

# Improve the Quality of Students' Scientific Research Activities in Colleges and Universities Today

Thi Mai Huong Le\*

\*(Ly Tu Trong College, Ho Chi Minh city, Vietnam

Email: [lethimaihuong@lrtc.edu.vn](mailto:lethimaihuong@lrtc.edu.vn))

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## Abstract:

Scientific research activities contribute to socioeconomic development, comprehensive human development, and national defense. Currently, scientific research is an important activity in students' learning process, greatly impacting the development of creative thinking, developing skills, and helping students perfect themselves and apply the acquired knowledge in practice. This study has contributed to clarifying the role of scientific research activities for students in universities and colleges, and based on this work practice, points out the difficulties and inadequacies of remedial measures for students' scientific research activities.

**Keywords —Scientific research, students, scientific basis, skills.**

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## I. INTRODUCTION

Today, when the forms of training at the college and university level are being built in an increasingly improved direction, students can access theoretical and practical knowledge in various ways. In particular, conducting scientific research is considered an effective method for students to expand their knowledge as well as their soft skills, as well as an opportunity for them to apply their theoretical knowledge to solve practical problems. Scientific research provides students with the opportunity to approach their favorite field of expertise and provides students with a scientific working style, training students to look at problems objectively, and approach from many sides [1].

Scientific research is the activity of finding, examining, investigating, or experimenting. Based on the data, documents, and knowledge gained from research experiments to discover new things about the nature of things, about the natural and social world. At the same time, create new higher, and more valuable technical methods and means.

Scientific researchers must have a certain knowledge of the field they research and must do independent work and methodical work from the time they study at school.

Students' scientific research skills are understood as the ability to effectively carry out research activities by selecting and implementing learned modes of action by the most conditions and circumstances determined to achieve the research objectives and tasks. The training of students' scientific research skills is the most effective method for training experts with professional competence, scientific capacity, and independent creative style in the acquisition of knowledge and skills techniques, solving scientific problems, apply science and practice. This is one of the factors that help achieve the goals of university training and associate theoretical teaching with practical activities.

Aware of the role and effect of scientific research activities in student training, universities have promoted this activity and enhanced skills training for students, but the results are still limited

compared to the results with requirements and objectives. Therefore, training students' scientific research skills is an urgent task in the training work of colleges and universities to improve the quality of scientific research.

## **II. SCIENTIFIC RESEARCH FOR STUDENTS TODAY**

Scientific research plays an important role in human life in general and academic and thinking activities in the educational environment. For that reason, scientific research activities in Vietnam and especially at colleges and universities are focused and encouraged to develop. Clause 2, Article 28 of the Law on Higher Education 2012 [2] stipulates that one of the tasks of colleges, universities, and academies is to “deploy training, scientific and technological activities, contract international cooperation, ensuring the quality of higher education.” Besides, Clause 2, Article 55 of this Law also stipulates that “Research, development of scientific application and technology transfer, assurance of training quality” is an important task of lecturers. However, the object of scientific and technological activities in universities includes lecturers, other scientists, and students studying at the university. This is reflected in the goal of “forming and developing scientific research capacity for learners” that the university's science and technology activities aim at (Article 39, Clause 2, Law on Higher Education).[2]

Scientific research in students does not require research results to be of great stature. The main goal of scientific research at colleges and universities is to equip students with knowledge and skills for independent scientific research to support learning activities and prepare students for the baggage best after school. Scientific research activities in various forms such as writing essays, internship reports, dissertations, and research topics bring practical meanings to students:

*Firstly*, scientific research helps students to supplement the knowledge didn't learn in the regular program, to fill the knowledge about social life to enrich their living capital. During the survey or practice, you will have to apply skills that are

rarely used, through which you have a deeper understanding of what is missing in the lecture hall or the lessons in the book.

*Second*, scientific research helps students learn more about what they have learned. This activity will promote the ability to analyze, evaluate, and combine with new things to solve the issues of interest, questions from one problem will expand to many problems to enrich knowledge as well as which live us.

*Third*, help students have experience writing reports, and graduation topics later. These experiences are really useful for final-year students and when leaving school to work.

At the same time, scientific research activities help students practice creative thinking, critical thinking, scientific proving certain points of view, skills in analyzing and synthesizing knowledge, the ability to think logically, build a spirit of cooperation, and help each other.[3]

## **III. CURRENT STATUS OF STUDENTS' SCIENTIFIC RESEARCH WORK**

### *1. Advantages of students' research work*

During their study at the school, the participation of students in scientific research activities has the following advantages and disadvantages:

#### *A. Flexible time*

Entering the university threshold, the time spent in class for most students, especially in the social and economic sectors, is not as much as when they were in high school. Many universities have now converted to credit-based training. This way helps students be more active in arranging their study schedule for the most convenience. Therefore, students today have more free time than in high school, as well as teachers participate in teaching. Meanwhile, time is an important factor in making a scientific study possible. That shows that students can complete their research well if they know how to make the most of their time.

