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THE EFFECT OF SELF DIRECTED LEARNING READINESS (SDLR) AND LEARNING APPROACH TOWARD MEDICAL STUDENT ACHIEVEMENT

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ABSTRACT

Background: *Learning approach and Self Directed Learning Readiness (SDLR) are important factors that influence student learning achievement. The world of medical education has experienced a paradigm shift from Teacher-Centered Learning (TCL) to Student-Centered Learning (SCL) that is applied through the Problem Based Learning (PBL) methods that expected the student to have the ability to learn independently or what is called Self Directed Learning (SDL). This study aimed to analyzed the effect of SDLR and learning approach on medical student achievement.*
Methods : *this study uses a cross-sectional design. The sample was students of the Faculty of Medicine, Swadaya Gunung Jati University, 2016, 2017 and 2018 as many as 181 people. The sampling technique uses stratified random sampling. Spearman test, chi-square test and linear regression test were used to analysed the effect of the age, SLDR and learning approach on medical student achievement*
Results : *The chi square test result in this study showed that age (P = 0.001; rs = 0.359), SDLR (P = 0.001; rs = 0.516) and the learning approach (P = 0.001; rs = 0.308) had a significant effect on medical students' learning achievement. However, there was no significant difference in the learning approach between 2016, 2017 and 2018 classes. The linear regression test results showed that SDLR was the most influential variable in the learning achievements of medical students.*
Conclusions : *Self Directed Learning Readiness (SDLR) and learning approach could be the effective learning methods. SDLR as the most effective method to increase the learning achievements of medical student could be applied on many medical schools.*

Keywords : *SDLR, learning approaches, learning achievement*

INTRODUCTION

Learning achievement is one indicator of a person's success in learning. [1] Student learning achievement is influenced by three factors, namely internal, external, and learning approaches. Internal factors consist of intelligence, motivation, feelings, attitudes, interests, physical condition and Self Directed Learning Readiness (SDLR). [2] External factors consist of environmental and instrumental factors. The last factor is the learning approach chosen by students to achieve their learning goals. [3] The world of medical education has experienced a paradigm shift from Teacher-Centered Learning (TCL) to Student-Centered Learning (SCL) that is applied through the Problem Based Learning (PBL) method. A student is expected to have the ability to learn independently or what is called Self Directed Learning (SDL) [4].

Students will basically have the readiness to study independently at various different levels. This readiness can then be measured through a measurement scale known as the Self Directed Learning

Readiness Scale (SDLRS). [5,6] Zulharman adapted the SDLR instrument and examined the role of SDLR of learning achievement in first-year students in the University of Riau FK. The researcher revealed that there was a positive and meaningful relationship between SDLR and the learning achievement of first year students in FK Universitas Riau which was seen from the value of UAB. [7] The importance of SDL can be seen from the inclusion of SDL by the American Board of Medical Specialties and the World Federation for Medical Education as something that must be evaluated on medical faculty students. [8]

Another important factor that affects learning achievement is the learning approach, namely the real behavior of individuals as a student in learning that determines the level of learning outcomes. Learning approaches are grouped into three prototypes (basic forms), namely: surface approach (surface or outward), deep approach (in depth or in detail), and strategic approach (feeling competing for approach). [9,10] Students who use deep approaches are proven to have higher test scores than students who use surface approach. [11]

Based on the description above, it can be concluded that the selection of learning approaches and SDLR are an important factor that influences student achievement. Identification of these two factors becomes important as input for planning strategies to improve student learning achievement. Research on SDLR medical students has never been done in the medical faculty of Swadaya Gunung Jati University , therefore researchers are interested in researching the description of SDLR and learning approaches and their influence on the learning achievements of medical students.

METHODS

This research is descriptive analytic, with a cross sectional design carried out on medical students in Cirebon, West Java, Indonesia with a sample of 181 respondents consisting of batch 2016, 2017 and 2018. This study uses stratified random sampling and sample size using Slovin formula. Subjects are medical students of batch 2018, 2017 and 2016 who have active learning status in the year 2018/2019 and are physically and mentally healthy which has been proven through psychological testing at the beginning of entering medical faculty. We exclude students who repeat years of study to avoid bias.

