

## Credibility of the Pattern of Educational Qualification of Faculty Members

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**Background:** The success of faculty members of Medical Sciences Universities in the medical education arena requires qualification and capability authentication in relation to education. In order to achieve these capabilities, it is necessary to use new and influential approaches of empowerment. One of the appropriate approaches is "Competency Based Training" (CBT). In this method, competencies of each profession are identified. Then, educational programs are designed and held to gain the competency for each person in an organization. One of the important steps of CBT is to codify and credit competency Model. Therefore, the purpose of the present study is to credit competency model for medical science professors.

**Method:** This study was conducted in 2014. This is a descriptive cross-sectional study conducted on 120 faculty members of Mashhad University of Medical Sciences. The present study used census. The questioner was emailed to all faculty members and after 20 days the replies were received. The validity was assessed based on experts' opinion and reliability was evaluated by Cronbach's alpha.

**Results:** The results showed that the success of faculty members in education required four main competencies including research competencies, medial competencies, teaching competencies and general competencies. Almost all of them are necessary.

**Conclusions:** According to the results of the study, the credibility of the model is confirmed and this competency model that is codified and credited can be used for different purposes such as selection and recruitment of the faculty members, educational needs-assessment and programming, development and empowerment of them. These findings were compatible with other studies in this field.

**Key words:** Credibility; Competency Model; Competency Based Training; Faculty Member

## اعتباریابی الگوی شایستگیهای آموزشی اعضای هیات علمی دانشگاه علوم پزشکی مشهد

**زمینه و هدف:** موفقیت اعضای هیات علمی دانشگاههای علوم پزشکی در حوزه آموزش پزشکی مستلزم احراز صلاحیتها و توانمندیهای مرتبط با آموزش است. لازمه کسب این توانمندیها استفاده از رویکردهای جدید و موثر توانمندسازی است. یکی از رویکردهای مناسب در این زمینه "آموزش مبتنی بر شایستگی" است. در آموزش مبتنی بر شایستگی، شایستگی های مربوط به هر یک از مشاغل تعیین می گردد. سپس برنامه های آموزشی در راستای کسب این شایستگی ها برای هر یک از افراد سازمان تدوین و اجرا می شود. در این میان یکی از گامهای اساسی آموزش مبتنی بر شایستگی تدوین و اعتباریابی مدل شایستگی است. لذا هدف این پژوهش اعتباریابی الگوی شایستگی های اساتید دانشگاه علوم پزشکی بود.

**روش:** این مطالعه یک پژوهش توصیفی - مقطعی بوده که بر روی ۱۲۰ عضو هیات علمی دانشگاه علوم پزشکی مشهد انجام شده است. نمونه گیری به روش سرشماری بوده که از طریق پرسشنامه محقق ساخته ای که روایی آن براساس نظر متخصصان و پایایی آن براساس ضریب الفای کرونباخ تایید شده است، برای اعضای هیات علمی ارسال شده است.

**یافته ها:** نتایج پژوهش نشان داد که در مجموع اساتید، موفقیت اعضای هیات علمی در بخش آموزش را مستلزم دارا بودن شایستگی در ۴ حیطه، شایستگیهای پژوهشی، شایستگیهای پزشکی، شایستگیهای معلمی و شایستگیهای عمومی می دانند. و تقریباً تمام شایستگیهای تعیین شده را در این خصوص ضروری می دانستند.

**نتیجه گیری:** بر اساس نتایج پژوهش اعتبار الگوی تدوین شده مورد تایید قرار گرفت و این الگوی تدوین و اعتباریابی شده شایستگی، می تواند برای اهداف مختلفی از قبیل انتخاب و استخدام اعضای هیات علمی، نیازسنجی و برنامه ریزی آموزشی، توسعه و توانمندسازی آنان مورد استفاده قرار گیرد.

**واژه های کلیدی:** اعتباریابی، الگوی شایستگی، آموزش مبتنی بر قابلیت، عضو هیات علمی

## اهذ الإعتبار لنموذج الكفاءات التعليمية لإعضاء الهيئة العلمية في جامعة مشهد للعلوم الطبية

**التصميم و الهدف:** إن نجاح أعضاء الهيئة العلمية في جامعة مشهد للعلوم الطبية في مجال التعليم الطبي يستلزم احراز الصلاحيات والكفاءات المرتبطة بالتعليم والحصول على هذه الكفاءات يستلزم إستخدام الأساليب الجديدة والمؤثرة في رفع مستوى الكفاءات إن احدى هذه الأساليب في هذا المجال هو التعليم البنائي على اللياقة. في هذا الأسلوب يتم تعيين الكفاءات المرتبطة بكل عمل و بعد ذلك يتم وضع برامج تعليمية للحصول على هذه المؤهلات. من أهم الخطوات في مجال التعليم البنائي على نموذج الكفاءات تدوين و تقييم نموذج الكفاءات من هذا المنظور تعرف هذه الدراسة الى تقييم نموذج كفاءات الاساتذة في جامعة مشهد للعلوم الطبية.