#### *B. Student youth*

In an interview with the Vietnam Student Newspaper on January 5, 2015, Mr. Bui Quang Huy,

Standing Vice Chairman of the Central Committee of the Vietnam Student Association, commented: “Confident, dynamic, creative, today's students bring with them the youth of the new era. They actively seek their direction, and are not afraid to express their new ideas.” This is an essential feature of scientific research. Creativity helps to open up new research directions and research problems. The dynamism enables researchers to actively explore and learn, and the confidence helps them stand their ground. These are the qualities required in a true researcher.

### *C. Scientific research activities of students in Ho Chi Minh City in recent years*

In the past time, the whole country in general and Ho Chi Minh City, in particular, have launched and organized many contests related to student scientific research activities, the most prominent of which is the contest “Eureka encourages students to do scientific research”.

The award started from the Euréka program to sponsor young researchers under the Tuoi Tre Newspaper "For Tomorrow's Development" Scholarship Fund (the school year 1990-1991). In 1998, before the development of the scientific research movement among city students, the Ho Chi Minh City Youth Union in collaboration with the Vietnam National University, Ho Chi Minh City upgraded the program into an award named Euréka to encourage scientific research among City students.

First held in 1999, the Prize attracted 116 topics from 19 universities competing in 5 fields: Natural Science, Technical Science, Social Science, Economic Science, and Science juridical.

In 2018, there were 903 topics from 2,263 students in 106 universities, colleges, and institutes from 24 provinces and cities across the country registered to participate; 165 topics have excellently passed the preliminary round at the school level and the semi-final round of the country to be in the final round, with 60 members of the Scientific Council participating in the evaluation of the topic.

The spread across the fields, and the practical value of the topics that students bring over the years is probably something worth pondering. Research -

Euréka (2018), the Organizing Committee awarded 100 prizes, including 11 First prizes, 11 Second prizes, 15 Third prizes, and 63 Consolation prizes. In particular, 16 topics have also been transferred to agencies and businesses to continue to perfect and deploy the application. Typically: "Application of bike sharing model in Bui Vien West Street" (Ho Chi Minh City University of Architecture), "Renovating the traditional fishing boat of people in the Southwest region to serve road tourism river" (Van Lang University, Ho Chi Minh City) was transferred to the Youth Union of Department of Tourism Ho Chi Minh city; "Application of GIS and remote sensing to estimate the total potential of CO2 absorbed from vegetation in Ho Chi Minh City" (Ho Chi Minh City University of Natural Resources and Environment) was transferred to Technology One Member Limited Liability Company. Environment Nguyen Le Gia.[5]

### *D. Some difficulties, exist in the scientific research activities of students today*

*Firstly*, students lack basic knowledge and skills about scientific research methods.

*Second*, the difficulty in determining the research topic. Choosing a topic is an extremely important step and plays a key role in the implementation of scientific work. Because choosing the right research topic is like holding a map with the correct destination in hand, it will help students identify the right field of interest and determine the scope, objects, and purpose of the research. However, to be able to choose a good and meaningful topic that is feasible, and at the same time, can be done within the student's ability is not an easy thing.

*Third*, search for documents. After choosing a topic to research, the difficulty that students encounter is finding documents. This is probably what almost all students doing scientific research have encountered. For topics that are not too new, the source material is somewhat more abundant. And the problem students face lies in how to manage and use it effectively. Often students will search for too many documents, even, if there are unnecessary documents and not related to the research topic. Meanwhile, relevant and really

necessary research documents on the topic could not be found.

*Fourth*, is data processing. Finding information and data was very complicated. After finding the necessary information, the student in charge of the topic must process and analyze the data to make the most accurate assessment. However, students sometimes do not have enough knowledge and skills in synthesizing, processing data, and analyzing the results of that processing. Therefore, the meanings of the data are not exploited accurately and effectively.

*Fifth*, present scientific research papers to the council. Besides the scientific content, the scientific presentation is a direct determinant of the persuasiveness of the topic. When implementing a project of more than fifty pages (excluding the appendix) with specialized terms with figures, tables, diagrams, drawings, etc., the presentation by regulations and specifications can be Probably not that simple and takes a certain amount of time.

#### **IV. SOME SOLUTIONS TO OVERCOME DIFFICULTIES IN THE SCIENTIFIC RESEARCH ACTIVITIES OF STUDENTS TODAY**

##### *4.1. The idea of the project*

The first problem that students often encounter is finding ideas for a project. Usually, to start a scientific research project, we need to define the exact content of the research. It can be a problem arising in the student's learning process, pressing problems in daily life that have not been thoroughly resolved, or simply the development of topics included in the study essay in class.

