

COLLABORATION IN TRAINING BETWEEN UNIVERSITY AND INDUSTRY TOWARDS MEETING THE REQUIREMENTS OF THE CURRENT LABOR MARKET

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***Abstract:** In the era of globalization and international integration, the quality of human resources is regarded as the key to the success of every country and economy. In that context, university and industry collaboration (UIC) in human resource training is becoming a vital issue. To date, there have been several studies on this. Using qualitative research method, the article reviews and analyzes some studies on collaboration in training between university and industry in 2 main categories (i) some studies on related policies and (ii) some studies on collaboration between university and industry. These research results aim to identify important factors in the collaboration between university and industry, contributing to advancing the quality of human resources, affirming the training role of universities in today's context.*

***Keywords:** management of curriculum, collaboration in training, university, industry, labor market.*

1. INTRODUCTION

In recent years, Vietnam's economy has been making great strides with many remarkable achievements. The Asian Development Outlook 2021 Report by Asian Development Bank forecasted that Vietnam's economic growth will be driven by export-oriented manufacturing, increased investment, and expanding trade. Growth momentum is anticipated to be maintained buoyed by reform programs aimed at improving the business environment and Vietnam's participation in many free trade agreements with most developed economies. Vietnam's economy is embarking on the process of high-speed development, followed by the expansion of production scale, the size of the enterprise, and increasing requirements for human resources. Education and training are among the sectors that need immediate changes to adapt to the fourth industrial revolution (Hue, 2017). Currently, a large number of the labor force in Vietnam have been trained, but there still exists a shortage of employees that meet the needs of society and industry. Facing the requirements of national development and international integration, this human resource is still bearing limitations in knowledge, practical skills, critical thinking ability, and foreign language competency as well as dynamism, the ability to apply knowledge to production and life (Khanh & Huong, 2010). According to experts, the key reason is the lack of collaborating between schools and the business sector in training and using labor resources. To some extent, collaboration activities have been promoted, however, they are still fragmented and perfunctory. The work of future forecasts has been enhanced, but there is still a shortfall in interoperability, job information, and interruption in the domestic labor market....

2. LITERATURE REVIEW

In the era of globalization and international integration, the quality of human resources is regarded as the key to the success of every country and economy. In that context, university and industry collaboration (UIC) in human resource training is becoming a vital issue. There are a number of research results pointed out this topic and the related issues, such as labor market requirements, cooperation in training cooperation of universities with enterprises, mechanism of action, the university's management apparatus for joint training activities with enterprises.

Requirements of the labor market: One of the urgent requirements in human resource training today is that the training must be based on the requirements of the labor market. This is a social issue, aiming to achieve the balance between labor resources and the needs of society. The collaboration between university and industry is not out of the orbit to reach that aim. To meet the demands of the labor market, universities need to be more flexible in changing training programs and objectives to catch up with socio-economic change, and the requirements of labor users and survive and thrive in the increasingly competitive trend. Particularly, it requires universities not only to carry the mission of training human resources to meet current needs but also to develop a training strategy to catch up with the development trend. To accomplish this task, the connection with the business community and the guideline of the authorities is indispensable. Therefore, the effective UIC will necessitate theoretical studies and situation assessments to jointly propose a system of viable solutions for the management of collaboration in training activities. This is the best shortcut to bridge the gap between schools and the world of work, solving critical issues in Vietnam's current structure of labor force (Lan, 2014).

Collaboration between university and industry: Studies on operational mechanism and the governance apparatus of universities for training collaboration with business sectors were once mentioned in the study of (José, 2013). Notably, researches on policy platforms were mentioned by Drew & et al., (Drew & et al., 2010). According to Rohrbeck & Arnold (Rohrbeck & Arnold, 2006), the motivation for collaboration between university and industry/ business sectors includes (i) Enhancement of teaching; (ii) Funding/ financial resources; (iii) Source of knowledge and empirical data; (iv) Political pressure; (v) Enhancement of reputation; (vi) Job offers for graduates. Research on higher education responsiveness through partnerships with industry and the advancement of science and technology and the knowledge-based economy was mentioned in a study by Leydesdorff & Meyer (Leydesdorff & Meyer, 2013).

