
Designing a Model of Professional Competence of Managers Based on the Development of Creativity and Innovation in Primary Schools

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Abstract

Purpose: The aim of this study was to design a model of professional competence of principals based on the development of creativity and innovation in primary schools.

Methodology: The method of the present study was a combination of exploratory type in which the qualitative method was performed using the underlying theory and the quantitative method was performed using the structural equation model. The statistical population of the study was in the quantitative part of all primary school principals in Tehran in the academic year 2019-20 and in the qualitative part of all experts in the field of education in Tehran. Sampling in the quantitative part using stratified sampling method 196 managers of 22 districts of Tehran were selected and in the qualitative part 17 people were selected using purposive sampling with emphasis on the principle of theoretical saturation. The research tools in the qualitative part were in-depth semi-structured interviews with 5 questions and in the quantitative part of the researcher-made questionnaire to assess the components of manager's professional competence. Since the content of the questionnaire shows the components that have the highest coefficient of importance, according to the approval of the questions by experts, the validity of the content of the questionnaire has been confirmed. The total alpha coefficient of the design questionnaire identifying the pattern of professional competence of principals based on the development of creativity and innovation in primary schools is 0.937 or 94% that the tool used has a good reliability. Data were collected in the qualitative section by grounded theory method and then analyzed by testing structural equation modeling using Smart PLS software.

Findings: The results of exploratory and confirmatory factor analysis showed that the components of motivation, management, technology, attitude-behavioral, cognitive-skill components and indicators of professional competence of principals are based on the development of creativity and innovation in primary schools. Also, the model fit indices that were performed using the structural equation model showed that the research data had a suitable fit with the model of professional competence of principals based on the development of creativity and innovation in primary schools.

Conclusion: Based on the results of the research, attracting and employing competent managers, especially in the critical elementary school, requires the creation of a human resources system in which meritocracy prevails.

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1. Introduction

Today we need creative ideas and thoughts to solve the problems we face in life; Creativity is a concept of individual differences that explains why some people have a higher potential for creating new solutions to old problems than others, and this leads us to change methods in ways that we previously thought, And is considered as a driving force for change (Hennessey & Amabile, 2010). In the past, attention to vertical development was limited to managers and supervisors; in such organizations, successful managers were promoted from the level of supervisor to executive director. Management science today seeks to empower and enhance professional competencies to pay attention to the development and growth of managers in all dimensions; Developmental assessment is considered as an important part of the program for developing the skills of managers in the organization and managers who have the necessary knowledge and skills in the work are considered as professionally qualified managers. The expansion of educational organizations has doubled the need for skilled and capable managers in the application of specialized knowledge and experience; educational environments need managers who can make the right decisions, provide creative solutions to problems, and be accountable for their work (Farzaneh, Pourkarimi, Nowruzi, 2015).

In the 21st century, the world has moved towards specialization and central competence, and other popular skills can no longer meet the diverse and complex needs of education today. In education management, the competence of managers is professionally important because without reliance and relying on such capabilities is futile and sometimes harmful. Vocabulary competence is usually referred to as appropriate for the purpose, appropriate and sufficient, sufficient or in the true sense of quality, acceptable or in the sense of capable, and in a case sufficiently prepared to enter a particular profession and directly related to having a certificate Or has specific endorsement in that profession (Vila et al, 2014). In any work, we say to someone who has the necessary ability and ability to do that work, in which he is competent; Competence has three pillars: the pillar of cognition, the pillar of tendency and the pillar of skill. Professional competence is a set of competencies including knowledge, skills and attitudes that are determined in accordance with each job or profession and are acquired by the individual in educational and experimental processes in educational, work and community environments and can be turned into professional behavior. Be actualized and considered as a competency (Mohammadian, Zaheri Abdohavand, 2014).

