

## **Psychological Barriers to Participating in Scientific Research Activities of Undergraduate Students in Ho Chi Minh City, Viet Nam**



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**ABSTRACT:** Scientific research is one of the important tasks of students at university. Encouraging students to participate in scientific research contributes greatly to improving the quality of training and student output. This study investigates psychological barriers to participating in scientific research activities of students in terms of awareness, interest and scientific research skills. The study was carried out on a sample of 206 third-year students at a number of universities in Ho Chi Minh City. Research results showed that 17.5% of students have low barriers, 68.4% have medium barriers and 14.1% have high barriers. The barriers of interest and skills are more than awareness ones, these three aspects are positively correlated. There is no statistical difference between male, female and between majors in the level of psychological barriers to participate in scientific research. In order to promote students to participate in scientific research activities, schools, lecturers and school organizations need to pay attention and have appropriate solutions to help them remove psychological barriers.

**KEYWORDS:** Psychological barriers, Scientific research activities, Undergraduate students.

### **1. INTRODUCTION**

Scientific research is one of the important tasks of students in the process of studying at university. This activity not only helps students deepen and expand their knowledge, but also helps them practice creative thinking skills, improve their independence, and be active in the learning process (Lamanauskas, 2012; Brice, 2014). In addition, the discovery of practical problems in scientific research also help students improve their professional capacity, improve their ability to adapt to work after graduation (Akulenko et al., 2005; Ruchina et al., 2015) Participating in scientific research also prepares students to participate in science and higher learning activities (Zubova et al., 2009). Student's scientific research needs to be encouraged and developed globally (Lamanauskas et al., 2014), however this is a complex activity with many difficulties and challenges and many students are not interested in this activity (Edwards et al., 2004; Denham, 2016; Babamohamadi et al., 2017).

Aware of this problem, many researchers have paid attention to students' scientific research activities as well as the difficulties and barriers to this activity, solutions to promote scientific research activities in the university students. Lamanauskas et al. (2016) focuses on analyzing students' perceptions of the significance of scientific research activities for careers. Lamanauskas et al. (2015, 2017) survey students' interest in scientific research activities, conditions that promote students' active participation in scientific research in schools. Winn (1995), Russia (2010) said that students often face many difficulties in scientific research. Hoa (2008), Kien (2018), Nguyen (2018) discussed awareness, interest, scientific research skills as aspects that manifest psychological difficulties in scientific research activities of students. Dong (2003), Ashrafi-rizi et al. (2015), Dadipoor (2018) analyzed the factors that cause barriers to students' scientific research activities, including factors from students' side, from the school side, economic factors, cultural and community. Lamanauskas et al. (2014), Martyushev et al. (2015) said that in order to develop students' scientific research activities, it is necessary to take measures to promote, strengthening students' motivation to actively participate in scientific research activity. According to Bazhenov (2019), it is necessary to develop online courses on basic scientific research, guiding scientific research methods for students.

In recent years, scientific research activities of students have always been interested and developed by universities and academies in Vietnam in general and in Ho Chi Minh City in particular. However, the percentage of students participating in scientific research

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and implementing topics and projects is not much (Huong et al., 2021). One of the reasons is that they encounter psychological barriers before and during the study (Dong, 2003; Hoa, 2008). Studies on psychological barriers to students' participation in scientific research activities in Vietnam have been interested by some researchers but not many. This is still a gap that needs further research. Our research was done to help fill this gap.

## 2. METHODOLOGY AND TOOLS

### Sample

The study was carried out on a sample of 206 third-year students, randomly selected from 4 universities in Ho Chi Minh City, including: 108 male, 98 female; 66 students majoring in Economics - Administration, 76 students in Social Sciences - Foreign Languages, 64 students in Engineering - Technology.

### Methodology

Psychological barriers to students' participation in scientific research in the aspects of awareness, interest and skills are measured through the scales designed by us. The 5-point Likert scale is applied in all scales. The analytical results showed that the scales have good reliability: Cronbach's Alpha is 0.87 to 0.97.

