

## The Relationship Between Learning Motivation and Anatomy Practicum Exam Results Among UGJ Faculty of Medicine Students

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### ABSTRACT

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Anatomy is a subject considered difficult by most medical students; therefore, many students obtain unsatisfactory test scores in the anatomy *practicum*. The anatomy *practicum* is part of the learning process at the Faculty of Medicine. The learning process is influenced by several factors, including learning motivation. Learning motivation serves as the foundation for students to achieve optimal learning outcomes. The aim of this research was to determine the relationship between learning motivation and the results of the anatomy *practicum* examination among UGJ Faculty of Medicine students. This study is an analytic observational study with a cross-sectional design. The results of the Spearman correlation test showed that the learning motivation variable and the anatomy *practicum* scores yielded a value of  $0.000 < 0.05$ , indicating a significant relationship between learning motivation and anatomy *practicum* examination results. The correlation coefficient was found to be 0.295, indicating that the strength of the relationship between learning motivation and anatomy *practicum* scores falls into the weak category. The distribution of learning motivation among UGJ Faculty of Medicine students in the anatomy *practicum* examination showed that 146 students (88%) were in the moderate category, 18 students (10.8%) were in the weak category, and 2 students (1.2%) were in the strong category. Therefore, there is a relationship between learning motivation and the results of the anatomy *practicum* examination among UGJ Faculty of Medicine students.

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### Keywords:

Anatomy; Motivation; Practicum Value

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## INTRODUCTION

Anatomy is one of the foundations of medical science that studies the morphological structure of living organisms, including the various parts, their positions, and their interrelationships. Anatomy is one of the courses that most medical students consider difficult. Several factors contribute to this perception, such as language barriers, difficulty interpreting images, and the large amount of material that must be memorized (Wicaksono, 2021; Mona & Yunita, 2021; Catur et al., 2018).

Anatomy is taught through lectures and practicums. In the anatomy practicum, based on a previous research survey conducted by Arif Wicaksono in 2021, it was revealed that anatomy is one of the courses considered difficult by most students, resulting in many students obtaining unsatisfactory exam scores. Learning anatomy requires students' ability to identify and understand various structures presented in the form of drawings, mannequins, plastinated specimens, and cadavers (Khan, 2024; McMenamin, 2023). Foundational knowledge of anatomical structures is generally delivered through lectures and practicums, supported by anatomy textbooks. This approach is expected to enhance student motivation and learning achievement (Wicaksono, 2021; Kuniya et al., 2018).

To improve anatomy learning outcomes, students need motivation. Motivation is a change in energy within an individual, characterized by internal drives to achieve goals. These drives and responses are influenced by the need to excel in life (Maslow, 2023). This condition encourages individuals to develop effort, desire, and persistence to achieve high learning outcomes. Motivation itself is one of the factors that influence student success (Nasrah & Muafiah, 2020).

Learning motivation is an essential requirement for effective learning and plays an important role in fostering enthusiasm. Individuals develop their abilities through continuous processes involving cognitive, affective, and psychomotor domains, as well as their integration, over a relatively long period (Alafnan, 2025; Subedi, 2022; Wilson, 2016). Through this process, individuals gain experiences and knowledge from both direct and indirect observations, which become relatively permanent. Learning outcomes can be measured through the evaluation scores obtained by students (Nasrah & Muafiah, 2020; Sari & Fatimah, 2018).

Motivation serves as the foundation for students to achieve optimal learning outcomes, which are then used to determine the attainment of expected competencies. The presence of strong motivation in the learning process leads to better results. In other words, diligent effort supported by strong motivation will lead to higher achievement. Thus, the intensity of student motivation greatly determines their academic performance (Emda, 2018; Abdurrahim, 2021).

Research by Hasan A. et al. shows a very strong relationship between student learning motivation and academic achievement. Academic achievement increased by 34% due to extrinsic motivation and by 23% due to intrinsic motivation. Research conducted by Nana stated that the role of peer mentors is categorized as low (6.9%), medium (23%), high (51.7%), and very high (18.4%). The results of the anatomy practicum exam showed that 31% of students passed, while 69% did not. This indicates that there is no significant relationship between peer-assisted learning and test scores (Sturges & Maurer, 2013).

