

## Designing and validating the quality management model of teaching activities for university faculty members

Majid Darabi<sup>1</sup>

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### Abstract

The main purpose of this article was to design and validate a model of quality management of teaching activities for university faculty members. This research was done in the framework of qualitative and quantitative approach. In the qualitative phase, 12 university education experts were selected purposefully and with a theoretical sampling strategy and were interviewed in a semi-structured manner. In the quantitative phase, the statistical population was the faculty members of Shahid University (N= 268)). By applying Cochran's sampling formula, 154 people were selected as a sample by stratified proportional sampling method. Thematic analysis technique was used to analyze the data and to validate the proposed model, Structural Equation Modeling (SEM) with Partial Least Squares (PLS) approach was used. After the implementation of the content of the interviews and their preliminary analysis, the primary codes or concepts were identified and placed in certain categories. For each class, a title that includes all the codes of that class was chosen. As a result of this study, the model of quality management of teaching activities for university faculty members was determined, which, according to academic research experts, it included four dimensions (Background and context, planning, implementation and evaluation, and improvement) and 30 components. The results of quantitative data analysis showed that the research sample evaluated the model of quality management of teaching activities for university faculty members at the desired level and the existence of these dimensions and their related components have been recognized as important. The validation of the designed model showed that all observable variables have appropriate factor loading on their latent variable and according to the PLS indicators, they have the necessary usefulness to measure their corresponding current variable. Also, the findings of the goodness of fit test and other model quality indicators showed that the proposed model of the quality management model of teaching activities for university faculty members has the necessary quality and fit.

**Keywords:** university, faculty members, teaching, quality management, model.



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1. Doctoral in Educational Administration, University of Tehran, Tehran, Iran. *Corresponding author:* ✉ Majid.Darabi12@gmail.com

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## **Introduction**

Universities and higher education institutions as the most important centers of thought and science production, have always been responsible for various tasks and roles, and day by day these roles have become more complex, heavier and more variable than in the past (Marufi, 2007). On the other hand, the higher education system is facing many issues such as the number of educational institutions, increasing the number of students, a large number of unemployed graduates (Masoumi Fard, 2013); Dissatisfaction of students and graduates with the low quality of teaching and evaluation processes; inability of education to shape independent and active learning {in students}, non-participation {of students} in the learning process, non-transparent standards (Khoran, 2013); reduction of financial resources and pressure from the society to be responsible and accountable (Mohammadi, 2005); inability to produce theoretical knowledge, inapplicability of university education, lack of proper relationship between universities and other social sectors, neglecting some important functions of universities, multiplicity of decision-making centers and the existence of multiple trustees (Marufi, 2007). Undoubtedly, such issues have affected the optimal functioning of universities and stall the expectations and expectations of their performance especially in the field of quality. In order to improve the quality of activities of universities and higher education institutions, the issue of quality management is placed in the serious work order of the government, institutions, scientific groups and individual programs (Khoran, 2013). And its implementation has become one of the main challenges facing university systems (Rahmani & Fathi Vajargah, 2009) because universities and higher education institutions need quality management for greater efficiency and quality improvement (Trow, 1994). There is still no agreement on how to manage quality within the higher education system. Perhaps one of the main reasons for this is that the word quality is *per se* a complex and multifaceted concept (Becket & Brookes, 2006). According to Robert Bernbaum, and multi-valued (Ghourchian, 1995) and according to Harvey & Green (1993), a stakeholder-oriented concept and a non-unitary, unstable and multifaceted concept has contradictory meanings including both strategic and operational concepts; both a practical idea and an inspirational idea; both a relative concept and an absolute concept; it defines it both by the organization and by the customers both about the means and about the result. It is both about systems and people and... (Dohirti, 2005; cited in Fathi Vajargah and Mohammad Hadi, 2012: 12).