### Data analysis

The survey results were processed using the statistical software SPSS 22.0. The statistics used include:

*Descriptive statistics:* mean score (M), standard deviation (SD), percentage (%) to assess the level of psychological barriers to participating in scientific research, percentage of students there are psychological barriers at different levels.

The level of students' psychological barriers in all aspects is assessed based on the average score, according to 5 levels:  $M < 1.80$ : Very low level;  $1.80 \leq M < 2.60$ : Low level;  $2.60 \leq M < 3.40$ : Average level;  $3.40 \leq M < 4.20$ : High level;  $M \geq 4.20$ : Very high level. The higher mean, the more psychological barrier.

The percentage of students with psychological barriers at different levels was assessed based on  $M \pm SD$ : Mean  $< M - SD$ : low (level 1);  $M - SD \leq Mean \leq M + SD$ : average (level 2); Mean  $> M + SD$ : high (level 3).

*Inferential statistics:* comparative analysis to assess the difference in levels of psychological barrier in aspects of awareness, interest, skills; level of psychological barriers of students by gender, major. Correlation analysis was used to examine the relationship between aspects of psychological barriers.

## 3. RESULTS

Surveying students' awareness, interest, and scientific research skills, we obtained the following data:

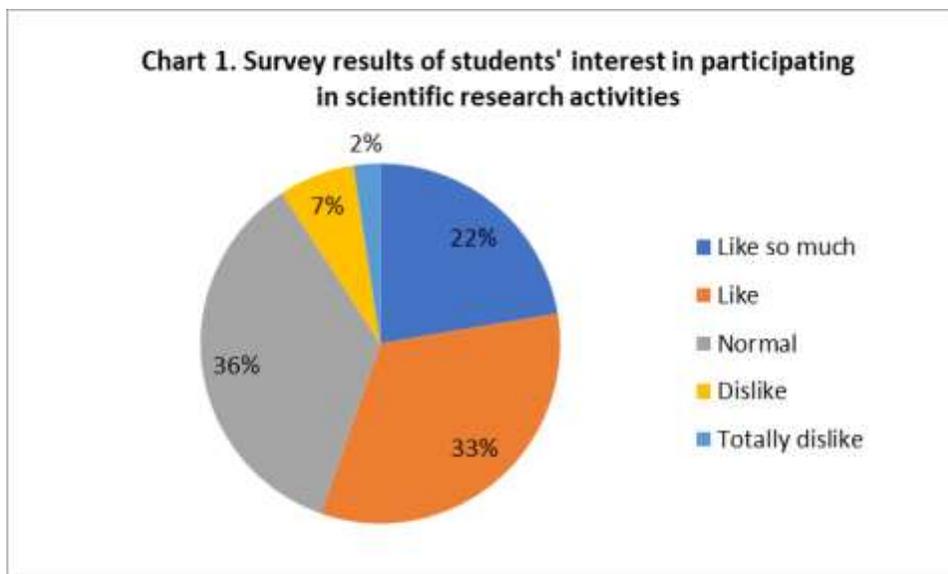
**Table 1. Survey results of student's perception about the meaning of scientific research activities**

Oder	Meanings	M	SD
1	Scientific research activities are very necessary for students.	1.90	.79
2	Scientific research is one of the important tasks of students.	2.20	.88
3	Scientific research helps students expand and deepen their knowledge related to their major.	1.65	.76
4	Scientific research helps students improve their self-study ability and promote active learning.	1.73	.84
5	Scientific research helps promote students' creativity and independence in learning.	1.74	.86
6	Scientific research helps students improve their career capacity and adaptability to work after graduation.	1.79	.78
<b>Total</b>		<b>1.84</b>	<b>.64</b>

\* **Note:** The lowest score is 1.0, the highest is 5.0. The higher mean, the more limited of perception.

The data in Table 1 showed that students' awareness of each content represents the meaning of scientific research activities with the mean from 1.65 to 2.20. The mean in total of students' perception of the meaning of scientific research activities for students is 1.84/5.0.

