

Some Solutions for Designing and Organizing A Study Influence Quality Accreditation on the Development of Teacher Training Programs in Vietnam

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Abstract

This study presented the theoretical model applied to the research design with descriptions of the overall sample, survey sample, research location, etc. The main contents of the design and research organization and the results obtained in theory have been applied in practice. The results have fully met the scientific and technical requirements of the research nature of the major Measure and Evaluate in education. At the same time, the results obtained from this article hope to help standardize the toolkit to assess the influence of the accreditation of higher education institutions in general and the pedagogical training program in Vietnam, which is convenient, accurate and objective.

Keywords: accreditation of higher education, assess the influence, measure and evaluate in education, pedagogical training program, research design

1. Introduction

Designing and organizing research is an important step to study in Measurement and Evaluation in Education. Research design and organization is a stage where the author describes how to arrange research contents and uses specific research methods to discover research objects and objects. Making the research object reveals the nature from which to find the rules and connotations of the research object. In this study, the author will describe the construction and explanation of the research model, the development of scientific hypotheses, the structure of the questionnaire, the survey method, the method of data analysis and the analysis of data. From that, a discussion of the results has been obtained.

Accreditation activities of higher education have been established in many countries around the world and have a history of nearly a century. However, the new accreditation was formalized nationwide almost 20 years ago in Vietnam. In 2003, the Ministry of Education and Training established the Department of Examination and Quality Accreditation with the task of managing testing and quality assurance issues from high school to graduate training; Research, developing and supervising the implementation of educational quality assessment and accreditation criteria. This is considered the first step in the formalization of quality accreditation activities in Vietnam (Nguyen Duc Hanh, 2020; Vietnam law library, 2005).

In 2008, the Ministry of Education and Training issued a Decision on regulating the cycle and process of accrediting the quality of educational programs of universities, colleges and professional secondary schools. At that time, quality accreditation of educational programs was considered "an activity to assess the satisfaction of educational program quality assessment standards prescribed by the Ministry of Education and Training for each educational program of a certain training level" (Nguyen Duc Hanh, 2020).

Accreditation of educational programs or accreditation of training programs at any stage aimed at meeting the quality assessment standards of the Ministry of Education and Training. In 2014, the Ministry of Education and Training issued the process and cycle of accrediting the quality of training programs of universities, colleges and professional secondary schools. At that time, the accreditation of training programs has considered "the activity of evaluating and acknowledging the extent to which the training program meets the quality assessment standards

prescribed by the Ministry of Education and Training". There was a change in calling from the educational program in 2008 to the training program in 2014. The regulation of quality accreditation has changed, and in addition to the assessment, have been additional recognition activities (Nguyen Duc Hanh, Pham Van Thuan, Vu Quynh Loan, 2021; Vietnam law library, 2017; Vietnam law library, 2020).

In Vietnam, according to Quality Management Department(Quality Management Department, 2022), there are 56 universities training teachers, including 14 schools specializing in pedagogy, 42 multidisciplinary universities with teacher training; 2 academies; 3 campuses and one affiliated faculty. With 31 university-level training programs; 1 major at the college level, as of December 2020, the scale of formal university training in pedagogy is 52,362 students; the total number of lecturers is 5,866. By the end of October 31, 2021, there are 65 teacher training programs out of 480 undergraduate training programs that have performed self-assessments according to Vietnam's standards. Out of these 65 teacher training programs, the number of training programs that are externally evaluated is 52, and the number of training programs that are recognized to meet quality standards is 48. Four programs are not accredited or have not yet been received. There have been two teacher training programs that have been evaluated and met foreign standards. From theory to the practice of accrediting education shows that: Accreditation of training programs in Vietnam has certain influences on the development of pedagogical training programs, both in terms of the number, quantity and structure of the Pedagogy sector. What is that influence, according to a rule, what is the management solution for state management agencies and how to orient higher education institutions is still a matter of discussion. This work describes and presents the content, methods, design and organization of research on the influence of educational accreditation activities on the development of pedagogical training programs in Vietnam.

