



Competencies of the Team of Department Head at Higher Education Institutions in Vietnam in The Context of the Industrial Revolution 4.0

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ABSTRACT

This study aims to investigate the Competencies of the team of department head at higher education institutions in Vietnam to implement higher education development in the context of the industrial revolution 4.0. The authors conducted a Delphi study with 15 experts in educational management in Vietnam to gather their expert views on the competencies of the team of department head at higher education institutions. A total of 24 components of competency related to 4 fields (professional expertise, scientific research, subject management and leadership, social activities and international cooperation) were strongly emphasized by experts. The competence of the team of department head is proposed based on the ideas of a group of experts and the results need to be tested, completed and confirmed by follow-up work. Besides, in this study, we have not determined the level of achievement of each competence as well as developed assessment tools. The specific competencies of the team of department head can be considered as a foundation to contribute to the development of higher education in the context of the industrial revolution 4.0. We know that competence does not exist independently; in stead of, they should be considered in the specific context of teaching, university, culture and society. This study is one of the studies related to the competence contextualization of the team of department head at higher education institutions in the Vietnamese context.

Keywords: Vietnam, department head, Industrial Revolution 4.0, Delphi Research, Competence

INTRODUCTION

In order to meet the requirements of the industrial revolution 4.0 and international integration, it is necessary to put education development as a top priority, it is necessary to speed up the development of education, especially higher education. In which an important factor and plays a key role is the team of department head (Nguyen, 2013). University managerial staffs in general and department head in particular are appointed and transferred from lecturers to work in management, most of them have high professional and pedagogical qualifications, and are experienced in training, scientific research and technology transfer, have strong political will, good moral quality, be responsible; strictly implement the guidelines and policies of the organization, manage the process of training and scientific research at the university. Over the years, this team has actively and effectively advised the faculty and university to develop higher education in accordance with the socio-economic conditions of each country (Bryman, 2007). However, before the requirements of higher education renovation and international integration, the university department head still have shortcomings and have not met the new requirements and tasks, many department head in the field of law enforcement have not yet met the requirements, many department head in work management is still based on experience, slow to renovate, affected by the centralized administrative mechanism; Most department head are afraid of change while the new mechanism requires change and must find motivation for change; There are not many department head who have an open mind to new things, dare to commit, take risks, dare to think, dare to do; There are a litter department head have the ability to negotiate, sign and cooperate with universities of countries in the region and internationally in training, academic exchange, scientific research, training for enhancing competence for team of lecturers; Many department head are still limited in the application of information technology to management, proficient in using foreign languages in expertise, management, and international cooperation, not meet the requirements of higher education renovation (Bolden et al., 2015). Therefore, determining the professional competence of the university department head which meet the requirements of higher education renovation and international integration is one of the important factors to build, develop and renovate higher education. Therefore, studying the specific

competencies of university department head to meet the requirements of the industrial revolution 4.0 is a very urgent requirement in the current context.

The question of this study is:

1. What are the competencies required for team of department head at Vietnamese universities in the context of the industrial revolution 4.0?
2. What are the specific expression of those competencies?

BACKGROUND

Industrial revolution 4.0

The concept of "Industrial Revolution 4.0" has appeared in recent years and has spread more and more deeply into many aspects of life. This is the inevitable trend of modern society. According to Klaus Schwab, founder and executive chairman of the World Economic Forum, the first industrial revolution used water and steam power to mechanize production. The second revolution took place thanks to the application of electricity to mass production. The third revolution uses electronics and information technology to automate production. The industrial revolution 4.0 is a combination of technologies, deleting the boundaries between the physical world, the digital world and the biological world (Hariharasudan & Kot, 2018). These are the technologies of the internet of things, artificial intelligence, robotics, self-driving cars, three-dimensional printing, super-intelligent computers, smart factories, nanotechnology, biotechnology, etc. This is the revolution on smart manufacturing based on breakthrough achievements in various technology fields with the foundation of digital technology breakthroughs. The center of the revolution 4.0 is information technology and the internet of things (IoT), which not only helps people communicate with each other, but also people communicate with machines and objects; and objects communicate with each other (Robandi et al., 2019). The industrial revolution 4.0 creates development at an exponential rate, from factors such as knowledge, technical progress, labor productivity, the amount of assets created, to changes in structure of administrative – institutional apparatus, management - administration. The industrial revolution 4.0 will create a strong change in the distribution of production resources, the method of production and consumption thanks to the strong development of science and technology (Li et al., 2019). The "automatic" production that is typical of the 3rd industrial revolution will soon transfer to "smart" production, in which machines are connected to the internet and linked together through a system that can be self-operated the entire production process according to a pre-determined plan. The new wave of technology with smart manufacturing will help technology develop and lead to increased productivity. However, in order to apply "smart manufacturing" into reality, it is indispensable for high-quality human resources. Therefore, if a country wants to develop quickly and sustainably, it must develop a strategy for implementation, especially education and training.

