

Explaining Competency model of teacher

Lida Javidan¹, Abdollah Aliesmaili^{2*}, Ali Asghare Shojaee³

1. Department of Educational management, Babol Branch, Islamic Azad University, Babol, Iran

2. Department of Educational management, Babol Branch, Islamic Azad University, Babol, Iran

3. Department of Educational management, Babol Branch, Islamic Azad University, Babol, Iran

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Abstract

Purpose: The concept of teacher competency is one of the key concepts in the document of the fundamental transformation of education. Different researchers have presented three approaches in various terms for modeling competency such as adaptive approach, adaptive-design approach, and design approach. Top-down and bottom-up approach is another division of competency modeling. **Methodology:** The present study is operational in terms of purpose and the method of collecting its data, is mixed. In this way, the first part of the present study is descriptive-correlation because this study aimed to collect the necessary information for determining the teachers' competency indicators and is qualitative research method such as content analysis method to extract the components from the top-level documents contained in the document of the fundamental transformation of education. **Findings:** On the other hand, since one of the research goals is to extract a questionnaire to determine the indicators and attributes of teachers based on the high education documents, quantitative research methods and factor analysis methods such as exploratory and confirmatory factor analysis were used. **Discussion:** Overall, the result of the present study shows that each competency is a complex combination of motivation, mental ability, practical knowledge and practical skill that increases the probability of a person's success in a certain role, which is clearly tangible, and the existence of it ensures him for the acceptance of responsibility of that role.

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* Corresponding Author Email: Shahramae@yahoo.com

1. Introduction

The concept of teacher competency is one of the key concepts in the document of the fundamental transformation of education (Abtahi and Torabian, 2010). As Alipour and Darabi (2007) stated in the general document of the transformation of education, in the explanation of the concept of "education": The achievement of good life requires the acquisition of basic competencies. In this statement, according to what has said in the concept of education, naturally, the notion of competence is obvious. Examples of these propositions are: clause 5. Grounding to acquisition basic competencies with emphasis on the common Islamic and revolutionary characteristics of Iran, in line with the continuous development and identity of students in individual, family and social dimensions.

2. Literature review

It is necessary to examine concept in a conceptual system to understand each concept. Conceptual system related to competence is competency, worthy, competency model, competency general model and role. The competency approach in HRM is not a new approach. Competency is a very old subject and its examples found abundantly in the works of ancient Greece, the verses of the Holy Qur'an, the words of the infallibles (AS), the literature of the poems of the poets. In the Western literature, this term emerged dramatically in the late 1960s and early 1970s, becoming one of the most widely used concepts of institutions and educational – credential institutions.

Safi (1376) and Maleki (1376) also emphasize this definition. Oxford culture has defined competency as "strength, ability, and capacity to perform a task" (Oxford, 2005). The term "competence" used to describe a set of behaviors that reflect the complex combination of knowledge, skills, abilities and motivations, and related to performance in a particular role. Competency of listening that usually exists in competency models includes behaviors such as eye contact, head duplication, oral confirmation, correct interpretation, and so on. Different researchers have presented three approaches in various terms for modeling competency such as adaptive approach, adaptive-design approach, and design approach. 1-Adaptive approach. This approach is the easiest and least costly approach.

An adaptive approach is useful if adapted to the requirements of the organization. An externally developed model never accurately describes the characteristics of the superior - required individuals of the other organization. The competency model is compatible with the organizational culture in which the model designed and may not be useful for other organization's use. 2-designing-adaptive approach. This approach changed as the general model or named competency list method. This approach involves the acceptance of a specific external model or the use of competency lists in the research literature. This approach based on past research, because other scholars have already done their research to formulate a general model. In this way, the modification of the model performed with the aim of fitting with the organization's culture and the competencies evaluated by the expert staff of the organization. Design approach: This approach is the most comprehensive method for compiling the competency model. In this way, a dedicated and unique model designed. However, this approach is costly and time-consuming (Alipour and Darqa'i, 2007).