**الأسلوب:** اجريت هذه الدراسة الوصفية - المقطعية على ١٢٠ عضو من أعضاء الهيئة العلمية في جامعة مشهد للعلوم الطبية. تم تجسيم المعلومات عبر استمارات مؤيدة اخصائياً من قبل اخصائيين و أيضاً تم استخدام ضريب الفاي كرونباخ في تأييدها.

**النتائج:** من خلال نتائج هذه الدراسة اعتبر الاساتذة أن مستوى نجاح أعضاء الهيئة العلمية يستلزم الكفائة في ٤ مجالات: الكفاءات البحثية، الكفاءات الطبية، الكفاءات التعليمية و الكفاءات العامة و اعتبروا هذه الكفاءات كدراً ضرورياه الى حد كبير.

**الاستنتاج:** بحسب هذه الدراسة تم تأييد الإعتبار النموذجي المرون. و نستطيع استخدام هذا النموذج في الاهداف مختلفة كالتخاب و توضيف أعضاء الهيئة العلمية، معرفة الحاجة و البرمجة التعليمية، التوسه و التثقيف.

**كلمات المفتاح:** اهذ الإعتبار، نموذج الكفاءات، التعليم البنائي على الاستمرار، عضو الهيئة العلمية.

## مشهد یونیورسٹی آف میڈیکل سائنس میں اکیڈمیک کونسل کے ممبران کی صلاحیتوں کا اعتبار

**ہیک گراؤنڈ:** میڈیکل سائنس یونیورسٹیوں کے لئے ضروری ہوتا ہے کہ ان کی اکیڈمیک کونسلیں توانا اور صاحب صلاحیت اساتذہ سے تشکیل پائیں، جو پھر پور طرح سے طلباء کو پڑھا سکیں۔ ان صلاحیتوں کے حصول کے لئے ضروری ہے کہ جدید اور موثر طریقہ تعلیم اپنائے جائیں ان طریقوں میں ایک تعلیم مطابق شایستگی ہے جس میں صلاحیتوں کے مطابق مزید تعلیم دی جاتی ہے، اسی طریقے سے استاد کی صلاحیتوں اور توانائیوں کا تعین ہوتا ہے لہذا اس تحقیق کا هدف یہ دیکھنا تھا کہ مشهد یونیورسٹی آف میڈیکل سائنس میں اساتذہ کی صلاحیتوں اور توانائیوں کا تعین کس معیار پر کیا گیا ہے اور وہ کس طرح معتبر قرار پائی ہیں۔

**روش:** اس تحقیق میں مشهد یونیورسٹی آف میڈیکل سائنس کے اکیڈمیک کونسل کے ایک سو بیس ممبران نے شرکت کی۔ تحقیق میں شرکت کرنے والوں کو سوالنامہ دیا گیا جس کا اعتبار کرونباخ آلفا سے حاصل کیا گیا تھا۔

**نتیجے:** اس تحقیق کے نتائج سے پتہ چلتا ہے کہ مشهد یونیورسٹی آف میڈیکل سائنس کے اساتذہ تحقیقاتی، میڈیکل، معلمی اور جنرل نالج کی توانائیوں کے حامل تھے۔ اور ان چار میدانوں میں ضروری توانائیوں کے حصول کو ضروری سمجھتے تھے۔

**سفرارہ:** اس تحقیق سے پتہ چلتا ہے کہ اساتذہ کی صلاحیتوں کا جو تعین کیا گیا ہے وہ قابل اعتبار ہے اور ان صلاحیتوں کو اکیڈمیک کونسل میں شمولیت اور ان کی خدمات حاصل کرنے نیز علمی ضرورتوں کا اندازہ لگانے، تعلیمی منصوبہ بندی اور ان اساتذہ کو مزید توانا بنانے کے لئے اس معیار قرار دیا جاسکتا ہے۔

**کلیدی الفاظ:** شائستگی کا معیار، قابلیت کے لحاظ سے تعلیم، اکیڈمیک کونسل کے ممبر۔

## INTRODUCTION

Medical Sciences universities' main duty is to train skilled and expert manpower to enhance health in the society besides providing health and care services (1). Professors are considered as main factors of this system (2) and play a crucial role in this process since the performance and the success of the universities in training and educating students is dependent on efficient and professional qualifications of the professors (1). Professors' qualifications influence values, behavior, communication, purposes and performance of the educational system (3).

