VIETNAM'S UNIVERSITY STUDENTS' COMMUNICATION CULTURE AND CRITICAL THINKING AMID THE FOURTH INDUSTRIAL REVOLUTION

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Abstract

Industry 4.0 is currently a pipe dream, but it has the potential to transform not just the way we do business but also the way our society is put together. The development of digitalization is driving more activity in the production departments of the US, China, Bangladesh, and Vietnam. In light of these developments, the question of policy arises as to how we can quicken the development of new goods and services as well as business models. And how can we make sure that everyone, not just a select few, benefits from this development? Innovation in higher education seems to be the key to developing fresh strategies for resolving societal problems. The paper confirms that the success of almost all knowledge economies is largely dependent on the quality of higher education, using both qualitative and quantitative methodologies along with specialized and multidisciplinary approaches. But even with all of the hard work and great accomplishments that have been made, Vietnam's higher education system continues to face numerous challenging issues. Thus, a system of synchronized solutions by all parties involved is essential, but ultimately, students, universities, and the labor market are the main players.

Keywords: Innovation, Higher Education, Critical Skills, 4th Industrial Revolution, Students, Vietnam.

1. INTRODUCTION

The quality of higher education has become an important aspect not only in determining a country's future and destiny, but also in determining the opportunities and prospects of individual workers. Identifying the strategic importance of higher education institutions to the national education system and the quality of highly qualified human resources as well as the country's potential and development prospects, in recent years, the Government of Vietnam has paid special attention to improving the quality and innovating the operation mechanism of the system of institutions. The Department of Higher Education aims to meet the needs of developing a team of highly qualified human resources for the country and at the same time gradually successfully integrate with higher education in the region and the world.

That means that improving the quality of higher education and continuing to promote international integration is the only right path for high-quality human resource production machines for Vietnam in the coming time. This issue has received a lot of attention from both authorities and scientists at home and abroad, but there are still many issues that have not been able to receive the consensus of all experts and teachers in direct practice.

Therefore, on the basis of the results of analyzing statistics of the authorities, the published research results of scientists, and the latest information of the press, the article introduces an additional perspective on the nature of the quality of higher education in Vietnam today with

the hope of contributing to improving efficiency the operation of this important higher education system of the country in the coming time. (Perspectives & 2005, n.d.; Wolcott WolcottLynch et al., 2002)

The more mature people are, the more they have access to a huge amount of information from nature and society. In order to adapt and develop in that world, it is necessary for people to have a correct and objective assessment of things and phenomena and to have critical thinking skills. In fact, not everyone has the ability to think critically well. Human thinking can be affected by many factors: conservatism, prejudice, narrow-mindedness, laziness of thinking, personal feelings. They have the ability to dominate and distort information about things and phenomena. From there, there is the possibility of making erroneous and inaccurate judgments. This explains why there are many different streams of opinions, judgments and assessments on the same issue. In folklore, the phrase "Nine people and ten ideas" is still used to express differences in thinking and commenting on problems. Although "critical thinking" is a term that is not new in advanced education in the world (especially higher education), in Vietnam this phrase is still quite new.

That explains why there is a paradox that still exists in education in our country, which is that university students - who are supposed to be part of high-quality human resources are less able to criticize science. In the current context, students are not only a part of intellectuals, citizens of a country but also citizens of the world. This requires students to practice critical thinking skills to serve the learning process, be able to meet career requirements and become people with the ability to think independently and creatively in society. So the question is, what criteria do global citizens need? Solving this problem means that countries have formed a workforce with the qualities, skills and capabilities to meet global requirements. According to the World Economic Forum (2015) on "A New Vision for Education: Developing the Potential of Industry", in order to meet the requirements of human resources in the global era, learners must have 16 essential skills in which, critical thinking skills play a major role. Core, is the factor that connects the remaining skills to reach the final skill, which is lifelong learning skills. In fact, students after graduating really have a hard time finding a job. The main reason is a skills shortage (according to a survey by the Ministry of Education and Training in 2011, the number of unemployed due to a lack of skills is up to 63%), in which many skills are related to critical thinking. This situation reflects the serious shortage of this knowledge in the undergraduate training program in our country today and shows that schools need to fill that gap in a timely manner (Lipman, 2003; Lorencová et al., n.d.)