Top-down and bottom-up approach is another division of modeling competency. In the top-down approach, competency analysis begins with the strategic goals and mission of the organization and goes ahead level to the level to reach the specialized competencies of the job. In the bottom-up approach, professional competencies identified using information and job analysis

techniques. This process takes place for higher levels of occupations, and formed based on overlapping competencies of job groups. Based on this newly formed structure, other processes redesigned, such as job classification and career paths. The top-down approach is prudent and has a major upward trend. The bottom-up approach focused on the present, however, demonstrates more objectivity and consistency for designing human resources processes and structures. The importance amount and weighting factor of each of competencies and their components must be in accordance with the occupational group or organizational basis. The cultural, value and ethical foundations of the organization should consider in the competency model. Competency model can apply in various areas of educational system, including educational management, educational planning, curriculum planning, student attraction and finally evaluation at its different levels (Alipour and Darqa'i, 2007).

Today, there are many public models for competency, but it can state that most of them based in part on the following. A) It contains the cluster of knowledge, skills, abilities, motivation, beliefs, values and interests. (B) It related to the important part of the job. (J) It related to superior performance or effectiveness. (D) It related to acceptable and measurable accepted standards. (E) It related to strategic orientation; and (e) it is Improvable through education (Lhsassi Zadeh, 2008). In some sources, competencies likened to the iceberg, with most of it being underwater (Lordsai Zadeh, 2008). In other words, some visible components of competency can easily found in behaviors that are visible and therefore easily defined and are more accessible and identifiable. For example, knowledge and skills are on the surface. While values, attitudes, personality traits and motivations are below the water level, they are not evident. Homer (2001) also stated that several roles are conceivable for every human being in his present and future life that he expected to succeed in all of them. The concept of competency usually considered for a single role. For example, a teacher can have a number of roles, such as his or her parents' children, spouses, or his children's parents, as an active political and social element. At the same time, when speaking about qualified teacher as well as teacher qualifications, only his job role is important neither family nor political roles.

The important point is that although every human being is present in different roles, he has a complex and integrated existence, which disregards this feature, will distract us from analyzing the facts and implementing fundamental solutions to education. All roles are important, so success in a role cannot justify failure in another role. In other words, success in business does not justify failure in marital life or succeeding in military service and sacrificing society, cannot solve failure on the father's duty to the child. On the other hand, success or failure in each role affects the quality of another's roles and the whole of life. Regardless of this "big picture of the totality of human existence," which represents our vigilance to our roles, we may simply devote ourselves to several specific roles, neglect attention spending time on other roles (Kawi, 2007). Accordingly, the following research question rose: what are the components in the model of attributes and competencies of teachers?

3. Methodology

The present study is operational in terms of purpose, and the method of data gathering is medley so that the first part of the present study is descriptive-correlation type in order to collect information necessary for determining the competency indicators of teachers. It is one of qualitative research methods such as content analysis method to extract the components from the top-level documents contained in the document on the fundamental transformation of education. On the other hand, quantitative research methods and factor analysis methods such as exploratory

and confirmatory factor analysis methods applied because one of the research goals is to extract a questionnaire to determine the indicators and characteristics of teachers based on the high document of education. In general, both qualitative and quantitative research methods applied. The research method was motley.

4. Findings

In this study, 200 teachers (115 males and 85 females) studied as a sample. Sample distribution based on age, years of service in table1.

Table 1. Sample distribution based on age, years of service for high school and middle school teachers

Indicator	Group	Minimum	Maximum	Average	Standard Deviation
Age	Teachers guide	31	53	37.66	13.70
	Secondary Teachers	34	48	40.63	4.50
Years of service	Teachers guide	5	35	21.18	5.99
	Secondary Teachers	4	17	9.25	3.78

The results of the above table show that the average age of secondary and secondary teachers is 66.37 and 63.40 years, respectively. The average service age for both groups was 18.21 and 25.9 years, respectively. The distribution of sample teachers in terms of educational level presented in Table 2 below.

Table 2. General distribution of teacher samples based on the degree of education

group	frequency	Percent	Valid percentage	Cumulative percentage
Bachelor	32	32	32	32
MA	65	65	65	97
P.H.D	3	3	3	100
Total	100	100	100	

The results of the table above indicate that 32% of teachers have a bachelor's degree, 65% master's degree and 3% doctorate. Table 3 shows the distribution of teacher samples in field of teaching.

