QUALITY ASSESSMENT IN HIGHER EDUCATION WITH COMPETENCY-BASED APPROACH IN VIETNAM: AN IMPLICATION FOR E-LEARNING

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**Abstract**

This empirical study examines the role and contributions of the factors in the quality assessment using the competency-based approach. The model comprises seven factors: 1. Lifelong learning, 2. Creativity and Innovation, 3. ICT and digitalisation capacity, 4. Adaptability, 5. Critical thinking and problem-solving skills 6. Foreign language, 7. Organisation and Management ability. Fuzzy logic approach is used in analyzing the panel interviews with 20 experts. Then, two survey databases are used to help show the evaluations from employee and employer points of view. The results show that high-demand skills required by employers are: ICT and digitalisation capacity, Adaptability, Creativity and Innovation, and Critical thinking and problem-solving; however, currently, graduates only match to some extent in ICT and digitalisation. Besides, employees' self-evaluation of the competency for these aspects is similar to employers' evaluation. This finding consolidates the current situation regarding the quality of higher education and emphasises the necessity for improvement in the higher education curriculum. The results would have potential implications for designing e-learning programs.

Keywords: quality assessment, competency-based, vietnam

1. **INTRODUCTION**

Education is considered the foundation for the individual development. Traditional education system has been evaluated to be very successful in spreading knowledge to the community, to meet the necessities of daily life and professional knowledge in the work. However, university training programs often focus on mostly on knowledge transfer [1]. However, with the technological development, especially the spread out of the 4.0 revolution in the world, education needs to change prepare human resources to proactively for future. The UNDP Human Resource Development Report 2015 has stated: “The key element for grasping the future in the digital revolution is not chance or fate but skills and vision” [2]. Babbar [3] also emphasizes the role of education quality in creating prosperity and security for individuals as well as for society. Thus, the question is how education must change.

To evaluate the quality of higher education, the content of quality needs to be determined [4]. We can see that the quality of education is a concept multi-dimensional concept, which can be understood from many angles and depends on each individual's point of view [5]. Furthermore, the concept of quality is constantly changing over time. In the 80s, education quality is excellence with elite education. In the 90s, the education quality lean towards customer satisfaction. Finally, tn the 21st century, the following four important pillars is considered the goals of education: "to know", "to do", "to live together” and “to self identify” [6].Therefore, the learner approach in building the models for the quality assessment of higher education is required. This will allow creating a scientific basis for harmonious and overall solutions to improve the quality of higher education. Knowing how learners change is the basis for the university to self-regulate, and be the premise for “learners transforming” objective in the most effective way.

Quality assessment in education is the application of scientific method for evaluating the design, implementation, improvement or outcomes of education. Evaluating the quality of higher education is one of three common models of quality assurance higher education today. While the quality assurance model focuses on on achieving minimum standards, the quality audit model places emphasis on process produces quality, the quality evaluation model prioritizes the analysis of results Therefore, the model of education quality evaluation that focuses on analyzing the output are the appropriate approach for the strategy to improve the quality of higher education.

This paper is organized as followed. The next section present the review on relevant literatures. Then the Methodology section propose the analytical framework and describe the data. The Analysis section present the empirical results of this study. Finally, the paper end with Conclusion section.

1. **LITERATURE REVIEW**
	1. **The concept and approach of education quality**

Previous studies on education quality often used terms such as:quality, efficiency and equality. Efficiency is maximized benefits, avoiding waste in the process of achieving outputs and results. Equality in education means that there is discrimination in accessing and participating in the system education.

In practice, quality is often evaluated through output, outcome, process or input. Outputs are archivements that students acquire such as graduation rates, skills, qualifications, etc. Unlike outputs, outcomes imply the longer-term effects of education such as jobs, income, changes in behavior, attitudes and values of learners. In contrast to output and result, input refers to the resources needed for education, including teachers, learners, facilities, finance, programs, etc. Finally, process is understood as an interactive between teachers, learners, administrators, learning materials and technology in educational activities.