Unfortunately, it has not been considered that in universities, the subject of planning, control and continuous quality improvement, there are not enough mechanisms to improve quality (Hosseini, 2014). Today, the quality of universities, especially in educational missions, has become a concern of

officials at different levels. The concern for quality in teaching activities at the macro level of the higher education system has been temporary. In fact, it can be said that currently the main problem in the country's universities in the field of teaching activity is the ambiguity and uncertainty of how to manage and guide the quality of this activity. Therefore, the lack of a suitable and comprehensive model has made it difficult to manage the teaching activities of university faculty members (Khadive & Allahverdi Khan Waziri, 2015). And it has made it difficult to achieve the mission of the university, which is on the shoulders of the faculty members of the universities. Therefore, in the scientific society where quality is a strategic issue (Farasatkah, 2007) it is not appropriate to carry out various actions and activities, especially the key teaching activities of faculty members, without a specific plan and framework. Based on this, this research seeks to design and validate a quality management model for the teaching activity of faculty members in universities.

## **Methodology**

This study is an applied research in terms of its purpose and a qualitative research with Grounded Theory approach in terms of data gathering. For quality management, GT approach as a suitable tool for the study of this unknown phenomenon was employed (Glaser, 1992). Grounded theory is a general method of analysis utilized by researchers aiming to generate an inductive theory in a real-life field (Glaser, 1992). In this research, the emergent GT approach has been used. Research population included all academic and scientific experts of Iranian higher education system who had more knowledge about the subject of the research. They were identified and selected using a non-probability and purposeful sampling method. To conduct the interview, the interview questions were first designed and then the criteria for selecting the interviewees were determined. The statistical population of the research in the quantitative part includes all faculty members of Shahid University. For this purpose, in order to validate the model obtained in the qualitative section, a sample was randomly selected from among the statistical population in question using stratified random sampling method.

## **Findings**

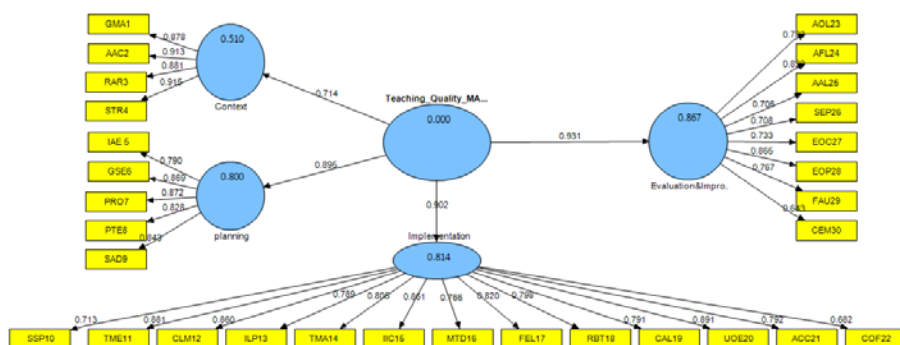
Dimensions and components of quality management of teaching activities of faculty members in universities: According to the findings of this study, the most important dimensions of quality management of the teaching activities of faculty members include dimensions of the background and context, planning, implementation and evaluation and improvement.

Background and context include components, mission goals and approach, atmosphere and culture, rules and regulations and structure; planning includes

components; Knowing the audience and their needs and expectations, formulating goals, formulating a program, preparing the teaching environment and equipment, and specifying and determining the duties of faculty members. Implementation includes components; determining the starting point of teaching, teaching methods, class leadership and management, implementing the lesson plan, time management, initiative and innovation in the class, managing differences, stimulating and facilitating learning, research-oriented teaching, communication and interaction, using equipment and facilities, attracting participation and cooperation in the classroom and the cooperation of academic staff members together; evaluation and improvement includes the components of learning assessment, assessment for learning, assessment as learning, assessment of students from the professor, evaluation of colleagues and experts from the professor, evaluation of the program implemented by the professor, feedback and use of it, and continuous empowerment.

How valid is the model of quality management of the teaching activity of faculty members in Shahid University?

The following diagram shows the factor loadings related to the quality management measurement model of academic faculty members.



**Diagram 1: Test of the exploratory model of quality management of academic faculty members**

### First Order Confirmatory Factor Analysis

In Table 1, factor loading values and t-statistics for the indicators of each structure are reported.

