

Strengthening the Relationship between Universities and Enterprises in Scientific Research to Meet the Requirements of Education Quality Accreditation

Nguyen Quang Giao¹, Huynh Ngoc Thanh²

¹The University of Danang, 41 Le Duan Street, Danang City, Vietnam
nqgiao[at]ac.udn.vn

²The University of Danang, 41 Le Duan Street, Danang City, Vietnam
hnthanh[at]cea.udn.vn

Abstract: *The relationship between universities and enterprises is an important factor because it originates in objective needs and harmoniously ensures the interests of the state, universities, and enterprises. University-Enterprise relationship plays a vitally important role in ensuring and enhancing the quality of training products of universities, as well as the quality of human resources of enterprises. In addition, such a relationship makes practical contributions to overcoming the limitations of both sides if only one party implements it, especially in scientific research. In the context that Vietnam's Higher Education is in the process of integration, the quality of universities must be objectively evaluated and recognized through educational accreditation activities, which is a mandatory activity in Vietnam. For the accreditation of educational institutions, universities in Vietnam have many difficulties in meeting scientific research standards owing to the limited financial resources to carry out scientific research activities in practice. Therefore, strengthening the relationship between universities and enterprises, not only benefits both universities and enterprises but also contributes significantly to improving scientific research activities at universities to meet the requirements of education quality accreditation.*

Keywords: university, enterprise, relationship, scientific research, education quality accreditation.

1. Introduction

The relationship between universities and enterprises is an objective need and plays an important role in human resource development for countries. In Vietnam, in the past time, the University-Enterprise relationship has been paid great attention from both sides with positive changes in cooperation and training support to enhance practical activities as well as practical experiences for students besides the background knowledge provided by the university. In particular, the relationship and cooperation between universities and enterprises in scientific research bring practical benefits to both universities and enterprises. However, the University-Enterprise relationship in scientific research is not really cohesive and sustainable. Universities and enterprises have found no common voice in agreements and cooperation in scientific research. In recent years, higher education quality accreditation in Vietnam has been strongly and extensively implemented according to the set of standards for assessing the quality of educational institutions promulgated by the Ministry of Education and Training. The set of standards for assessing the quality of educational institutions applied to universities in Vietnam includes 25 standards with 111 criteria, of which 3 standards with 14 criteria refer to scientific research activities at universities [1]. Universities in Vietnam cannot meet the standards of scientific research at universities because of the limited financial resources. Therefore, the relationship between universities and enterprises is more essential and significant for mutual benefits. While universities have a chance of implementing their scientific research activities to meet the standards of scientific research in the set of educational institution evaluation standards promulgated by the Ministry

of Education and Training, thereby improving the universities' academic performance; enterprises receive scientific research products that have both scientific and practical value. Nowadays, it is urgent for universities in Vietnam to identify and apply measures to strengthen the University-Enterprise relationship in scientific research which meets the standards of scientific research in the set of standards for assessing the quality of educational institutions promulgated by the Ministry of Education and Training.

2. The importance of the University-Enterprise relationship and the reality at the University of Danang

Firstly, universities, which provide high-quality human resources for the country, specifically for the economy - society in general and enterprises in particular, are responsible for training students to become those who both have basic knowledge and meet the professional requirements of enterprises. The universities' prestige and academic performance will increase and be recognized by society thanks to the quality of their training products. In addition, the University-Enterprise relationship not only offers universities practical bases and consultants to adjust training programs in order to meet the needs of society and enterprises but also helps enterprises to recruit high-quality human resources that fully meet the requirements of the vacancy. Furthermore, enterprises will solve the current dilemma that the number of employees who meet the professional requirements of the enterprises is limited. In case employees can be recruited, most of them must be retrained by the enterprises before they can be used.

Therefore, the University-Enterprise relationship will contribute to reducing the cost of retraining and ensuring the implementation of the plan as well as the enterprises' work progress.