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There are 22% of students in the study sample very interested in participating in scientific research activities, 33% are interested, 36% feel normal, 7% students do not like and 2% totally dislike.

**Table 2. Students' self-assessment of scientific research skills**

Oder	Meanings	M	SD
1	Choosing a research problem	2.61	1.20
2	Naming research topics	2.73	1.10
3	Making a research proposal	2.84	1.14
4	Building the theoretical framework of the topic	2.84	1.18
5	Developing or selecting tools to collect data (tests, questionnaires, interview questions, exercises, ...)	2.73	1.18
6	Data collection	2.65	1.15
7	Data processing	2.74	1.17
8	Writing a report of research results	2.84	1.15
<b>Total</b>		<b>2.75</b>	<b>1.06</b>

\* Note: The lowest score is 1.0, the highest is 5.0. The higher mean, the lower of skills.

The survey results in Table 2 showed that students self-assessed their proficiency in their scientific research skills with mean of 2.61 to 2.84. The mean in total of students' scientific research skills is 2.75/5.0.

**Table 3. Results of correlation analysis between students' awareness, interest and scientific research skills**

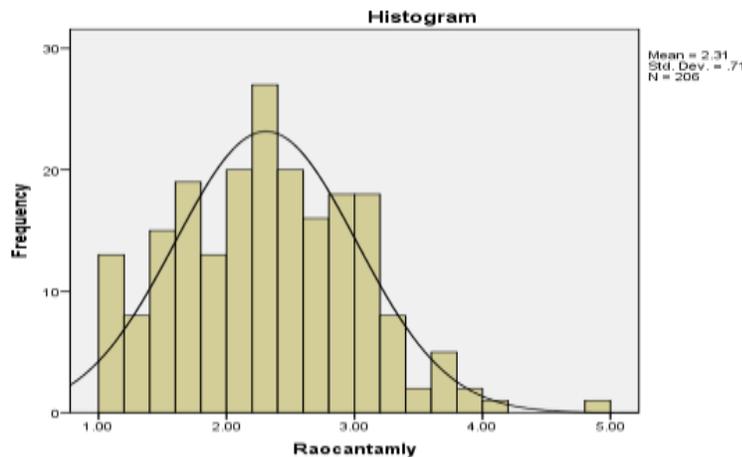
	Awareness	Interest	Skills
<b>Awareness</b>	1		
<b>Interest</b>	.48**	1	
<b>Skills</b>	.33**	.47**	1

\*\* . Correlation is significant at the 0.01 level (2-tailed).

The results of correlation analysis in Table 3 showed that students' awareness, interest and scientific research skills are positively correlated with each other, with "r" from 0.33 to 0.48.

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**Chart 2. Distribution of psychological barriers to participation in scientific research activities**



In this distribution, the mean and median are roughly equal (Mean = 2.31, Median = 2.33), the skewness ranges from -1 to +1 (Skewness = 0.268), and the data are fairly evenly distributed on both sides should be assumed to have a normal distribution.

**Table 4. Percentage of students with psychological barriers at different levels (number - %)**

Levels		
<i>Level 1</i>	<i>Level 2</i>	<i>Level 3</i>
N (%)	N (%)	N (%)
36 (17.5)	141 (68.4)	29 (14.1)

Among the 206 students surveyed, 17.5% of students have low psychological barriers, 68.4% are at medium level, and 14.1% are at high level.

**Table 5. Differences in the level of psychological barriers of students by major and gender**

Oder	Characteristics	M	SD	P-value
1	Economics - Management	2.35	.67	0.30
	Social Sciences – Foreign Languages	2.37	.77	
	Engineering - Technology	2.19	.65	
2	Male	2.22	.71	0.55
	Female	2.41	.69	

Test the difference in the level of psychological barriers between male and female students through Independent-Samples T Test, 95% Confidence Interval for P-value (Sig.) = 0.55 > 0.05.

Test on the difference in the level of psychological barriers between students of 3 majors through One-Way ANOVA, 95% Confidence Interval for P-value (Sig.) = 0.30 > 0.05.

