High Quality Universal Education Create High Quality Human Resources for The Construction Industry, Case In HCMC

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Abstract. In the era of the Fourth Industrial Revolution and the rapid development of Artificial Intelligence, the construction industry is facing great challenges in providing quality education that effectively meets the needs increasing number of highly skilled human resources, especially in the fields of construction and architecture. This study aims to address the question of how universities specializing in civil engineering and architecture in Ho Chi Minh City (HCMC) and Vietnam can train and produce qualified students to meet the increasing demands of the labor market. The research uses qualitative methods, conducting case studies at Ho Chi Minh City University of Architecture. Data will be collected through conducting in-depth interviews with stakeholders and decision makers at different management levels. The study aims to identify strategies and directions that can lead to the development of high-quality human resources in the field of construction and architecture. The results of this study will provide valuable insights to local and central government agencies as well as universities and businesses in need of high-quality human resources, helping them strengthen their training process, building and applying policies to support and improve overall quality. Higher education in the construction industry.

1 Introduction

Education is widely recognized as a fundamental requirement for human advancement and escaping poverty. The responsibility for ensuring quality education lies with the government, and it should be managed using national resource [1]. Education plays a vital role in fostering independent thinking, enhancing communication and cooperation skills, and facilitating personal growth [2]. The education sector has the potential to significantly contribute to improving the quality of human resources. Education not only equips individuals with knowledge and skills but also instills values and ethics [3].

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Higher education serves as a valuable cultural and scientific asset that facilitates individual development and drives social, economic, and technological advancements. Furthermore, it plays a crucial role in knowledge transformation, research, and equipping students with the necessary skills to enter the workforce [4]. Recent studies have identified various dimensions of higher education quality, including student quality, faculty qualifications, academic characteristics, and administrative support [1]. Although higher education is experiencing rapid growth in student enrollment, a considerable portion of graduates struggle to meet the demands of employers and face challenges in securing employment [5]. The primary objective of higher education institutions is to foster the development of students, ensuring they possess the qualities sought after by the labor market [6]. Therefore, enhancing the quality of higher education should encompass every stage, from enrollment to training, with the aim of supplying the labor market with high-quality human resources [2].

Human resources, comprising individuals’ skills, knowledge, practical abilities, and potential, are pivotal for socio-economic development. High-quality human resources are essential for advancing fields and organizations, embodying individuals with education, technical expertise, creativity, professional ethics, and strong work ethic. These individuals demonstrate adaptability, practical aptitude, and the ability to apply knowledge effectively, enhancing productivity and efficiency [7]. Strategies for human resource development encompass various activities and opportunities across education, economic practice, and public administration. In higher education, the advancement of educational institutions is key to nurturing high-quality human resources [8].

2 Research Methods

2.1 Method

The research took place at the University of Architecture in Ho Chi Minh City, Vietnam, renowned as one of the oldest and most esteemed institutions specializing in architecture, urban planning, and construction. With a rich tradition spanning over 90 years in architect training, the university consistently produces a substantial number of architects and engineers annually, contributing significantly to the city and the nation. Setting itself apart from other academic institutions, the university distinguishes itself by offering comprehensive multidisciplinary training programs tailored to the construction and architecture sectors. Notably, it holds the distinction of being the sole university in Ho Chi Minh City overseen by the Ministry of Construction.

Qualitative research methods were employed in this study, utilizing data collection through in-depth interviews, a commonly utilized approach. In-depth interviews entail individual sessions with respondents at specific intervals to gather intricate information. A structured approach was adopted for in-depth interviewing, entailing the use of a predetermined set of questions during the interviews.

2.2 Research object

The interview subjects for Subject 1 encompass key officials of Ho Chi Minh City University of Architecture, including the principal, vice principal, chairman of the school council, faculty leaders, and functional unit heads such as deans or vice deans. Subject 2 consists of faculty members, totaling 21 individuals. Subject 3 involves business owners and company representatives utilizing human resources within the construction and
architecture industry, totaling 6 participants. Subject 4 comprises alumni and current students at Ho Chi Minh City University of Architecture, totaling 27 individuals.

