



Research on the Impact of Consciousness, Attitude, and Self-Study Methods on the Learning Outcomes of Medical Students in Vietnam

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Abstract— Active self-study is one of the significant factors that have a great influence on students' learning outcomes. The activeness in students' self-study is reflected in students' awareness - attitude - behavior in self-study activities. The study investigated the impact of self-study awareness, attitudes, and methods on medical students' learning outcomes. The study started from the research objective and referenced the theoretical basis from previous studies on the factors affecting learning outcomes. The author proposed a model consisting of 03 independent variables (consciousness, attitude, and self-study method) and 01 dependent variable (outcomes learning results). Based on data collected from 418 medical students, the research results show that the factor that has the strongest influence on the learning outcomes of medical students is the self-study method $\alpha_3 = 0.403$, then the self-study attitude ($\alpha_1 = 0.359$), and finally the self-study attitude ($\alpha_2 = 0.198$).

Keywords— Self-study, self-study awareness, self-study attitudes, self-study methods, learning outcomes.

I. INTRODUCTION

Self-study plays a significant role in the educational path of each person. Educational innovation has been exciting and researched in recent years, especially innovating teaching and learning methods to improve learners' initiative, promote creativity and improve students' intellectual activities. Knowledge is limitless, while human memory is finite, and self-learning is the process of acquiring knowledge. Of course, any job begins with difficulties and challenges, and self-study is similar. There is no such thing as success without challenges. The critical thing is whether we persevere. Self-study activities will help us practice perseverance and positive habits and be more proactive in difficult circumstances. Above all, self-study will help learners see the good, and the beauty of knowledge, thereby becoming passionate about discovering and learning more new things..

Medicine has always been known to be a problematic discipline with a vast amount of lessons and a long list of unfamiliar technical terms. Therefore, finding an effective way of learning for medical students is necessary so that students can receive, accumulate and apply most effectively in practice and development jobs. However, the research team's observations on medical students found that some medical universities' self-study environment is not exciting and motivate learners' awareness, attitude, and positive self-study methods. Medical students need more desire to learn, research, practice, and improve their professional skills. Learning to cope and cope with exams is still quite common. Students' self-study

results also have a significant difference between different subjects.

Stemming from the above issues, the study was carried out to investigate the relationship between consciousness, attitude, and self-study method to medical students' learning outcomes. Based on research results, some solutions are proposed to improve self-study ability for students in general and medical students in particular..

II. THEORETICAL BASIS OF THE RELATIONSHIP BETWEEN AWARENESS, ATTITUDE, AND SELF-STUDY METHOD TO LEARNING OUTCOMES

2.1. The impact of self-study awareness on learning outcomes

Self-study is a sense of active self-training to receive knowledge and strengthen skills oneself. It is a difficult job that requires the will to strive and persevere. Duong Tran Thi Diem (2005) investigated the causes of low learning outcomes for non-specialist English students at Van Hien University and pointed out that students if their self-study sense is not high, lack of willpower and patience in the self-study process, this will negatively affect students' learning outcomes. Besides, in the author's research, Bui Ngoc Quang (2016) has shown a positive relationship between good self-study sense and learning results of Russian - English bilingual students at the University of Science and Technology. Social Sciences and Humanities, Vietnam National University, Ho Chi Minh City. Based on the above arguments, we form the first hypothesis of the specific study as follows:

H1: The higher the student's awareness of self-study, the higher the student's learning outcomes, and vice versa

2.2. The impact of self-study attitude on learning outcomes

Learning attitude is a component and, simultaneously, an integral essential attribute of the subject's learning consciousness. This factor determines self-discipline, active learning, and the expression of emotions corresponding to the action. In the relationship: Perception - Attitude - Action, knowledge acquisition (the central stage of learning activities) plays a fundamental role, meaning orientation, adjustment, and illumination for attitudes and behaviors. Because. Nguyen Thi Thi Thu (2010), in the study on the relationship between self-study attitude and learning outcomes, showed that students with a positive self-study attitude have better learning results than students with a positive self-study attitude and less active self-study. Author Bui Ngoc Quang (2016) found evidence that

there exists a positive relationship between positive self-study attitude and student learning outcomes. Based on the above arguments, we form the second hypothesis of the study:

H2: The more positive the student's self-study attitude, the higher the student's learning outcome and vice versa

2.3. The impact of the self-study method on learning outcomes

Students' self-study method is a synthesis of ways and paths. It means that students choose for themselves while studying and doing scientific research to complete academic and scientific research tasks best-proposed study (Pham Van Vinh et al., 2010). Author Duong Tran Thi Diem (2005) has found evidence that choosing inappropriate learning methods is one of the leading causes of students' poor learning performance. Besides, in the author's research, Bui Ngoc Quang (2016) has shown a positive relationship between the self-study method and learning outcomes of Russian - English bilingual students,

University of Science and Technology. Social Studies and Humanities. Based on the above arguments, we form the third hypothesis of the specific study as follows:

H3: The better the student's self-study method, the higher the learning outcomes and vice versa.

III. RESEARCH METHODOLOGY

3.1 Research model

Based on inheriting the research model of authors such as Bui Ngoc Quang (2016), Duong Tran Thi Diem (2005), and Nguyen Thi Thi Thu (2010) related to the relationship between self-study awareness, self-study attitude, and self-study method to learning results, we propose a research model The impact of self-study consciousness, self-study attitude, and self-study method on students' learning results are as follows:

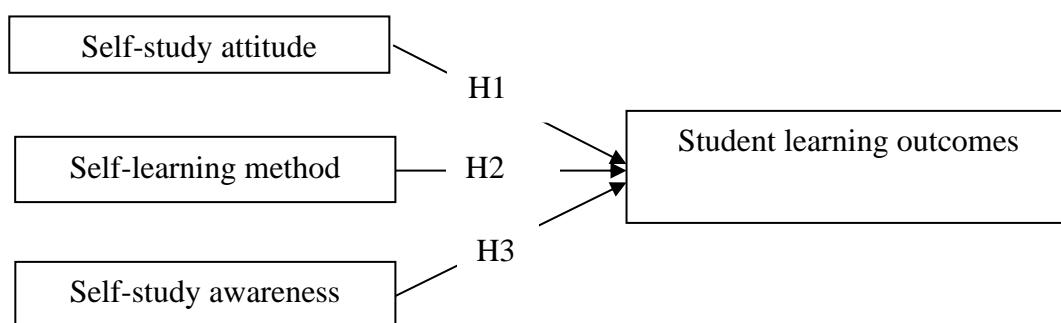


Figure 1. Proposed research model
(Suggested by the authors)

TABLE 1. The scale of factors in the research model

No	Observed variables	Coding
I	Self-study awareness	YT
1	Self-study is obvious and mandatory for students.	YT1
2	Self-study is an activity of training and developing intellectual abilities.	YT2
3	Self-study is the way to train and develop a personality	YT3
4	The sense of self-study helps students achieve high results in learning	YT4
5	The sense of self-study helps students practice self-study and other skills	YT5
6	Self-study will help my-self succeed in my-self future career	YT6
II	Self-study attitude	TD
1	I always spend a lot of time and resources invested in learning	TD1
2	I am always eager to learn and learn new things	TD2
3	I always try to find ways to apply what I have learned in real life	TD3
4	I always actively collect documents, research, learn more knowledge	TD4
5	I always actively build a self-study timetable	TD5
6	I have always loved self-study	TD6
III	Self-study method	PP
1	Read the lesson before going to class	PP1
2	Exchange lessons with teachers and other students	PP2
3	Go to the library to study	PP3
4	Read many reference books, advanced beyond the textbooks and books teachers require.	PP4
5	Review what my-self have learned	PP5
6	Join a study group	PP6
7	Use mind maps for self-study	PP7
8	Apply and make practical connections with what my-self have learned	PP8
IV	Learning outcomes	KQHT
1	I have gained much knowledge from the subject	KQHT1
2	I have developed many skills from the subjects	KQHT2
3	I can apply what I have learned from the subjects	KQHT3
4	Overall, I have learned a lot of knowledge and skills by studying	KQHT4