The quality of higher education is not a new topic in the world. There are numerous publications, including journal articles and published books on this topic. However, the concept of quality education is still a misleading concept in academic world [7]. Indeed, quality is a relative concept. depends on the object and the context. So, different objects have different requirement on equality. This make the scales and methods for quality assessment are also different. Even the same person may have different views on quality different quantities at different times, in different contexts, and for different purposes.

In general, previous studies have summarized the definition of quality into the following 7 groups: i) quality is excellence, ii) quality is the appropriateness for purpose (meaning product products/services that meet the defined goals, satisfy customers), iii) quality is value for money (effectiveness), iv) quality is conformance to standards, v) quality quality is zero defect, vi) quality is conversion value vii) quality is reaching a threshold [7], [8],[9].

Within the context of higher education, previous studies often define quality is the fit with the stakeholder's objectives [10], [11]. For Vietnam, the learners’ competency approach is an appropriate one for evaluating education quality, especially in the situation when there is a of a large shortage of workers' capacity in the labour market [12]. Therefore, this study will focus on learner competence approach.

* 1. **Measuring education quality**

From the multidimensionality in the definition of educational quality, the measurement of the education quality is also very diverse and controversial. According to Skordoulis and colleagues [13], the quality of education can be measured through a set of high-quality criteria, meeting the requirements of learners, including: prestige, team, instruction, programs, services, learning materials. In regarding to the teaching staff, Sarrico & Alves [14] believe that this is the key to quality education. The authors identify the following quality criteria: team capacity, academic research ability, international cooperation and career guidance. Besides, the ability to manage also contributes to improving quality of education [15]. Other studies such as [16], [17] summarized the educational quality measurement criteria as following: 1) resources for educational activities, 2) organization of educational activities, 3) training/retraining capacity building of teaching staff 4) leadership, 5) teaching process.

Harvey & Green [18] developed a methodology for assessing the quality of stakeholders, focusing on the criteria for the quality of teaching and learning rather than administrative aspect. The research focused on criteria such as: 1) material resources; 2) human resources; 3) the objectives of the stakeholders; 4) the relevance of the subject and the program content; 5) the student’s proactivity, 6) objectivness in learning assessment; 7) the consistency between learning assessment and course objectives; 8) The helpfulness of feedback in the assessment; 9) providing learners with relevant knowledge and skills.

Zineldin and colleagues [19] applied the 5Qs model to find out which factors is important in providing student satisfaction with the quality of the institution university education. This model is built based on the service quality model with 2 the basic factors that make up the overall quality, that is: technical quality (i.e, specifications and standards and operational quality (supply and customer relations). Vazzana and colleagues [20], in applying the 5Qs model empirically, used the factor analysis method to form a model to measure and evaluate the quality of education. This empirical model consists of 5 main aspects: 1) technical, 2) functional, 3) facilities, 4) interactive and 5) environment.

With the focus on the competency of learner, Hanushek & Ludger [21] argued that skills is the key to labor productivity, and will help to boost the growth and development of individual. The difference in skills, which is argumentably the educational output, is the requirement of the labor market both currently and in the future. Consequently, education must prepares the learners with skills that they can used to adapt for new environment and situation in future. Summarily, the quality of education lies not only in knowledge but also in attitudes and skills aspects which constite the competence of learners [22] (Liem & Sigurjonsson, 2011).

* 1. **A conceptual framework for quality education**

From the previous studies, this study proposes the model for the quality assessment using the competency-based approach including seven factors as following:

1. **Lifelong learning**: the ability for continous learning and knowledge update; the ability of effective self-study, actively build learning goals

2. **Creativity and Innovation**: the ability to to explore, discover, dare to test the new ideas, thinking spontaneous, confident

3. **ICT and digitalisation capacity**: ready to apply and use science and technology, knowledge about information technology to solve the problem

4. **Adaptability**: flexibility, work in the multidisciplinary and multiculture environment, application of knowledge learned in new circumstances

5. **Critical thinking and problem-solving skills**: Multi-dimension thinking, the ability to analysis,evaluate, synthesize information. Decision making and problem solving; the ability to work in group and independently.