2. LITERATURE REVIEW

Ennis (1989) describes four approaches to instruction that, depending on the level of critical thinking skills taught in a separate course, are compared to those taught in a regular instructional material. The general approach provides direct and clear instruction in critical thinking skills in a separate course, whereby critical thinking skills and competencies are separated from the context of the professional problem. Specifically, some content is considered to contextualize the examples and exercises posed. However, the content is not

related to the knowledge of the professional field of the course, but is drawn from problems that students are very likely to face in their daily lives. Van Gelder (2005) advocates a holistic approach to the guidance of critical thinking. Drawing from expert documents, Van Gelder believes that learners need to have certain purposeful practices to practice critical thinking and skills. This type of practice should be present when critical thinking is taught as an explicit separate part of the entire curriculum. However, learners must be taught how to "transfer" critical thinking "to" very diverse contexts, by giving them opportunities to practice and apply critical thinking skills in such diverse contexts. Similarly, Halpern (2001, p.278) argues that guidelines for general critical thinking skills, taught in a "broad-based, multi-discipline" course, are the most effective way to teach critical thinking (M. B.-J. of distance education & 1998, n.d.; journal & 2007, 2007)

The infusion approach provides in-depth instructions on specialized issues and in addition to clear guidelines on technical content related to critical thinking in general. This type of critical thinking guidance is used in the context of a professional field problem. Ennis (1989) points out that this approach is often seen throughout the curriculum. In a way, the transmission approach is immersion. In these in-depth tutorials, learners are deeply involved in the subject areas of expertise in the tutorial. Although critical thinking skills and competencies are part of the content to be learned, critical thinking guidelines are not entirely clear. To understand more correctly, critical thinking skills and competencies are not focused on direct and clear instructions. In addition, learners are expected to acquire these skills as a natural result of engaging in subject matter (Ennis, 1989). Proposals for this transmission approach are present in both the work of Bailin et al. (1999), who defended the view of critical thinking by field of expertise, and Lipman (1988), who considered critical thinking skills to be something generic but when someone wanted to argue about this, critical thinking instruction must be accompanied by instruction in basic skills, such as reading, writing, listening, and speaking. Silva (2008) echoes this view, arguing that knowledge and thinking can be taught simultaneously. Likewise, Case (2005) argues that critical thinking is a lens through which the aim is to teach the contents and skills that have been included in the curriculum; and Pithers & Soden (2000) reject the idea that critical thinking can be taught as a separate subject. Rather, critical thinking should be recognized as a way of teaching and learning in any professional field. (Educator & 2004, n.d.; Reviews & 2020, 2020)   (Lorencová et al., 2019; Walker et al., n.d.; Williams, 2005)

The mixed approach combines the elements of the 2 general and specific approaches mentioned above. Teachers combine purely separate instruction in general critical thinking with the application of critical thinking skills in the context of a subject matter. The guidelines clearly state that critical thinking skills can be incorporated into both general and specific component factors (Ennis, 1989). Facione (1990) supports this approach when he argues that critical thinking can be taught in the context of the content of a professional problem, or of the content drawn from everyday events (p.10). Paul (1992) proposes courses on basic critical thinking skills, as well as critical thinking in specialized field courses. Kennedy et al. (1991), after reviewing extensive studies of diverse approaches, concluded that no approach is superior. Accordingly, they propose a mixed approach. In a meta-analysis of 117 empirical studies on

the impact of instructional interventions on students' critical thinking skills and tendencies, Abrami et al. (2008) pointed out that when the instructional approach is categorized into: a generalized approach, deep, transmitted, or mixed, the mixed approach has the greatest impact and the digging approach has the least effect on learners' critical thinking skills. This means that educators should take an approach to guiding critical thinking both by incorporating critical thinking into academic content and by teaching critical thinking skills as a separate teaching content. This discovery reinforces the importance of providing clear and separate instructional materials on critical thinking, rather than simply treating critical thinking as a mere potential outcome of a course. The authors also point out that the interventions that educators have learned from special training courses on teaching critical thinking also have the greatest impact, when compared to courses where the curriculum content merely includes content on critical thinking standards or thinking criticism is only considered as a guiding goal, nothing more. Therefore, successful interventions require professional development for teachers, specifically in the teaching of critical thinking. (Ahern et al., n.d.; Synthese & 1989, n.d.) (Bailin et al., n.d.; Education et al., n.d.)