Secondly, through the contracts signed between universities and enterprises, students have many places to choose for practice and internships that are suitable for their majors. Besides, enterprises have more human resources to serve their activities for a certain period of time as well as can monitor and select excellent students who meet the requirements and recruitment criteria of the unit through practice and internships of students.

Thirdly, the issue of employment and the level of satisfaction of students' job requirements after graduation is one of the concerns of university leaders. This issue will be solved when the universities and enterprises have a close relationship with each other. Universities can be assured of the output of graduates. Enterprises will be proactive about recruitment plans and rest assured about the number and sources of recruitment.

Fourthly, enterprises can support training funds and scholarships for students with excellent academic results from the first school year to help students meet the necessary conditions during their studies. At the same time, the enterprises get a good impression from students through their specific supports and orientations, so that they can recruit excellent students for long-term service to the unit. In addition, enterprises have more opportunities to advertise their image to the community.

Fifthly, enterprises can order quality scientific research materials from universities to improve and enhance product quality. In contrast, scientific research projects of universities will increase their applicability and practicality when applied to actual production. In addition, universities benefit from technology transfer and have additional funding for their training and scientific research activities.

Sixthly, the support of enterprises can help universities that have limited funds for research to conduct large-scale scientific research projects. Especially, universities have funds for trial production and on that basis transfer technology to produce for life.

Seventhly, enterprises can provide financial support for universities to increase investment in facilities and teaching equipment in order to ensure and improve the quality of training products. This support is a form of enterprises participating in the training process for investment and development purposes. The output of universities' training process is the input to the recruitment and employment process of enterprises, so when the quality of universities' training products is guaranteed, the enterprises themselves will benefit.

The University of Danang has built a close relationship between the university and enterprises in order to choose partners to build and develop training strategies such as practice facilities, internships, research orders, inviting

experts in business and production activities in practice to teach, ... The University of Danang has participated in the project HEEAP (Higher Engineering Education Alliance Program); a combination of Intel, Siemens, some of the world's leading companies, American universities, the U.S Government and 5 Vietnamese universities to improve the quality of engineers to meet the needs of multinational enterprises operating in Vietnam and other countries. For the University of Danang's member universities, the University of Danang – University of Science and Technology has coordinated with domestic and foreign enterprises and employers to organize job fairs and recruit students, thereby increasing the number of students who have jobs after graduation. At the same time, the university organizes seminars between universities and enterprises as well as continuing Education Centers of the Provinces to listen to the recommendations of the units in order to improve the quality of training, meet local and enterprise requirements. The University of Danang – University of Foreign Language Studies has developed a periodic plan to interview and recruit graduates. This activity has helped enterprises to choose high-quality human resources, and this is also the basis for the university to show its reputation for training quality. Besides, the University of Danang – University of Science and Technology has organized training cooperation with enterprises such as Truong Hai Auto Corporation, Central Power Corporation... on undergraduate and postgraduate training. In addition to internships at the university, students also practice on modern production lines of enterprises. College of Information Technology - The University of Danang regularly signs cooperative contracts in training and using human resources with enterprises such as Truong Hai Auto Corporation, Viettel Telecom, Inax Sanitary Equipment Company, Schlumberger (Germany), Cosevco Company, Dong Nai Hung Nghiep Co., Ltd (Taiwan), Doosan Company (Korea), Coca-Cola Company (USA)... Business establishments receive students to practice and work after graduation.

3. Standards on scientific research in the set of standards for assessing the quality of educational institutions of the Ministry of Education and Training

In Vietnam, according to the Law on Higher Education promulgated in 2012 and the Law amending and supplementing a number of articles of the Law on Higher Education promulgated in 2018, education quality accreditation is a compulsory activity for universities, in which the principles of higher education quality accreditation are: (1) Independent, objective and lawful; (2) Honest, public and transparent; (3) Equal, compulsory, periodic [4], [5].