One of the main index and benchmarks of professional qualification for professors who are working in medical sciences fields is teaching, that is considered the most important and complicated qualification among others (research and treatment) (4). Teachers' qualifications support professional development and curriculum studies. Consequently, it is highly important to discuss about teachers' abilities and qualifications in order to upgrade teaching-learning process in the educational system (3). The universities, in order to accomplish their mission and goals, need teachers that have knowledge and professional skills as well as other teaching skills. However, these skills are not gained sufficiently during education at university (4).

Therefore, the empowerment of faculty members for professional development (in relation to education) and achievement of educational purposes is very important so that they can be prepared for their influential and practical educational role. The requisite for the empowerment of faculty members of medical schools in the field of education is to design and conduct empowerment programs influentially and use appropriate educational approaches to enhance capabilities of human resources. In this regard, educational development centers of medical sciences have taken effective measures such as holding teachers' empowerment programs during last year's. However, it seems that the provided programs were not consistent with the real needs of teachers and educational programs were provided inappropriately and lack of review of the subjects of the programs has reduced effectiveness (5, 6).

Teachers' empowerment programs should enhance necessary general and professional capabilities that will not be achieved only if the empowerment, educational program be designed to produce and enhance these competencies (7). One of the approaches to develop competencies and capabilities is "Competency based training". This method is highly considered for the educational programs are designed based on the results and consequences and nowadays efficiency and result of learning are very important (7, 8)

In competency based training, the qualifications of each profession are specified (9, 10). Then, developmental programs and personal education to gain the qualifications are designed and conducted for each person (11, 12). The competency model leads to provide a structure for the profession and also a scale to assess the performance. Moreover, organizations can easily compare peoples' competencies with the required competencies for the job (13).

They believe that some traits of competency based training are as follows: emphasis on the results of education, simple approach, targeted training and facilitating the evaluation of performance in this type of education, individual training and influential leading of learning experiences via permanent feedback (7). One of the researches states that models and patterns related to educational issues similar to competency based training that is presented in simple, fluent, and without specialized terminology can have an effective application in the empowerment of medical teachers (14, 15).

Recently, this approach is considered in professional teaching and training of medicine and can be stated that it is a new approach in medicine (16, 17, 18). However, designing programs in accordance with the competency approach requires precise programming, preparation and commitment of all involved people in education (19, 20). Meanwhile, one of the main steps of competency based training is to have a model and pattern of competency (specifying the features of capabilities) and specify credibility; this model can be used for different purposes such as selection and recruitment, needs-assessment and educational programming, enhancement and empowerment of people and supervision on performance (21).

Competency model is a model of required abilities and behavior to do professional activities successfully. Competency is a vast domain of traits and characteristics, including knowledge, skills, abilities, attributes, attitudes and interactions, motivations and behavior that can enable the person to do his job effectively and efficiently (22). To design competency model and credibility, it seems necessary to specify and identify these competencies to program for the group empowerment. Therefore, the present study attempts to study the credibility of competency model required for teachers of medical university that is devised in another research by Mohammad Hosseinzadeh and Karami (2014) via descriptive study (23).

The meaning of teachers' educational qualifications is the traits that help him/her in teaching properly (24). In an article named teachers' competencies, the competencies were mentioned in 9 arenas: competencies in relation to the field, competencies in relation to research, competencies in relation to curriculum, competencies in relation to permanent learning, cultural-social competencies, competencies related to affection, communication competencies, competencies of information technology, environmental competencies, teachers' competencies about values, behavior, communication, purposes and actions that influence their performance at school. The purpose of the present study is to credit these competencies.

## METHODS

This is a descriptive cross-sectional study. The current study was conducted in 2014. This study used census. Informed consent was given from all the participants. The questioner was emailed to all faculty members. After 20 days the replies were received. The sample includes 125 faculty members of medical sciences of the University of Mashhad. The data were collected via a questionnaire designed by the researcher that

was based on another research conducted by Mohammad Hosseinzadeh and Karami (2014) that devised educational qualifications pattern of faculty members of Mashhad University of Medical Sciences from professors and students' perspective. The validity of the questionnaire was assessed according to experts' ideas and reliability was confirmed based on Cronbach's alpha (0/9). The questionnaire had 24 items; and in total, 4 domains of competencies that are required for the success of teachers of medical sciences. According to the results of Mohammad Hosseinzadeh and Karami (2014), the researchers concluded that if a faculty member wants to be successful in education he/she should have a number of competencies including medicine, research, teaching and general. The questionnaires were distributed both on paper and by emails. The collected data were analyzed by SPSS software. One sample t test and Pearson correlation were used for data analysis according to data distribution.