Researchers do not yet have a consensus on the extent to which critical thinking skills learned change as contexts change. The context here is different professional fields and subject content. However, most researchers agree that "switching" is unlikely unless learners are taught how to "switch." What does this mean from the perspective of the aforementioned guidelines? First, learners must be given the opportunity to apply critical thinking skills and competencies in a rich set of contexts and subject areas of expertise. Second, instruction should emphasize executive function or supercognitive skills, such as setting goals, planning, and controlling progress toward goals. because the majority of learners' thinking usually focuses only on the surface of the problem or the assignment requirements set forth (Halpern, 1998; Willingham, 2007). Hummel and Holyoak define structural sensitivity as the ability to "code and manipulate relational knowledge" (quoted in Halpern, 1998, p.453).

The goal of this structural training is to help learners recognize structures that reflect a particular problem in ways that they can recognize: be it in mathematics, science, or social studies, so they can come up with appropriate strategies. The Structures course involves giving practices in rich contexts and conditions. Halpern points out that the use of practical learning activities enhances the ability to "shift" critical thinking skills. Brown (1990) argues that specialized knowledge may also be necessary for children to be able to "transfer" skills to new problems that require the establishment of similar structures that go into depth. Brown observes, "we conclude that even children can articulate what they learn in a thorough manner and can be 'translated' on the basis of in-depth structured learning content, rather than relying solely on conspicuous perceptual characteristics.

When they approach the knowledge required by the field of expertise and reflect on learning that knowledge." Therefore, teaching how to "translate" also requires the provision of appropriate instructional materials on the basis of appropriate information. (Chee et al., 2009; today & 2013, n.d.) (Forum & 1980, n.d.; Walker & Finney, 1999)

The practice of critical thinking skills requires us to build and nurture a sense of self-change, have patience when performing thinking operations. The general process for practicing critical thinking skills will be: Step 1: Ask questionable questions: Is that true? Why did they come to that conclusion? On what basis do they affirm that? Where do they get this information from? Why is this important? What could explain this phenomenon? What are the other options, how to make them better? The purpose of these questions is to test the reasonableness of the information, the accuracy of the information, that is, to have a different way of looking at information. Step 2: Observe Step 3: Search for arguments and arguments Critical thinking requires people to be able to think clearly and coherently; arguments must have evidence, arguments must be convincing, reliable, and verifiable information. Step 4: Recognize and explain the problem Step 5: Affirm personal value Step 6: Reaffirm It is possible to give a specific example of the process of critical thinking manipulation as follows: Suppose there is a belief that: "Only high education is the only path to success". Step 1: Ask questionable questions: "Is that true? So those who don't go to college all fail? Is there anyone who goes to college and still doesn't succeed? Is there a way not to go to college and still be successful? Step 2: Observe to find evidence Observation is to look before and after to see if there is anyone who does not go to university but is still happy, and there is someone who goes to university (even a doctorate) who is still unhappy.

Let's point out a few practical examples: - Mr. T is a doctor, but until now he is still in a hurry, life is hard, the family economy is difficult, his wife and children look down on him. - Ms. Y finished high school and went to work right away, now she is the chairman of a large economic corporation. Bill Gate is a billionaire but not a doctor. - Mr. H has not been to the university gate for a day but is still the one who built the seeding machine. Step 3: Find arguments and arguments for aspects such as: - What is success depends on each person's point of view, there is no common concept of success (or happiness, unhappiness, fame, wealth...) for everyone. - Higher education is a "good start", but it is not necessarily a decisive condition for success. There are many paths to success thanks to the individual's efforts to find the right direction. - Less education will have certain difficulties in some areas of deep expertise, but it does not mean failure in all areas of life. (My grandmother is illiterate, but she is an "expert" in culture of behavior...) Step 4: Recognize and explain the problem by answering a system of questions such as: - What is the purpose of raising this problem? - Who believes this matter? Why do people say, believe that? - What does the above affirmation mean, what consequences does it lead to? Step 5: Affirm personal values: I think: "Success is when...", "Not a lot of money, having authority is success", "Success is when we try our best, promote our abilities and strengths and achieve great achievements in the field of our choice". Step 6: Reaffirm: "That is not necessarily a high education to be successful"! The general process for forming, practicing and developing TDPB skills is generally like that. However, TDPB skills are a system that includes a set of skills at each stage of the process to give an opinion, a critical argument, with the main skills: independent thinking skills, analytical – synthesis skills, reasoning skills, evaluation, etc. Therefore, in the learning process, in order to have and develop TDPB skills, each learner needs to persist in practicing regularly and choose appropriate and effective practice methods and forms for each of the above-mentioned departmental skills. For example,