In 2017, the Ministry of Education and Training issued Regulations on accreditation of higher education institutions, including a set of standards for evaluating the quality of educational institutions including 25 standards with 111 criteria [1]. The set of standards for assessing the quality of educational institutions issued by the Ministry of Education and Training is built based on the reference to the standards

for evaluating the quality of higher education institutions of the Southeast Asian University Quality Assurance Network (AUN-QA) version 2.0. The set of standards for assessing the quality of educational institutions issued by the Ministry of Education and Training is based on the PDCA cycle (Plan - Do - Check - Act), in which it is very important to improve. This contributes to the requirement for universities to focus on improving the quality of training activities, scientific research and community service.

In the set of standards for assessing the quality of educational institutions issued by the Ministry of Education and Training, there are 3 standards referring to scientific research activities at universities with the following contents: Scientific research management (standard 18), Cooperation and scientific research partners (standard 20), Scientific research results (standard 23) [1].

Standard 18: Scientific research management

Criterion 18.1: To establish a system for directing, operating, implementing, monitoring and reviewing research activities, quality of research staff, resources and activities related to research.

Criterion 18.2: Strategies for finding funds for research, promoting research, scientific discovery, collaboration and cutting-edge research are implemented to achieve the vision and mission of the institution.

Criterion 18.3: Key performance indicators used to assess the quantity and quality of research.

Criterion 18.4: Research management is improved to enhance the quality of research and scientific discovery.

Standard 20: Scientific research cooperation and partnership

1) Criterion 20.1: To develop a system to establish collaborative relationships and partnerships in research in order to meet research objectives.

2) Criterion 20.2: To implement policies and procedures to promote collaboration and research partnerships.

3) Criterion 20.3: A system to review the effectiveness of collaboration and research partnerships is implemented.

4) Criterion 20.4: Research partnerships and collaborations are improved to achieve research objectives.

Standard 23: Scientific research results

1) Criterion 23.1: The type and volume of research of lecturers and researchers are established, monitored and compared for improvement.

2) Criterion 23.2: The type and volume of learners' research are established, monitored and compared for improvement.

3) Criterion 23.3: The type and quantity of scientific publications including citations are established, monitored and compared for improvement.

4) Criterion 23.4: The type and quantity of IP assets established, monitored and compared for improvement.

5) Criterion 23.5: Funds for each type of research activity are established, monitored and compared for improvement.

6) Criterion 23.6: Research and innovation results (including commercialization, transfer testing, the establishment of start-ups) are established, monitored, and compared for improvement.

At the same time, in Circular No. 12/2017/TT-BGDDT promulgating the Regulation on accreditation of higher education institutions, there are clear provisions on the 7-level rating scale (corresponding to 7 points) as follows [1]:

a) Level 1. Failure to meet criteria requirements: Failure to perform quality assurance work to meet criteria requirements. There are no plans, documents, proofs, or results available. Need to implement quality improvement immediately.

b) Level 2. Not to meet the criteria requirements, more quality improvement is needed: Quality assurance for the areas that need to be improved to meet the new criteria is in the planning stage or does not meet the requirements. There is little documentation or proof. Quality assurance activities are not implemented or are not effective.

c) Level 3. Not to meet the criteria requirement yet but only a few small improvements will meet the requirements: Quality assurance activities have been identified and implemented to meet the requirements of the criteria but are required additional new small improvements to fully meet the requirements of the criteria. There are documents, but no clear proof that they are used, fully implemented. The performance of the quality assurance activity is inconsistent or has limited results.

d) Level 4. To fully meet the requirements of the criteria: Fully implement the quality assurance work to meet the requirements of the criteria. There is evidence that the implementation has been adequately carried out. The implementation of quality assurance activities brings expected results.

e) d') Level 5. Higher response to the criteria requirements: The quality assurance work better meets the requirements of the criteria. There is evidence that the implementation is carried out effectively. Quality assurance performance shows good results and positive improvement trends.

f) Level 6. Good performance as a national model: The performance of quality assurance work to meet the requirements of the criterion is the best example of the country. There is evidence that the implementation is carried out effectively. The performance of the quality assurance activity gives very good results and shows a very positive improvement trend.

g) Level 7. Excellent performance, reaching the level of the world's leading educational institutions: The performance of quality assurance work to meet the requirements of the criteria is considered excellent, reaching the level of leading educational institutions in the world or leading examples for other educational institutions in the world to follow. There is evidence that the implementation is carried out in a creative way. The performance of the quality assurance activity gives excellent results and shows an excellent trend for improvement.