The present age, in addition to creativity, is called the age of rapid and accelerating change; Various organizations, including educational organizations, are also in the path of these changes; In order to survive, these organizations have to adapt to these rapid and unprecedented changes and upgrade their hardware, manpower and software in parallel with changes (shah, 33). Therefore, in order to improve the level of productivity, in addition to considering other characteristics, having expertise and competence should be one of the basic principles in selecting individuals in organizing managers. It should be noted that attracting and employing competent managers, especially in the critical elementary stage, requires the creation of a human resources system in which meritocracy prevails. The tool for skills and increasing staff productivity is education, which is based on an approach based on the development of creativity and innovation, which can help increase the human and organizational capacity of primary schools and the quality of its output, according to The gap in the theoretical and practical model of professional competencies related to creativity and innovation in organizational managers, and with the aim of providing an effective model for selection, in-service training and evaluation of creative professional performance of managers, the main issue of the present study is that professional competencies What is necessary to achieve the development of creativity and innovation in primary school principals and what are the dimensions and structures ?The education organization in general and primary schools in particular always need to create a platform for creative thinking in the young generation due to rapid technological changes, and this owes much to the professional competencies of educational administrators and officials (Bairauskiene, 2017).

Lack of creativity in managers of organizations can have many negative consequences such as lack of understanding of the cause of problems, inability to choose solutions and reduced ability to resolve organizational conflicts (Vila et al, 2014) On the other hand, professional competence of managers can largely organizational health indicators. Affect schools, including competent, capable, and motivated graduates, and the quality of output in terms of production and services for countries and the return on investment in education in the coming years (Anderson, 2014). Numerous research evidences show that lack of creativity and innovation in the management of the organization and the organizational set is associated with some problems such as job dissatisfaction and reduced productivity and achieving organizational goals (Maija, et al, 2017; Luo, Chang, 2011; Chatzoglou & Chatzoudes, 2018).

According to the available evidence, the development of creativity and innovation in managers requires certain professional competencies that should exist in managers or should be created as much as possible. Therefore, the necessity, success in applying the methods and techniques of creative professional competencies in managers can be effective in selecting the right managers and with a fundamental emphasis on up-to-date and innovative insights, beliefs and goals that the organization seeks a factor for return on investment, In education and the prosperity of production and the economy of the country and the all-round growth of the scientific and moral dimensions of the staff and students of primary schools. Bakhir (2016) in a study entitled The study of the impact of professional competencies of school principals on their job performance, mediated by the creativity of principals (case study: education principals of Taybad city) on all principals of education schools in Taybad city (male and female) The results showed that the professional competencies of school principals affect their job performance, and also the creativity of school principals has a mediating role in the impact of professional competence on their job performance. Hosseini, Danaei Farda (2011) In a study entitled Designing and evaluating the causal model of creativity and innovation of educational administrators in Tehran, which was conducted on 308 male and female principals of all schools in Tehran, the results showed the status of creativity and innovation of administrators in It was moderate and organizational culture, organizational climate, knowledge management and organizational learning were also moderate, organizational culture had the greatest impact on managers' creativity and organizational climate had the least impact. Culture, atmosphere, organizational learning and knowledge management had a positive and direct effect on managers' creativity. Ali model also had a good fit, so it can be said that in order to increase creativity and innovative competencies in educational managers, efforts should be made to strengthen organizational culture, organizational climate, organizational learning and knowledge management. This research only deals with organizational barriers and does not examine individual factors. However, the question of the present study is what is the appropriate professional competency model for principals based on the development of creativity and innovation in primary schools?

2. Methodology

Given that the purpose of this study is to design a model of professional competence of principals based on the development of creativity and innovation in primary schools. And since in applied research, the main goal is not just scientific discovery, but to test and study the application of knowledge, so the method of this research is applied in terms of purpose and was done by exploratory method. The statistical population of the research in a small part of all school principals Elementary in Tehran in the academic year 2019-20 and in the quality department was all experts in the field of education in Tehran. Sampling in the quantitative part using stratified sampling method 196 managers of 22 districts of Tehran were selected and in the qualitative part 17 people were selected using purposive sampling with emphasis on the principle of theoretical saturation. The research tools in the qualitative part were in-depth semi-structured interviews with 5 questions and in the quantitative part of the researcher-made questionnaire measuring the components of managers' professional competence. Since the content of the questionnaire

shows the components that have the highest importance, according to the confirmation of the questions by the experts, the validity of the content of the questionnaire was confirmed. The total alpha coefficient of the design questionnaire identifying the pattern of professional competence of principals based on the development of creativity and innovation in primary schools was 0.937 or 94% that the tool used had a good reliability. Data were collected in the qualitative section by grounded theory method and then analyzed by structural equation modeling test using Smart PLS software.