Based on these findings, there remains a research gap regarding the relationship between learning motivation and anatomy practicum exam results, especially in the context of medical students in Indonesia. Most previous studies focus on general academic performance, while limited research specifically examines practicum-based outcomes in anatomy education. The novelty of this study lies in its focus on analyzing the relationship between learning motivation and anatomy practicum exam results within a specific population of medical students at the UGJ Faculty of Medicine, as well as providing empirical evidence from a practicum-based learning context, which is still rarely explored in previous studies.

The purpose of this study is to determine the relationship between learning motivation and anatomy practicum examination results among students of the UGJ Faculty of Medicine. The expected benefits of this research are both theoretical and practical: theoretically, it contributes to the literature on learning motivation in medical education; practically, it provides insights for educators and institutions in designing strategies to improve student motivation and learning outcomes, particularly in anatomy practicum learning.

## METHOD

This research was conducted at the Faculty of Medicine, Gunung Jati Swadaya University, from January to August 2023. This study is an analytical observational research with a cross-sectional design. This study has a target population, namely all students of the Faculty of Medicine, Swadaya Gunung Jati University, while the affordable population of this study is students of the Faculty of Medicine, Swadaya Gunung Jati University, class of 2022. This research sample is taken if it meets the inclusion and exclusion criteria. The inclusion criteria in this study are active students of the class of 2022 who are taking part in the anatomy practicum of FK UGJ block 2.2 FY 2022/2023, students who are willing to be respondents, students who fill out all questionnaires. The exclusion criteria for this study were students who were not present during the research, students who were demoted, and 30 students who took part in the questionnaire validation. The number of samples needed in this study is 196 people with a sampling technique using total sampling. The independent variable of this study is the learning motivation of FK UGJ students of the class of 2022 and the variable bound for this study is the final results of the anatomy practicum exam class of 2022 in block 2.2 of the 2022/2023 academic year. The method of data collection uses primary data, namely a questionnaire that has been validated. The data processing carried out was univariate and bivariate analysis using Spearman correlation to assess the relationship between 2 independent and bound variables.

## RESULT AND DISCUSSION

This research was conducted at the Faculty of Medicine, Gunung Jati Swadaya University. The results of this study present univariate and bivariate analyses which are then presented in each table below.

### 1. Univariate Analysis

#### Overview of the Learning Motivation of Students of the Faculty of Medicine UGJ in the Anatomy Practicum Exam.

**Table 1.** Distribution of the Frequency of Learning Motivation of Faculty of Medicine Students UGJ in the Anatomy Practicum Exam

Student Learning Motivation	F	%
Strong	2	1.2
Medium	146	88
Weak	18	10.8
Total	166	100.0

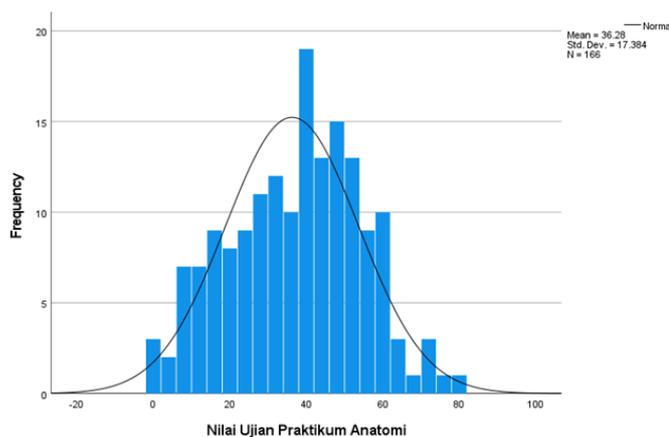
Source: Primary data analysis, processed by the author (2023)

Table 1 presents the distribution of the frequency of learning motivation in students. It can be found from the table above that the students' learning motivation is moderate as much as 146 (88%), the student learning motivation is weak as much as 18 (10.8%) and strong as much as 2 (1.2%).