4. Measures to strengthen the relationship between universities and enterprises in scientific research activities to meet the

requirements of education quality accreditation

4.1. Strengthening information exchange between universities and enterprises

To build a sustainable relationship between universities and enterprises, first of all, universities and enterprises need to have full information about each other. Therefore, universities and enterprises need to be proactive and increase information exchange through seminars, talks, or writing. Universities and enterprises need to pay attention to exchange specific information about resources, training professions, development directions, and especially in terms of quantity and quality of training products of the university, current and future human resource needs of enterprises. The exchange of information is an important premise to create full understanding and mutual trust, as well as the basis for universities and enterprises to sign agreements and contracts in training and recruitment, in which enterprises order universities to train specialties that enterprises are in need of human resources in a specific number. In contrast, universities have many advantages in building and orienting the development of training industries to meet the needs of enterprises and society. In addition, it is necessary to build a university-enterprise forum and enhance information about the relationship between universities and enterprises on the electronic information pages of the unit.

4.2. Signing memorandums, agreements and contracts between universities and enterprises

Nowadays, the relationship between universities and enterprises is mostly built through personal relationships instead of being organized, and cooperation has not really become a vital necessity from both sides. Therefore, universities and enterprises need to concretize their relationship through the signing of memorandums, agreements and contracts between the two parties in training activities, scientific research and technology transfer, ... In which, it is necessary to clearly state the responsibilities, obligations, powers and interests of each party in the cooperation relationship. This is an important basis to strengthen and build a sustainable relationship between universities and enterprises. Universities and enterprises need to cooperate in building long-term, clear and systematic human resource development plans, in line with development trends and needs of the locality, region and country. In addition, universities and enterprises need to establish a University-Enterprise Cooperation Committee in each unit to promote the link between universities and enterprises. Universities and enterprises need to strengthen direction, pay attention to creating conditions for the University-Enterprise Cooperation Committee to maintain regular operations, have specific work programs, ensure costs to operate and have an important contribution in building a sustainable relationship between universities and enterprises.

4.3. Coordinating the implementation of joint activities between universities and enterprises

From current practical results, it shows that the relationship between universities and enterprises brings many benefits to both sides and the issue of coordinating and implementing joint activities between universities and enterprises is completely appropriate and feasible. Universities and enterprises can coordinate to organize seminars, scientific conferences, register and carry out scientific research projects at all levels. In addition, universities and enterprises can carry out joint activities in the process of student training such as universities invite company staffs who have good professional qualifications, experience in practical work, and have pedagogical skills to participate in teaching, guiding students' graduation thesis and projects. In contrast, enterprises support the university with facilities, equipment, and laboratories to serve the training process of the university. Enterprises create favorable conditions for lecturers at universities to visit and gain experience, access to new technologies in order to supplement practical experience for lecturers. Universities need to improve their training programs, which increase the duration of practical courses, focus on output standards to meet the requirements of enterprises. In addition, enterprises participate in the process of consulting and appraising the universities' training programs as well as consulting and job recruitment activities.

4.4. Strengthening technology transfer activities between universities and enterprises

The sustainable relationship between universities and enterprises not only creates favorable conditions for technology transfer activities, in which the application of scientific research works of lecturers will be concretized in the production process of enterprises but also brings significant funding to support research activities of lecturers and universities. At the same time, enterprises benefit from applying scientific research to production practice. In addition, enterprises can order the university for scientific research projects to improve and improve product quality. Universities will conduct research and transfer results to enterprises. For large-scale projects, students will have the opportunity to participate in the implementation of branch projects, which contributes to strengthening research capacity for students and promoting scientific research movement among students at universities.