3. Findings

The number of subjects in this study included 196 people. Their demographic characteristics were as follows: Gender: A study of the gender of the selected respondents in the sample shows that 64.3% of the respondents (126 people) are female respondents and 35.7% of the respondents (70 people) are male respondents; Therefore, female respondents are more frequent in this study. Age: The study of the age of the selected respondents in the sample shows: 23.0% of the respondents age (45 people) between 20-30 years, 44.4% of the respondents age (87 people) between 31-40 years, 28.1% of the respondents age (55 people) between 41-50 years and 4.6% of respondents (9 people) are 50 years and older. Level of education: The study conducted on the level of education of the selected respondents in the sample shows: 11.7% of the respondents (12 people) have a diploma, 46.9% of the respondents (92 people) have a bachelor's degree, 40.3% of the respondents (79 people) have a master's degree and 1.0 Percentage of respondents (2 people) have a doctoral degree. Service history: A survey of the service history of selected respondents in the sample shows: 30.6% of respondents (60 people) under 5 years, 35.7% of respondents (70 people) between 6 to 10 years, 11.2% of respondents (22 people) between 11 to 15 Year, 13.8% of respondents (27 people) are between 16 and 20 years old, and 8.7% of respondents (17 people) are 21 years old and older. The design of identifying the model of professional competence of principals based on the development of creativity and innovation in primary schools from the perspective of experts and pundits, from 8 dimensions (resulting from open, pivotal and selective coding) was reviewed and evaluated. Experts and experts were brought into different dimensions and components.

Table1. Summary of expert opinions of elites and experts

Component	Degree of importance / expert opinion									
	10	9	8	7	6	5	4	3	2	1
special skills	6	3	2	3	2	1	-	-	-	-
At the suggestion of experts, this component was renamed "Cognitive-Skills".										
Specialized knowledge	10	9	8	7	6	5	4	3	2	1
	8	2	2	2	2	1	-	-	-	-
At the suggestion of experts, this component was renamed "Attitude-Behavioral".										
Managing the development of managers and employees	10	9	8	7	6	5	4	3	2	1
	5	3	3	2	1	2	1	-	-	-
At the suggestion of experts, this component was renamed "managerial".										
Legal problems	10	9	8	7	6	5	4	3	2	1
	-	-	-	-	-	-	3	3	5	6
At the suggestion of experts, this component was removed and replaced by this component; Two components: "motivation" and "technology" were added to the components.										

In the end, at the suggestion of experts and specialists, the component of "specialized skills", this component was renamed to: "cognitive-skill", the component of "specialized knowledge", this component was renamed to: "attitude-behavior", the component of "management" "Development of managers and employees", this component was renamed: "managerial", and finally, the component "legal problems" was removed and replaced by this component; Two components: "motivation" and "technology" were added to the components and approved by experts and thinkers.