**Table 1: Factor load values for the indicators of each factor in the form of teaching quality management measurement model**

Result	Sig.	Statistics T	factor load	Components	Dimensions
Indicator confirmation	0.01	45.88	.88	Goals, mission and approach	Background and context
Indicator confirmation	0.01	63.69	.91	Atmosphere and culture	
Indicator confirmation	0.01	56.07	.88	Rules and Regulations	
Indicator confirmation	0.01	91.59	.91	Structure	
Indicator confirmation	0.01	28.41	.79	Knowing the audience, needs and expectations	planning
Indicator confirmation	0.01	35.32	.87	Establishing goals	
Indicator confirmation	0.01	38.35	.87	Develop a program	
Indicator confirmation	0.01	25.10	.83	Provision of training environment and equipment	
Indicator confirmation	0.01	26.20	.84	Specifying and determining the duties of the academic staff	Performance
Indicator confirmation	0.01	16.82	.71	Determining the starting point of teaching	
Indicator confirmation	0.01	46.59	.88	teaching methods	
Indicator confirmation	0.01	31.78	.86	Leadership and classroom management	
Indicator confirmation	0.01	27.80	.79	Implementation of the lesson plan	
Indicator confirmation	0.01	30.29	.80	Time Management	
Indicator confirmation	0.01	45.79	.86	Initiative and innovation in class	
Indicator confirmation	0.01	19.64	.77	Managing differences	
Indicator confirmation	0.01	27.44	.82	Facilitate learning	
Indicator confirmation	0.01	18.61	.80	Research-oriented teaching	
Indicator confirmation	0.01	24.74	.79	Communication and interaction	
Indicator confirmation	0.01	53.40	.89	Use of equipment and facilities	
Indicator confirmation	0.01	20.20	.79	Participation and cooperation in the classroom	

<b>Result</b>	<b>Sig.</b>	<b>Statistics T</b>	<b>factor load</b>	<b>Components</b>	<b>Dimensions</b>
Indicator confirmation	0.01	15.83	.68	Cooperation of faculty members together	Evaluation and improvement
Indicator confirmation	0.01	24.53	.78	Measuring learning	
Indicator confirmation	0.01	26.55	.83	Measurement for learning	
Indicator confirmation	0.01	16.93	.71	Assessment as learning	
Indicator confirmation	0.01	13.05	.71	Student evaluation of the professor	
Indicator confirmation	0.01	20.50	.73	Evaluation of colleagues and experts from the professor	
Indicator confirmation	0.01	40.84	.87	Evaluation of the program implemented by the professor	
Indicator confirmation	0.01	18.87	.77	Feedback and benefit from it	
Indicator confirmation	0.01	10.99	.64	Continuous empowerment	



All the items of the teaching quality management structure have a suitable factor loading (close to and higher than 0.7) on the related variable, which are significant at the level of 01, considering the t value corresponding to each factor loading. As a result, it can be said that these components have the necessary accuracy to measure their respective structures. Second order confirmatory factor analysis.

The findings in Table 2 show that the factor loading values are significant at the 0.01 level.

In other words, the t value corresponding to each factor load is greater than its critical value (2.58) at the 0.01 level. As can be seen in the table below, R<sup>2</sup> all the measurement models is suitable and significant.

**Table 9. The results of the second-order confirmatory factor analysis for the teaching quality management construct**

R <sup>2</sup>	Sig.	The value of t	factor load	construct
.51	0.01	16.29	.71	Background and context
.80	0.01	58.28	.89	planning
.81	0.01	78.87	.90	Performance
.87	0.01	100.13	.93	Evaluation and improvement
0.74				AVE
0.935				$\rho$
0.915				$\alpha$

**Goodness of fit:** Tenenhaus et al. (2005) have provided an index called goodness of fit to measure the entire model. This index considers both measurement and structural models and is used as a measure to measure the overall performance of the model. The range of this index is between zero and 1; Values of 0.01, 0.25 and 0.36 have been defined as weak, medium and strong respectively for GOF. The value of this index in this study is equal to 0.712 which is more than 0.36. Therefore, the overall performance of the quality management model for the education of faculty members is evaluated as strong.

## Discussion

The present study was conducted with the aim of providing a model for quality management for the teaching activities of faculty members in universities.