3.2 Construction of the scales

Based on the theory about the factors of awareness, attitudes, and self-study methods affecting students' learning outcomes, the authors build a scale of factors in the research model. The scale is used as a basis for qualitative research to build a questionnaire for quantitative research. Qualitative research was carried out by group discussion method. Scales were needed to measure the variables accurately, so different variables were selected with appropriate scales. The variables are applied according to the 5-point Likert scale, which is conventionally scaled according to the score as follows:

- 1 – Strongly disagree
- 2 – Disagree
- 3 – Neutral
- 4 – Agree
- 5 – Strongly agree

3.3 Research sample

Respondents

The survey subjects are students who are currently studying medicine at the following schools:

(1) Hanoi Medical University; (2) VNU School of Medicine and Pharmacy; (3) ThaiBinh University of Medicine and Pharmacy; (4) Hai Duong Medical technical University; (5) Haiphong University Of Medicine and Pharmacy; (6) Vietnam Military Medical University; (7) Thai Nguyen University Of Medicine And Pharmacy .

Sample size

In this study, the author chooses a large enough sample size to satisfy both conditions, as suggested by the EFA factor research method. The necessary sample size is $N \geq 5 * 24 = 120$ samples; The sample size required by the regression method is $N \geq 50 + 8 * 3 = 74$ samples.

Survey method

The survey organization method used in the study was distributing questionnaires directly to students, and recalling after being answered, the authors sent 600 survey questionnaires. A total of 418 questionnaires were conducted.

IV. RESEARCH RESULTS

4.1 Sample description

Through screening, a total of 418 questionnaires met the requirements for input and analysis. The following are descriptive statistics of the study sample:

TABLE 2. Descriptive statistics of the study sample

Indicator		Number of people	Percentage (%)
Gender	Male	228	54.5
	Female	190	45.5
Years	Freshman	148	35.4
	Sophomore	31	7.4
	3rd-year student	102	24.4
	4th-year student	130	31.1
	5th-year students and above	7	1.7

(Source: Analysis results of SPSS 20.0 software)

4.2 Current self-study situation of medical students

To survey the self-study status of medical students, the research team surveyed students' perceptions of the importance of self-study activities, self-study time, and self-study methods often used by students. Here are the results of a survey of 418 medical students:

