 21st century are not students who are only able to deliver material with interesting methods but also need a technological approach in the process. The students needed in the 21st century are teachers who have harmonious competencies between technology, pedagogy, and material content. If one component is not fulfilled, it can affect other components. However. the learning design must be adjusted to the learning needs, where learning with a broad scope requires special attention in learning mechanisms such as courses in human anatomy, sports physiology, biomechanics, and kinesiology. Human anatomy is also called anthropotomy, is a field of anatomy that studies the structure of the human body (Chairad, 2019). Anatomy and sports are closely related. In the Human Anatomy course, the structure of the human body is studied and discussed. This is related to the function of locomotion (body movement, especially during exercise) and human body size (which relates to the placement of individuals according to the sport). The ability of students to identify each sports movement is the focus of this course. In this course, osteology (the science of human bones), arthrology (the science of joints), myology (the science of muscles and how they function in the locomotion system), and neurology (the science of the nervous system) will be discussed.

The researcher chose Discovery Learning to be able to improve student learning outcomes in this study. Because in addition to the purpose of Discovery Learning itself which is expected to improve students' contextual abilities, student reasoning and students' ability to express opinions. In one of the journals that I mentioned above, it has also been proven that Discovery Learning can improve student motivation and learning outcomes.

Based on this description, the author is interested in applying the Discovery Learning learning model based on Sensory Data Insane Artificial Intelligence (AI) to the human anatomy course. The specific objective of this study is to improve student learning outcomes in physical education students. This research is expected to support the UNIB Research Master Plan, namely improving the quality of education in order to become intelligent humans. Through this research, it also helps to implement the focus of PPKP FKIP UNIB research, namely improving and improving the performance of educators in the learning process, and improving the quality of the learning process through the use of learning models. This research will also help to improve the UNIB Main Performance Indicators (IKU) on IKSS 10.1, namely increasing scientific publications and IKSS 6.4, namely increasing proceedings.

#### **METHODS**

The method in this research is the class 2 action research method, namely an action research in the scope of education carried out by lecturers, and at the same time as researchers in their others class together with or (collaboration) by designing, implementing, and reflecting on actions collaboratively and participatively which aim to improve or increase the quality of the learning process in their class through a certain action (treatment) in a cycle (Subali 2014), by planning, implementing, observing, and reflecting actions collaboratively and on participatively with the aim of improving learning outcomes in the Human Anatomy course..

### Participants

The subjects in this study were all first semester physical education students who took the Human Anatomy course, totaling 36 students..

### **Materials and Apparatus**

The data to be obtained from this study has several sources of research data which are described as follows:

- 1. Data on the feasibility of learning devices comes from responses from education experts.
- 2. Data on critical thinking and problem-solving skills comes from test results conducted by students.
- 3. Data on the application of the Discovery Learning learning model comes from lecturers in charge of the course.

4. Interview data comes from 2 students who have critical thinking and problem-solving skills with a high category, 2 students with a medium category, 2 students with a low category

### Procedures

This classroom action research plan will be implemented in two cycles, and each cycle consists of four stages, namely (1) planning stage, (2) action (acting), (3) observation (observing), and (4) reflection (reflecting).

### Planning

In the planning stage, the researcher carried out several activities such as: reviewing the Human Anatomy course material along with its indicators, creating a learning design into the Semester Learning Plan (RPS). research facilities preparing and infrastructure.

### Action

At this stage, the researcher implemented the Discovery Learning learning model action according to the design that had been formulated in the RPS.

# **Observation Stage**

When students were discussing and implementing, the researcher recorded and observed each student response in the learning process. The observation stage was carried out by the researcher to observe each incident during the implementation of the action. Observation activities were carried out at each meeting using an observation sheet to determine the increase in learning outcomes in the Human Anatomy course.

## **Design or Data Analysis**

This study uses qualitative descriptive data analysis techniques. Data formed from words or sentences from observation results are processed into meaningful sentences and analyzed qualitatively. The data obtained from this study are also in the form of quantitative descriptive data in the form of simple numbers obtained from the results of the observation sheet calculations when the action is carried out and presented in a structured form so that it is easy to understand. The data obtained in this study will be analyzed in the following manner:

1. Calculating the average value of critical thinking and problem solving skills

$$\overline{\mathbf{X}} = \underbrace{\sum \mathbf{K}}_{\sum \mathbf{N}}$$

Information :

- $\overline{\mathbf{X}}$  = the average value sought
- $\sum X = total score$
- $\sum N$  = number of students
- 2. Determining minimum completeness

The determination of the minimum limit of completeness in this study is 78.