independent thinking skills can be practiced and developed through self-counseling activities. Learners are always aware and ask themselves some types of questions such as "is that true? Is the issue raised complete?... After that, learners think for themselves, consider all aspects and aspects of the problem to answer the next questions such as "how is it right/wrong? What is missing, where?... Or as with argumentation skills, learners can practice through discussion and debate activities in forms such as: group debates, group debates, individual rhetoric (Ahern et al., 2019; Kurfiss, 1988; Siegel, 1989)

3. RESULTS AND FINDINGS

The quality of higher education is reflected in the output products of higher education institutions. The outputs of the higher education system may include many different forms and modes of expression, but one of the proudest functions, tasks, and achievements of educational institutions in general and the higher education system in particular is to provide the labor market with a team of human resources that is not only meeting the increasingly high quality standards of the labor market but also in line with the practical development needs of the community. In this aspect, Vietnamese higher education has made significant strides in recent years. The total enrollment target of Vietnam's higher education system in 2019 is 489,637 students. This is a slight increase of about 7.5% more than in 2018, but relatively stable with a very low increase over the past 3 years. This is considered one of the resolute measures of the authorities to ensure the training quality of Vietnam's higher education institutions. As a result, up to 91.4% of Vietnam's university graduates find a job within 1 year. However, in 2018, the average labor productivity of Vietnamese people was only 1/30 of that of Singapore, 29% of Thailand, 13% of Malaysia, and 44% of the Philippines. (Fig 1) ("EDUCATION, KNOWLEDGE AND CRITICAL THINKING," 2020; "The Blackwell Guide to the Philosophy of Education," 2003)
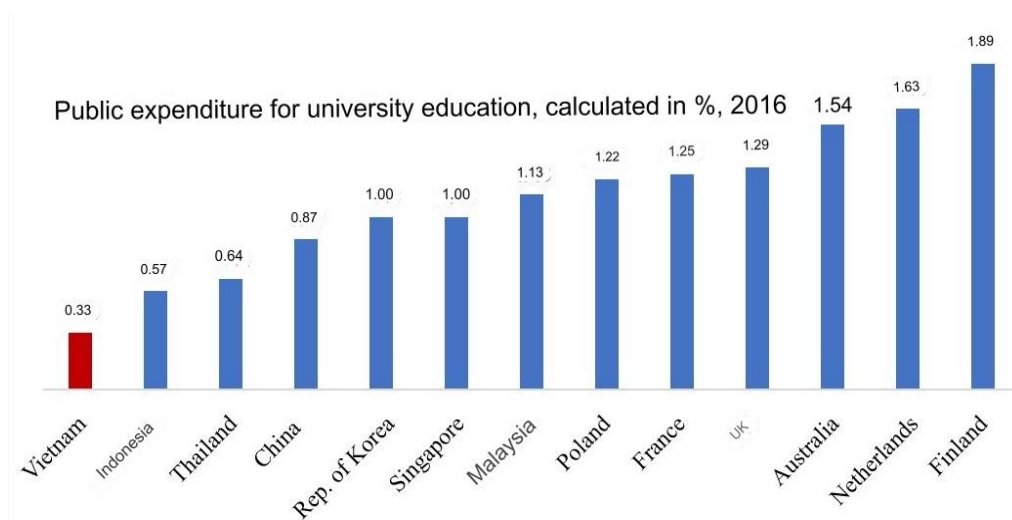