The selected topic should contain urgent and highly significant issues. Maybe what students bring up is just a small song event, a bold, fresh and creative idea will always be appreciated. The problem may not be completely solved, but it will be the basis for further research in the future. The name of the topic should be "accurate", and "concrete" in terms of the research object, as well as the survey time and space. The title of the topic should be written clearly, avoiding unnecessary lengths or misunderstandings.[6]

##### *4.2. Accurately identify the contents of the opening*

The beginning of a topic is very important. It shows a general and comprehensive overview of the necessary orientations and content for the researcher. Through the introduction, new management levels can consider and decide whether to accept it for the author (or group of authors) to continue working on the topic or not. In this section, students often fail to correctly distinguish some basic concepts such as "research object" and "research object". Research subjects are not always "human", this is where they are often confused.

##### *4.3. Document Search*

Students also have difficulty in finding documents and information for the title "history of the study" (or overview of the research situation). The topics that have been or are being researched related to the issue of interest of the author can be consulted in many different sources, in which the Internet is a very effective tool to find information. In addition, students can use the documents in the school's library, theses, and graduation projects of the Faculty. An overview of the topics, reports, and documents of other authors will help students know where the current topic has been studied by other authors and can inherit and develop how from there a specific orientation for the content to be researched.

##### *4.4. Research Methods*

Currently, students mainly conduct their research by the method of sociological investigation, but the collection and processing of information from this method have not been done thoroughly. Most of the data tables presented in the project only show two indicators, that is quantity and percentage. However, researchers should combine the method of calculating the mean to analyze the data and rank the content when necessary. Besides, most students do not appreciate the importance of qualitative information collection methods such as in-depth interviews, group discussions, observations, and document research. The processing of qualitative information is also a difficult problem for each student. Due to the large amount of information

collected, it is difficult to synthesize, and students cannot determine which information is necessary and which information can be ignored.

#### *4.5. About presentation style*

This is a problem something that should be taken care of and paid attention to. A student's scientific research project is highly appreciated not because it has good content, but more importantly, the presentation form must be clear, coherent, scientific style, and tight. Quite a lot of students are still weak in this respect, the article often has many spelling mistakes, the use of words is in the style of "speaking", and even the sentences are very confusing, lack logic, not convincing the reader. To improve this situation, you should refer to the method of presentation in specific topics, theses, and research works of other authors. This is an opportunity for you to absorb invaluable experiences from those who have gone before, supplement and enrich your knowledge, especially the way of expression. Form good expression, there is no other way, students need to practice regularly to gradually form their style.

#### *4.6. Make specific plans for research activities*

The author or team of authors (if many members are involved) needs to develop a detailed and specific work plan, including milestones to be completed and expected resources. There should be a clear division of responsibilities among team members. An obvious fact is that many teams have not used the full potential of each member. It is an obvious fact that many teams have not brought out the full potential of each member. This can lead to low effectiveness of the work, even causing disunity in the group. Students should plan their work to avoid overlapping with the official study time. Therefore, it is necessary to arrange and set aside a certain amount of time each day for teamwork, document collection, and project implementation. If everything is stagnant, it will lead to depression and anxiety, which can significantly affect the quality and progress of the work.

#### *4.7. More notes on references*

One of the big obstacles for every student is not knowing how to use reference materials from many different media. Currently, finding information for the topic (especially for the theoretical basis) is no longer a matter of concern for every student. However, how to have appropriate information, help solve, supplement the content being studied, and at the same time refer to the idea of what is not copyright infringement, not considered "plagiarism" are issues that need attention. With ideas, the content of direct references of other authors, should be a footnote, avoid using their idea prototypes. If you only take some ideas from the article, you need to develop them according to your thinking to match the content presented.[7]

#### *4.8. Talk to your instructor*

Students should send their articles or what they have prepared via Email to their teachers before meeting face-to-face. This will help teachers have more time to read and research what they are doing, thereby giving them better guidance and direction. Many students are often "afraid" or try to avoid their mentor. This is a shortcoming that needs to be overcome. Students should have a spirit of curiosity, and absorb the guidance of teachers, this will be a good experience to apply in the implementation of the research topic and contribute to building their learning attitude.

## **CONCLUSION**

Scientific research is an activity that requires an investment of time, intelligence as well as money. This activity is often strenuous and may encounter many difficulties or even failure. Therefore, only those who truly love and are passionate can stay firmly on this difficult, but also glorious, path. For students at colleges and universities today, it is necessary to actively cultivate scientific research activities to gain initial experience for further research and study. Scientific research activities help students build and develop their dynamism, creativity, independent thinking, self-research, and teamwork abilities. Thereby also helping students to improve their knowledge, promote their strengths, apply science and technology to solve practical



problems, and accumulate professional skills to meet the needs of employers in society.

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