## RESULTS

The results of the current study answers to 5 questions that were put in the questionnaire:

1. What is the perspective of faculty members of Mashhad University of Medical Sciences toward the importance of educational qualifications required for teachers in different domains including medicine, research, teaching and general? The data related to this question were analyzed. The collected results are analyzed by t-test and presented in table 1.

Among the variables, the average score of the perspective of faculty members of Mashhad University of Medical Sciences had higher test value in comparing with required educational qualifications for professors. In general, there was a positive attitude toward required educational competencies.

2. Is there any significant difference between the desired position and the perspective of faculty members of Mashhad

University of Medical Sciences toward educational qualifications required for teachers in different areas including medicine, research, teaching and general?

In the following, in order to realize the positive or negative perspective of faculty members of Mashhad University of Medical Sciences toward educational qualifications required for professors in comparison with the desired position, the average of their opinion of variables was compared with cutoff point 75% ( $x=3$ ); and as it is shown, generally the average score of educational qualifications required for faculty members of Mashhad University of Medical Sciences in comparing with educational qualifications required for professors in all variables was higher than test value and faculty members agreed and had a positive attitude toward the four dimensions. (table2)

3. What is the perspective of faculty members of Mashhad University of Medical Sciences toward each educational qualification required for professors?

Since the average score of the perspective of faculty members of Mashhad University of Medical Sciences in comparing with educational qualifications required for professors was higher than the test value in all variables, therefore, they totally have a positive attitude toward educational qualifications and assume that all of them are necessary to be successful in the education process. (Table 3)

4. Is there any significant difference between the perspectives of faculty members of Mashhad University of Medical Sciences toward each educational qualification required for professor and desired position?

5. In general, the average score of the perspective of faculty members toward educational qualifications required for professors was higher than test values in all variables except the ones that will be mentioned in the following and they assumed them to be necessary to be successful in teaching. However, the perspective of faculty members of

**Table 1. analyzing perspective of faculty members of Mashhad University of Medical Sciences toward required educational qualifications for teachers (comparing with cut-off point 50%, corresponding with  $x=2/5$ )**

Required competencies to achieve success in education	M	SD	Test value	t	df	p	DM
research competencies	3.21	0.86	2.50	15.94	124	0.000	0.71
Medical competencies	3.29	0.91	2.50	16.99	124	0.000	0.79
Teaching competencies	3.34	0.62	2.50	22.95	124	0.000	0.84
General competencies	3.40	0.71	2.50	24.88	124	0.000	0.90

**Table 2. analyzing the perspective of faculty members of Mashhad University of Medical Sciences toward educational qualifications required for professors (comparing with cut-off point 66%, corresponding with  $x=3$ )**

Required competencies to be successful in education	M	SD	Test value	t	df	p	DM
Research competencies	3.21	0.86	3.00	4.71	124	0.000	0.21
Medical Competencies	3.29	0.91	3.00	6.34	124	0.000	0.29
Teaching competency	3.34	0.62	3.00	9.44	124	0.000	0.34
General competency	3.34	0.71	3.00	11.14	124	0.000	0.40

**Table (3). analyzing the perspective of members of Mashhad University of Medical Sciences toward each educational qualifications required for professors (comparing with cut-off point 50%, corresponding to  $x=2.5$ )**