6. **Foreign language**: The ability to use foreign language (listerning, speaking, reading, writing) in daily work

7. **Organisation and Management ability**: communication skills, stress management, fit effective, compliant principles, talk judge, manage, team job title, beat public quality price work, influence

1. **METHODOLOGY**

First in-depth interviews is conducted with 20 experts representatives of key stakeholder groups (employers, establishments, training, experts in the field) to learn the standards and criteria used for the assessment and measurement of the quality of higher education.The experts are seletected using the 4 criteria: (i) having knowledge and experience in this field (ii) willing to participate in the interview (iii) having time to participate in the interview and (iv) having effective communication skills. The outputs of this stage are rather subjective data.

For analysis the expert interviews, empirical practice shows that with subjective assessment resulting from of experts, using fuzzy logic techniques in analytical modeling often gives better results than objective analysis other techniques based on imprecise data [23]. Therefor, the fuzzy logic math method to build evaluation and measurement model measure the quality of higher education, based on expert interviews until finding expert consensus (inconsistent rate <10%).

Second, this study use the quantitative research approach with primary survey from 60 employers and 600 higher education students, including those studying at university and alumni working at businesses. The research team implemented convenience sampling method. Primary data served for quantitative research will be collected mainly via email. This method is done by sending pre-built questionnaires to interviewees by email. Recipients simply mark their answers and send them back to the survey team. This method has many advantages as the interviewee will have more time and less pressured than the direct survey. Consequently the information collected will be more accurate. Therefore, this method will also give more statistically reliable results compared to other methods. However, the limitation of this method is the low response rate. So sample size that is much larger than usuall is needed. In addition, phone call are made to potential interviewee to ensure that those selected for interviews are willing to respond to emails.

For the questionaire, the choice of objective or subjective scale is one of concern and debate for behavioral research. According to Bertrand & Mullainathan [24], subjective scales are often seen with sceptical. However, in practice, subjective scales are increasingly used in reality, especially economic, education, and behavioral research due to the difficulty of data collection using an objective scale. This is especially true for the issues that the interviewees do not feel comfortable in revealing/responding to surveys [25]. Based on the above analysis, along with the consideration on research ethics, the subjective scale is used in this study. The results of the in-depth interview also shows that 5-levels or 7-levels Likert scale is not suitable since they give embarrassment to the respondents, especially those who first exposure to this scale. Therefore, 11 levels (0: lowest – 10: highest) is used as recommended by [26].

1. **RESEARCH RESULTS**
	1. **Analysis of expert views**

First of all, from the application of fuzzy-logic analysis on the panel interviews of 20 experts, the results show the importancies of the seven factors could be ordered as followed

1. **Lifelong learning**
2. **Creativity and Innovation**
3. **Foreign language**
4. **ICT and digitalisation capacity**
5. **Adaptability**
6. **Organisation and management ability**
7. **Critical thinking and problem-solving skills**

Of them lifelong learning and creativity and innovation are the two most important element which account for 60% weigting in total. Foreign language and ICT are the next two with 15.7% and 10.3% weight respectively. Therefore, altogether, this four elements account for 86% weighting. The rest three element account for only 14%.

It shoud be noted that the result above is from the opinion of the expert on the importancy of the factors. To have empirical results on the actual capacity of the learners, the analysis of survey data from the employers and learner is conducted and present below.

* 1. **Analysis of employers’ view**

The following table give characteristics of the respondent from the employer survey. The allocation is slightly bias toward HCMC and Can Tho due to the convenient sampling and HCMC is the author location base. However, there are also nearly half of the employer locate in other areas of Vietnam, spliting rather equally between the Central (Da Nang) and the North (Ha Noi). This helps to make the sample representative to the Vietnam to some extent. The distribution by gender is rather equally. By role, about three forth of the respondents are midle manager while one fourth has high rank position in the directory board. This is understandable since midle manager are more accessible and readier to answer the survey.