2.3 Data collection

To gather data, we employ structured in-depth interview techniques, which involve having a predetermined set of questions ready for use during the interviews. Alongside inquiries regarding the interviewee's personal information, such as name, age, position, and years of experience, we provide the primary set of interview questions outlined in Table 1.1.

| 1 | What role does university education play for you? |
| 2 | How do you evaluate the current state of high-quality construction and architecture human resources at Ho Chi Minh City University of Architecture? |
| 3 | In your opinion, what challenges are currently facing the development of high-quality human resources in the architecture and construction industry? |
| 4 | In your opinion, what new trends are there currently in training high-quality human resources in the construction and architecture industry? |
| 5 | Do you have any suggestions to enhance the role of higher education in developing high-quality human resources for the industry? If so, please state clearly |
| 6 | How do you perceive the relationship between businesses, policymakers and higher education institutions in developing high-quality human resources in the construction industry? |

The interviews were conducted in April 2023, with each session lasting between 45 and 60 minutes. All questions were formulated as open-ended to allow interviewees to freely express their perspectives and opinions, thereby ensuring objectivity in the interview process. To maintain confidentiality, we anonymized interviewer information (Correspondent: TTV) and interviewees (PVV). Additionally, quotes presented in the results section will be coded accordingly; for example, student (SV), lecturer (GV), manager (QL). Information was collected through audio recordings and handwritten notes for significant content. Subsequently, the interviews were transcribed, categorized by topic, and analyzed to derive results for the research.

2.4 Data analysis

Based on the analysis results, we draw the main topics as (1) strengths of high-quality higher education at Ho Chi Minh City University of Architecture (2) the limitations of high-quality higher education (3) solutions to improve the quality of higher education in architecture and construction at Ho Chi Minh City University of Architecture. In the large topic, we continue to divide it into smaller topics, specifically the topic of strengths (1) including "training program", "quality of the lecturers", "scientific research". On the topic of limitations (2) include “training program”, “facilities”, “quality of the lecturers”, "scientific research". Regarding the solution topic (3) includes "training program", "facilities", " quality of the lecturers ". 
3 Result

3.1 Strengths of high-quality higher education at Ho Chi Minh City University of Architecture

3.1.1 Training program

A high-quality training program is characterized by a clear study plan and learning objectives, enabling students to acquire professional knowledge and skills while preparing them for future careers. It also provides lecturers with a structured framework for content delivery and teaching methods to ensure quality education. Presently, all programs emphasize output standards encompassing knowledge, skills, and autonomy. Both general and specialized subjects, as well as graduation projects, are closely integrated. Interviews reveal that most managers and lecturers view the construction and architecture industry's training program as well-structured, comprehensive, and instrumental in developing high-quality human resources for the industry.

“The program has a balance and reasonableness between basic and specialized subjects, with unity and logic from the first year to the fifth year (final year). Give you a system of professional skills for you to graduate” (TTV GV7).

3.1.2 Quality of the lecturers

During the interview process on this topic, we found that most managers and lecturers interviewed rated the school's teaching staff as good quality, ensuring that each lecturer has a unique style, with different strengths, is not only good at expertise but also has very good practical experience.

“Each teacher has different strengths; students not only learn from teachers about knowledge but also methods. For example, there are teachers who are strong in function, teachers who are strong in restaurant and hotel design..."(TTV GV8)

Commenting on the school's teaching staff, most of the students from first year to last year commented that the teaching staff is very passionate about their profession, dedicated, dedicated, and the teachers are very enthusiastic about teaching. Bring your professional experience to students, creating many conditions for students to develop knowledge. Teachers have deep expertise and a lot of professional experience and can convey knowledge well.