Learning achievement is seen from the value of blocks taken after students complete the exam obtained from the academic section. Student SDLR was obtained from the SDLR Scale questionnaire that had been validated by Zulharman and Nyambe which consisted of 36 questions using a Likert scale 1-5, this scale categorized students into three groups, namely students with high, medium, and low levels of independent learning readiness, measured by a score of <85, 85-132 and> 132. There are three subscales on the SDLR questionnaire, namely self management, desire to learn, and self control. Learning Approach data was collected through the RSPQ2F questionnaire which was validated by Diana in 2017, consisting of 20 Likert scale items that categorize students into two groups, namely deep approach and surface approach. The data were processed using the Spearman test to examine the effects of each independent variable (age, SDLR and learning approach) on medical student achievement, Chi-square test to analyze differences in learning approaches used by medical students of 2016, 2017 and 2018 and regression linear test to find out which independent variable is more influential on the dependent variable.

RESULTS

Characteristics of Respondents

Table 1. Characteristics of Respondents

Characteristics	Frequency	Percentages (%)
Gender		
Male	56	30.8
Female	125	68.7
Total	181	100.0

Characteristics	Frequency	Percentages (%)
Age (year)		
17	5	2.8
18	57	31.5
19	64	35.4
20	37	20.4
21	14	7.7
22	4	2.2
SDLR		
<85	3	1.7
85-132	33	18.2
>132	145	80.1
Learning Approaches		
Surface	10	5.5
Deep	171	94.5
Learning achievement		
E	18	9.9
D	44	24,3
C	45	24,9
BC	30	16,6
B	28	15,5
AB	13	7,2
A	3	1,7

Most of the subjects in this study were 19 years old (35.4%), followed by 18 years and 20 years (31.5% and 20.4%, respectively). Female respondents were 125 respondents (68.7%), and 56 male respondents (30%). Most students (24.9%) have learned achievements with category C and at least students (1.7%) have learning achievements in category A. The total of 145 students (80.1%) had SDLR with a score of> 132 and only 3 students (1.7%) had SDLR with a score of 85. The deep learning approach was chosen from 171 students (94.5%) with the highest score being C and 10 students choosing the surface learning approach (5.5%) which only obtained E and AB scores.

Differences in Approach to Learning between 2016, 2017 and 2018 Classes

The effect of age, SDLR and learning approaches on learning achievement was analyzed using Spearman correlation, whereas to analyze differences in learning approaches between 2016, 2017 and 2018 classes used the Chi-square test with a significance level of 0.05.

Table 2. Differences in Approach to Learning between 2016, 2017 and 2018 Classes

		Learning Approaches						p-value
		Surface Learning Approach	%	*Deep Learning Approach*	%	Total	%	
Year of the Force	2016	1	3.3	29	96.7	30	100	.434
	2017	1	2.4	40	97.6	41	100	
	2018	8	7.3	102	92.7	110	100	
	Total	10	5.5	171	94.5	181	100	

Spearman correlation analysis (rs) shows a statistically significant positive correlation between age on learning achievement (rs = 0.359 and p-value = 0.001), SDLR on learning achievement (rs = 0.516 and p-value = 0.001) and learning approaches to learning achievement (rs = 0.308 and p-value = 0.001).

Based on statistical calculation with the Chi-square test, the p-value is 0.434, so there is no significant difference between 2016, 2017 and 2018 classes towards the approach of learning medical students.

Multi-variate Analysis

Table 3. Multi-variate Test Results

Step	Variable	Coefficient	Coef. Correlation	P
Step 1	Age	.624	.445	<0.001
	SDLR	1.573	.473	<0.001
	Learning Approaches	.380	.058	>0.001
	Constant	-13.702		<0.001

The effect of age, SDLR and learning approaches on learning achievement were analyzed using a linear regression test. Based on multi-variate analysis using a linear regression test the SDLR results were more influential on the learning achievement of medical students with a p-value of 0.001 and a correlation coefficient of 0.498.