**Table 1. Characteristic of employer survey**

|  | **Frequency** | **Percentage** |
| --- | --- | --- |
| **By Location** |  |  |
| HCMC and Can Tho | 34 | 56.7 |
| Da Nang | 12 | 20.0 |
| Ha Noi | 14 | 23.3 |
| **By Gender** |  |  |
| Male | 29 | 48.3 |
| Female | 31 | 51.7 |
| **By Position** |  |  |
| Board of Director | 16 | 26.7 |
| Midle manager | 44 | 73.3 |

*Source: calculated by the author from the employer survey*

The evaluation of employers on the importancy and actual capacity of the graduated learner is presented in table 2. Please note that the order of the factors follows the importancy from expert reviews, from most improtant to least one. This helps to compare the views between experts and employer.

**Table 2. Evaluation of employers on importancy and capacity of learner**

|  |  |  |  |
| --- | --- | --- | --- |
|  |  | **Importancy** | **Capacity** |
| **Nr** | **Name** | **Mean** | **Mean** |
|  |  |  |  |
|  | **Lifelong learning** | 7.5 | 6.4 |
|  | **Creativity and Innovation** | 8.0 | 6.6 |
|  | **Foreign language** | 7.8 | 6.6 |
|  | **ICT and digitalisation capacity** | 8.2 | 7.2 |
|  | **Adaptability** | 8.1 | 6.5 |
|  | **Organisation and management ability** | 7.7 | 6.0 |
|  | **Critical thinking and problem-solving skills** | 8.1 | 5.9 |

*Source: calculated by the author from the employer survey*

Various interesting points could be identified from the results. First of all, on the importancy, in overall there is the congruent to some extent between the experts’ view and employers’ view. Among the five most important factors from the experts’ view, four are also identified as most important by employers, judged by the mean of score on the importancy, except with lifelong learning. However, unlike the case of experts’ view, the difference between the mean of factors are rather tight. It is also interesting to see that while experts view critical thinking and problem-solving skills as least important, employer evaluate the requirement of this capacity event higher than lifelong learning.

Yet, there are gaps between what required and what learner actual possess in reality as could be seen from the results, and the extent of the gap are rather noticiable. ICT and digitalisation is the one that best match, but still leave the gap about 1 point (on 10 points score). It is alarming that Critical thinking and problem-solving skill is the one that has largest gap (2.1 point) while this is one of the most important factor in the view of employers. One possible explanation is ther impact of the experts’s view on the formation of curriculum and training program, making this factor received less attention both by unviersity and learners.

* 1. **Analysis of learners’ view**

To see how learners evaluate the importancy and actual capacity they possess in regarding these factors, the analysis of the learner survey is done. The following table give the characteristic of the responding from learner survey. The similar bias in term of location is seen here, and they are justified with the same reason and argument as with employer survey. The gender is also rather balance in this survey. However, for the working role, it is clearly that this sample consists mostly staff and those current. However, given the purpose of this survey is to explore the option of learners, this bias should not be the critical problem.

 **Table 3. Characteristic of learner survey**

|  |  |  |
| --- | --- | --- |
|  | **Frequency** | **Percentage** |
| **By Location** |  |  |
| HCMC and Can Tho | 300 | 50.0 |
| Da Nang | 150 | 25.0 |
| Ha Noi | 150 | 25.0 |
| **By Gender** |  |  |
| Male | 294 | 49.0 |
| Female | 306 | 51.0 |
| **By Position** |  |  |
| Staff, others | 584 | 97.4 |
| Manager | 16 | 2.6 |