3.1.3 Scientific research

Scientific research significantly enhances the quality of teaching and learning at universities by providing knowledge, supporting program enhancements, fostering creativity, and improving teaching capabilities. It also contributes to building a robust research community, particularly in the construction and architecture industry, by bridging theory with practical application. Currently, both lecturers and students at the school are increasingly engaging in scientific research tasks, leading to a rise in the number of research topics each year. Students have achieved numerous prestigious awards in domestic and international research competitions, demonstrating the school's excellence in scientific research endeavors. Moreover, there has been a notable increase in the number of articles published in domestic and international journals, particularly those indexed in Scopus, indicating the continuous improvement and global reach of the school's research efforts.
"The school's current scientific research activities among students are good and stable, growing in quantity and quality of topics." (TTV SV22)

3.2 The limitations of high-quality higher education

3.2.1 Training program

While the training program is praised for its depth and solid knowledge, it also faces limitations and requires improvement. Feedback from managers, lecturers, and students indicates that the program is overly theoretical and lacks practical focus and experience. Subjects remain academic and fail to adapt to current trends in construction and architecture. In addition to providing professional knowledge, there is a strong emphasis on equipping students with essential skills, particularly soft skills needed for the construction and architecture profession. These skills demand meticulousness and creativity, highlighting the need for enhancements in the curriculum.

“Rapid technological change: The field of construction and architecture tends to develop and change very quickly. Therefore, the training program needs to be updated regularly to ensure students grasp the latest trends and technologies in the industry." (TTV SV7)

The training program not only equips learners with enough professional knowledge, but also soft skills such as presentations, teamwork, handling situations, etc. Grasping new trends in design and construction, new material. The program helps students understand the conscience and responsibilities of engineers and architects. In addition, a good training program also helps increase students' passion for the industry.

3.2.2 Facilities

Discussing this topic, most administrators and lecturers interviewed affirmed that the school's facilities are still limited and are very concerned about the need to improve facilities for their training. the school, the interview subjects said that the school's facilities were just sufficient in quantity, the quality had not been improved, it had not been innovated to keep up with the development trend of technology and meet training conditions. link theory with practice.

“Facilities have not kept up with the scale of training, especially the development of science and technology, applications and training utilities, the need to deploy new teaching methods and the demands of learners, especially in the training of high-quality human resources” (TTV QL5)

Student’s express concerns about the outdated and deteriorating facilities at the school. They emphasize the need for expanded learning spaces, updated practice rooms, and accurate equipment to ensure the quality of learning. Additionally, they note that the school's library lacks aesthetic appeal and adequate lighting, further contributing to dissatisfaction with the overall quality of facilities.

3.2.3 Quality of the lecturers

Although most opinions give good reviews about the school's teaching staff, the management team and lecturers also have frank assessments to have solutions to increasingly improve the quality of the team to meet the requirements. demand at the present stage. There are many opinions that the teaching staff is still limited in terms of academic titles and high degrees, there are not many high-quality lecturers, lecturers are
good in expertise and practical knowledge but do not actively participate in research.
science. Especially with the rapid development of the industrial revolution, some lecturers'
an application of technology is still limited.

"...however, teamwork related to the development of academic titles and degrees, 80 -
90% of MScs, however, associate professors and senior teachers are still few, so it is
necessary to train and strengthen the team in terms of academic titles and degrees." (TTV
QLII)

3.2.4 Scientific research

Despite some achievements in scientific research, there remain limitations. Many scientific
articles lack applied topics addressing urgent industry issues. Additionally, some lecturers
prioritize quantity over quality, resulting in confrontational articles. Most interviewed
lecturers and managers acknowledge the importance of scientific research in developing
high-quality human resources in the construction and architecture industry. However, many
lecturers lack motivation for research due to several reasons: the university's focus on
application rather than research, inadequate policies on remuneration and recognition,
difficulties in conducting research on arts-oriented subjects, insufficient skills and research
methods among some teachers, limited research facilities, theoretical-heavy topics with
little practicality, and insufficient coordination among departments and businesses in
identifying key research topics.

"...Doing scientific research has not brought economic efficiency at the middle-class
level; Policy mechanisms and processes to create conditions for researchers are difficult. It
has not been possible to promote the amount of scientific research..." (TTV QL7)

For students, interview samples collected from students obtained information that many
3rd or 4th year students have never been interested in scientific research. In addition,
students also encounter many difficulties while participating in scientific research such as
heavy training programs that prevent students from having time to participate in other
activities, problems with capacity, recognition, etc. knowledge, inspiration and facilities are
also mentioned.