Table 3. Distribution of teachers based on discipline

Teaching field	percent	Teaching field	percent	Teaching field	percent	Teaching field	percent
Consultation	12	Educational Assistant	18	The computer	4	Persian Literature	1
English language	3	Physics	5	chemistry	2	Breeding	1
Planning	4	Arabic	4	Biology	1	Social Sciences	1
math	11	Psychology	9	experience Sciences	1	Islamic education	3

The table above shows that most of the teachers employed in positions of deputy education (18%), counseling (12%), and teaching math (11%) and school management (11%) respectively. the method of qualitative research and content analysis technique have been used to address this question, what are the components of the model of attributes and competencies of the teacher? Content analysis method based on document mining applied in order to describe, review, organize and process systematically and quantitatively content in the model of teacher attributes and competencies based on upstream education documents. Given that the above documents existed officially on the Ministry of Education website, the document coded according to the content analysis method and the result reported in the following table. It should note that the coding of the components is as follows. A. formal verdict, B at least 3 years of experience, C having at least a Bachelor's degree, D Marriage, E relative proficiency in a foreign language, F. mastering to the computer and the essential programs of teaching, H. Physical health, I. Theoretical and practical qualifications from reputable academic and transactional authorities, J. strong working and

research-executive resume, K. becoming sample during study or teaching, having a personal website, L. high score in general and emotional intelligence tests, M. scientific reputation and moral popularity in terms of managers, parents and students. N. Acceptable score of assessment in last 3 years teaching, O. Mental health. P. degree of education related to discipline, Q aristocratic to structures and infrastructure, goals, performance of the current situation of the educational system of the country. R. Creating course creative content in the form of software or curriculum content verified by scholars from textbooks.

Table 4. Operating factors, correlation coefficients and Cronbach's alpha

Index	components				component									
	First	second	r	α	index	Third	fourth	fifth	sixth	seventh	eighth	r	α	
19	0.8		0.84			0.8						0.86		
23	0.8		0.82	0.96		0.8						0.81	0.92	
32	0.7		0.78			0.8						0.78		
22	0.7		0.81			0.8						0.80		
31	0.7		0.79			0.7						0.76		
30	0.7		0.79		12	0.7						0.69		
26	0.7		0.81		43		0.79					0.75		
20	0.7		0.78		6		0.77					0.69		
24	0.7		0.76		4		0.73					0.71	0.87	
28	0.7		0.76		5		0.73					0.6		
27	0.7		0.81		44		0.72					0.63		
29	0.7		0.74		42		0.67					0.66		
21	0.7		0.72		2		0.64					0.54		
25	0.7		0.69		13			0.7				0.80		
33	0.6		0.67		14			0.7				0.80	0.89	
55		0.8	0.88		18			0.7				0.70		
51		0.8	0.84		16			0.7				0.68		
50		0.8	0.81		15			0.7				0.66		
47		0.8	0.81		41				0.7			0.66		
45		0.8	0.78	0.94	39				0.7			0.72	0.83	
54		0.8	0.77		37				0.7			0.65		
52		0.7	0.73		40				0.6			0.56		
49		0.7	0.72		38				0.5			0.59		
48		0.7	0.68		36					0.8		0.83	0.91	
53		0.7	0.63		35					0.7		0.82		
46		0.6	0.60		34						0.86	0.68	0.81	
α : Cronbach's α					0.57						0.7	0.68		

The above table shows that the first component contains 15 indicators that have a suitable factor load and have a good correlation with the total score of this component. The special value of this component was 16.01 and explained 18.91% of the variance. This component named "abilities". The second component had a specific value of 6.32 with 11 indexes and its explained variance was 13.94. This component named "motivations". The third component, with six indicators and the variance explained 82.8 called "Beliefs". Special value of this component was 3.84. The fourth component named values with seven indicators, a special value of 26.3 and an explained variance of 7.82. The fifth component named "pleasures" with 5 terms of special value 36/2 and the variance explained of 6.57. The sixth component with five indicators and variance explained 6/15, called "knowledge". This component had a special value of 2.07. The seventh component named

with a special value of 1.61 and an explanatory variance of 3.63 "moral competence". The seventh component named "moral competence" with a special value of 1.61 and an explanatory variance of 3.58. Finally, the eighth component named "health" with phrases, the special value of 14.1 and the explained variance of 3.20. Confirmatory factor analysis method used to determine fitness rate of 8-factor model with data. Root Mean Square Error of Approximation, Standardized Root Mean Square Residual, Comparative Fit Index, Goodness of Fit Index, and Adjusted Goodness of Fit Index applied to evaluate the fitness of the model. Experts proposed several sections for the fitness indicators. For example, the value equal to or less than 0.05 for Root Mean Square Error of Approximation, the value equal to or higher than 0.96 for Comparative Fit Index, a value equal to or less than 0.07 for Standardized Root Mean Square Residual indicates a sufficient fitness of the model (Jorskog and Sorbom, 2003). On the other hand, it has suggested that if Comparative Fit, Goodness of Fit and Adjusted Goodness of Fit Indexes be greater than 0.9, Root Mean Square Error of Approximation, and Standardized Root Mean Square Residual be less than 0.05, will indicate very favorable and smaller fitness than 0.1 (Brockler, 1990). The fitness indexes of the verified model presented in Table 4-23.