*Source: calculated by the author from the employer survey*

Table 4 presents the evaluation of learners on the capacity they possess. As in the employer survey, the order of the factors also follows the importancy from expert reviews, from most improtant to least one. This helps to compare the views between experts and learners. To help compare between learners view and employers view, the results of the employer evaluation on the actual capacity in the previous survey is copied here under the heading Employer evaluation

**Table 4. Evaluation of learners on actual capacity**

|  |  |  |  |
| --- | --- | --- | --- |
|  |  | **Learner evaluation** | **Employer evaluation** |
| **Nr** | **Name** | **Mean** | **Mean** |
|  |  |  |  |
|  | **Lifelong learning** | 6.5 | 6.4 |
|  | **Creativity and Innovation** | 6.4 | 6.6 |
|  | **Foreign language** | 6.4 | 6.6 |
|  | **ICT and digitalisation capacity** | 6.5 | 7.2 |
|  | **Adaptability** | 6.2 | 6.5 |
|  | **Organisation and management ability** | 6.0 | 6.0 |
|  | **Critical thinking and problem-solving skills** | 6.1 | 5.9 |

*Source: calculated by the author from the learners survey*

It is very interesting to see that in term of actual capacity, the evaluation by learners and employers are rather matched. The only exception is ICT and digitalisation capacity, which got the much higher score from the employers view. The congruence in the evaluation on capacity here emphasises again the gaps between the output of the current education system and the requirement by the job market. Moreover, it could be seen that the gaps exist in all factors of the competency, thought with different extent.

The results in this section helps to identify some common patterns in the current situation and suggest some consideration for policies.

1. **CONCLUSION**

To summary, two important points can be made from the empirical research results. Firstly, there is the agreement at large extent between expert views and employer views on which factors are important for the learner competency. Four factor could be identified in common: Creativity and Innovation, Foreign language, ICT and digitalisation capacity, and Adaptability. There are difference in the view on Lifelong learning and Critical thinking and problem-solving skills, andwith opposite direction. While expert evaluate Lifelong learning as most important, and Critical thinking and problem solving skills as least imporant, employer has the reversed opinion. They evaluation Critical thinking and problem solving skill as one of the most important ones (along with ICT and digitalisation capacity) and Lifelong learning as least important. Perhaps this different is the reflection of the perspective. Experts may see the importancy in a long-term view where the ability in Lifelong learning should be more demanded and should help learners to sustain what they possess. On the other hand, employers may see the competency requirements in more practical, daily work aspect, where critical thinking and problem solving skill would be more important. Secondly, there are gaps between the requirement and actual capacity of the learner. This is also confirmed by both employer and learner. Moreover, the gaps are noticeable even in the most important factors.

Therefore, to catch up with the requirement by reality, universities should consider reforming the curriculum, training program, teaching method to increase the capacity of learner. Priority should be given to the four most important factor that all agreed by both experts and employer: Creativity and Innovation, Foreign language, ICT and digitalisation capacity, and Adaptability. With the the contradition in the views between experts and employers in regarding to the Lifelong learning and Critical thinking and problem solving skill, the focus on which one could be left to each own university as stratetic choice depending on their own perspective vision about the career path of their learner.

This research is conducted in the context of higher education in general rather than focusing on elearning or distance education environment in particular. However, given the development and transformation of the higher education sector nowadays, the distinction between various teaching and learning environment become blurred. In addition, the scope and objective of this study is to examing the learner competency and the gaps between the requirement and actual capacity of learner rather than on how specific learning environment affects them. This makes the result applicable to a wide range of situation and learning environment, thought admitedly it would requires further studies to put the results into specific practices suitable for elearning and distance education environment.

That is obviously one of the limitation of this study, and also is a suggestion for further studies. There are also others in term of methodology. This research uses the convenient sampling, which slightly bias towards the HCMC area. In addition, the subjective approach is used in designing the survey. Although this has been shown justifiable in the paper, these points should be kept in mind when reading and applying the results. Further studies may want to use different approaches as alternative and robust check for this research./.

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