The impact of the industrial revolution 4.0 on higher education is huge, creating opportunities but also having many challenges. This is that industrial revolution 4.0 poses a huge training demand for graduate university. First of all, the industrial revolution 4.0 requires high-quality human resources, meeting the requirements of knowledge, skills and qualities, which are constantly changing in the new working environment (Rahman et al., 2019). This is an urgent requirement for education, especially higher education. Therefore, the education sector must quickly move from a knowledge-heavy education to an education that helps develop students' competence, promote renovation and creativity. Thus, at universities, new learning models will be formed along with the development of science and technology, gradually replacing traditional teaching and learning methods.

The domestic and international labor market will have a strong division between the group of low-skilled workers and the group of high-skilled workers. The researchers point out that the industrial revolution 4.0 not only threatens the employment of low-skilled workers, but even average-skilled workers will be affected if they are not equipped the new knowledge - creative skills for the economy 4.0. Industrial revolution 4.0 not only creates first-time training opportunity for young people, but also requires those who have worked, from workers to engineers, to change and update their knowledge and skills at a higher level. Besides, the industrial revolution 4.0 changes all activities in universities. To meet enough human resources for the creative economy, it is necessary to change training activities, from renovation of program, teaching methods, student management, methods of testing & assessment of output standards, with the strong application of information technology (Karre et al., 2017). Universities must change their teaching model, such as online training without classes, without teachers directly in class, learners will be guided through the internet. Thus, universities will have to make a strong transition to a model of only training "what the market needs", the contents of basic subjects will have to be shortened and replaced with content which is necessary to meet the needs of the labor market and help learners realize the motto "lifelong learning". According to this new model, the connection between training institutions and organizations and enterprises is an indispensable requirement to supplement each other, promote the formation of training institutions in enterprises to divide general resources, making the resources used with the highest efficiency (Xu & Duan, 2019). This will affect the arrangement of managerial staffs, serving staffs and teaching staffs of universities.

Facing the increasing demands of the labor market, in order to adapt to the new production environment, the

training activities of universities must be linked with organizations and enterprises in order to shorten the gap between training, research and implementation. Promote the development of training at enterprises, develop universitys in enterprises to train human resources in accordance with the technology and organization of the enterprise. Strengthen the connection between universities and businesses on the basis of corporate social responsibility, towards businesses that are really "extended arms" in university training activities in order to effectively use equipment and technology of the enterprise to serve the training work, thereby forming the professional competence for learners during training and internship process at the enterprise.

The relationship between the industrial revolution 4.0 and education 4.0

Education 4.0 is a catchall phrase used by educational theorists to refer to many approaches to incorporating cyber technology into learning, both physically and virtually(Anaelka, 2018). The term "education 4.0" refers to a phenomena that developed in response to the demands of the fourth industrial revolution, in which machines and people work together to solve issues, develop new technologies, and enhance the quality of life for contemporary people(Moraes et al., 2022). With the assistance of Industry 4.0's cutting-edge technology, Education 4.0 puts the student at the center and makes them the protagonist of their learning. Industry 4.0 technology and active approaches are used in education 4.0. According to Silva et al. (2020), some examples of these techniques include project- or problem-based learning, the flipped classroom, and hybrid learning, which combines online and offline components with distance learning activities, discussion groups, etc(Silva et al., 2020). In these, students study the material at home and talk about what they've learned in class. The professors and leaders of the academic community, the students, and their families are listed by Silva et al. (2020) as the other pillars of Education 4.0. The infrastructure, mesostructure, and superstructure are managed by the management. The scientific and technological education is delivered by the teachers. The students oversee fulfilling their goals and objectives.

