The correlation between learning approach and learning achievement among medical education students

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Abstract: The objective of this research is to find the relationship between learning approach and learning achievement of medical education students in the Faculty of Medicine, University of Nusa Cendana Kupang. This research is an analytical observational research with cross-sectional design conducted towards medical education students of Faculty of Medicine, University of Nusa Cendana Kupang. Sample was obtained using proportionate stratified random sampling technique. Data were obtained using Revised Study Process Questionnaire 2-Factors (R-SPQ2F) on 160 respondents who met the inclusion criteria. Sample was analyzed bivariately using contingency coefficient statistical test. From 160 respondents, data show that the numbers of students who used deep learning and surface learning approach were 139 students (86.9%) and 21 students (13.1%) accordingly. While for learning achievement categories, 121 students (75.6%) achieved commendation category, 39 students (24.4%) got very satisfactory category, and none of them belonged to satisfactory category. Bivariate analysis shows results of p value = 0.631 and r value = 0.038.

Keywords : Learning approach, learning achievement, questionairre, cross sectional

Abstrak: Penelitian ini bertujuan untuk mengetahui hubungan *learning approach* dengan prestasi belajar mahasiswa prodi pendidikan dokter Fakultas Kedokteran Universitas Nusa Cendana Kupang. Penelitian ini merupakan penelitian *analitik observasional* dengan rancangan *cross-sectional* yang dilakukan pada mahasiswa prodi pendidikan dokter Fakultas Kedokteran Universitas Nusa Cendana Kupang. Pengambilan sampel dilakukan dengan *Proportionate Stratified Random Sampling.* Data diperoleh dengan melakukan pengisian kuesioner *Revised Study Process Questionnaire 2 Factors* (R-SPQ2F) oleh 160 responden yang memenuhi kriteria inklusi. Hasil analisis bivariat dilakukan uji statistik *coefficient contingency.* Data 160 responden menunjukan mahasiswa yang menggunakan *learning approach* tipe *deep approach* sebanyak 139 (86,9%) orang, tipe *surface approach* sebanyak 21 (13,1%) orang. Untuk prestasi belajar mahasiswa yang mendapat indeks prestasi kumulatif kategori dengan pujian berjumlah 121 (75,6%) orang, kategori sangat memuaskan berjumlah 39 (24,4%) orang, sedangkan tidak terdapat mahasiswa yang mendapat indeks prestasi kumulatif dengan kategori memuaskan. Hasil uji analisis bivariat pada penelitian ini diperoleh nilai *p*=0,631 dan nilai *r*=0,038.

Kata kunci: Pendekatan belajar, prestasi belajar, kuesioner, *cross sectional*

INTRODUCTION

Learning is an effort made by someone in order to obtain knowledge as a means to reach a particular goal (Novaldy et al., 2019). Instruction is a teaching learning process which plays a role in determining someone's learning success. There are three significant components in instruction which is influential to someone's learning outcome namely learning process, learning outcome, and learning achievement. If students learn well, they will likely reach decent learning outcome (Novaldy et al., 2019) and are able to understand the objective of the learning itself.

According to Winkel, the result achieved by students when participating in a learning process in university is called learning achievement. The outcome of the learning achievement is represented in grade or score (Rahmayani, 2017) which in university level is manifested in GPA. The greater the GPA gets, the better the achievement is. Many factors play role in students' learning success one of which is learning approach (Novaldy et al., 2019).

Learning approach denotes to the way individuals learn as students to meet their desired goals. Bigss, quoted by Syah, classifies learning approach in three categories; surface approach, deep approach, and strategic approach (Asmisul, 2018). However, in further studies, strategic approach functions as an indicator of deep approach so that strategic approach no longer becomes a type of learning approach (Wandasari & Hernawati, 2021).