❖ The importance of self-study activities

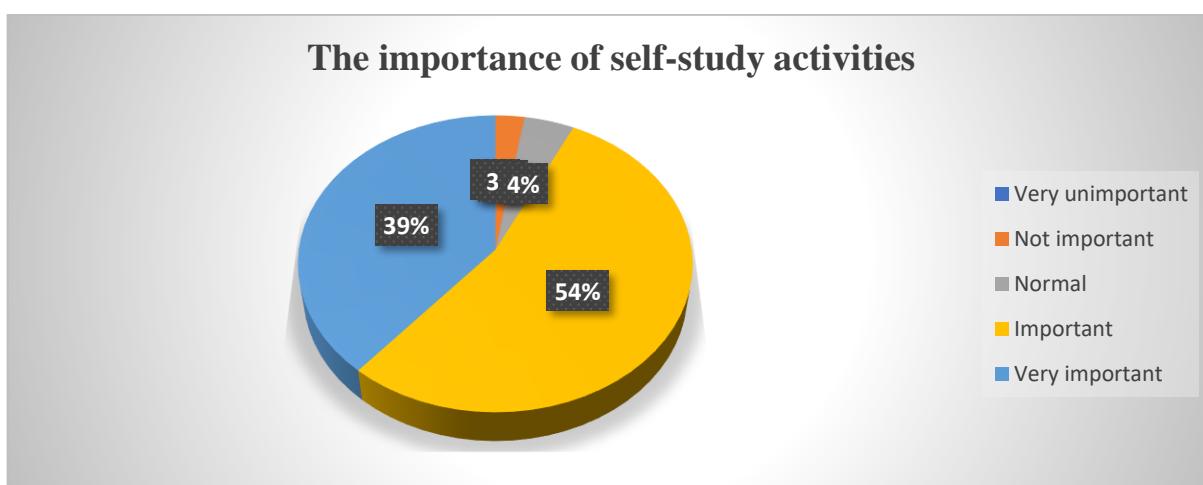


Figure 2. The importance of self-study activities

The survey results showed that the students participating in the study were aware of the importance of self-study activities. None of the students considered this activity very unimportant. However, a few students still need to learn about the importance

of self-study (2.6% choose not essential, and 4.5% choose standard answers).

❖ Self-study time

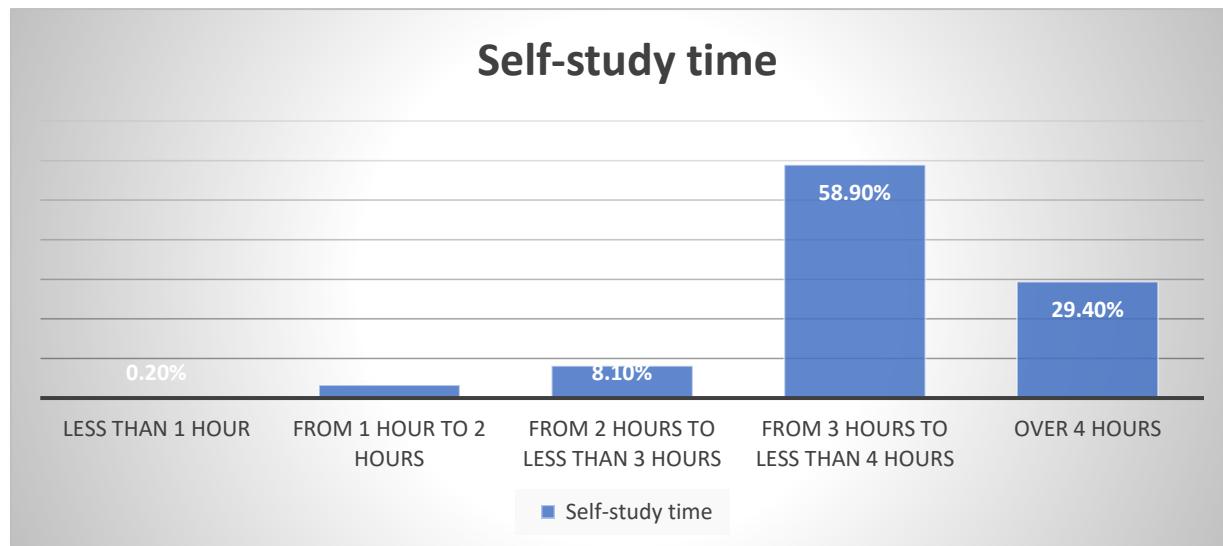


Figure 3. Students' self-study time

The survey results show that most students participating in the survey spend 3 to 4 hours on self-study (58.9%). 29.45 spends more than 4 hours a day on self-study activities. 8.1% of

students spend 2-3 hours on this activity, and only 3.3% said that they study for themselves 1 to 2 hours a day.

