



The Correlation Between Learning Approach and Student Achievement of Student Oral Case Analysis (SOCA) in Dental Undergraduate Education

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Abstract. Learning is an individual's attempt to experience new behavioral changes in the interaction of his environment. The changes enable individuals to master the material as the goal of learning. Learning mastery needs to be accompanied by a learning approach. The learning approach is divided into two groups: the deep approach and the surface approach. The learning approach is carried out to achieve the learning objectives. Learning objectives can be seen by evaluating the learning process, such as conducting an oral test. One of the exams with the oral method applied in the undergraduate study program in dentistry, Universitas Muhammadiyah Yogyakarta, is Student Oral Case Analysis (SOCA). SOCA aims to identify learning outcomes through reasoning and problem-solving in case scenarios. This study aims to determine the relationship between the learning approach and the results of the SOCA exam in students of the dental undergraduate program. The study is an observational analytical study with a cross-sectional research design. The subjects included 263 undergraduate dentistry students selected using the total sampling technique. The research data were taken with the Revised Study Process Questionnaire 2–29 Factors (RSPQ-2F). The study collected data on SOCA exam results in blocks 4, 11, and 18. Data analysis was conducted using the Spearman Rank correlation test with values ($r: 0.022$), ($p > 0.05$). The study concluded that there was no significant relationship between the pattern of approach to learning and the results of the SOCA exam in undergraduate dentistry students.

Keywords: Learning Approach · RSPQ-2F · Student Oral Case Analysis

1 Introduction

Learning is an effort made by individuals to experience a new change in behavior due to the interaction of their environment [1]. The purpose of learning is the mastery of the material to experience a change in behavior [2]. Mastery of learning materials by individuals requires a learning approach. The learning approach is divided into two groups: deep and surface approach [3]. A surface approach aims to achieve the main goal of passing the assessment only. In comparison, a deep approach is a learning approach where individuals can take their time to understand the material [4]. Individuals with a deep approach are motivated and desire to learn about the material. Meanwhile, individuals with a surface approach have learning motivation due to the ability to complete lessons and overcome a fear of failure [5].

The achievement of learning objectives can be seen by evaluating the learning process. One way to evaluate the learning process is to conduct an exam, one of which is an oral exam. Oral exams require individuals to answer questions orally. The answers to the questions that must be delivered orally can trigger the individual to be enthusiastic about learning [6, 7]. One of the exams with the oral method applied in the Dental Medicine Study Program of Universitas Muhammadiyah Yogyakarta is SOCA. SOCA requires students to be able to identify cases orally based on scenarios. The SOCA scenario motivates students to study to understand the case and pass the exam [8]. The SOCA exam shows students' knowledge, communication skills, and scientific interactions to improve their ability to convey knowledge [9]. The SOCA exam identifies student learning outcomes through reasoning and problem-solving in case scenarios [10]. The Dental Medicine Study Program of UMY University implements SOCA to evaluate student learning outcomes starting in 2017. Based on the background, the researchers attempted to identify the pattern of learning approaches that dental students have applied. Specifically, the researcher attempted to identify the correlation between the learning approach and the results of the SOCA exam for dental students.

2 Material and Method

This study is an analytical observational study with a cross-sectional design to determine the correlations between the learning approach and the results of the SOCA exam in dentistry students. The study population included dentistry students in the class of 2017, 2018 and 2019, with a total of 293 students.

The study used the total sampling technique. The inclusion criteria included active students of the class of 2017, 2018, and 2019 who were willing to become research respondents. Exclusion criteria were students who did not take the SOCA exam and did not fill out the questionnaire correctly and those who have been respondents to the questionnaire validity and reliability test.

Table 1. Characteristics of Respondents Based on Learning Approach Patterns

	Learning Approach		
	Deep Approach	Surface Approach	Total
2017	74	22	96
2018	67	16	83
2019	74	10	84
Total	215	48	263

The data collection method of the learning approach used the RSPQ 2F questionnaire. The validity test was obtained from 20 statement items. There were 6 invalid items, so the researcher eliminated the items. The validity test resulted in a Cronbach's Alpha value of 0.809, so the 14 items of the statement were declared valid and reliable. SOCA test score data was obtained from the dental study program. The data was taken after the authors received research permission from the research ethics committee. Data processing was carried out using the Spearman rank test to identify the relationship between the two variables.