Table 5. Fitment Indicators of the Eight-factor Model of Teacher's Competencies (n=200)

model	* χ^2/df	CFI ¹	RMSEA ²	SRMR ³	GFI ⁴	AGFI ⁵
Eight factors	1.88	0.95	0.049	0.061	0.646	0.610

The results of the above table indicate some the fitness acceptable indicators of the model.

¹ Comparative Fit Index

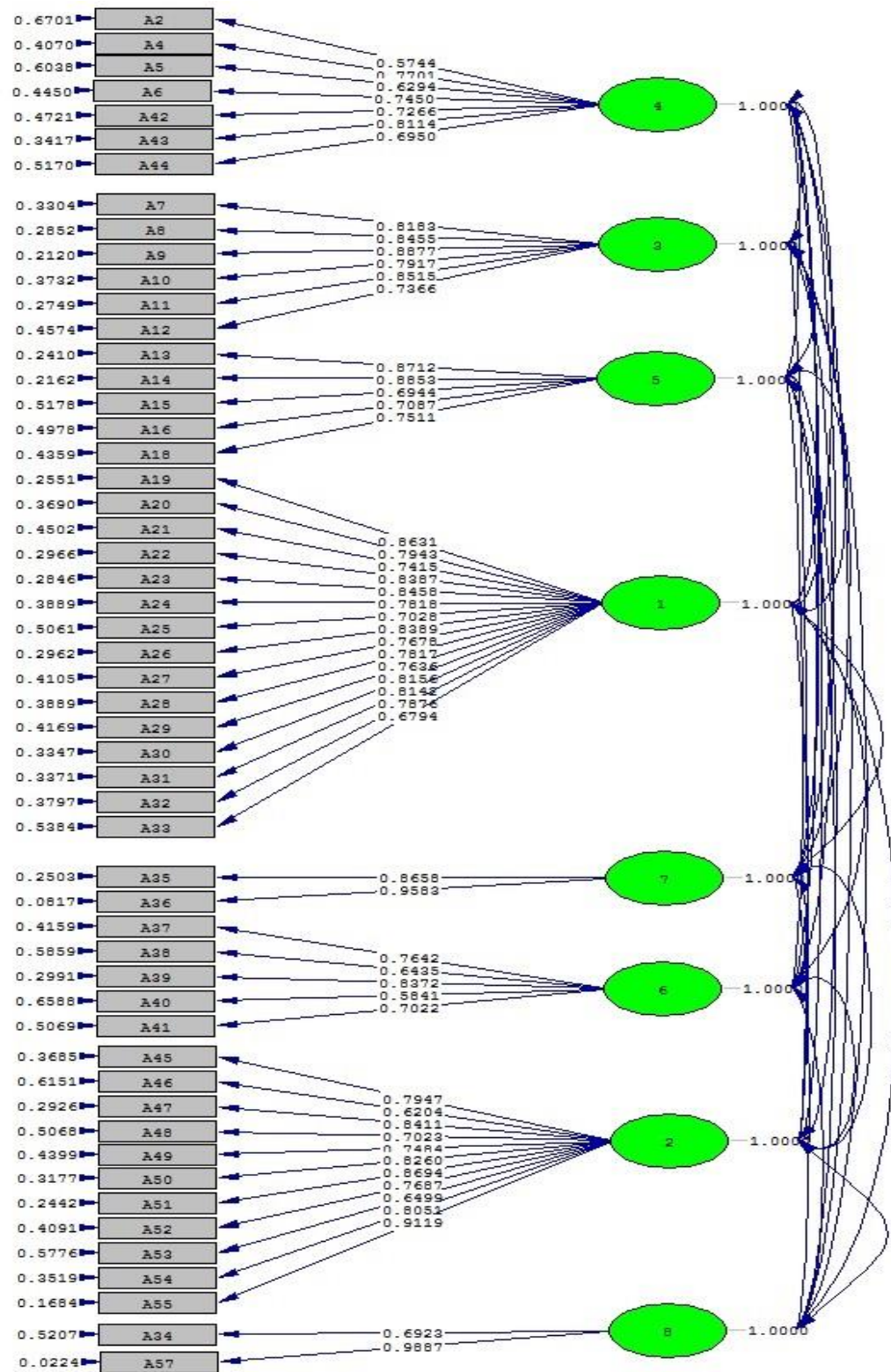
² Root Mean Square Error of Approximation