Medical education is reported as one of study programs with the highest difficulty level of curriculum in the world (Wassif et al., 2019). The curriculum implemented in medical education is competency-based with its learning system divided into 2 namely credits and block system (S & Oktaria, 2017). Medical students in their pre-clinic phase are obliged to master many learning loads and other medical skills within a short period of time with limited sources and energy. They also have to attend face-to-face lecture in the classroom as well as practicum such as Problem Based Learning (PBL) and Clinical Skills Lab (CSL) (Shadid et al., 2020).

Indonesian education system, particularly in medical field, has transformed from teacher-centered learning (TCL) to student-centered learning (SCL) in competency-based curriculum (Surbakti, 2017).

It has been common for medical students to face high learning demand to get them accustomed to be a long-life learner. Medical students have to deal with mastery of more learning loads in a shorter time and busier lecture schedules compared to students from other majors. If this kind of hectic demand is carried out with improper learning approach, it is highly likely to trigger academic fatigue which may later lead to a decline in students' learning achievement (Oktavia, 2018).

Referring to a study by Anjani et al. (2020), deep approach is found to be positively correlated with learning achievement while surface approach generates the opposite idea; it is negatively linked to learning achievement (Anjani, Sari & Apriliana, 2020)

A study conducted by Sandeep et al. in 2021 shows that outstanding students prefer deep and strategic learning approach compared to low achieving students ($p < 0.05$). Most of students with low achievement employ surface approach in studying ($p < 0.05$) (Bansal et al., 2021).

Other than the above studies, a research by Winita Cevany et al. in 2016 found that the meaningful correlation with the most distribution is deep learning approach (S1 et al., 2016).

Another study by Novaldy et al. in 2019 generates a non-meaningful correlation with value of $p > 0.05$ and higher rate of graduation by students employing deep approach (Novaldy, Oktaria & Warganegara, 2019).

An empirical investigation on the correlation between learners' approach and student achievement in Faculty of Medicine, University of Tarumanegara carried out by Anggi Arini and Rebekah Malik in 2019 figures out that there is a meaningful correlation between learning approach and learning achievement with value of $p < 0.05$. (Arini & Malik, 2019).

Based on the background above, the researchers are interested to investigate the influence of learning approach on learning achievement represented in GPA for the sake of the continuity of a future doctor.

METHOD

This study applied observational analytic with cross-sectional design using Revised Study Process Questionnaire 2 Factors (R-SPQ2F) as the instrument to assess the learning approach. Data on learning achievement were obtained by keeping record of students' GPA in the even semester of 2020/2021 from the medical education unit (MEU).

Proportionate stratified random sampling was applied, and bivariate analysis of contingency coefficient was utilized.

FINDINGS AND DISCUSSION

Table 1. Respondents' Characteristics

Variable	Frequency f(x)=160	Percentage (%)
Gender		
1. Male	44	27.5
2. Female	116	72.5
Age		
1. 17-18	2	1.3
2. 18.1-19	15	9.4
3. 19.1-20	55	34.4
4. 20.1-21	41	25.6
5. 21.1-22	40	25.0
6. 22.1-23	5	3.1
7. 23.1-24	2	1.3
Year		
1. 2018	60	37.5
2. 2019	43	26.9
3. 2020	57	35.6
Places to live		
1. Parents	71	44.4
2. Family	19	11.9
3. Boarding House/ Dormitory	66	41.3
4. Others	4	2.5
Comfort Rate of Living Place		
1. Yes	157	98.1
2. No	3	1.9
Comfort rate of Social Environment		
1. Yes	153	95.6
2. No	7	4.4
Motivation		
1. Self-choice	142	88.8
2. Others' Request	18	11.3

Table 1 shows that the majority of respondents were female accounted for 116 (72.5%) while male respondents were for as many as 44 (27.5%). 55 respondents (24.4%) were 19.1-20 years old while the lowest number of respondents were 17-18 years old and 23.1-24 years old for as many as 2 people (1.3%) each. A large number of respondents in this study lived with their parents accounted for 71 people (44.4%). A significant number of respondents, 157 of them or 98.1% felt comfortable with their places to live, which is counted quite similar to those saying to felt comfortable with their social environment for as many as 153 people or 95.6%. 142 respondents, or 88.8%, are reported to study in Faculty of medicine, University of Nusa Cendana as their own choice. Referring to the table above, it can be concluded that all existing conditions and

environments supported the respondents to accomplish good learning achievement.