2. Research Contents

2.1. Research Design

2.1.1 Define the Population Sample

The list of pedagogical training programs in Vietnam that have conducted self-assessments is announced by the Quality Management Department - Ministry of Education and Training by the end of October 31, 2021 (Table 1).

Table 1. The pedagogical training program has been accredited in Vietnam

Total number of training programs that have been accredited and recognized as meeting standards	Total number of pedagogical training programs that participated in self-assessment	Total number of pedagogical training programs that participated in external assessment	Total number of pedagogical training programs has been accredited and recognized as meeting standards.	Total number of pedagogical training programs has been accredited and recognized as meeting standards of Asean University Network (AUN)	Total number of unrecognized pedagogical training programs
480	65/65 (rate 100%)	52/65 (rate 80%)	48/65 (rate 73,84%)	02/65 (rate 3,07%)	04/65 (rate 6,15%)

(Source: Vietnam Ministry of Education and Training)

According to Table 1, nationwide, 48/65 training programs (accounting for 73.84%) of the Pedagogy sector have been accredited and recognized as meeting standards. This data is selected by the author as the overall sample for research.

2.1.2 Research Sample Design

To determine the survey sample when the population value is known, we rely on Slovin's formula:

$$n = N/[1+N(e)^2],$$

Where n is the sample size, N is the overall size, and e is the standard error (Black, 1999; Guilford, Frucher, 1973). According to Table 2.1, with an overall size of N = 48, if we want the survey results to have 95% confidence and standard error e = 0.05, we will calculate the corresponding minimum sample size of n = 7. The selection of the survey sample n = 10 meets the technical requirements for the minimum sample of the pedagogical training programme. In order to select an accurate representative survey sample that meets technical standards, based on the percentage of lecturers/researchers in the table above, we build a stratified survey sample

corresponding to the number of subjects and survey using a questionnaire on google form application. The samples selected for research are ten training programs in Pedagogy that have been accredited by quality accreditation, including: (1) Informatics Pedagogy; (2) Biology Pedagogy; (3) English Pedagogy; (4) Chemistry Pedagogy; (5) Mathematics Pedagogy; (6) Literature Pedagogy; (7) History Pedagogy ; (8) Physics Pedagogy; (9) Preschool Pedagogy and (10) Primary Pedagogy.

Thus, compared with the overall sample, the research sample is 10/48, accounting for 20.83%. The selection of 10 research samples mentioned above is applied according to the theory of Etikan (Etikan et al., 2016) on convenience sampling. This sample selection method meets certain practical criteria such as ease of access, geographic distance, feasibility at a given time, or sample willingness to participate. Convenience sampling is also sometimes referred to as random because the elements are selected in the sample simply because they were chosen by chance, either in space, time, administratively, or near the place of study data collection is underway. Convenience sampling is also used because of cost reduction, ease of data collection, and ease of subject selection. Convenience sampling will easily access and collect information, and the convenience sampling technique is often applied in quantitative research to achieve the breadth of knowledge and sometimes qualitative research to achieve the depth of information. Although the convenient sampling method also has limitations, due to the characteristics of the research sample spanning three regions of North - Central - South Vietnam, the sampling conditions were not favourable, so the authors used the convenience sampling method.

The author selected the research sample according to the procedure (1) Determine the sample population; (2) Determine the sampling method; (3) Determine the sampling unit and (4) Carry out the sampling. From there, samples were selected at higher education institutions nationwide, including Pedagogical Hanoi University, Thai Nguyen University of Education (Thai Nguyen University), Tan Trao University (Tuyen Quang province), and University of Education (Vietnam National University), Hoa Lu University (Ninh Binh province), Hong Duc University (Thanh Hoa province), Quy Nhon University (Binh Dinh province) and Dong Thap University (Dong Thap province).

2.1.3 Survey Form Design

The author surveyed the number of samples listed in Table 2, including all units/organizations/individuals involved in educational quality accreditation and development of training programs in the Pedagogy sector. The total number of survey samples consisted of 886 people, of which the number of the survey from higher education institutions with training programs in the pedagogy sector that had been conducted quality assessment was the highest with 600/882 people, accounting for 68.02%.