Department head at higher education institutions

A department is a specialized unit within a university’s faculty. The Department has the function of performing training and scientific research; directly manage officers of the department to ensure the professional work of the department, the faculty and the university; participate in the education and training of students. The Department head is the Department head who is appointed and dismissed by the Dean on the basis of the Dean's proposal(Nguyen, 2012). The department head must have the qualifications of a university lecturer, have experience in teaching, scientific research and management capacity, and have a doctorate degree(Seagren et al., 1993). The department head has a great and very important role in ensuring the quality of training and scientific research, developing the training major, advising the faculty and the university to implement good management of the training majors and emphasis, lecturers and students.

METHODOLOGY AND RESEARCH METHODS

Conceptual model

Department head tasks, McLaughlin, Montgomery, and Malpass (1975) found three major roles that Department head in the USA play: academic, administrative and leadership(McLaughlin et al., 1975). In a comparative study examining Department head duties in the USA and Australia, Wolverton, Gmelch, Wolverton, and Sarros (1999) found six common major themes: administrative tasks, resource management, scholarship, leadership, faculty development and resource development (Wolverton et al., 1999).

Based on the above research and in order to suit the context of universities in Vietnam, we propose a competency model of department head as shown in Fig.1.

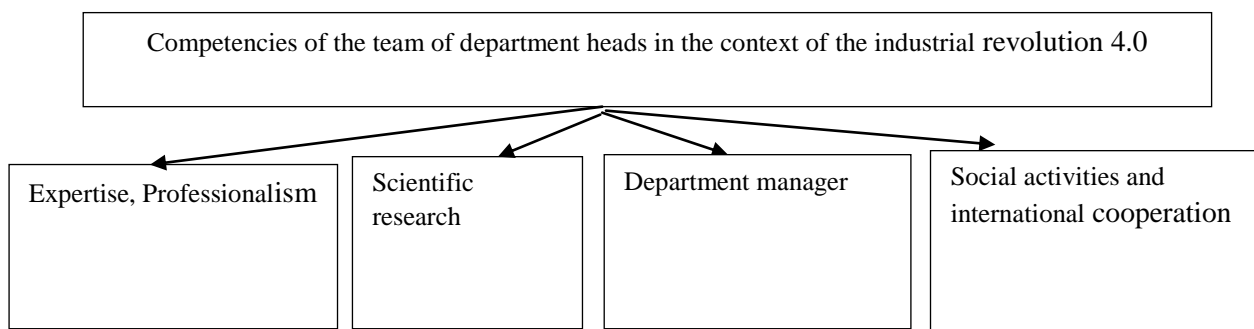


Figure.1: Conceptual model

Research design

We conducted a three-round Delphi study (Table 1) from February to June 2022 to collect experts' views on the professional competence of department head at higher education institutions in the context of higher education of the industrial revolution 4.0 in Vietnam. The participants are experts with:

- (1) have a major in educational management and education; and
- (2) their research background with publications related to educational management in Vietnam

We do not place any restrictions on the nationality of experts provided that they meet the two criteria listed above. Finally, 15 experts are invited, and all of them are Vietnamese, in which, 10 experts hold the position of manager at universities, two experts are former lecturers and currently working at research institutes when participating in this study, three experts are lecturers. 15 experts, who have been representatives of three fields: lecturers, managerial staff and research institute, were the best choice in this study. Especially, some researchers have shown that a sample size is fifteen which can be considered as acceptable in a Delphi's study (Hallowell & Gambatese, 2010)(Clayton, 1997). Therefore, with the sample size of 15 experts in this Delphi's study, it is considered sufficient for the validity and reliability of the content. In the first round, based on the proposed conceptual model, we conducted in-depth interviews with experts to come to an agreement on the conceptual model and determine the professional competence of the department head. Interview questions can be found in the Appendix. Interviews ranged in length from 30 to 60 minutes. All interviews were recorded and then transcribed verbatim. The main categories for analysis are created based on theoretical concepts, including:

- Expertise and Professional knowledge;
- Scientific research;
- Department management; and
- Social activities and international cooperation.