In Vietnam, research on higher education responsiveness through partnerships with industry was mentioned in a study by Hoa (Hoa, 2013). There are several other studies on UIC, such as a study on the perception of school officials - lecturers - staff of UIC (Trang, et al, 2019); studies on the responsiveness of university through partnerships with industry (Hang, 2012; Hoa, 2013), a study on the advancement of science and technology and the knowledge-based economy (Luan & et al., 2020), a study on international integration and competitive partners (Hai & et al., 2020).

Studies on UIC have been widely discussed, however, so far there has not been any of such in Ho Chi Minh City. Therefore, this article summarizes some publications related to (i) operational mechanism, governance apparatus of the university for training collaboration with industry, and (ii) UIC with an aim to identify the core factors in UIC, meeting the requirements of the current labor market.

3. RESEARCH METHODS

The article uses groups of theoretical methods such as analytical methods, and synthetic methods to explore scientific information from relevant documents. They range from documents issued by the

Party and State on areas like Education and Training, human resource development; documents about UIC; books of all kinds, newspapers, journals, documents on management science, economy, and other matters related to the research topic; to guidelines on socio-economic development in the current period. This is to arrange them into a theoretical system for the research. In addition to research on policies related to UIC, this article also looks at UIC in the following aspects (i) perception of school official- lecturers - staff of UIC, (ii) the responsiveness of university through partnerships with industry, (iii) the advancement of science and technology and the knowledge-based economy, (iv) international integration and competitive partners. The theoretical research method functions as a baseline to clarify the theoretical basis of UIC.

Using qualitative research method, the article reviews and analyzes some studies on collaboration in training between university and industry in 2 main categories (i) some studies on related policies and (ii) some studies on collaboration between university and industry. These research results aim to identify important factors in the collaboration between university and industry, contributing to advancing the quality of human resources.

4. RESULTS AND DISCUSSION

4.1. Operational mechanism and governance apparatus of the university for training collaboration activities with industry

Collaboration between educational institutions and the business sector was initiated by the German philosopher Willhelm Humboldt. The university, in addition to its training function, must conduct research and cooperation activities with the industry. Scientific research in modern schools demonstrates their function in promoting social knowledge innovation. UIC is understood as direct or indirect interaction, personal or non-personal transactions between educational institutions and businesses to benefit the two parties. This includes cooperation in research and development, personnel exchange (scholars, students, and experts), commercialization of research and development results, development and dissemination of training programs, lifelong learning, business development, and governance.

The operational mechanism and governance apparatus of the university on UIC have been studied by many authors. In 2013, José carried out a notable study entitled “Promoting University-Industry Collaboration in Developing Countries”. According to the author, one of the criteria to enhance the quality of university graduates is to promote stronger collaboration between university and industry. Hue (2017) pointed out that, like the issue of autonomy in training institutions, the issue of strengthening the connection between human resource training institutions and human resource-using enterprises needs to be accelerated.

A study on institution and policy by Drew & et al., (2010) mentioned the strategic partnership between parties such as individuals; family; community; volunteer organizations; private training institutions; state training institutions; laborers and organizations; managers and organizations; government. etc. These authors indicated that the key point in that partnership is to make every party feel comfortable and willing to collaborate. Huang (2011) stressed that there must be mutual promotion and cooperation between industry and university to conduct training to meet the pre-set requirements.

The government serves as a “midwife”, creating the legal framework and support, catalyst, and mechanisms to implement UIC. This is an inevitable trend and an inner need offering long-term benefits to the parties involved (Toan, 2016). In Vietnam, UIC, and more recently, university start-ups have been attached with great interest, however, these activities are still very limited: types are not diverse enough,

in-depth collaboration has not been reached, potentials of the parties have not been brought into full play. Industry and university need policies and mechanisms to unleash their own resources. Moreover, entrepreneurship in university and innovation, creativity in industry need to be encouraged and fostered.

4.2. Research projects on collaboration between university and industry

In response to the trend of integration and development, universities need to be flexible in changing their training programs and objectives to adapt to the change of socio-economic situation and the requirements of labor recruiters. At the same time, the implementation of scientific research activities must meet and match the requirements of practice, the application and transfer of technology must meet business needs and be in line with the movement and development trend of the society. To survive and thrive in the increasingly growing competition, it requires universities not only to carry out their mission to train human resources to meet the current needs but also to develop a training strategy to catch up with the development trend. To accomplish this task, the connection with the business community and the guideline of the authorities is indispensable. Cooperation between educational institutions and businesses will bring about synergistic benefits to the parties, including cooperation in research and development; personnel exchange; commercialization of scientific research results through technology transfer activities; development and dissemination of training programs, lifelong learning, business development, and management. Enterprises must serve as an “extended arm” in training activities, creating “what the market will need”, at the same time, helping students catch up with the world of work right after graduation, accessing the latest technology, and exploit resources for the training process. To bridge the gap between training institutions and businesses, there should be incentives offered to businesses that sign contracts with training institutions; and training institutions under enterprises should be supported (Hue, 2017).