Table 2. Learning Approach Distribution

Learning Approach	Frequency	Percentage (%)
Deep Approach	139	86.9
Surface Approach	21	13.1
Total	160	100.0

Primary data collection shows that respondents, in average, used deep learning approach.

Table 3. GPA Distribution in Even Semester of 2020/2021

GPA	Frequency	Percentage (%)
Commendation (3.50-4.00)	121	75.6
Very Satisfactory (2.75-3.49)	39	24.4
Satisfactory (2.00-2.74)	0	0
Total	160	100.0

Data on GPA on Table 3 above were obtained from the secondary data collection from academic division. This study concludes that the majority of students possessed good achievement.

Table 4. Correlation Analysis between Learning Approach and Learning Achievement

Learning Approach	Learning Achievement						Total (%)	r	p value
	Commendation		Very Satisfactory		Satisfactory				
	f	%	f	%	f	%			
Deep Approach	106	76.3%	33	23.7%	0	0%	139 (100%)		
Surface Approach	15	71.4%	6	28.6%	0	0%	21 (100%)	0.038	0.631
Total	121	75.6%	39	24.4%	0	0%	160 (100%)		

Contingency coefficient test* value of p>0.05

The majority of medical students in Medical Faculty of University of Nusa Cendana employed deep learning approach and belonged to 'commendation' learning achievement category. Data were analyzed using contingency coefficient test where it yields p=0.631 and r=0.038. Thus, it can be concluded that there is no significant correlation between learning approach and learning achievement of students of Medial Research and Education Program, Faculty of Medicine, University of Nusa Cendana.

This research was conducted to figure out the link between the two variables. Findings showed that out of 160 respondents, 139 of them (86.9%) applied deep learning approach and 21 respondents (13.1%) implemented surface approach. This finding might result from the problem-based learning applied by Faculty of Medicine, University of Nusa Cendana in which students often joined tutorial consisting of 7-8 students doing discussion from case scenario. The tutorial allowed students to learn independently, have high learning motivation, and possess deep learning approach as they, on their own, find the problem in the scenario and come back to group discussion. This finding agrees with research by Winita Cevany et al. in 2016 that found that learning approach was dominated by deep learning approach accounted for 64 orang (59.3%) out of 108 respondents in total (S1 et al., 2016).

Data on the distribution of learning achievement based on GPA are 160 respondents

(75.6%) were in the commendation category, 39 respondents (24.4%) in the very satisfactory category, and none in the satisfactory category. This shows that respondents have decent average learning achievement as no student belongs to satisfactory GPA.

The result of contingency coefficient test yielded value of p= 0.631 in which p>0.05, thus, the conclusion is that there is no significant correlation between learning approach and learning achievement of medical students, Faculty of Medicine, University of Nusa Cendana. This finding goes along with a study by Rika Lisiswanti et al. which generated value of p=0.155 (p>0.05) meaning that there is no significant link between learning approach and learning outcome (Lisiswanti et al., 2015).

Table 2 presents information that students employed deep approach achieve GPA within categories of commendation and very satisfactory. However, this idea contrasts the existing theory stating that students applying surface learning approach get lower learning outcome while those implementing deep learning approach will achieve better accomplishment. Difference on students' learning approach can be affected by other factors like diverse personal factors among students such as the ability to comprehend something, their perspectives towards education, learning goals, and previous knowledge (Rantari et al., 2019). As some students employing surface approach also achieve outstanding learning outcomes, it signifies that it takes different intelligences to master certain materials. One determinant factor for learning achievement is internal factor which includes intelligence, interest, talent, and motivation (Novaldy et al., 2019). Some factors influential to someone's learning achievement are internal factors, external factors, and learning approach. Learning approach is only one among those factors affecting students' performance. This is the limitation of this study. Findings showed that medical students of Faculty of Medicine in University of Nusa Cendana earned decent academic achievement regardless their learning approach. This notion is supported by other characteristics, as those presented in Table 1, like the supporting conditions and environments for students' learning achievement.