❖ *Self-study method*

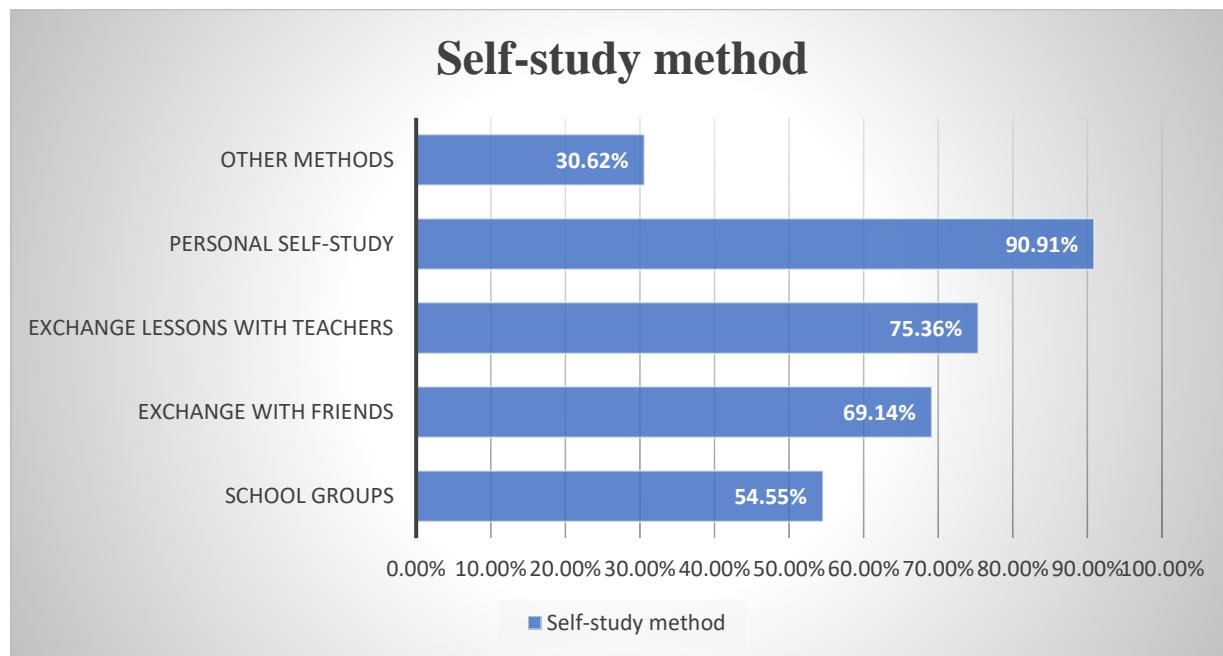


Figure 4. Self-study method of students

The survey results show that the self-study methods of medical students are diverse. 90.91% of them are self-taught. 75.36% self-study through exchanging lessons with lecturers. 69.1% exchange with friends. 54.55% self-study through group study, and 30.36% of the participants said they also self-study by other methods besides the ones listed in the survey.

4.3 Cronbach's Alpha reliability test results

Below are the results of testing the reliability of the scale using Cronbach's Alpha coefficient

TABLE 3. Results of testing the reliability of the scale by Cronbach's Alpha coefficient

Observed variables	Cronbach's Alpha coefficient
Self-study awareness (YT)	.893
Self-study attitude (TD)	.822
Self-study method (PP)	.880
Learning Outcomes (KQHT)	.783

(Source: Analysis results of SPSS 20.0 software)

The results of Cronbach's Alpha test show that Cronbach's Alpha coefficient of all variables gives a value > 0.7 . The variable-total correlation coefficients of the observed variables



are all greater than 0.3, so it meets the requirements for inclusion in the analysis EFA discovery factor.

4.4 Exploratory Factor Analysis EFA

Hypothesis H0: The observed variables do not correlate in the population.

- KMO coefficient = $0.900 > 0.5$. Barlett test: $\text{Sig} = 0.000 < 0.05$: satisfactory.

- KMO and Barlett's test in factor analysis shows that hypothesis H0 is rejected ($\text{Sig} = 0.000$); The KMO coefficient is $0.900 (> 0.5)$.

This result indicates that the population's observed variables are correlated, and factor analysis (EFA) is appropriate.