Table 2. The total number of survey samples

Surveyed unit	Number of survey (persons)	Rate (%)
Ministry of Education and Training	20	2,26
08 Higher education institutions have training programs that have been accredited by quality accreditation	600	68,02
Students	150	17,00
Employers	80	9,07
Other stakeholders	36	3,65
Total	886	100%

2.1.4. Research Model and Hypothesis

To build a research model, the article determines variables, including: (1) The independent variable is defined as educational quality accreditation and includes the following factors: Self-assessment, External assessment, Accreditation and certification. (2) The dependent variable is the development of training programmes for the Pedagogy sector, including the following factors: Number of training programs, Quality of training program and structure of training program.

The determination of the criteria under the factors of the independent and dependent variables will be confirmed through factor analysis (Exploratory Factor Analysis - EFA and Confirmatory Factor Analysis - CFA) and rotation matrix analysis. From the above analysis, to consider the influence of educational quality accreditation activities on the development of training programs in the Pedagogy sector, we have identified the following research model:



2.1.5 Research Hypotheses

Within the scope of the article, the author develops the following four research hypotheses for the teacher training sectors:

- (1) Self-assessment has a positive impact and is positively correlated with the quality of the training curriculum;
- (2) External assessment is negatively correlated with the number of training programs;
- (3) Accreditation and issuance of accreditation certificates have a positive impact and are positively correlated with the structure of training programmes;
- (4) Self-assessment has a positive impact and is positively correlated with the number of training programmes. The testing of 4 hypotheses will be shown through Pearson correlation analysis in quantitative analysis.

2.2 Research Organization

2.2.1 Research Methods

- Mixed research methods

The mixed research method is an approach to investigation that involves collecting both qualitative and quantitative data. This integrated data collection involves the use of theories for research. The core assumption of mixed research is that integrating qualitative and quantitative approaches will provide an understanding of a research problem rather than a purely qualitative or a quantitative approach (Creswell, 2014). Also, according to Creswell, the design of mixed research methods has the following four characteristics:

- (1) Qualitative data tends to be open-ended without a predetermined response, while quantitative data often includes closed-ended answers;
- (2) How to integrate qualitative and quantitative data that can use to check the accuracy and validity of other data;
- (3) A database can lead to better tools when the tools do not fit the population pattern;
- (4) A database can be built on top of another, and a reciprocal database can replace a database during longitudinal research.

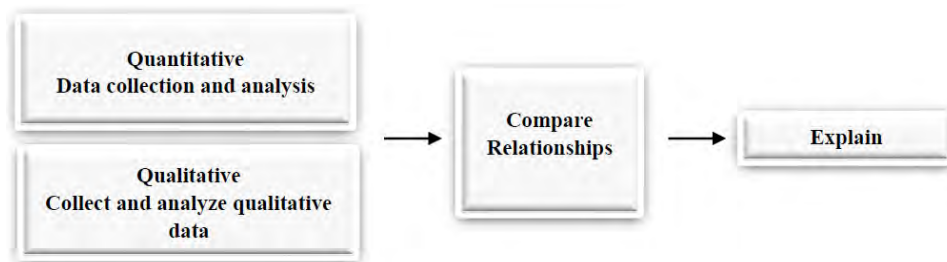
The Creswell method of association also has four types of design: (i) Convergent parallel mixed method design: this approach collects both quantitative and qualitative data, analyzing them separately differentiate and then comparing the results to see if the findings confirm or not confirm each other; (ii) Design of sequentially explanatory mixed methods: the explanatory sequential combined methods approach is a design in the mixed methods that attract individuals with a strong quantitative background from the relatively new field with qualitative approach; (iii) Exploratory sequential mixed method design: the exploratory sequential mixed method approach is started by exploring with qualitative data and analysis, then using the findings in quantification stage. The database in the quantitative phase is built based on the results of the qualitative database. The purpose of this measurement is to see if data from a few individuals can be generalized over a large population sample and (iv) Advanced mixed method design: a combination of mixed methods of converging parallelism, a mixture of sequential explanatory and sequential exploratory methods. This design requires the researcher to have a solid foundation of the above three basic things.