There have been various studies on UIC and the management of UIC, within the scope of this study, the following studies are mentioned:

Perception of school officials - lecturers - staff of UIC: Urayaa (2001) argued that lecturers play an important role in UIC. They act as facilitators who direct and stimulate the collaboration process. They conduct the joint coordination and enable the process to run smoothly, and ensure the overall balance of this process. At the same time, they guide and support students to participate in the training process. They are purposeful promoters of the collaboration process, helping students achieve better learning results and better exploitation of equipment and other training resources. They not only take part in training human resources for universities but also directly determine the effectiveness of UIC. The competency of managers at universities and businesses, together with the knowledge, skills of lecturers and instructors have a direct impact on the content and method of managing UIC. A research on the perception of school officials - lecturers - staff of UIC by Trang & et al., (2019) accentuated the lecturers’ role in innovating teaching methods and the school leaders’ role in directing and supervising. According to the authors, UIC is a popular trend in the world and is highly regarded for its crucial role in ensuring and enhancing the quality of university graduates - those then become human resource input for the industry.

Higher education responsiveness through partnerships with industry: A study entitled “Innovation in the training of Human Resource Management at National Economics University to meet the needs of society” in 2011 mentioned shortcomings of university in training that lead to passive graduates, and force enterprises to retrain them before using them (Nha, 2008). Building and strengthening the relationship between university and industry in human resource development is an urgent imperative, and a mandatory

task that requires the attention of the leadership of schools as well as businesses. However, according to the International Labor Organization, less than 20% of Vietnam's labor force has specialized training and skills that do not match the requirements of the market. Businesses need high-quality workers, while the number of graduates has not met the requirements and expectations of industry (Khanh & Huong, 2010). This is a great challenge for businesses and schools.

UIC plays a vital role, however, in realities, the university's ability to respond to industry also has a certain degree of influence. This is because the university possesses a host of lecturers who are competent and have expertise in advanced technology, and they will receive feedback from industry on training program reform. A study on higher education responsiveness through partnerships with industry was conducted by Hoa (2013) in which the author believed that: The development of human resources, especially the issue of education quality and vocational skills of graduates to meet the requirements of industry and society attracts great attention of employers, politicians, businessmen, and researchers.

The central point of human resource development efforts rests on the main theme "learning and improving quality for the sake of job performance". In the United States of America, in the 1970s, vocational educators and trainers relied on task performance to assess learners' abilities and labor needs. This issue was further developed to a new level in the 1990s in many other countries such as the UK, Australia, and New Zealand (Cedefop, 2011). This is because many scholars and practitioners on human development have seen this as the most powerful, and the most strongly supported approach, (Compe, 2008) to balance education, training and labor market requirements (José, 2013) and as "a way to prepare the workforce for a globally competitive economy". Due to the characteristics and advantages of training based on labor market requirements, training models targeting the labor market have been built, developed, and used as tools for the implementation of various educational programs, training, and development around the world (Compe, 2008). Another research by Hang (2012) on "Management of vocational training based on the needs of society" introduced the theoretical basis of training management in the direction of meeting the needs of society, including concepts of training in the market mechanism, training towards meeting the needs of society, and the content of training management towards meeting the needs of society.

Studies on the current status of management of UIC: The general studies or the suggestive studies mentioned above, have all analyzed, assessed the current status of UIC.