³ Standardized Root Mean Square Residual

⁴ Goodness of Fit Index

⁵ Adjusted Goodness of Fit Index

Figure 1. Model of standardized coefficient measurement



Chi-Square=2302.94, df=1297, P-value=0.00000, RMSEA=0.070

Since two types of secondary and secondary teachers used in this study, after extraction of components, extractive components were compared in two groups. Analysis test of multivariate variance used to check this issue. The results of the assumption assertion were that the assumption of equality of variances was not established. Independent t-test applied instead of multivariate analysis of variance. This test calculates coefficients separately for the two modes of establishing and not imposing an equality equation for variances. The results of this test presented in the table below.

Table 6. Independent t-test results for comparing the components of competency model between middle and high school teachers

Variable	group	M	SD	t	D f	Sig
Abilities	Teachers guide	3.59	0.82	0.07	158	0.94
	Secondary Teachers	3.58	0.77			
Motivations	Teachers guide	3.76	0.90	-0.97	154.27	0.33
	Secondary Teachers	3.88	0.63			
Beliefs	Teachers guide	3.75	0.81	0.12	158	0.91
	Secondary Teachers	3.74	0.79			
Values	Teachers guide	3.84	0.73	0.52	158	0.61
	Secondary Teachers	3.78	0.70			
Hobbies	Teachers guide	4.11	0.91	1.49	158	0.14
	Secondary Teachers	3.89	0.83			
Knowledge	Teachers guide	3.75	0.68	1.14	103.33	0.26
	Secondary Teachers	3.61	0.85			
Moral competence	Teachers guide	3.23	1.08	-2.81	569.19	0.21
	Secondary Teachers	3.63	0.72			
physical health	Teachers guide	3.63	1.03	-1.62	142.15	0.12
	Secondary Teachers	3.88	0.86			

The results of the above table show that there is no significant difference between the middle and upper secondary teachers in the competency model. There is no need for separate analyzes for the two groups due to the insignificant difference. Firstly, the correlation coefficients between the extracted components investigated and finally, a second-order confirmatory factor analysis applied to fit the final model. Correlation matrix presented in Table 7 for competency model components.

Table7. Correlation matrix of components of competency model for middle and upper secondary teachers.

Variable	1	2	3	4	5	6	7	8
1. Abilities	1							
2. Motives	0.30**	1						
3. Beliefs	0.31**	0.44**	1					
4. Values	0.38**	0.41**	0.45**	1				
5. Hobbies	0.33**	0.37**	0.47**	0.38**	1			
6. Knowledge	0.26**	0.43**	0.45**	0.49**	0.45**	1		
7.moral Competency	0.16**	0.19**	0.28**	0.23**	0. **18	0.29**	1	
8. Health	0.27**	0.29**	0.27**	0.35**	0.34**	0.20*	0.29**	1
Mean	3.58	3.80	3.74	3.82	4.03	3.70	3.38	3.72
T	0.80	0.81	0.80	0.72	0.88	0.75	0.98	0.97

The results presented in the table above show that the correlations are significant.

Table 8. Fitness Indicators of Teachers Competency Model (n=200)

model	* χ^2/df	CFI	RMSEA	RMSEA CI 90%	SRMR	GFI	AGFI
Eight factors	0.85	0.99	0.01	0.01-0.06	0.03	0.98	0.96
Square chi with maximizing method							

The results of Table 8 indicate that Fitness Indicators of the teacher's suitability pattern located at a very good level.