Table 1: Overview of the Delphi Round

Round	Content	Guide
Round 1	Agreement on conceptual model and investigatived competencies	In-depth interview
Round 2	Review competencies	Evaluate and comment on the results of Round 1
Round 3	Final assessment	Group discussion

Based on these categories, sub-categories or competencies are inductively coded. The results of the first round were compiled and presented in manuscript form. In round 2, the manuscript is sent to experts for review and general comments of the previous round. In this round, the following rules were applied:

- If experts provide or suggest new competencies, this information will be added to the list of competencies in the manuscript, which is the focus of Round 1.
- If the experts are expected to propose changes, remove any comments in the manuscript and request clarification, these issues will not be added to the manuscript, but will be noted as content for further discussion in Round 3. For example, a person may assume that a competency belongs to a professional expertise in the first round, but then he/she asks to transfer it to management and leadership or social activities and international cooperation in this round. In the final round, experts joined in a 90-minute group discussion to resolve all changes and conflicts, reach group consensus on required competencies, review and correct the final result, will be presented in the results section. Finally, experts are invited to become co-authors. Due to geographical distance and Covid-19, all interviews and panel discussions were conducted online. Table 1 shows an overview of Delphi rounds.

Due to the limitation of this article, we only focus on identifying specific competencies, not clarify the learning objectives, the level of achievement and proposing pedagogical methods to achieve the competencies. This will be left to the design of fostering courses / competence strengthening courses for department head.

RESULTS

Conceptual model

We do not expect that the conceptual model will be changed after 3 rounds of Delphi; however, the interesting thing is that experts agreed that the second element of the model which is Department management, should be extended to Department management and leadership. Experts believe that the department head not only needs to have the necessary management capacity but also has the leadership competence to lead and develop the department in the face of challenges in the context of the industrial revolution 4.0. Regarding the 01st and 03rd competency component, the experts agreed to keep the same as the proposed form. Therefore, the revised conceptual model is presented as follows (Fig.2):

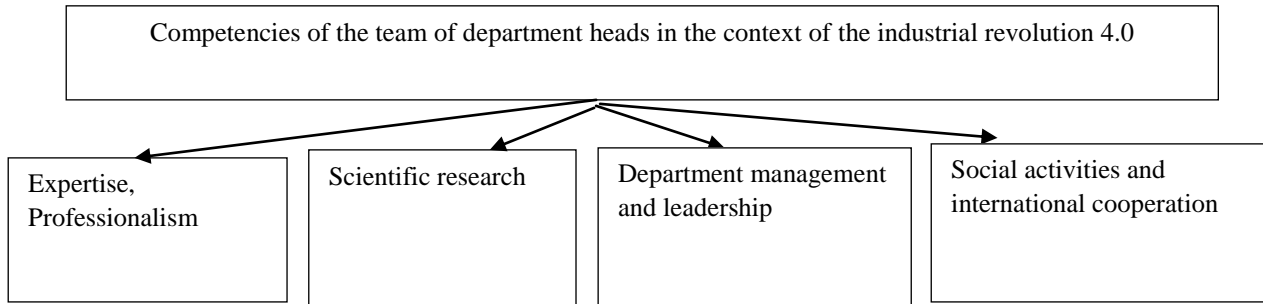


Figure.2: Conceptual model after revising

The professional competence of the department head, conducted by experts through 3 rounds by Delphi method, has highlighted 24 components of competency and their behavioral expression in Table 2 as follows:

Table 2: Competence of team of department head

Component of competency	Behavioral expression
Expertise, Professional knowledge	1. Understanding undergraduate and graduate training programs <ul style="list-style-type: none"> - Understand correctly and fully the objectives, requirements, contents and methods of education in the university training program of the majors that the department is in charge of. - Understand correctly and fully the objectives, requirements, contents and methods of education in the graduate training program of the emphasis that the department is in charge of. 2. Qualification <ul style="list-style-type: none"> - Achieve the standard qualifications of teachers as prescribed by the Law on Higher Education - Firmly grasp the subject that has been or is being taught, has an understanding of the relationship with other subjects in the training program that the department is in charge of. - Ability to compose lectures and training curriculum - Ability to compile and teach in-depth/advanced topics in the training field - Ability to foster talented students - Understanding of theory, profession and educational management 3. Pedagogical profession <ul style="list-style-type: none"> - Skills on classwork organization scientifically - Skills to organize, implement effectively teaching methods in the direction of promoting the positivity, initiative and creativity of students, developing students' self-study and thinking competence. - Skills to organize teaching techniques into technological processes - Skills to organize and perform effectively the method of learning outcomes assessment in the direction of developing student competence - Skills to organize, guide students to participate in scientific research - Skills to link teaching, scientific research with practice - Establish a positive, democratic, friendly, cooperative, collaborative learning environment, encouraging the participation of all students - Settle pedagogical situations in the process of teaching organization - Skills to integrate emotional, attitude and professional responsibility education content for students through teaching subjects - Skills in developing training programs and guiding, fostering for lecturers and students. 4. Self-study and creativity <ul style="list-style-type: none"> - Have a sense of self-study and build the Department group into a learning and creative organization - Self-study and self-improvement skills to improve qualifications - Select content for self-study and self-improvement (expertise, professional knowledge, management, foreign languages, informatics). - Arrange time, self-study and self-improvement methods 5. Foreign language competence and information technology application <ul style="list-style-type: none"> - Use a foreign language in teaching, scientific research and work

	<ul style="list-style-type: none"> - Ability to teach in foreign languages - Ability to use foreign languages to serve scientific research - Use information technology in teaching, scientific research and work.
Scientific research	<p>6. Scientific research skills</p> <ul style="list-style-type: none"> - Ability to identify and select research problems - Develop research outline - Skills in using scientific research methods, means and technical equipment - Research organization skills - Writing and project defending skills - Skills to organize, guide students to participate in scientific research - Skills to collaborate, help colleagues do scientific research, critique scientific products <p>7. Skills of publishing research results</p> <ul style="list-style-type: none"> - Skills to write scientific articles - Skills to publish scientific articles - Skills to sign implement scientific research contracts for higher education renovation and socio-economic development - Skills to consult, technology transfer for the community, enterprise and society
Department management and leadership	<p>8. Training and development of the team of lecturers</p> <ul style="list-style-type: none"> - Develop the Department effectively - Planning to develop the team of lecturers - Develop training and fostering plans for lecturers to meet the requirements of fundamental and comprehensive renovation of higher education. - Foster to enhance competence for lecturers through analysis of teaching hours and academic activities - Organize activities and academic exchanges, helping young lecturers learn experiences in teaching and scientific research - Foster lecturers in teaching and assessment methods according to orientation of student competence development - Foster lecturers in scientific research methods and technology transfer - Encourage the team of lecturers to promote the initiative of building the Department, practice democracy at the locality, build solidarity in the Department; Every teacher is an example of morality, self-study and creativity - Pay attention to the spiritual and material life of lecturers <p>9. Management of teaching activities</p> <ul style="list-style-type: none"> - Organize teaching activities of lecturers according to renovation requirements, promote democracy, encourage the creativity of each lecturer - Professional assignment to ensure science, to meet professional requirements and to harmonize labor - Organize activities and academic exchanges, helping young lecturers learn experiences in teaching and scientific research - Organize teaching and fostering activities for talented students - Organize the compilation and acceptance of exam questions and sets of module exam questions - Direct lecturers to comprehensively evaluate learners in terms of knowledge, skills, performance competence, professional ethical qualities - Organize teaching in the direction of studying lessons - Implement comprehensive education, maximize learners' potential, so that each student has good professional ethics, has a sense of professional and profession development to meet social needs. - Direct the subject to select teaching curriculum and compile curriculum to ensure science and democracy; organize idea contribution, correct, complete the curriculum and lectures seriously. <p>10. Asset management of the Department</p> <ul style="list-style-type: none"> - Advising the Board of Directors to invest, purchase teaching and research equipment in service of training, scientific research and technology transfer of the subject. - Effectively manage and use the department's assets and equipment <p>11. Developing an educational environment</p> <ul style="list-style-type: none"> - Build a cultural lifestyle and pedagogical environment in the Department - Build and maintain regular relationships with other subjects, faculties and departments in the university to improve the quality of human resource training of the university.