3 Result

The study used 263 respondents from 2017, 2018, and 2019. Characteristics of respondents based on the pattern of learning approaches in the class of 2017 showed that 74 respondents had a deep approach learning pattern, and 22 respondents had a surface approach. In the class of 2018, 67 respondents had a deep approach learning pattern, and 16 respondents had a surface learning approach. In the class of 2019, 74 respondents had a deep learning approach, and 10 respondents had a surface learning approach.

The results of the 2017 SOCA exam showed that 96 respondents passed. The results of the 2018 SOCA exam showed that 82 respondents passed, and 1 respondent did not pass. The results of the 2019 SOCA exam showed 81 respondents passed and 3 respondents did not pass.

All respondents from the 2017 class successfully passed the SOCA exam with a score of > 60, with 74 respondents having a deep approach learning pattern (77.08%) and 22 respondents had a surface approach learning pattern (22.92%). The 2018 batch of respondents produced a total of 66 respondents (79.52%) with a deep learning approach and 16 respondents (19.28%) with a surface approach learning approach. All students successfully passed the SOCA exam with a score of >60, but there was 1 respondent (1.20%) with a deep learning approach who did not pass the SOCA exam since he got

Table 2. Characteristics Based on SOCA Exam Results

	Category		
	Passed	Not passed	Total
2017	96	0	96
2018	82	1	83
2019	81	3	84
Total	259	4	263

Table 3. Spearman’s Test Result in the Learning Approach and SOCA Exam

Learning approach	Category				P
	Passed		Not passed		
Deep approach	212	80.61%	3	1.14%	0.726
Surface approach	47	17.87%	1	0.38%	
Total	259	98.48%	4	1.52%	

a score of <60. The class of 2019 respondents produced 72 respondents (85.72%) with a deep learning approach and 9 respondents (10.71%) with a surface learning approach, successfully passing the SOCA exam with a score of >60. However, 2 respondents (2.38%) with a deep approach learning approach and 1 (1.19%) with a surface approach learning approach failed to pass the SOCA exam.

The results of the Spearman correlation test showed no relationship between the pattern of student learning approaches and the results of the SOCA exam with a significant value ($p = 0.726 > 0.05$).

4 Discussions

The results showed that some students had a deep and surface learning approach. It aligns with the theory that every student has the desire and strategy used in every learning activity [4]. Furthermore, the research found that most students had a deep learning approach to preparing for the SOCA exam. These results are in line with the theory stating that SOCA is a type of oral exam requiring students to be able to solve problems

in the form of cases and analyze the case according to their competence [8]. The deep approach gives students a desire to understand the learning material and that they can develop their thoughts to understand an overview of a topic, a feature of the deep approach pattern [11]. Students with a surface learning approach only study to pass the exam. That kind of student has memorization characteristics and tends to feel pressured and anxious when facing exams [13].

The research data were taken with the Revised Study Process Questionnaire 2–29 Factors (RSPQ-2F). RSPQ-2F is a questioner that contains data to distinguish learning carried out through a deep approach or surface approach. The study collected data on SOCA exam results in blocks 4, 11, and 18. The learning approach can affect learning outcomes. However, several factors cause those two aspects to be imbalanced. These factors are divided into internal and external factors. External factors include family factors, school factors, and community factors. Meanwhile, internal factors are divided into three, namely physical factors such as health conditions and physical disabilities; psychological factors such as intelligence, attention, interest, talent, motivation, and readiness; and the last factor is the fatigue factor¹. Furthermore, motivational and environmental factors can also affect a person's learning approach. Thus, an appropriate learning environment is an important component of the learning process [14].

5 Conclusion

Based on data analysis and discussion, it can be concluded that the majority of dentistry students had a deep approach learning. Furthermore, this study showed no significant relationship between the pattern of learning approaches and the results of the SOCA exam on students.

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