The mixed research method demonstrates the combined strength between quantitative and qualitative research by taking advantage of the advantages and limitations of quantitative or qualitative research. At the same time, it also provides more evidence to increase persuasive arguments from different perspectives. Quantitative and qualitative data are collected for statistical and subject-based analysis to clarify the research phenomenon. Therefore, the mixed research method with its advantages is very suitable and used in this study. This is the current preferred research method in the study of social sciences, education, health, economics etc.

Among the four types of mixed research method design, the converging parallel association research method is the most familiar among the basic and advanced combined research methods. This is a type of mixed methods design in which researchers converge or combine quantitative and qualitative data to provide a comprehensive analysis of a research problem.

The data collected by parallel combined research converging in both qualitative and quantitative forms performed by the author also helps the author save time and research costs when the overall sample is experienced across the country. After analyzing quantitative and qualitative data, information is integrated to interpret the overall results. This converging parallel design further explains or explores contradictions or inconsistent findings.

Process flow chart according to Convergent Parallel Research Method (Creswell, 2014)



- Documentary research methods

A systematic literature review is necessary to ensure a good research paper. The organization of information for use in research makes it easier for researchers to identify and organize data. Creating a literature review will become less complicated and easier to understand for the study (Creswell, 2014).

- Descriptive statistical analysis

Descriptive statistics are coefficients that succinctly describe or summarize a given data set, which may be representative of the whole or a sample of an overall. Descriptive statistics are divided into concentration trend measures and volatility measures. Measures of trend focus have mean, median, and metric, while measures of volatility include standard deviation, variance, minimum and maximum values, and sharpness.

Descriptive statistics help describe and understand the properties of a particular data set by giving short summaries of the data's samples and parameters. The most common type of descriptive statistics is the concentration trend parameters, including the mean, median, and mode, which are used at almost all levels of mathematics and statistics.

The mean is calculated by adding all the numbers in the data set and then dividing it by the number of data in the set. For example, the sum of the following data set is 20: (2, 3, 4, 5, 6). The mean is 4 (equal to 20/5). The metric of the data set is the value that occurs most often, and the median is the number in the middle of the data set. In addition, there are less common but still very important descriptive statistics. Descriptive statistics are used to bring complex quantitative information of a large data set into simple descriptions.

Parameters in Descriptive Statistics: All descriptive statistics are measures of concentration trends or volatility, also known as measures of variability dispersion of data. Focused trend measures determine the mean or middle value of data sets. Meanwhile, volatility metrics focus on data dispersion. Both parameters can use charts, tables or overview discussions to help understand the nature of the data being analyzed.

Within the scope of this article, descriptive statistics are used with such contents as age, academic degree, academic rank, work experience, the working agency of the survey subjects, and statistical methods description for the sample selected for survey and investigation (percentage) and descriptive statistics for the development of training programs in pedagogy in recent years (percentage).

2.2.2 Research Process

The study was carried out according to the following three basic steps:

Step 1. Theoretical overview: Collecting and searching documents related to educational quality accreditation activities and development of pedagogical training programs; Analysing and synthesising documents; Proposing research model and theoretical analysis framework.

Step 2. Preliminary research:

(1) Interviewing experts and completing the research model: Collecting opinions from 10 experts from the

Ministry of Education and Training; Center for Accreditation of Education (Vietnam National University) to interview about educational quality accreditation activities and development of training programs for the Pedagogy sector; ask for their opinions on the proposed research model, questionnaire; absorb their ideas and perfect the research model.

(2) Design the preliminary survey: Determine the structure, composition, content of the preliminary survey, factors, variables, and items and shape the survey form; Design the preliminary survey on the google form.

(3) Interviewing experts and completing survey forms; Consult with experts about the preliminary survey, collect their opinions, adjust the content and form of the questionnaire and complete the survey.