3.3 Solutions

3.3.1 Improve limitations through linkages with domestic and international
schools

In the current integration period, training links between domestic and international schools
to share training and scientific research activities are very important. Firstly, domestic
training links, each university has different orientations and strengths in training
construction and architecture.

Increase opportunities to exchange lecturers and students between schools, allowing
students to earn joint degrees with partner schools, especially foreign schools; Lecturers
and faculties have the basis to compare, update and upgrade training programs, as well as
update advanced teaching methods in the world; promote scientific research, technology
transfer, increase the quality of scientific works, and increase practical knowledge for
learners; create conditions for schools to learn about human resource management and
training; promote the school's reputation among students domestically, regionally and
internationally; Helps students improve their knowledge, skills, and foreign language
abilities to get closer to world trends.
“It is very necessary and important to share, connect networks, share resources about databases, multiply reference documents, share management experiences, training, and advanced methods, our school conducts student exchanges to change the learning environment; cooperation in research and technology transfer” (TTVQL7)

Students value networking for its benefits, including access to scholarships from foreign schools for study exchanges, staying updated on global trends in construction and architecture, and fostering creativity and ambition. Networking encourages students to generate innovative ideas, fosters a spirit of progress, and enhances learning motivation.

3.3.2 Improve limitations through cooperative measures with businesses

Linking with businesses helps students access knowledge and practical skills, a part that is lacking today. This combines theory with practice, providing internship opportunities in a professional environment, thereby helping students learn and prepare for the labor market. They also recognize the skills needed to be successful after graduation. For businesses, this also brings high quality human resources. At the same time, the association also helps schools adjust training programs according to market needs and improve training quality.

"This connection is extremely effective and needs to continue to be promoted to help connect theory in the school with practice, giving learners the opportunity to practice and do real work" (TTVQL6)

3.4 Discussion

Based on the analysis results, Ho Chi Minh City University of Architecture has clear strengths and weaknesses in providing quality higher education in the architecture and construction industry.

This school's strengths include its well-structured curriculum, which provides students with a clear study plan and learning goals. In addition, the school's advantage also lies in its in-depth curriculum and lecturers with many years of experience. This is a great advantage to develop a quality education [9]. This program provides basic and detailed knowledge of construction and architecture, from design principles to construction methods and project management. The teaching staff is highly appreciated for their diversity in style and practical experience, as well as the dedication of the teaching staff also enhances students' learning motivation. Studies show that the behavior of lecturers has a strong influence on student motivation during the learning process, for this reason high quality education needs to pay much attention to motivation and learning outcomes of students [10].Scientific research is also considered a strong point, with the number of topics and articles published increasing each year and scientific research awards being won by students.

However, there are also notable limitations. The training program is considered not focused enough on practice and real-life experience, nor is it up to date enough with new trends in the industry. The school's facilities are also assessed as needing improvement, especially to meet the requirements of a modern learning and research environment because good facilities also bring great impacts to students, with improving student academic achievement and impacting the goal of developing high-quality human resources [11]. The teaching staff, although highly appreciated for their expertise, still lacks diversity in terms of academic titles and advanced degrees. Finally, scientific research also needs to be improved to enhance practical applications and promote industry development. Studies show that developing and maintaining undergraduate research programs benefits students, faculty advisors, and the university. Combining a research component along with a strong academic foundation allows students to develop independent critical thinking skills along
with communication skills, the research process has a lasting impact as students university
students participate in working in professional environments [12].

Creating a network of links between domestic and international schools to cooperate
with businesses is an important solution to help improve the quality of training and prepare
students for the labor market. Sharing knowledge, experience and resources between parties
not only diversifies the learning environment but also promotes the sustainable
development of the construction and architecture industry.

4 Conclusion

Research shows that Ho Chi Minh City University of Architecture appears to have many
strengths such as a well-structured training program, diverse teaching staff and rich
scientific research. However, it cannot be denied that there are limitations such as lack of
focus on practice, facilities that need improvement and the diversity of academic titles of
lecturers. To improve, creating a network of links with other domestic and international
schools to cooperate with businesses is an important solution. The sharing of knowledge
and resources will help improve the quality of training and better prepare students, while
promoting the sustainable development of the construction and architecture industry in the
future.

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