"There are three factors extracted from EFA analysis: At eigenvalue = 2,658, 3 factors are extracted, and no new factors are formed compared to the initially proposed research model. The extracted variance is 57,327 %. Thus, the extracted variance meets the requirements. Thus, after the EFA analysis of the independent variables, these observed variables have ensured the EFA analysis criteria (satisfactory), and no variables have been excluded at this stage.

4.5 Regression analysis

The results of the correlation analysis show that the correlation between the variables is < 0.8 , so these factors are eligible to be included in the regression model. Here are the results of the regression analysis

TABLE 4. Results of Regression Analysis

Variable	Unstandardized Coefficients	Standardized Coefficients	Sig	VIF
(Constant)	.414		.041	
YT	.322	.359	.000	1.133
TD	.208	.198	.000	1.079
PP	.371	.403	.000	1.187
Adjusted R Square:	48,9%			
Sig. of the F:	0,000			
Durbin-Watson:	2,001			

(Source: Analysis results of SPSS 20.0 software)

The linear regression results in Table 4 show that the independent variables self-study consciousness, attitude, and method all have Sig coefficients. < 0.05 has statistical significance, and the standardized regression coefficient (α) has a positive sign, meaning that there is a positive correlation with the dependent variable, which is the learning outcome of medical students. The factor that has the most substantial influence on the learning outcomes of students based on the standardized regression coefficient is the self-study method ($\alpha_3 = 0.403$), followed by the Self-study awareness ($\alpha_1 = 0.359$), and finally, self-study attitude ($\alpha_2 = 0.198$).

Also, according to the linear regression results, the VIF (Variance Inflation factor - VIF) maximum value is 1,187, and all are less than 10. This shows that the independent variables are not related closely, so there is no multicollinearity. Therefore, the relationship between the independent variables does not significantly affect the explanatory results of the regression model.

The coefficient $R^2 = 0.489$ means that the appropriate model

explains 48.9% of the variation of the independent variables affecting the dependent variable, which is the student's learning outcome, and the remaining 51.1% is the student's learning outcomes due to the influence of other factors that have not been included in the model.

V. PROPOSED SOLUTION

From the research results on the relationship between fundamental ideas, attitudes, and self-study methods to medical students' learning outcomes, the research team proposes several solutions to improve students' self-study ability. Medical specialties are as follows:

Solution 1: Build a diverse, rich, and influential self-study method. This is an essential solution that has a significant influence on learning results. People with suitable self-study methods will easily absorb, learn faster, cultivate a large amount of knowledge, and have the correct orientation, promoting their development

Solution 2: Raise students' awareness of self-study activities. This is a solution that plays a "directing" role and has a significant influence on other factors that the authors discovered during the research process. Through education and fostering to raise awareness and responsibility, students will have a correct awareness of the position and importance of self-study activities, thereby helping to improve each individual's Self-study awareness. At the same time, the training and education to raise the awareness of subjects for self-study activities will be a solid premise to promote the effectiveness of the remaining solutions.

Solution 3: Foster and train students to have the right attitude towards self-study activities. This solution has a vital position, affecting the behavior and perception of learners in the process of self-study and often in two directions: positive or negative. Help students have a correct awareness of the importance of attitude in self-study. Besides, it also helps students find the motivation to learn.

VI. CONCLUSION

The author selected the study to investigate the impact of self-study, attitudes, and self-study methods on the learning outcomes of major students. The study started from the research objective and referenced the theoretical basis from previous studies on the factors affecting learning outcomes. The author proposed a model consisting of 03 independent variables (awareness, attitude, and self-study method) and 01 dependent variables (learning outcomes). Based on data collected from 418 medical students, the research results show that the factor that has the strongest influence on the learning outcomes of medical students is the self-study method $\alpha_3 = 0.403$. then the self-learning attitude ($\alpha_1 = 0.359$), and finally the self-study attitude ($\alpha_2 = 0.198$).

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