DISCUSSION

According to the theory put forward by Rusman, age does not directly affect learning achievement, but older age has better SDLR because of more experience, which then affects medical student learning achievement for the better. [12]

Students who have high SDLR with higher learning achievement are more dominant than moderate SDLR with moderate learning achievement. This explains that there is a connection between SDLR and learning achievement. [13]

The higher the SDLR, the higher the learning achieved. But this is not absolute, from the data it appears there are still students who have high SDLR with low achievement and students who have moderate SDLR with higher learning achievement. This explains that learning achievement is not only influenced by the SDLR, there are other factors that also affect student achievement. [13] This is supported by the theory that underlies that learning achievement is the result of interaction between various factors that influence it, both from within (internal factors) and from outside (external factors) individuals. These internal factors include physiological conditions and psychological conditions that include interests, intelligence, talent, motivation, etc. [14] While external factors consist of environmental and instrumental factors. [2,3]

This study also shows the influence of the learning approach on student learning achievement. The results of this study are similar to those of Tarabashkina & Lietz (2011) which show that approaches to deep approaches and strategic approaches contribute high to learning outcomes. [17] Lietz and Tarabashkina (2009) research also found that the learning approach has an influence on student learning outcomes, deep approach has better performance and performance. [18] Malik MM revealed the results of his research that students who use deep approach the graduation rate is higher than the surface approach. Learning approach or learning approach in general is the real behavior of individuals as a student in learning that determines the level of learning outcomes. [9]

The deep learning approach can help students succeed in the exam. In a deep learning approach, a person has the desire to learn about a material and is followed by a strategic approach to compete. The approach is also based on the information process, namely the surface only relies on memory or memory, deep approach focuses on the basis and process of understanding.

There is no significant difference between 2016, 2017 and 2018 classes towards the approach of learning medical students. The results of this study are in accordance with the results of Ati Artati's

research conducted in the Unswagati Medical Faculty in 2018, namely the chi square test showed no significant differences in student learning strategies.

Students who study with a deep learning approach are more focused on understanding, able to evaluate learning material, motivated, interested, able to connect to prior knowledge, broad-minded and connect with the reality that occurs in the field. The surface approach is characterized by learning to memorize only, remembering information, having a narrow view, motivation for fear of failure or extrinsic motivation, unable to distinguish basic concepts and examples. [10,15]

Effect of SDLR, Age and Learning Approach on Medical Student Learning Achievements

SDLR has a greater influence than age and student learning approaches. This is in accordance with what has been explained by Syah, which states that student learning achievement is influenced by three factors, namely internal, external, and learning approach factors. [16]

SDLR is an independent learning readiness that is owned by students and is permanent in students. This condition is related to several internal components in the form of self-management, the desire to learn and self-control. While the learning approach is the real behavior of students in learning and more temporary and not always fixed on student independence, where students who have a deep learning approach are able to evaluate learning material, motivated, interested, able to connect with previous knowledge, broad-minded and connecting with the reality that occurs in the field, but not necessarily having independence in learning. In addition, age is an internal factor that can affect SDLR, older people have better SDLR because of more experience. From the statement, it can be concluded that SDLR has a greater influence on learning achievement.

The limitation of this study is that there is no uniformity of time and place when distributing questionnaires. Therefore the researcher must adjust the time with the respondent.

For further research, it is expected to be able to add research variables in order to be an evaluation of learning achievement both students and teaching staff. In addition, institutions are expected to be able to support student facilities and infrastructure in improving SDLR and learning approaches in order to achieve better learning achievement by providing material to new students during matriculation about learning in medical faculty and students are encouraged to use high independent learning readiness and approaches learn deep learning approach to achieve better learning achievement.

CONCLUSION

Age, SDLR and learning approaches are variables that influence the learning achievements of medical students. There is no significant difference in the learning approach between 2016, 2017 and 2018 classes. SDLR is the most influential variable in the learning achievements of medical students. The influence of SDLR and learning approaches on the achievement of student learning, it is expected that students use high self-learning readiness and deep learning approach to achieve better learning achievement. For further researchers who are interested in SDLR problems and learning approaches if they continue to sample more and add research variables and institutions are expected to be able to support student facilities and infrastructure in improving SDLR and learning approaches in order to achieve better learning achievement.

CONFLICT ON INTEREST

The author declares no conflict of intertest

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