**Table 2.** Summary of Anatomy Practicum Exam Score Data

Practicum Exam Scores	Value
Average Score	36.28
Standard Deviation	17.384
Mode	38
Median	38
Maximum	80
Minimum	0

Source: Primary data analysis, processed by the author (2023)



**Image 1.** Histogram of Practicum Values

Source: Generated from research data using statistical software, processed by the author (2023).

Table 2 shows the average practicum exam score of 36.28 with a minimum score of 0 and a maximum of 80, a standard deviation score of 17,384, a median of 38 and a mode of 38. While graph 1 shows the average value of anatomy practicum of 36.28 with a standard deviation value of 17.384. The standard deviation value is 17.384 and the mean is 36.28 which means that the data is less varied because the standard deviation value is smaller than the mean, the smaller the standard deviation, the more similar the values on the item or the more accurate it is with the mean. The black curve describes the normal distribution. From the graph, it shows that more students get a score of 40 normal curves so that the tendency is to score higher than average.

## 2. Bivariate Analysis

Bivariate analysis was used to answer the hypothesis, whether there is a relationship between learning motivation and the results of the anatomy practicum exam scores. The results of the spearman correlation test are presented in Table 3 below:

**Table 3.** Correlation Test Results Spearman

Learning Motivation	Nilai Anatomy	Median	Frequency	<i>p value</i>	<i>r</i>
Strong	60	60-60	2	0,000	0,295
Medium	38	0-80	146		
Weak	28	10-60	18		

Source: Primary data analysis, processed by the author (2023)

Table 3 shows the results of the correlation test. From the results mentioned above, it shows that practicum exam scores with strong student motivation obtained a median score with a minimum score of 60 and a maximum of 60. The score of the practicum exam with moderate student motivation was obtained with a median score of 38 with a minimum score of 0 and a maximum of 80. The score of the practicum exam with weak student motivation was obtained with a median score of 28 with a minimum score of 10 and a maximum of 60. The results of the Spearman test showed that the variable of learning motivation to the anatomy practicum score was  $0.000 < 0.001$  so that there was a significant relationship between learning motivation and the results of the anatomy practicum exam score. It is known that the Correlation Coefficient value is 0.295, so it can be concluded that the strength of the motivation relationship with the value of anatomy practicum is in the weak category.

### **Overview of the Learning Motivation of UGJ Faculty of Medicine Students in the Anatomy Practicum Exam**

The results showed that most of the students' motivation to learn was in the medium category as much as 146 (88%), weak learning motivation as much as 18 (10.8%) and strong as much as 7 (10.8%). The majority of students' learning motivation is in the medium category and in the strong category at a percentage of less than 4%. One of the factors that affect student motivation in participating in anatomy practicum is suspected to be student interest. Interest when deciding to major in medicine. Because some of the students who were sampled in this study answered the reason for entering medical college because of their parents' request (Sturges & Maurer, 2013).

Motivation can arise for several reasons, including the desire to graduate with good grades. According to Muhammad (2014) in his research, most of the motivation of students is good with the average student wanting an A grade in every learning in lectures. Student motivation is related to preparing for exams — 51.35% of students have relatively high motivation, while the remaining 48.65% of students still have relatively low motivation. One way that should be tried is to provide education and understanding to prospective new students about the goals that may be achievable if students take a certain major (Anas & Aryani, 2013; Filgona et al., 2020).

According to McDonald (1950), motivation is a change in energy in a person, which is characterized by the emergence of feelings and reactions to achieve goals. The above definition contains three important elements that are interrelated, namely: motivation starts from a change in energy in a person; motivation is characterized by the emergence of feelings; and motivation is characterized by a reaction to achieve a goal that provides a response to a certain goal (Anas & Aryani, 2013; Filgona et al., 2020).