3. Calculate classical completeness using the following formula:

Learning Completion = 
$$\frac{Number of Students Who Completed}{Total Number of Students} \times 100$$

After obtaining classical completeness results, the level of action success can be determined according to

the action success criteria in table 1 below.

Table		1. Criteria	for Success	of Action	
	No	Interval	Kategory	Grade	

No	Interval	Kategory	Grade
1	80 - 100	Very well	А
2	60 - 79	Good	В
3	40 - 59	Enough	С
4	10 - 39	Not enough	D
5	0-9	Fail	E

## RESULT

The research that was conducted from May to December 2024 on 36 Physical Education students, University of Bengkulu, showed that the use of Sensory Data Insane Artificial Intelligence (AI) as a learning medium in the Implementation of Discovery Learning in learning can improve student learning outcomes in the Anatomy course. The following is a table showing the value obtained before (cycle 1) and after (cycle 2) using the Sensory Data Insane Artificial Intelligence (AI) application.

Table 2. Learning Results Cycle I and

			11				
Val	Val Grad De		Target	Cycle I		Acceptin	
ue	e		achieveme	Value Obtainm ent		g Values Cycle II	
Ran			nt				
ge							
85-	А	Very	30%	5	14%	1	44%
100		good				6	
70-	В	Goo	50%	1	33%	1	50%
84		d		2		8	
50-	С	Prett	20%	1	53%	2	6%
69		у		9			
		good					
0-	D	Not	0%	0	0%	0	0%
49		good					
	Total			3	100	3	100
				6	%	6	%

From the table, it can be seen that there was an increase in learning

outcomes before the use of the Sensory Data Insane Artificial Intelligence (AI) application as a learning medium in the Implementation of Discovery Learning and after the media and learning model were applied. In cycle 1, there were 5 students who received grades in category A, while in cycle 2 there were 16 students. This means that there was an increase from the first cycle to the second cycle of 30%. Furthermore, there were 12 students who received grades in category B in cycle 1, while in cycle 2 there were 18 students. This means that there was a percentage increase of 20% from the first cycle to the second cycle. Then, for grades in category C, there were 19 students in cycle 1, while in cvcle 2 there were 2 students. This means that there was a decrease in the number of students who received sufficient grades in cycles 1 and 2, the decrease was 47%. The grade category D in both cycles 1 and 2 both amounted to 0.

These results indicate that the use of Sensory Data Insane Artificial Intelligence (AI) as a learning medium in the Implementation of Discovery Learning can improve student learning outcomes in the Anatomy course. This research was conducted offline. Next, the details of the classroom action research process that the researcher conducted will be explained, which consists of 2 cycles and each cycle consists of four stages, namely (1) the planning stage (planning), (2) action (acting), (3) observation (observing), and (4) reflection (reflecting).

## CONCLUSION

- 1. The average value of the practice in the form of a material creation project Data Insane on the Artificial Intelligence (AI) user application is 83.5. The assessment aspects consisting of 5 assessment indicators were successfully implemented by students in the Data Insane Artificial Intelligence (AI) user application that was created.
- 2. The results of the response questionnaire distributed to students showed a final score of 24.72 or an average of 4.2, which means that the category most often chosen by students was agree. In other words, indicate these results that the implementation of the assignment of the Health Sports Education material management project using the Data Insane Artificial Intelligence (AI) user application is in demand by students.
- 3. The average value of students in the practice and the results of filling out questionnaire the response bv students correlate with the results of the knowledge test obtained by students. The use of the Data Insane Artificial Intelligence (AI) user application as a learning medium in the application of the Discovery Learning Implementation model for the Health Sports Education course for Penjas UNIB students in semester can improve student learning Ι outcomes. As a result, the target achievement was obtained in cycle II with the following details; 16 students or 44% obtained category A, 18 students or 50% obtained category B,

2 students or 6% obtained category C, and none or 0 students obtained category D.

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