	<ul style="list-style-type: none"> - Build a solidar and friendly pedagogical environment; strengthen team cooperation competence; team spirit building; sympathy and sharing in the collective; uphold the spirit of learning, helping each other in the work to complete the assigned tasks. 12. Administrative management <ul style="list-style-type: none"> - Build and improve operational processes and administrative procedures of the department - Guide to build and manage the professional plan of each lecturer; inspect and urge teachers to implement the set plan. - Manage and check types of professional dossiers, hours, teaching content, use of teaching and research facilities and equipment of lecturers in the subject. 13. Management of emulation and commendation <ul style="list-style-type: none"> - Effectively organize emulation movements - Organize the self-study, self-improvement and scientific research movement of lecturers. - Motivate, encourage, appreciate and properly evaluate the achievements of lecturers in the subject 14. Building information system <ul style="list-style-type: none"> - Organize and build an information system to effectively serve in teaching, scientific research and management activities - Effective application of information technology in management, training and scientific research - Receive and process feedback to renovate and improve the training quality of the university - Cooperate and share information on leadership and management experiences with departments at higher education institutions, individuals and other organizations to support and develop the department. 15. Check & assessment <ul style="list-style-type: none"> - Organize an objective and scientific, fair assessment of students' learning and training results, and the work and training results of lecturers. - Perform self-assessment of Departments and comply with educational quality accreditation as prescribed - Organize and supervise the teaching activities of lecturers 16. Analysis and forecast <ul style="list-style-type: none"> - Understanding the economic, political, social and higher education situation of the country, some countries in the region and in the world - Timely grasp the guidelines, policies and regulations of the education sector and the university - Ability to analyze the situation and forecast the development trend of higher education in the local country 17. Strategic Vision <ul style="list-style-type: none"> - Build the vision, mission, and values of the Department towards the comprehensive development of each learner and improve the quality and effectiveness of the university's training. - Propagate and promote the values of universitys and Departments; publicize goals, output standards, training programs, training quality assessment results and the university's diploma and certificate system to create consensus and support to develop the university 18. Design and orientation for deployment <ul style="list-style-type: none"> - Identify priority goals in the department's development strategy - Design and deploy action programs to implement the strategic plan of department development - Direct all activities of the subject to the goal of improving the quality of training, scientific research, technology transfer, associated with the actual socio-economic development of the country and locality - Actively participate in and encourage lecturers to actively participate in social activities 19. Decisive, courage to renovate, adapt to new work <ul style="list-style-type: none"> - Having the ability to advise, make correct and timely decisions and dare to take responsibility for decisions in order to develop the Department to meet the requirements of fundamental and comprehensive renovation in higher education. - Skills to arouse and nurture motivation, skills to create influence - Change leadership skills - Skills to direct, manage conflicts, create cooperation and consensus to implement the cause of higher education renovation
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	<ul style="list-style-type: none"> - Value-oriented skills, building Department culture <p>20. Planning activities</p> <ul style="list-style-type: none"> - Organize the planning of the Department in accordance with the strategic vision and action programs of the department and the university
<p>Social activities and international cooperation</p>	<p>21. Social activities</p> <ul style="list-style-type: none"> - Understanding of trends and current issues of the socio-economic, cultural, political, security and defense environment to university - Develop plans, implement thoroughly and concretize views, goals, tasks, solutions to fundamentally and comprehensively renovate education & training in Department, universities and the whole society, creating a high consensus that education and training are the top national policy - Skills to establish close relationships and consensus of socio-political organizations, individuals and related parties to support the development of the training sector of the Department or university <p>22. Building, developing relationships and supporting the community</p> <ul style="list-style-type: none"> - Advise on the mobilization of resources, such as intellectual, financial, and material resources of the locality, of enterprises, to support the educational renovation of the university. - Participate in and encouraging members of the department to participate in local socio-economic development activities - Skills in building a working environment, create the best conditions for everyone to cooperate and work together to participate in solving problems of higher education in the process of international integration - Guide and direct lecturers to build and develop relationships with the social community, associate and share responsibility for university and community development, and build a learning society. - Spiritual and ethical orientation skills for the community <p>23. Understanding of international cooperation in higher education</p> <ul style="list-style-type: none"> - Understanding the development trends of higher education in the world: Massification; Diversification; Privatization; Ensure quality and enhance competitiveness; corporatization and industrialization of the higher education system - Understand the guidelines and policies of the Party and State on building international integration strategies, improve cooperation competence and competitiveness of Vietnamese higher education, implement international agreements and commitments. - Grasp the opportunities and challenges of the university in the process of international integration <p>24. Building and developing international cooperation relationships in training, scientific research, and fostering of lecturers</p> <ul style="list-style-type: none"> - Advise faculty and universities to develop advanced training programs and high-quality training programs on the basis of selectively absorbing training programs from the world. - Advise faculty and universities to organize international and regional human resource training services - Advise faculty and universities to organize various types of human resource training services to attract foreign investment. - Advise faculty and universities to organize joint training and exchange of lecturers with prestigious higher education institutions in advanced countries. - Develop a plan and deploy to invite Vietnamese lecturers to participate in teaching and academic exchanges with subject lecturers. - Advise universities and faculties to attract overseas students to study and research at the university - Skills to negotiate, sign cooperation agreements with universities of countries in the region and internationally, exchanging management experience, academic exchange, and scientific research; competence building training for teaching staff; for students to exchange learning, exchange experiences - Skills to participate in bidding, sign scientific research projects in the form of bilateral cooperation, Protocol