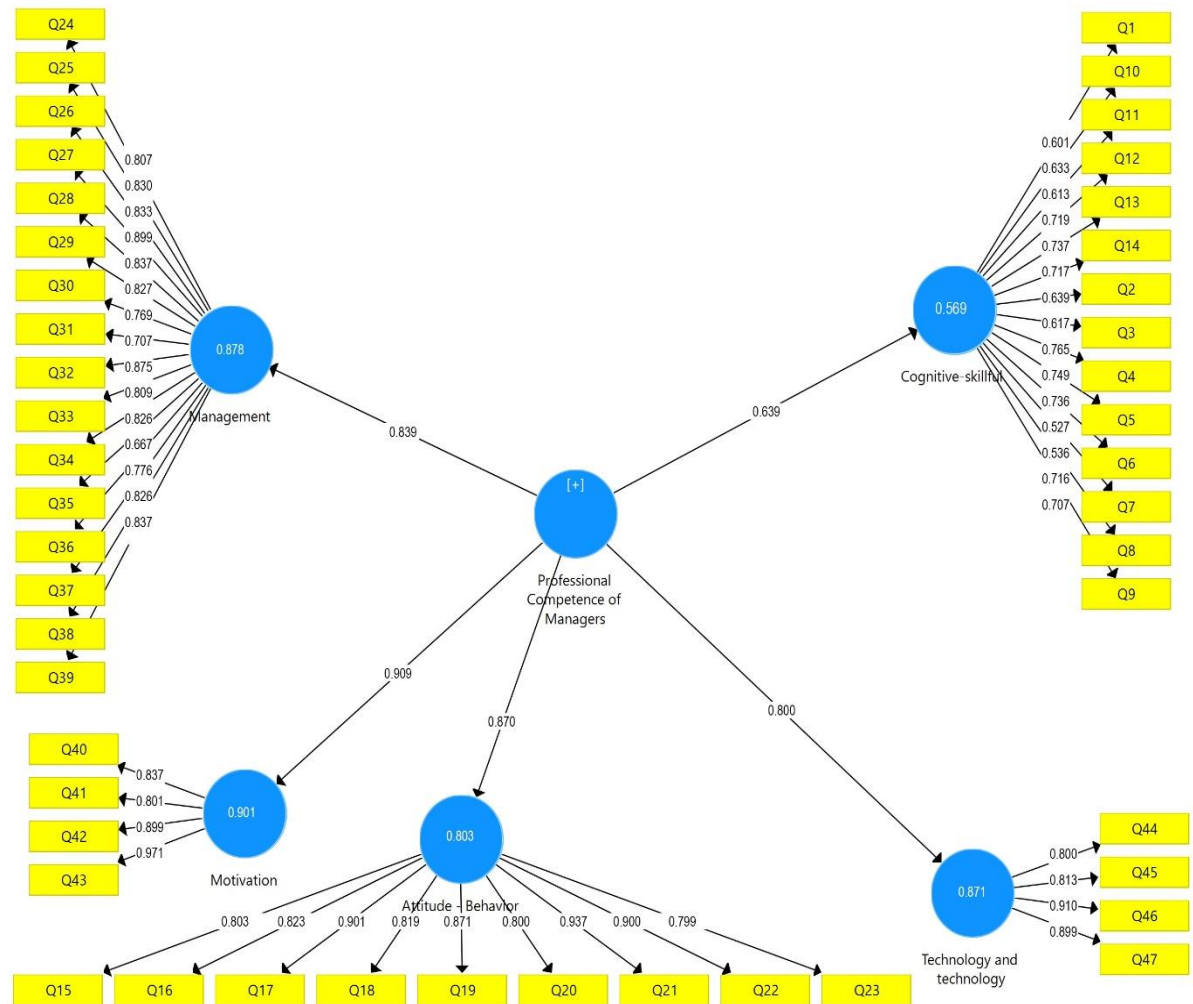


Figure 1. Model of factor analysis of indicators of professional competence of principals based on the development of creativity and innovation in primary schools

Table 2. Factor analysis output path coefficient

Row	Component	Path coefficient	meaningful
1	Motivation >>> Attitude - Behavioral	0.909	
2	Attitude - Behavioral >>> Managerial	0.870	
3	Management >>> Technology and Technology	0.839	meaningful
4	Technology and technology >>> Cognitive-skill	0.800	
5	Cognitive-skill	0.639	

From the summary of previous studies and researches, the factors, dimensions and components of the model of professional competence of principals based on the development of creativity and innovation in primary schools were obtained, but none of the 7 components was removed from the analysis path. Therefore, in order to check the fit of the model, X2 was examined. Proper fit of the model the presence of low X2 and the ratio of chi-square to the degree of freedom less than three indicate a good fit of the model. In this study, according to the output of Smart PLS, the X2 ratio calculated to the degree of freedom for the whole structure is equal to 47.187 for "attitude-behavioral", equal to 39.841 for "motivation", equal to 43.944 for "technology And "technology" is equal to 44.645 for "managerial", and finally equal to 29.766 for "cognitive-skill".