Table 1 gives information that the average students' motivation to study medicine in Faculty of Medicine, University of Nusa Cendana is their own choice. Learning motivation is external and internal driving forces that encourage students to study to reach the learning objective (Lubis, 2019). Motivated students tend to improve themselves like being able to work more effectively and efficiently, being interested to study and recognize potentials, and supporting learning process to reach maximum outcome (Sutrisno & Siswanto, 2016).

Environmental and social factors also play a role in the success of learning. Comfortable social environment contributes to someone's learning success (Baptista, 2020). On average, students feel comfortable with their houses and social environment (Ridwan, 2016).

Intelligence is a combination between learning skill and adaptation skill towards existing situation (Oktarindri, 2016). The higher the intelligence is, the faster someone understands learning materials, which leads to better learning achievement (Baptista, 2020).

Interest can be defined as someone's permanent habit to be attracted to a certain field (Oktarindri M, 2016). Low level of learning interest may cause learning achievement to decline and in contrast, high level of learning interest may improve learning achievement (Ratnasari IW, 2017).

Talent is a skill that people claim to be innate ability. Therefore, it can be concluded that someone's specific ability is determined by their aptitudes. Thus, aptitudes are influential to learning outcome in a certain field (Oktarindri, 2016).

The learning system in Faculty of Medicine, University of Nusa Cendana applied block and non-block system which differentiates this university from others. A student in this university is declared passing the block if the final grade $\geq$ 60 (C), but those students who have not achieved the final score of $\geq$ 70 (B) in a block are obliged to take remedial and final semester exam of which the maximum score is 70 (B). This creates a greater opportunity for students to reach higher GPA >3.00 (Medical Faculty of Undana, 2018) (Baptista, 2020).

Findings in this research are different from what Winita Cevany et al. found in their study that a meaningful correlation between learning approach and learning achievement exists (S1 et al., 2016).

This difference can be due to factors such as research site, research time, and research respondents in which Winita Cevany et al. involved students in one particular year while this study included students from three different years. There is also a dissimilarity in terms of research instrument in which the previous study used *Study Process Questionnaire (SPQ)* while the current study employed *Revised Study Process Questionnaire 2 Factors (R-SPQ2F).* Moreover, the former study investigated three learning approaches using bivariate analysis of Spearman correlation test while in the current study, two approaches were examined using bivariate analysis of coefficient contingency test.

CONCLUSION AND SUGGESTIONS

The non-significant correlation between learning approach and learning achievement is found in Medical Education students, Faculty of Medicine, University of Nusa Cendana. Almost all respondents employed deep learning approach for as many as 139 people (86.9%) while for the users of surface learning approach are accounted for 21 (13.1%). 121 respondents (75.6%) achieved GPA in commendation category, and 39 students (24.4%) respondents had very satisfactory category of GPA.

For those respondents who employed surface learning approach, it is suggested that they start to apply deep learning strategy as an effort to realize long life learning since early life regardless no correlation between types of learning approach and students' learning achievement found in this study. The followings are suggestions for future researchers.

a. Future researchers may refer to studies which tackle other factors affecting learning achievement other than learning approach.

b. Future researchers can conduct studies investigating the correlation between three learning approaches; deep, surface, and strategic learning approach, and learning achievement taken from the first exam score excluding remedial test.

c. Future researchers would be better to take students from other majors as the respondents and do not limit the respondents to only medical students.

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