(4) Preliminary research: Conduct a preliminary investigation and survey on the initial sample of 86 people, including educational administrators, lecturers and related people.

(4) Correction of the second survey: After the preliminary research results are available, the author evaluates the survey form and compares it with the default technical criteria. The product of this step is the official survey.

(5) Official survey form: The form is adjusted, revised and aligned according to the sample form and designed on Google for online investigation and survey.

Step 3. Formal survey:

In this step, the author performs the following seven tasks:

(1) Formal investigation: The author identifies an official survey and survey sample of 882 people via Google form. The output of this task is shown in the excel file and is called the original dataset.

(2) Reliability analysis: Check reliability through the Cronbach Alpha index.

(3) Exploratory Factor Analysis (EFA): Testing of indicators; KMO (Kaiser Meyer Olkin) coefficient; Bartlett test; Total variance extracted; Eigenvalues Index; Result of the rotation matrix of the scale.

(4) Confirmatory factor analysis (CFA): The next step of the EFA, including design to identify independently, test, and adjust measurement models. The purpose of CFA is to establish well-fit measurement models that can be used to test structural models.

(5) Test for group differences (correlation, T-Test and ANOVA - *Analysis of variance*): Used to test whether or not there is a difference between the mean of a single variable and a specific value, with assumptions the original theory states that the mean to be tested is equal to some particular number. This method of the T-Test is used for distance or scale distortion. We will discard the original hypothesis when testing for the Sig. index less than the confidence level (0.05).

Pearson correlation analysis: Inspection the Pearson correlation coefficient to test the linear relationship between independent variables (knowledge management) and dependent variables (results of scientific research activities in universities). Pearson correlation coefficient (r) will take the value from +1 to -1. The condition for meaningful correlation is the value sig. <0.05. Pearson correlation r has a value ranging from -1 to 1.

Multiple regression analysis: To predict the value of one response variable based on the values of two or more other regressors. The variable we want to predict is the outcome of university scientific research activities.

(6) In-depth interview after quantitative research: To consult experts and relevant people to comment on quantitative research results, compare with qualitative study and deepen the results research.

(7) Comment on results and propose solutions and recommendations: To summarize research results; compare the results with the original expectations and theoretical models; propose solutions and recommendations to universities in knowledge management.

2.2.3 Data Collection

Data is collected over the same period:

(1) Collecting quantitative data: Quantitative data will be collected through a questionnaire for the following subjects: leaders and specialists of departments and agencies of the Ministry of Education and Training; leaders, lecturers, researchers and support staff; learners (students, trainees and researchers); Employers and stakeholders

(2) Collecting qualitative data: qualitative data will be collected through semi-structured interviews with lecturers and researchers and semi-structured interviews with managers.

(3) Secondary data collection: identified from sources that can be collected from the outside (website, library, internet), and the internal source is the higher education institution. Then conduct a secondary data study,

determine the value of the data, and compare it with the primary research objective.

(1) Collecting quantitative data: Quantitative data will be processed by Excel and SPSS software. Types of descriptive statistical analysis will be used during the test. Inferential statistical tests in the research hypothesis. Use t-test or analysis of variance.

(2) Qualitative data collection: Qualitative data will be processed by AMOS software. Use comparative analysis methods, inductive reasoning, data clustering, data reporting, and theory development.

(3) Secondary data collection: The collected secondary data is used to compare information and serve as a basis for further analysis and interpretation of research results.

3. Conclusion

Within the scope of researching and proposing some theoretical solutions on "Designing and organizing research on the influence of educational quality accreditation activities on the development of pedagogical training programs", the author has the study design presented with descriptions of the overall sample, survey sample, study site, etc.

The main contents of the research design and organization and the results obtained in theory. The theory has been applied in practice, and the results have fully met the requirements of science and technology by the research nature of the major of Measurement and Evaluation in education.

At the same time, the results obtained from this article hope to help standardize the toolkit to assess the impact of quality accreditation activities of educational institutions in general and the training program in the pedagogy sector in particular in Vietnam.

Declaration of Interests

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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