Expertise and professional knowledge

Regarding the Expertise and professional knowledge of the team of department head, experts also recommend that the department head should have knowledge of the training program and must have professional

qualifications that meet the provisions of the law on education. Besides, many experts also recommend that the pedagogical knowledge of the team of department head needs to be concerned and must be at a good level or higher to be able to guide and sample for colleagues. It is also noted that, in the component of professional and expertise competence, experts emphasize that self-study and creativity, skills in using foreign languages and applying information technology, scientific research skills, etc is extremely important for the development and international integration of educational institutions in the current period.

The following segment is an example of an expert's point of view:

One issue that needs to be paid attention is that the department head must be aware of the role of foreign languages, information technology and scientific research in order to guide colleagues in personal development. Many lecturers are not aware of the need to improve foreign language skills, apply information technology in learning and teaching as well as not realizing the role of scientific research in the tasks of each lecturer. Therefore, the department head needs to encourage lecturers in the Department of self-study and improve their own competence (Expert 4).

Scientific research competence

Science and technology activities are one of the three main tasks of the university & the department and play an important role in improving the quality of training highly qualified human resources, in order to create knowledge, new technologies, solutions and products, improve the quality of training, contribute to the discovery and fostering of talents, and develop the scientific and technological potential of each country. The experts agreed that the department head must be a competent and reputable scientist to preside over and be responsible for the science and technology activities of the department. Including, scientific research and technological development tasks, implementation of science and technology tasks as planned by the university and faculty; proactively coordinate with training institutions, science and technology organizations, production, business and services in order to associate training/scientific research with production activities and social life, supplementing finance resources for the university. In addition, experts suggested that the department head should carry out international cooperation in science and technology in the Department's professional fields, make a plan to develop the scientific staff of the department, participate in training and fostering a team of scientific staff in their professional fields.

Department management and leadership

In terms of management, most university management models in Vietnam are divided into 3 levels: University, Faculty (unit), Department (specialty unit). In which, the department is the core unit that plays a very important role in training activities, scientific research and organizing other activities of the faculty and university. Therefore, experts believe that the department head has an important role in managing the training major, emphasis, organizing academic activities, managing the scientific research activities of lecturers, contributing to improve the training quality, scientific research and successful implementation of the cause of higher education renovation.

Experts agree that the department head must be capable of: Fostering and developing the lecturers staff; Managing teaching activities; Management of the department's assets; Developing an educational environment; Administrative management and management of emulation and commendation; Building a management information system; Evaluating and accrediting education quality. Especially, most experts recommend that, in the trend of globalization, knowledge economy and in the context of fundamental and comprehensive renovation of higher education, the department head are not only a manager but also a leader.

For example, expert 10 said that "The department head needs to motivate and attract lecturers to participate in the successful implementation of the renovation cause. Therefore, the department head needs to show his leadership role in the team".