	M	SD	Test value	t	df	p	DM
Qualifications to document learning experiences	3.114	0.634	2.50	10.330	124	0.000	0.614
Appropriate reviewing and assessment skills	3.267	0.614	2.50	13.216	124	0.000	0.767
Research competency in education	3.026	0.777	2.50	7.256	124	0.000	0.526
Foreign Language skills	3.418	0.619	2.50	16.050	124	0.000	0.918
Communication skills	3.655	0.561	2.50	22.173	124	0.000	1.155
Personal competencies	3.716	0.471	2.50	27.412	124	0.000	1.216
Team-work skills	3.260	0.636	2.50	12.821	124	0.000	0.760
Competencies related to general scientific information	3.123	0.628	2.50	10.549	124	0.000	0.623
Lifelong learning skills	3.330	0.671	2.50	13.257	124	0.000	0.830
Time Management skills	3.359	0.636	2.50	14.609	124	0.000	0.858
Professional and clinical skills (in the case of clinical teachers) in relation with field	3.673	0.576	2.50	19.540	124	0.000	1.173
Skills of teaching public health to society	3.009	0.751	2.50	7.074	124	0.000	0.509
Medical ethnics competency	3.630	0.659	2.50	18.060	124	0.000	1.130
Health economy (in the case of clinical teachers)	2.846	0.744	2.50	4.437	124	0.000	0.346
Skills of teaching to patient	3.349	0.723	2.50	11.914	124	0.000	0.849
Skills to use educational technology and IT	3.379	0.599	2.50	15.801	124	0.000	0.879
Skill in educational planning	3.248	0.643	2.50	13.131	124	0.000	0.784
Student assessment skill and using new student assessment methods	3.371	0.585	2.50	15.827	124	0.000	0.871
Skill in assessing program and using new program assessment methods	3.095	0.725	2.50	8.809	124	0.000	0.595
Skill in providing educational materials	3.230	0.634	2.50	12.449	124	0.000	0.730
Skills in attracting students' participation in education	3.482	0.583	2.50	17.979	124	0.000	0.982
Adult education skills	3.063	0.815	2.50	7.246	124	0.000	0.563
Competencies related to art of teaching	3.629	0.536	2.50	22.685	124	0.000	1.129
Competencies related to attract and keep students' motivation	3.634	0.483	2.50	25.164	124	0.000	1.134

Mashhad University of Medical Sciences toward educational qualifications required for professors included qualifications to document learning experiences ( $t= 1.918$ ,  $df=116$ ,  $p=0.058$ ), research qualification in education ( $t= 0.360$ ,  $df= 116$ ,  $p=0.720$ ), skills of teaching public health to society ( $t=0.127$ ,  $df=116$ ,  $p=0.899$ ), health economy ( $t=1.972$ ,  $df= 116$ ,  $p=0.052$ ), skill in assessing program and using new program assessment methods ( $t=1.415$ ,  $df=116$ ,  $p=0.160$ ), and teaching adult skill ( $t=0.818$ ,  $df=116$ ,  $p=0.415$ ), these variables have no significance difference ( $p<0.05$ )

5. What is the relationship between different educational qualifications required for teachers in difference arenas including medial, research, teaching and general from the perspective of faculty members of Mashhad University of Medical Sciences?

Finally, Pearson's correlation coefficient was used to analyze the relationship between different variables and the perspective of faculty members toward different educational qualifications required for professors in medical, research,

teaching and general arenas. As it is presented in the table below, the results showed that there is significance difference between variables. Moreover, the level of significance was positive in different variables ( $p<0.01$ ). (table4)

## DISCUSSION

Professors and teachers of medical sciences university play a crucial role in the achievement of the university in education. If the universities want to achieve their purposes, the teachers should have required capabilities and qualifications to provide professional services in their field and also have other qualifications related to education arena.

Consequently, in order to empower faculty members for professional development (in relation with education) and achieve educational goals, it is essential to upgrade faculty members' performance. Faculty members' empowerment in educational issues, designing and performing empowerment programs and using appropriate educational approaches in development of capabilities and potentialities of human resources is an essence. One of these approaches is

**Table 4. level of correlation between different educational qualifications required for professors in the fields of medicine, research, teaching and general from the perspective of faculty members of Mashhad University of Medical Sciences.**

Components of the questionnaire	First component	Second component	Third component	Fourth component
Research qualifications				
Medical qualifications	0.59**			
Teaching qualifications	0.45	**0.48		
General qualifications	**0.62	**0.65	**0.48	

\*\* . Correlation is significant at the P <0.01 level (2-tailed).

“Competency Based Training” (8, 17, 18). A main characteristic of this method is to determine specific and local competencies (25).

One of the main steps of Competency Based Training is Competency Model (determining a list of instances of these features) and to validate. Therefore, the purpose of the present study is to credit competency model for the professors of medical university for achievement in education that was developed by Mohammad Hosseinzadeh and Karami (23). The results of the study showed that almost all of professors of medical sciences university consider all competencies in the model necessary to achieve educational purposes, and confirmed the credit of model. These findings

were compatible with other studies in this field (24, 25, 28, and 29). It seems that this model can provide a structure to explain profession and teaching. It also provides an assessment scale to evaluate teachers' performance; moreover, teaching performance of faculty members can be evaluated by Medical Sciences University. In addition, this model can be used for other purposes such as selection and recruitment of faculty members of Medical Sciences University, educational assessment and planning, upgrade and empower human resources and supervision on performance.

#### Conflict of interest:

Authors declare no conflict of interest.

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