**4. DISCUSSION AND CONCLUSIONS**

Psychological barriers of students to participating in scientific research activities are firstly reflected in their perception of the meaning of scientific research activities. Specifically, when students are not aware or inadequate awareness will hinder their participation in this activity. Research results in Table 1 showed that students have a fairly complete awareness of the meaning of scientific research activities. Students not only realize that this is an important task for students at university, but also see the specific benefits that scientific research brings to them. This also means that the psychological barriers of students to participation in scientific research activities is at a low level. This is a very positive signal. The results of our study have similarities with the recent research results of Nguyen (2018). In our opinion, this result is due to recent times that schools have paid more attention to educating students on scientific research activities and promoting this activity among students.

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Although there is a fairly complete and correct awareness of the meaning of scientific research activities, the data in chart 1 showed that students' interest in this activity still has certain limitations. Students are not really interested in participating in scientific research activities. This causes certain barriers to their participation in scientific research activities. Our findings are quite similar to the research results of Dong (2003), Nga (2010), Kien (2018). This may be because scientific research activities are complex activities, the motivation to participate in scientific research is not strong, etc.

Research results also showed that students' scientific research skills are still quite limited, the limitation occurs in most specific skills. Students self-assessed the average level of proficiency in scientific research skills (table 2). Hoa (2008), Topalov et al. (2013), Huong (2016), Huong et al. (2021) also have similar results. Scientific research is a complex activity that requires researchers to master many skills. The limitation of research skills will make it difficult for students to participate in or perform scientific tasks. Thus, it can be seen that students currently have certain barriers in terms of skills to participate in scientific research activities. In order to limit the psychological barriers of students, improving scientific research skills is one of the important tasks.

Students' awareness, interest and scientific research skills are positively correlated (table 3). This means that when one of the 3 aspects changes, it will lead to a change in the other 2 aspects in the same direction of increasing or decreasing. This result indicates that reducing psychological barriers in any aspect is important in reducing psychological barriers of students to participating in scientific research activities.

In general, the statistical results in Table 4 showed that the majority of students have an average psychological barrier, while a small percentage of students have a high barrier. There is no statistical difference between male and female students and students of different majors in the level of psychological barriers (table 5). Thus, the level of psychological barriers to participating in scientific research activities of male and female students and students of different majors is the same.

From the above analysis, it can be concluded that currently university students in Ho Chi Minh City have certain barriers to participating in scientific research activities. Schools, lecturers and units in the school need to pay attention and take appropriate measures to help students remove psychological barriers, thereby promoting students to actively participate in scientific research activities in university.

### REFERENCES

- 1) Akulenko, O. V. (2005). The effect of university student scientific research in training future professionals. *Contemporary Society, Education and Science*, 2, 66–72.
- 2) Ashrafi-rizi, H., Fateme, Z., Khorasgani, Z. G., Kazempour, Z., & Imani, S. T. (2015). Barriers to research activities from the perspective of the students of Isfahan University of Medical Sciences. *Acta Inform Med*. 23(3), 155–159.
- 3) Babamohamadi, H., Daihimfar, F., Chahrpashloo, H., Hamidi, M., & Kahouei, M. (2017). The approach and function of university students to research process: a cross sectional study. *Koomesh*, 19(2), 412–420.
- 4) Bazhenov, R. I. (2019). Arranging student scientific research as an educational technology: The experience of regional universities of Russia, *Education Research International. Volume 2019*. Doi: <https://doi.org/10.1155/2019/8358954>
- 5) Brice, T. (2014). Research as an educating tool. *Gamtamokslinis ugdymas bendrojo lavinimomokykloje – 2014 / Natural Science Education in a Comprehensive School – 2014*, XX, 24–28.
- 6) Dadipoor, S., Ramezankhani, A., Aghamolaei, T., Safari-Moradabadi, A. (2018). Barriers to research activities as perceived by medical university students: A cross-sectional study. *Avicenna Journal of Medicine* 9(1), Doi: 10.4103/AJM.AJM\_121\_18
- 7) Denham, B. (2016). Teaching research methods to undergraduates. *Journalism and Mass Communication Educator*, 51(4), 54–62.
- 8) Dong, N. V. (2003). Some common psychological obstacles in students in scientific research from the perspective of managers. *Psychology*, 2,17-22.
- 9) Edwards, D. F., & Thatcher, J. (2004). A student-centred tutor-led approach to teaching research methods. *Journal of Further and Higher Education*, 28(2), 195–206.
- 10) Gabunia, L., Khetsuriani, S., Gamkrelidze, N., & Antia, N. (2020). Students' knowledge and attitude towards scientific research at Tbilisi State Medical University, *European Journal of Public Health*, 30(5), <https://doi.org/10.1093/eurpub/ckaa166.651>
- 11) Hoa, P.T.T. (2008). Common difficulties in students' scientific research. *Psychology*, 7.
- 12) Huong, N. T. X. (2016). The status and measures to practice scientific research skills for university students. *Quang Binh Science & Technology Information Magazine*, 3, 48-50.