Figure 1: Vietnam's education expenditure compared to other countries

Source: Ministry of Education and Training of Vietnam, 2020

The quality of higher education is reflected in the indicators of scientific and technological competence and the process of integration with advanced and modern higher education of the region and the world. In 2017, 142/271 universities in Vietnam built 945 research groups. On average, each school has 7 research groups. 5 However, the number and quality of international publications of Vietnamese higher education institutions are still relatively modest compared to the advanced education systems of many countries in the region6 and around the world. This is not only one of the most important standards to demonstrate scientific and technological capacity, but also the level of international integration of Vietnam's higher education system. However, there is still a significant gap between Vietnamese higher education and the world's modern higher education in this field. The quality of higher education is reflected in the rankings and evaluations of stakeholders. In 2019, there were 121 higher education institutions and 3 pedagogical colleges (51%) in Vietnam that met the higher education quality accreditation standards according to Vietnam's higher education quality accreditation standards. At the same time, many Vietnamese higher education institutions have also tried to improve the quality of training and have been highly appreciated by international accreditation organizations.8 In addition, according to the Times Higher Education assessment on September 11, 2019, Vietnam has two national universities in the list of the world's top 1,000 universities.9 is a significant success of Vietnam's higher education system, but in terms of the overall aspect, the goal of striving to have a number of Vietnamese universities ranked among the top 200 universities in the world by 2020 is not only far from being achieved. But also extremely unrealistic (Fig 2)   (Liu et al., 2014; Siegel, 1980)
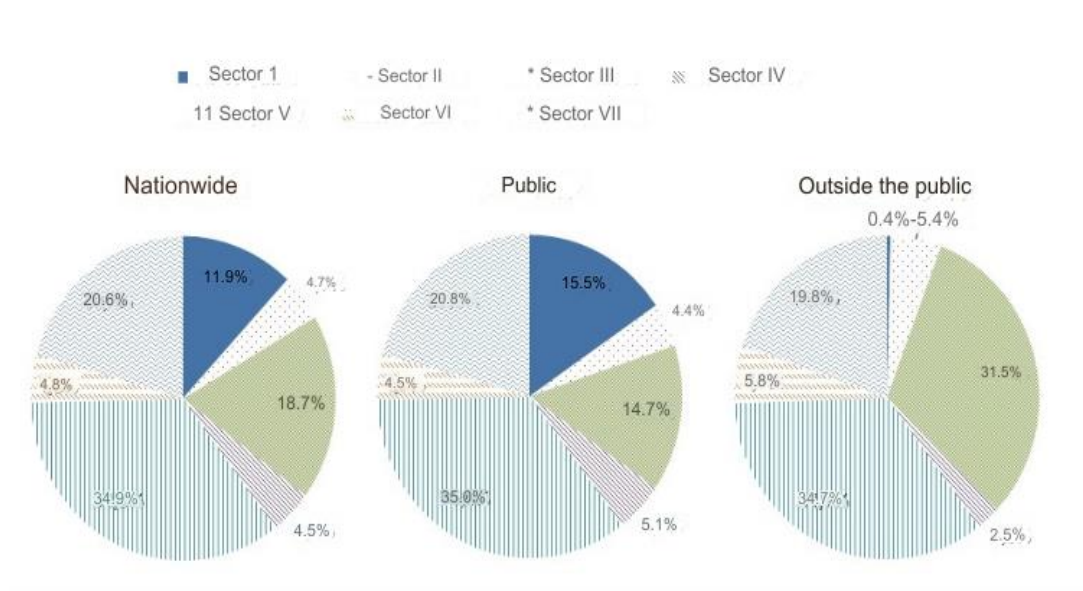

Figure 2: Student structure by major group in universities in Vietnam

Source: Ministry of Education and Training of Vietnam, 2020

The quality of higher education is reflected in the revenue of higher education institutions based on relevant scientific and technological products and educational services. The scale of