Table3. Pattern fit indicators

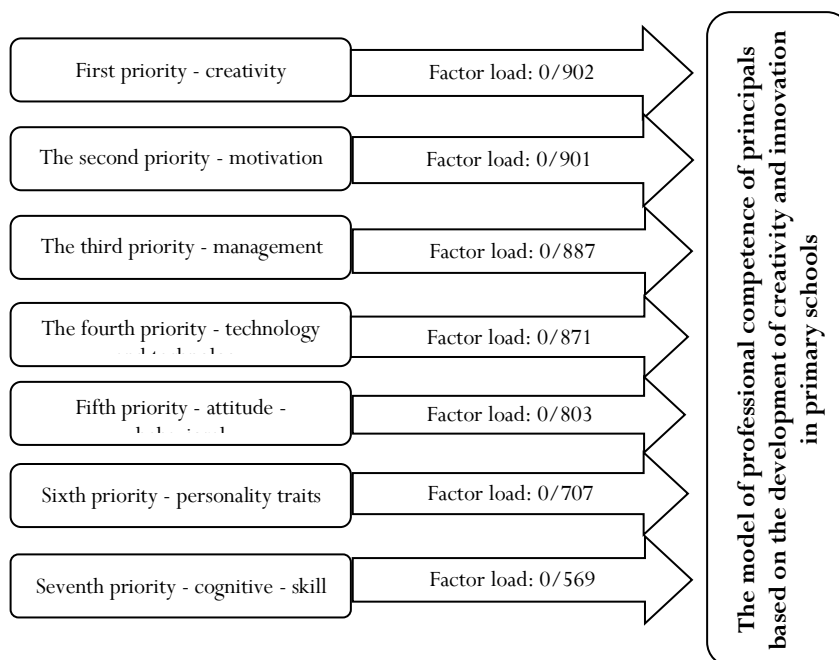
Indicator	Acceptable range	Attitude - Behavioral	Motivation	Technology and technology	Managerial	Cognitive-skill
(X^2)	-	29/766	44/645	43/944	39/841	47/187
Df	-	17	37	30	31	40
X^2/df	≤ 3	0/028	0/181	0/048	0/133	0/175
RMSEA	$\leq 0/08$	0/028	0/049	0/13	0/013	0/06
RMR	$\leq 0/08$	0/022	0/025	0/19	0/011	0/04
NFI		0/98	0/99	0/93	0/91	0/89
CFI		0/99	0/97	0/96	0/93	0/87
GFI		0/93	0/96	0/97	0/95	0/91
AGFI		0/91	0/92	0/93	0/96	0/89

RMSEA and RMR values less than 0.8, GFI and AGFI above 90% and close to one, all indicate the validity of the model. All these indicators have desirable values. In the present model, the components of principal professional competence based on the development of creativity and innovation in primary schools (cognitive-skill, attitude-behavioral, managerial, motivation, technology and technology) as observed variables 1 and the variable of principal professional competence as latent variable 2 in was considered. Pattern fit indicators in factor analysis confirm pattern fit.

Table4. R-Square and R-Square Adjusted

Indicator	R-Square	R-Square Adjusted
Cognitive-skill	0.817	0.818
Attitude - Behavioral	0.897	0.897
Managerial	0.921	0.922
Motivation	0.916	0.917
Technology and technology	0.897	0.898

As shown in the table above, the results of calculating the coefficient of determination (R-Square) and the coefficient of adjustment (R-Square Adjusted); shows that the model explains the maximum variability of response data around its mean.

**Figure2.** Model of professional competence of principals based on the development of creativity and innovation in primary schools