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- 13) Huong, L. T. T., Huong, D. T., Huy, D. T. N., Thuy, N. T. (2021) Education for students to enhance research skills and meet demand from workplace - case in vietnam. *Elementary Education Online*, 20(4), 606-611. doi:10.17051/ilkonline.2021.04.66
- 14) Kien, N. T. (2018). Some measures to raise interest in scientific research for pedagogical students of Vinh University. *Education Journal*, 438(2), 18-22.
- 15) Lamanauskas, V., Augienė, D. (2014). Bachelor students' scientific research activity at university: Situation analysis and improvement possibilities. In M. Bilek (Ed.), *Science and technology education for the 21st century: Research and research oriented studies* (Proceedings of the 9th IOSTE symposium for Central and Eastern Europe). Hradec Kralove: Gaudeamus Publishing House, 297-312.
- 16) Lamanauskas, V., Augienė, D. (2016). Scientific research activity of students pre-service teachers of sciences at university: Significance, readiness, effectiveness and career aspects. *Journal of Baltic Science Education*, 15(6):746-758.
- 17) Lamanauskas, V., Augienė, D. (2015). Development of scientific research activity in university: A position of the experts. *Procedia - Social and Behavioral Sciences*, 167, 131–140. doi: 10.1016/j.sbspro.2014.12.654.
- 18) Lamanauskas, V., Augienė, D. (2017). Scientific research activity of students pre-service teachers of sciences at university: The Aspects of understanding, situation and improvement. *EURASIA Journal of Mathematics, Science & Technology Education*, 13(1), 223-236.
- 19) Lamanauskas, V. (2012). Development of scientific research activity as the basic component of science education. *Journal of Baltic Science Education*, 11(3), 200-202.
- 20) Martyushev, N., Sinogina, E., & Sheremetyeva, U. (2015). Motivation system of students and teaching staff of higher educational institutions for research work accomplishment. *Procedia-Social and Behavioral Sciences*, 166, 265–269.
- 21) Nguyen, T. N. T. (2018). The status of students' awareness of scientific research activities at Saigon University. *Education Journal*, 1, 95-98.
- 22) Ruchina, A. V., Kuimova, M. V., Polyushko, D. A., Sentsov, A. E., & Jin, Z. X. (2015). The role of research work in the training of master students studying at technical university. *Procedia-Social and Behavioral Sciences*, 215, 98–101.
- 23) Topalov, Jagoda & Bojanić, Biljana. (2013). Academic Research Skills of University Students. *Romanian Journal of English Studies*. Doi: 10.10.2478/rjes-2013-0012.
- 24) Winn, S. (1995). Learning by doing: teaching research methods through student participation in a commissioned research project. *Studies in Higher Education*, 20(2), 203–214.
- 25) Zubova, L. G., Andreeva, O. N., Antropova, O. A. (2009). Graduating college students' orientation toward scientific research activity. *Russian Education & Society*, 51(11), 61-70.