revenues and expenditures and the quality of revenue sources not only reflect the training efficiency and ability to provide scientific and technological services as well as educational services of universities, but also one of the most important foundations for the future development and measure of the practical value of the higher education system. The quality of higher education is reflected in meeting the practical development needs of the country. In this respect, Vietnam's higher education system has not really met the actual needs of the country. Every year, Vietnam has about 0.8 million students who are eligible to study and need to prepare for further study at the university level, but the ability of Vietnam's higher education system to meet the practical needs is still not really commensurate with expectations. Broadly speaking, the percentage of people of university age (from 18-29 years old) in Vietnam participating in university education is only 28.3%, while in Thailand and Malaysia this rate is 43% or 48% respectively, while in industrialized capitalist countries this rate is even higher. It is especially important to ensure the quality of training of the higher education system, the authorities of Vietnam are trying to control the enrollment rate and total enrollment quota of the higher education system at a stable number for many years. This figure is not commensurate with the training capacity of Vietnam's current higher education system, and cannot meet the needs of developing the country in the direction of knowledge economy and service industry in the coming time. (Fig3) (Ernst* et al., n.d.; Fahim et al., 2012; Journal & 2015, n.d.) (Kennedy et al., n.d.; leadership & 1984, n.d.; RaduloviÄ et al., n.d.)
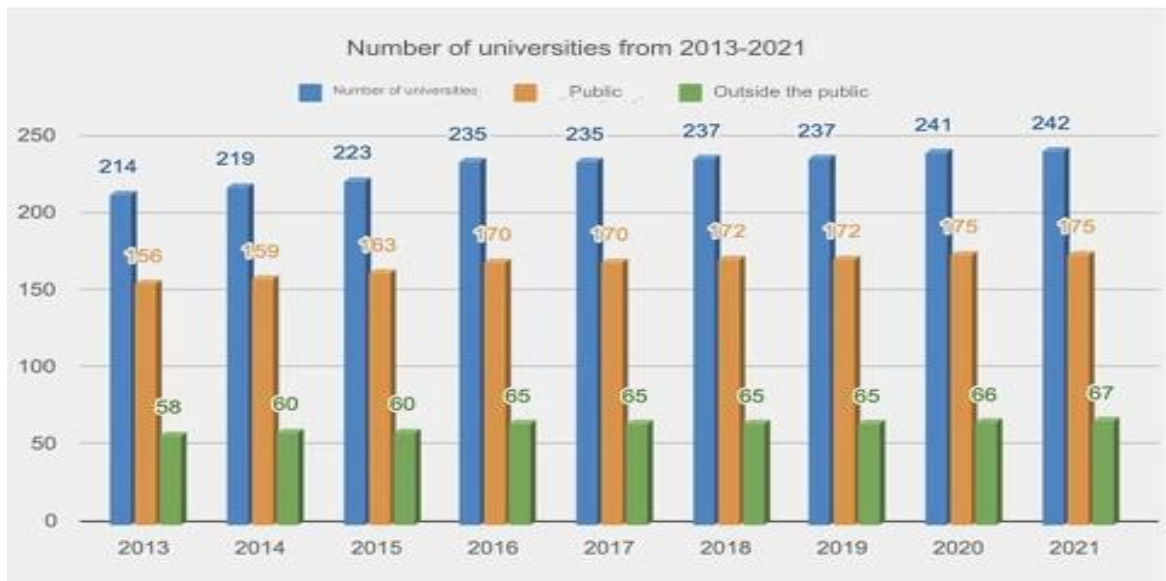

Figure 3: Number of universities in Vietnam

Source: Ministry of Education and Training of Vietnam, 2020

Innovation in higher education in Vietnam is associated with critical thinking in that in the learning environment, the brainstorming method will help us summon many opinions from many different brains in a short time to solve a problem together. This method is shown through discussions, teamwork, etc. In this method, learners need to be encouraged to come up with as

many ideas as possible, there will be no limit to ideas (there may be crazy and odd ideas) or comments or disparagement of ideas. Finding a new "whirlwind" of ideas is just the beginning of the brainstorming process. The ideas will then be summarized (completely inappropriate and irrelevant ideas removed; ideas with similarities and similarities, etc.) will begin to be evaluated to find and select the most perfect idea. This process will help learners think for themselves and think in groups, helping them have a more objective and comprehensive view of the problem to choose the most accurate and appropriate answer. (Fig 4) (Behar-Horenstein et al., 2011; Development & 2011, 2011; theory & 2007, 2008)

Figure 4: Building a university program associated with critical thinking

Source: monash.edu/student/ thinking/critical-thinking/what-is-critical-thinking/

Application of the thinking level scale, the Mind Map method, the technique "Six Thinking Hats", the "Five Resources" method, the "Fishbone" diagram... suitable for practicing critical thinking skills in students. These are teaching methods and techniques that cannot be ignored or underestimated in university teaching. These methods can be used quite flexibly and easily, but they are highly effective in learning, creating excitement and helping learners have the ability to detect problems, see problems from different angles, help learners systematize the information collected... to evaluate, select and decide on cognitive issues in the most scientific and methodical way. These methods and techniques provide students with basic knowledge for students to improve their ability to practice and apply in study, research, work and even in their lives (Ennis, 1993; Ernst & Monroe, 2004; Lim, 2015)