4. Discussion

The results of prioritizing the components and indicators of the conceptual model of principal professional competence based on the development of creativity and innovation in primary schools showed that it was raised with high priority. These factors that were the result of the confirmatory factor analysis model of the first stage and the relevant factor, are: motivation (with a factor of 0.909), creativity (with a factor of 0.905), attitude-behavior (with a factor of 0.893), management (with a factor of 0.878), technology and Technology (with an operating load of 0.871); Introduces as important factors with factor loads above 0.9. Therefore, the priority factors are: first priority: motivation, second priority: creativity, third priority: attitude-behavior, fourth priority: managerial, fifth priority: technology and technology. The results of the study, consistent with the results of Berg's 2013 study, stated that motivation is important for creative thinking and that their model showed that finding a problem facilitates intrinsic motivation in individuals; Luo and Chang (2011) entitled "Competitive Strategy of Strategic Business Units" found that transformational leaders play a key role in facilitating innovation; Young and Deleuze (2005) in a study entitled The most important management and leadership competencies, the competencies are described as follows: managerial skills and abilities, staff management competencies, communication skills, personal traits and characteristics, change and innovation, scientific and technical skills Foresight and purposefulness, good communication and interaction with external stakeholders and negotiation abilities and skills; Vila et al (2014) in a study entitled The role of employees' professional competencies in their innovative behaviors, Maija Hero, Lindfors Taatila (2017) in a study entitled Individual innovative competencies, a systemic perspective and future research on employees of European research institutes Took; Bairauskiene (2017) in a study entitled Latin American High School Vocational Competence on Latin American Schools; Chatzoglou & Chatzoudes (2018) in a study entitled The role of innovation in creating a competitive environment in the organization; It was in line.

Management means organizing the available material and human resources to achieve the desired goals and objectives (Nwune et al, 2018). This concept includes the full use of available resources in an effective and efficient manner in order to achieve the goals. Nkwah (2011); In his study, he stated that managers should have a wide range of competencies for the goals of the organization in an efficient way that leads to changing expectations of what managers need knowledge and ability to do. There is no doubt about the fact that the 21st century is constantly changing rapidly in terms of technological, political, economic, and other developments. Bloch, et al (2014) stated that today's organizations have undergone unpredictable environmental changes in recent years. These environmental changes have drawn the attention of organizations to the professional competencies of managers in the organization. Given the anticipated and unpredictable changes in today's competitive environments, managers must identify the necessary competencies and capabilities for the development and dynamism of the organizational environment (Chupani, 2011). Managers' professional competencies can be defined as the set of knowledge, skills, performance, and attitudes that each manager needs to be effective in his or her job and organization. On the other hand; Competence is considered as a basic characteristic in any manager that includes motivations, skills, tendencies or knowledge and experience used by the manager.

In order to improve the level of productivity, in addition to considering other characteristics, having expertise and competence should be one of the basic principles in selecting individuals in organizing managers. It should be noted that attracting and employing competent managers, especially in the critical elementary stage, requires the creation of a human resources system in which meritocracy prevails. And innovation, this can help increase the human and organizational capacity of primary schools and the quality of its output. Given the gap in the theoretical and practical model of professional competencies related to creativity and innovation in organizational managers, and with the aim of providing an effective model for selection, in-service training and evaluation of creative professional performance of managers, the main issue of the present study was: What are the professional competencies needed to realize the development

of creativity and innovation in primary school principals and what are the dimensions and structures? In this research, this fundamental question was answered at the end. The researcher also tried to fill the gap in the theoretical and practical model of professional competencies related to creativity and innovation in organizational managers.

The results of the researcher with Bakhir (2016) studies in a study entitled The study of the impact of professional competencies of school principals on their job performance, mediated by the creativity of principals (Case study: education principals of Taybad city) on all principals of education schools in Taybad (Male and female), which showed that the professional competencies of school principals affect their job performance, also the creativity of school principals in mediating the impact of professional competence on their job performance; Also, Niknami, Taghipour, Delavar and Ghaffari (2009) in a study entitled Designing and evaluating the causal model of creativity and innovation of educational administrators in Tehran, which was performed on 308 male and female principals of all schools in Tehran, which showed the status Creativity and innovation of managers was moderate and the most impact on the creativity of managers was organizational culture, and this study only addressed organizational barriers and did not examine individual factors; Also, Bazargan (2013) studies the professional competencies required by assessment experts in six areas of professional competence, including systematic research competencies, managerial competencies, position analysis competencies, feedback utilization competencies, basic evaluation competencies, and communication competencies. Socially examined; It was consistent and, of course, more complete and comprehensive than these studies. One of the limitations of the present study was the low and strict cooperation between Miran and experts. In this regard and in line with the research results, it is suggested that the following activities be performed: 1- Teaching technologies and educational and research technologies to managers. 2- Creating and developing a virtual network platform and exchanging up-to-date and fast news and information in School 3- Facilitating technological communication and technology through teaching technological skills to students 4- Creating and developing equal opportunities in the growth and training of students in school.

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