5. Discussion

Qualitative research method and content analysis technique applied to investigate the research question. The external data of above analysis developed as a researcher-made questionnaire. The first questionnaire consisted of 45 items from the upstream documents, which modified using the Delphi method and comments from experts and exploratory factor analysis and confirmation of the number of questions that its detailed report has given in the fourth quarter. The main components of teacher suitability index including:

formal verdict, B at least 3 years of experience, C having at least a Bachelor's degree, D Marriage, E relative proficiency in a foreign language, F. mastering to the computer and the essential programs of teaching, J Internet proficiency, H. Physical health, I. Theoretical and practical qualifications from reputable academic and transactional authorities, J. strong working and research-executive resume, K. becoming sample during study or teaching, having a personal website, L. high score in general and emotional intelligence tests, M. scientific reputation and moral popularity in terms of managers, parents and students. N. Acceptable score of assessment in last 3 years teaching, O. Mental health. P. degree of education related to discipline, Q aristocratic to structures and infrastructure, goals, performance of the current situation of the educational system of the country. R. Creating course creative content in the form of software or curriculum content verified by scholars from textbooks.

In explaining, the above results it can be said that from the viewpoint of many researchers (Mohammadi, 2004, Zinchir, 2003) and in line with the results of this research, important and determining indicators the competence of teachers are in the field of Scientific, professional, personality, cognitive and value capabilities. Having skills and abilities, such as appropriate qualifications, adequate experience, professional competence, research, ethical and technical abilities, as well as individual and public abilities such as internet mastering, mastering the computer and the essential software for teaching and physical health, mental health for the selection of teachers are essential to earn competency.

Hence, as Roll (2005) along with the findings of the present research shows that more emphasis on key indicators causes to reach most desired goals of education. Since the advancement of the education system of a country and students, which is the focus of training, relates to the specialized ability of teachers to provide quality teaching, professional competence among other agents is more important. In this regard, it can say that in all organizations, especially education, the main pillar of quality promotion is the teacher's special ability. That is, if a teacher does a quality job and is motivated, he will compensate defects in other educational factors, such as space, curriculum, and tuition fees in many cases. Randy and Goldstin (2005) also argue that the process of training and improving are the necessary and continuous activities for the adaptation of specialist teachers to the changing circumstances of the organization and the educational and training environment. Education is a tool that, through various techniques and methods, helps managers in the organization's quality management. Creating an appropriate administrative system is largely possible through the training and upgrading of teachers' capabilities.

Zahedi & Shamsasadat (1369), in line with the findings of this study argued many people may also be studying in an unrelated career because Iran is a large, relatively populous country and moving towards progress.; it has a large young manpower with a large administrative structure;

the level of literacy, knowledge of many of its teachers is not optimal. These and many other topics show the importance of in-service training in Iran. Therefore, Training of human resources and evaluating its effects on increasing the performance of teachers is very important. Correct training of human resources, while at the level of government agencies, promotes the performance of staff and organization; it also provides a more appropriate framework for staffing with clients.

In addition, Sha'bani (2006) believes that educational systems in passing on quantitative issues and popularize education are bound to pay attention to the quality issues of educational phenomena and improving the quality of education, while paying attention to the resources and equipment through the main factor in the educational system, "educational forces," have been targeted. Studies show that "educational forces" play a two-way role in educational reform. On the one hand, it is issue of reforming education and, on the other hand, is the cause of educational reform. Therefore, one of the most common goals in teaching educational forces is: Professionalism (focusing on educational forces without relevant academic field or related field of study), updating training forces and keeping up-to-date knowledge and teaching ability appropriate to the related field of study and teaching methods (Habermen, 2004; Tang & Han, 2005).

Therefore, if the educational forces have a thorough knowledge of the principles of teaching, they can operate the more powerful and more precise in creating the desired learning situation. With this in mind, it can admit that the most important factor for the quality of the work of expatriate teachers abroad is the educational forces. The information of the educational forces and, in fact, the field of study affects learning and development of the learner. Therefore, it can say that the information and the personality of the educational forces affected by factors such as degree, field of study and experience, therefore the relationship of academic degree with the field of study is important. In fact, what distinguishes a professional teacher from other teachers is the proper use of their experience in choosing the best methods of teaching.

According to Fringington's (2008) findings, though, the lack of any of the two factors of knowledge and teaching methods creates problems for the teacher, but lacking sufficient experience can lead to the loss of two other variables. Can he send happily students out of class? This is where the difference between a professional and a non-professional person is obvious. The professional teacher knows how and with what methods he has started teaching, continued and completes it, and when and how to deliver the content, to maximize the student's activity and take them step by step to the teaching objectives. Meanwhile, (Mahdian et al., 2011), according to the results of the present research state The method implies not only knowing the common teaching methods most often used by teachers, but also the timely and appropriate use of those methods, the methods and techniques that guide teachers toward getting professional.

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