4. DISCUSSION AND CONCLUSION

Vietnam's higher education system remains mostly unchanged, with inherent self-functions and tools that serve a restricted number of aims rather than becoming an unavoidable result of social interaction modernization. A modern higher education system not only offers the country's labor market with a pool of high-quality human resources in all professions, professional domains, and training levels, but it also delivers numerous other important benefits. However, the majority of Vietnam's top higher education institutions today still basically rely on state investments. The number of higher education institutions that do not need to rely on state investment is small, and the majority of these institutions still mainly rely on revenues from tuition fees, fees, and other legal revenues. The proportion of revenue from scientific research and technology transfer activities of Vietnam's higher education system is still extremely limited. That fact shows that the capacity of scientific research and technology transfer of Vietnam's higher education system is still very weak. International awards, international publications, international science and technology projects, international students, and international rankings are also therefore still relatively modest. (Mason, 2007; Submission & 2017, 2017)

Due to the unreasonable investment structure for education and training, the system of research and training facilities and equipment of Vietnam's universities is still too weak compared to many countries in the region and the world. 36 The conditions of facilities and equipment for research and training of Vietnamese higher education institutions have generally not improved significantly in recent years and have not met the basic standards of the University Charter. Many lecture halls, learning areas, laboratories, libraries, and equipment of Vietnam's public universities and colleges are seriously deteriorating. Compared to university design standards (55-85m²/student), more than 50% of Vietnam's universities and colleges do not meet the standards. The average area for students' learning is only 3.6m²/student, while the general regulation in Vietnam is 6m²/student and in developed countries it is 9-15m²/student. Currently, only 19.50% of students are housed in the dormitories of universities and colleges. (Rezaei et al., 2011; Theory & 1991, n.d.)

The labor productivity of Vietnam's economy is still relatively low compared to other countries in the region and the world. One of the main functions of the higher education system of all countries in the world is to provide the country's labor market with a team of human resources that are guaranteed in quantity and constantly improved in quality. In this respect, Vietnam's higher education system has not been able to meet the country's development needs. For example, in 2014, Vietnam had nearly 5.4 million highly qualified workers, 40 but the best ones are looking for training abroad. 41 Particularly serious is that Vietnamese workers lack not only basic computer skills and common foreign language skills, but also sharp tools to work in environments that require high professional qualifications and heavy work pressure. This fact has significantly affected the independent labor capacity and improved the work efficiency of Vietnamese workers. Specifically, Vietnam's labor productivity in 2013 was 5,440 USD, higher than that of Myanmar, Cambodia and Laos, but lower than the rest of the ASEAN countries and only equal to 55% of Indonesia, 54% of the Philippines, 37% of Thailand, 15%

of Malaysia and 6% of Singapore.   (S. B.-S. & education & 2002, n.d.; Enciso et al., 2017; Franco et al., n.d.)

In the face of the requirements of development, universities need to train global citizens with full qualities and competencies according to common values. This requires lecturers, in addition to providing specialized knowledge, to be able to combine teaching methods, leading skills, and orient learners to think critically about problems that arise in learning, working and in social life. This support from lecturers will help students orient and form self-study, self-discipline and constantly explore and learn. Although the effectiveness of students' self-study is determined by each student himself/herself, for a good education system, it is necessary to orient and support students, especially to provide students with critical thinking skills. In a global educational context, critical thinking abilities have a significant impact on the efficacy of instructional activities, as well as the teaching and learning outcomes of both teachers and students. Thus, it is imperative that every student in the current educational system be prepared to learn on their own, develop their critical thinking abilities to support the learning process, be able to fulfill professional requirements, and eventually become an autonomous thinker. Society's Inventiveness

Ethical Statement

No animals were used in this study; thus, no ethical approval is required.

Declaration of Conflict of Interest

The author declaresno conflict of interest.

Contribution

Nguyen Hai Hoang: Provided input on the overall structure, methodology, and findings.

Nguyen Duc Huu: Co-author, primary point of contact, discussion and analysis of results

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