The advancement of science and technology and the knowledge-based economy: The updated impacts and application have made the vocational training process adapt to the fluctuations of the labor market when the service production process has been upgraded and developed rapidly by technology. This helps the university catch up with a part of the trend, vocational training needs and even know for sure some requirements to make appropriate adjustments in the vocational training process in the direction of focusing on quality improvement, especially the quality of moral education, lifestyle, creative ability, employability to meet the requirements of industry. This, on the one hand, serves socio-economic development, promote industrialization and modernization of the country, safeguard national defense-security. On the other hand, it is necessary to satisfy the development needs of each learner, especially that of gifted ones. The advancement of science and technology and the knowledge-based economy were mentioned in the research: "University-industry collaboration in human resources training for socio-economic development in Vietnam: current situation and solutions" (Luan, 2015). In this research, the author analyzed the current situation of human resources and the current situation of connection between schools and businesses. Based on these situations, the author gave out recommendations related to the

role of state management, the role of the school, the role of business, and the role of learners in enhancing the collaboration between university with industry today. In the same vein, he contended that businesses need to understand the benefits of competition and innovation as a result of the technology transfer process. Therefore, UIC is essential to design training programs that are suitable for future development needs. Besides, ordering tasks at the university is necessary. To accelerate technology transfer, it is mandatory that industry encourage internal research. To this end, industry and university need to closely collaborate in training and guiding their employees in research and transfer new technologies.

The collaboration between the 3 parties (the state, university, and industry) also faces many great challenges posed by the advancement of science and technology and the knowledge-based economy. According to Hai & et al., (2020), there is a big gap between research orientations of university and industry. Completely different perspectives of university and industry on scientific application and technology have become one of the major barriers affecting this relationship. Moreover, industry seems to solely wish to quickly commercialize research results, meanwhile, university wants to carry out foundation researches and publishes them in prestigious journals. Thus, it is a big challenge to settle the differences and satisfy all parties. The second one is the cost factor, it often takes much money in the initial stage of cooperation without producing instant profit. At present, the link between the user and the producer in developing countries is still weak. Apart from that, the science and technology market is too small and the parties only carry out research projects from the budget. Besides, the backwardness of domestic science and technology is another barrier affecting this relationship, therefore, instant profits from the transferred technologies cannot be achieved easily.

According to a study on advances in science and technology and factors that affect joint training activities by Leydesdorff & Meyer, (2013), university often lacks financial resources to invest in facilities and research, while the school's main source of revenue is tuition fees. This leads to insufficient attention to the development of scientific and technological research because the cooperation and development of technological research require a large amount of funding. Another issue is that young lecturers at university often lack experience in collaborating with industry whereas, experienced professors often focus on conducting state-funded projects rather than developing technology products.

International integration and competitive partnership: This factor brings about many opportunities but also poses many challenges for universities, especially in terms of recruiting, education programs, policies, scholarship, overseas study, education quality, employability after graduation. However, if universities can take advantage from the opportunities, it will help them determine their own position, value, and brand not only on a local scale but also on a regional and global scale; at the same time, it will create a bridge to take full advantage of valuable opportunities in the collaboration process, training, and transferring technology, provide access to advanced vocational training programs with domestic and international businesses and competitors.

The factor of international integration and competitive partnership also exerts a great impact on UIC. Dung (2020) pointed out that: In the era of integration and development, the fourth industrial revolution is making profound impacts on societal life and the production environment of enterprises. It has terminated many occupations but also created many new jobs that require highly qualified human resources to work in that environment. The training process should have a training program associated with the development of technology in the production process and scientific and technological activities in practice. Therefore, the collaboration between schools and enterprises in human resource training activities goes in line with actual needs in production activities. Along with the development of the industrial revolution 4.0, technology transfer between university and industry plays a key role in the

strategic development of the parties and the socio-economic development process. This study focuses on analyzing the direct and indirect relationship between university and industry in terms of enhancement of training high-quality human resources, promotion of research, technology transfer, and knowledge transfer in line with business activities. Thereby, the study proposes some directional recommendations to build the relationship between school and business sector to faster integrate into and accelerate the fourth industrial revolution (Hai & Bich, 2020).

Business sector plays a crucial role in the training activities of university because the business and production environment will facilitate learners with work experience and assist university to adjust its training program. Besides, this helps to solve the experience problem for fresh graduates when they apply for a job.

5. CONCLUSION

University-industry collaboration in training human resources is an inevitable trend. Moreover, it has a direct impact on the quality of highly qualified human resources, especially in the current context, when the measure of product value is based on knowledge content. The direction of UIC is considered as a breakthrough solution in the strategy of developing high-quality human resources. This study has reviewed several publications to consolidate two factors directly affecting the development trend of UIC, they are (i) operational mechanism and governance apparatus of university for UIC and (ii) collaboration activities between university and industry. These research results help to identify important factors in the collaboration between university and industry, contributing to advancing the quality of human resources, affirming the training role of universities in today's context.

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