### **Results of the Anatomy Practicum Exam for Students of the Faculty of Medicine UGJ**

The results of the study showed an average practicum exam score of 36.28 with a minimum score of 0 and a maximum of 80, a standard deviation score of 17.384, a median of 38 and a mode of 38. The graph above shows the average value of anatomy practicum of 36.28 with a standard deviation value of 17.384. The standard deviation value is 17.384 and the mean is 36.28 which means that the data is less varied because the standard deviation value is smaller than the mean, the smaller the standard deviation, the more similar the values on the item or the more accurate it is with the mean.

Anatomy is a difficult and unpleasant subject for students, especially early year students. Students at this level still need adaptation and an introduction process. According to Singh and Bhatt in India, in their research entitled *Introduction of Case-Based Learning for Teaching Anatomy in a Conventional Medical School*, anatomy is a difficult and unpleasant lesson, so other methods or ways are needed to make anatomy more fun and easy to learn (Almoslamani, 2022).

### **The Relationship of Learning Motivation to the Results of the Anatomy Practicum Exam in Students of the Faculty of Medicine UGJ**

Motivation influences the learning process of students. Motivation is seen as a factor that dominates educational achievement. This is related to student intelligence and academic performance or learning outcomes. Motivation is one of the parts of the human being that is quite complex — it can affect how an individual invests time and energy to solve a problem or complete a certain task. Motivation can arise when there is something to be achieved (Agustina et al., 2019).

The results of the research show that there is a relationship between motivation and the anatomy practicum exam score with the strength of a weak relationship. This research is in line with the results of research by Eriarosa Celin (2018) which examined the relationship between educational background and learning motivation with the Anatomy Learning Achievement of PJKR UNY Students Class of 2016, with the result that there was a relationship between learning motivation and student anatomy learning achievement (Eriarosa, n.d.).

In addition, research conducted by Filgona et al. (2020) explained that motivation is important in making students involved in academic activities. Student motivation is also important to determine how much students learn or how much information they will encounter in learning activities. Fostering student motivation to participate in learning is a topic that is of great concern today, because it is necessary to get quality education. Learning motivation has an important role in students' academic performance. It is known that increased motivation can help students to concentrate more on what they are currently doing to get satisfactory final results, can increase student initiation in the learning process, and can increase learning attention — such that extrinsic factors, including teachers who create a pleasant atmosphere or adequate facilities, can lead to good results in anatomy practicum exams (Filgona et al., 2020).

One of them is defined, learning style is the way a person prepares and processes information in a learning situation. The prevalence or comfort of each individual in learning is one aspect that refers to a situation or condition above other preferences. In addition, it is also defined that learning style is as the general approach of an individual to process new things such as global or analytical, auditory or visual that each individual uses in acquiring a new language or learning a new subject. It can be concluded that learning style is a way for students to be able to interact, feel and respond to the learning environment which is actually learning is something that is done continuously so that there is a change in a person. Therefore, everyone has their own way of processing new things, one of which is learning style.

In addition to learning style, learning strategies also have a close relationship with the final results — in this study, the results of the anatomy practicum exam. Anatomy and physiology courses are among the difficult courses for first-year medical students. Because of this, a good strategy is needed to obtain optimal final results (Almoslamani, 2022).

## CONCLUSION

From the results of the study, it was concluded that the majority of the learning motivation of students of the Faculty of Medicine UGJ in the Anatomy practicum exam was in the medium category of 146 students (88%). The results of the anatomy practicum exam for students of the Faculty of Medicine UGJ obtained an average score of 36.28 with a minimum score of 0 and a maximum of 80. There is a relationship between motivation for teaching and the results of the anatomy practicum exam in students of the Faculty of Medicine UGJ. These findings indicate that learning motivation plays a role in influencing student learning outcomes, but it is not the only determining factor, as other variables may also contribute to academic performance. Therefore, it is recommended that educators enhance student learning motivation through interactive learning strategies, improved practicum methods, and supportive learning environments to achieve better academic outcomes. Future research is also suggested to explore additional factors that may influence anatomy learning outcomes, such as learning styles, teaching methods, and academic support systems.

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