4.5. Focusing on scientific research cooperation between universities and enterprises to meet the requirements of education quality accreditation

The scientific research cooperation between universities and enterprises usually mainly focuses on scientific research products. This is the main cause of undeveloped cooperation in scientific research due to the lack of management to implement scientific research cooperation between universities and enterprises. The set of university quality assessment standards, including standards for scientific research is built according to the very strict PDCA cycle. Therefore, the scientific research cooperation between universities and enterprises needs to meet the standards of scientific research, which means that it has been managed according to the PDCA cycle, in which the quality of

research products is always improved because “universities need to use the Deming PDCA cycle to make continuous improvement” [2]. This contributes to making scientific research cooperation between universities and enterprises strictly managed from planning, organizing, checking and improving. On that basis, University-Enterprise relationship develops based on quality scientific products. In addition, the university meets the standards of scientific research in the set of standards for assessing the quality of educational institutions issued by the Ministry of Education and Training. Therefore, cooperation in scientific research between universities and enterprises needs to focus on meeting the standards of scientific research of the set of quality assessment standards in higher education.

4.6. Focusing on the role of former students in the relationship between universities and enterprises

Former students are those who are knowledgeable about the university and enterprises, and who want to build and promote cooperation between universities and enterprises. Therefore, universities and enterprises need to enhance the role of former students in the University-Enterprise relationship. Universities need to establish, strengthen and promote the activities of former student associations. In addition, it is necessary to select individuals who have professional qualifications to participate in the training process of the university. On the business side, it is necessary to focus on promoting the role of former students in the relationship with universities, considering former students as an important bridge in the sustainable relationship between universities and enterprises. Former students themselves must be aware of their own roles and responsibilities towards the university and enterprises, contributing to the building and sustainable development of the university-enterprise relationship, in which it is necessary to ensure the interests of both sides.

4.7. Strengthening support in international cooperation

Nowadays, in the context of globalization that is taking place deeply and strongly, universities and enterprises themselves must promote international cooperation activities. Through the relationship that has been built, universities and enterprises can introduce, share experiences, and support each other in cooperation with foreign partners. Universities and enterprises can jointly build international-scale projects that are reasonable and feasible through the combination of human, finance and facilities of both parties. As a result, international cooperation activities of universities and enterprises are promoted, contributing to increasing the prestige, brand name and enhancing the funding, facilities and equipment of the unit. At the same time, through supporting activities in international cooperation, the relationship between universities and enterprises is developed sustainably.

5. Conclusion

In the context of Vietnam, including higher education is in the process of strong integration in the world today, the quality of training products of universities in general and the

quality of scientific research activities needs to approach international quality. Therefore, first of all, the quality of the universities' activities, including the quality of scientific research activities must meet the requirements of the set of standards for assessing the quality of educational institutions, which are built based on reference to the higher education institution quality assessment standard of the Southeast Asian University Quality Assurance Network (AUN-QA) version 2.0. In order to do that, universities need to strengthen the University-Enterprise relationship so that their training products meet the needs of employers, scientific research products of the universities are used in daily life and enterprises have practical research products that contribute to improving productivity. The relationship between universities and enterprises benefits both sides and makes an important contribution to overcoming the limitations of universities in current scientific research.

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Author Profile

Nguyen Quang Giao is the Acting Vice Director of Center for Education Accreditation, The University of Da Nang, Vietnam. He is a Assoc. Prof. Dr. in Education. His research areas are the management of higher education quality. He has performed 8 scientific researches and more than 40 scientific papers published in the special journals of the Ministry of education - training and the Da Nang University in 2004 so far as: Journal of Education; Journal of science education; Journal of science - technology of Da Nang University. In addition, many works have been reported in the national and international science education proceedings and workshops.

Huynh Ngoc Thanh is a PhD student in education management. He is currently working at Center for Education Accreditation, The University of Da Nang, Vietnam. His main research area is education management.