Accordingly, experts also recommend that, in order to perform the role of a leader, the department head must have a strategic vision and future orientation; have the ability to influence, gather and entice people to make change; Have interpersonal and communication skills; Have change leadership skills; Skills in arousing and nurturing motivation; Have skills in influencing; Have skills in value orientation, building organizational culture; Ability to solve problems and make right and timely decisions; Have skills in conflict management and negotiation

Social activities and international cooperation

Currently, higher education in the world is developing according to the following trends: Massification; Diversification; Privatization; Ensuring quality and enhancing competitiveness; Consolidation and industrialization of the higher education system; Develop a network of research universities to become centers of production, use, distribution, export of knowledge and transfer of new and modern technologies. Through training and research to discover and attract scientific and technological talents; Promote types of international and regional human resource training services. Universities have become service institutions in training human

resource, attracting investment capital in training from many countries, especially developing countries that need access to modern technology.

In that context, it is required that universities in Vietnam are really places to provide higher education, training, scientific research and technology transfer services to society and the community. That requires the department head, first of all to respect and nurture the ideas of "exploiting" the market for providing educational, scientific and technological services, and at the same time to create consensus, encourage, create all conditions to implement those ideas in the Department and university environment.

In addition, experts also said that, for universities in Vietnam, strengthening international cooperation has become an urgent requirement and a fundamental solution for the development of higher education in general, training and exchange of lecturers in particular. Therefore, it is necessary to develop a strategy for international integration, to improve the cooperation competence and competitiveness of Vietnamese higher education in the implementation of international agreements and commitments. Deploy the teaching and learning in foreign languages, improve the quality of training and research programs with capable of attracting foreigners... Create favorable conditions and mechanisms for investors and Reputable higher education institutions in the world open international higher education institutions in Vietnam or associated training with Vietnamese higher education institutions... Expert 12 said that "in order to implement this problem, the department head must do well in communications so that staff, lecturers and students clearly understand the policy of promoting international cooperation in training and scientific research and technology transfer; Develop an international cooperation strategy and actively expand international cooperation in training, scientific research and technology transfer of the subject; Direct and prepare necessary conditions for the subject and its lecturers to participate in higher education training programs with foreign countries.

DISCUSSION AND CONCLUSION

This study presents perspectives from the specific Vietnamese context to contribute to the discussion of the competencies required for the team of department head in University. Although there are small differences in the naming of the component competencies, our results have similarities with other studies with the same research approach or theoretical framework, such as the studies of Montez et al. (Montez et al., 2003) and Pamela Benoit (Benoit & Graham, 2005). For example, compared with the study of Pamela Benoit (2005), the similarities are mainly found in leadership competencies, management capacity; Or the study of McLaughlin, Montgomery, and Malpass (1975), which has similarities in the field of scientific research (McLaughlin et al., 1975).

This study demonstrates the competencies required by department head to carry out Department development effectively in the context of the industrial revolution 4.0 in Vietnam. This contributes to settlement of a larger discussion of competence for department head. To meet the requirements of the industrial revolution 4.0 in the context of Vietnam, experts propose 24 components of competency related to professional expertise (five competencies), Scientific research (two competencies). Management and leadership (thirteen competencies) and social activities and international cooperation (four competencies). By clarifying the competence of the the department head, this research can contribute to the educational development process in education and training institutions in Vietnam. The results of this study include the ideas of a small group of education experts in Vietnam. Almost all of them have training experience in university and have a deep understanding of the educational context in Vietnam. However, the results of this study still need to be tested, refined, and confirmed with further work. For example, the question How to make Department head in Vietnam aware of the necessary competencies to develop the Department, contributing to the renovation of education and training in Vietnam which should be carried out in the future. Besides, in this study, we have not determined the level of achievement for each competence as well as the evaluation tools developed; therefore, this requires further experimental studies for clarification. Although there are some limitations, the proposal for the competence of the department head can be considered as the foundation for the development of the Department to contribute to the renovation of higher education in Vietnam. In particular, Vietnam is performing an education reform that has transitioned from a content-based approach to a competency-based approach and has been performed since the 2020–2021 school year. In order to address the requirements of reform, universities in Vietnam have been revising and redesigning their training programs to orient towards a competency-based approach. In this context, the competencies proposed for department head have been meaningful to the design of educational environments in higher education. This study has important implications for the development of higher education in Vietnam. Because through that, higher education institutions have short, medium and long-term strategies in training and fostering human resources for the university, especially the department heads.

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