For this purpose, in the first step the researcher conducted a systematic study of the literature related to the subject under study. After examining and



analyzing the theoretical and experimental bases of the research, the model framework was designed. Based on the results from the experts' point of view, the dimensions and components of the quality management of the teaching activities of the faculty members including the dimensions of the background and context, planning, implementation and evaluation and improvement were obtained. Dimension and context include components; Mission and mission, culture and context, rules and regulations and structure; the dimension of background and context have also been examined in various researches including Jamshidi Kuhsari research (2010) in examining the requirements for the establishment of a quality management system; Quality infrastructures creating a quality culture and suitability of organizational structures; Fitrat et al. (2004) in the design of faculty members' performance management model, rules and regulations, structure and culture; Mojtazadeh et al. (2018) in the validation and quality assurance model of the higher education system, quality discourse category; Abili & Jabari, (2017) in designing the audit pattern of teaching and research processes, structural requirements; Khedevi et al. (2007) in the effective investigation on the quality of education and teaching, intra-structural factors and extra-structural factors; Mohammadzadeh et al. (2006) determines the structure of quality assurance and express procedures for the culture of quality to become common in higher education; Mohammadi et al. (2013; b) in the design of the ideal model for higher education quality audit; mission, organizational goals; Masoumi Fard (2012) in the evaluation of quality and qualitative excellence in virtual universities, to the indicators of strategies, policies and general goals, which have a significant effect on the quality of the university; Resino (2011) in the implementation of quality management in higher education; organizational structures, responsibilities, procedures; Vakaterman (2007) in the framework he provides for the implementation of comprehensive quality management in higher education programs at Wellington University, to the leadership and culture of quality and the development of cooperation between the internal and external factors of the university.

The planning dimension includes components; it is getting to know the audience and its needs and expectations, formulate goals, develop a lesson plan/plan, prepare the educational environment and equipment, and determine the teacher's duties. The dimension of planning has also been examined in various researches including Hosseini (2014) in the design of the model for guaranteeing the quality of education, goals and developing curricula; Fitrat et al. (2014) in designing the performance management model of faculty members to the programs and responding to the needs of Masoumi Fard (2014) in evaluating the quality and qualitative excellence in virtual universities, to the goals, Sharifian et al. (2014) in explaining the teaching

indicators. Effective in universities, they refer to the category of lesson design and preparation.

The implementation dimension includes components; Determining the starting point of teaching, teaching methods, leading and managing the class, implementing the lesson plan, time management, initiative and innovation in the class, managing differences, stimulating and facilitating learning, communication, using equipment and facilities, attracting participation and cooperation in the classroom and the cooperation of the professors. The implementation dimension has also been examined in various researches including Sharifian et al. (2014) in explaining the indicators of effective teaching in universities, lesson presentation, classroom management, human relations; Jafari Kakalki (2011) in the study of the influencing factors on the quality of academic faculty members' teaching, new teaching strategies, continuous evaluation, supporting students' teaching activities, the use of information technology, Fitrat et al. The aspects of the faculty members' activities such as the educational, professional dimension and the teaching-learning process (2016) in identifying, analyzing and prioritizing the factors affecting the quality of education in higher education, the components of the teacher's teaching method, the organization of teaching content, facilities and equipment and New technologies have been investigated. And the assessment dimension includes the components of learning assessment, assessment for learning, assessment as learning, student assessment of the teacher, colleagues and experts' assessment of the teacher, evaluation of the program implemented by the teacher, feedback and use of it, and continuous empowerment.

The dimension of evaluation and improvement in various researches, including Jafari Kakalki (2011) in the scales of the use of factors affecting the quality of teaching of academic board members, continuous evaluation; Mohammadi et al. (2013) in the design of the optimal quality audit model of Iran's higher education, to the quality management of the quality assessment and quality assurance system; Sharifian et al. (2006) in explaining the indicators of effective teaching, to evaluate students' academic performance; Marufi et al. (2008) in the evaluation of the quality of teaching in higher education, to different dimensions and aspects in the evaluation of the quality of teaching, the use of other appropriate resources and tools to collect information in addition to the student evaluation questionnaire; Jamshidi Kohsari (2010) in the study of the requirements of the establishment of the quality management system for the continuous improvement of the processes; and Hall (2015) in examining and explaining the perception of faculty members in relation to quality management and quality in higher education, have pointed to the effectiveness of the activities of faculty members.

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