

# Development and Validation of Assessment Instrument for Community-Engaged Scholarship of Medical University Faculty

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## Abstract

**Background:** In recent years, the scholarship of faculty, responding to the needs and concerns of community, has received the attention of experts.

**Objectives:** The present study aimed to develop and validate an assessment instrument for community-engaged scholarship of medical university faculty.

**Methods:** The present study was carried out in two stages. First, after searching and extensive reviewing of texts, and conducting qualitative interviews with experts, an assessment instrument for community-engaged scholarship of medical university faculty was developed and validated. In the second stage, the content analysis of mentioned instrument was performed. In order to evaluate the content validity of the instrument, ten individuals with specialized knowledge in the fields of medical education and faculty evaluation were invited to participate in a conclave. These people assessed the developed instrument in terms of content validity index, and content validity ratio.

**Results:** A 20-item instrument was developed to assess the community-engaged scholarship of medical university faculty. The mean CVR and CVI of all questions based on experts' opinions were 0.90 and 0.925, respectively, indicating high and acceptable validity of developed instrument. Therefore, based on the values of CVR and CVI, the content validity of all 20 initially developed questions was accepted for the final instrument.

**Conclusion:** 20-question questionnaire for assessing the community-engaged scholarship of the medical university faculty had a good content validity. It is recommended that this instrument be used in the regulations for the promotion of faculty.

**Keywords:** Community-Engaged Scholarship; Instrument; Medical University Faculty

## Background

In today's world, the university is considered one of the main civil institutions, so that the growth and development of any community depends on the quality of its services (1). The principal and customary purpose of the university, which is referred to as a university of the first generation, was to provide education. The primary objective of a university of the second generation is to generate knowledge through research. One of the key missions of the third-generation university, in addition to the educational and research functions, is entrepreneurship, and creating new economic values. In the third generation (entrepreneurial) university, competition increases, and using knowledge becomes important, along with

education and research. Thus, the relationship between industry, and university is strengthened (1).

A new generation of universities, called as the fourth-generation university, has emerged (2, 3). Fourth generation universities have local and regional development policies and procedures, manage intellectual capital, and environmental changes, which are community engaged universities (4, 5). The university will serve as the hub for all national scientific, technical, and cultural advancements in the fourth generation of university students, who are excellence-oriented and whose connections to the local and global community will both function as catalysts and active participants in these changes. The central mission of the fourth-generation university is to manage future

change, and guide its immediate environment (6, 7). Modern communities face complex issues and problems that universities can be effective in solving and preventing them (8). In this regard, in recent years, attention to the roles of faculty members and their effect on local development indicators was the focus of many experts (9, 10). The community-engaged scholarship of faculty refers to the educational, research, and executive activities of faculty that respond to the needs and concerns of community. These people are those who work outside the traditional boundaries of academic environment. In other words, community-engaged scholarship includes scientific and creative activities through which knowledge is generated, and verified in reality (11, 12). This type of knowledge is generated via the partnerships with people/community, and organizations outside academic environment (13-15). Community-engaged scholarship specifically include activities that aim to answer the questions, concerns and problems of the community. Based on Metzger and Zakers (16), community-engaged scholarship generally include following characteristics:

A: These activities should be related to a community problem; B: These activities include interaction with community; C: These activities should seek answers to questions that are related to public concern; D: These activities should widen the boundaries of knowledge in a specific scientific field; E: Faculty should have a leadership role in carrying out these activities; F: These activities should lead to enhancing public knowledge and awareness; G: These activities should lead to the discovery of different aspects of knowledge, making connections between them and using them practically.

The criteria for assessing the community-engaged scholarship of faculty are in three areas of teaching, research, and executive services. The duties of faculty in teaching are more than in the past, and they are considered as people who cause the development and progress of community/organization. Research involves the generation, analysis, and implementation of information and technology in a manner that establishes a connection to the issues faced by members of the public in both academic and practical spheres. This connection facilitates the active involvement of community members in the research process. In executive services, faculty is encouraged to provide services to external communities (outside of the university), communicate with these communities, and play a leadership role in community engaged organizations (17-19).

The experience of corona epidemic showed that there are a great number of professors who can publish articles on the topic of corona in Iran, but there are very few professors who speak on the radio for people, make educational clips, facilitate the presence of non-governmental organizations, etc., since none of these measures were given a privilege in the promotion regulation. Actively affecting social and cultural environment requires more effort and collective determination. Regarding what was stated above, to develop the scholarship of medical university faculty in Iran in the area of solving health, social, economic and moral problems and increase the more concrete effectiveness of university research at the community level, the inclusion of the issue of community-engaged scholarship of faculty in the regulation of promoting faculty members will be a necessity and in line with the prestigious universities of world.

### Objectives

This study was conducted with the aim of developing, and validating an assessment instrument for the community-engaged scholarship of medical university faculty in Iran.

### Methods

This study was carried out based on the method suggested by Lynn (20). Searching articles using keywords, such as community-engaged scholarship; instrument; medical university faculty and related databases in English Scopus, Medline and persin, such as Embase, Iranmedex, Magiran, SID were conducted. Moreover, the study was carried out in two stages: the stage of preparation, and development of items (developmental stage), and the stage of judgment-quantification stage. In Figure 1, the stages of conducting the study were shown.

*The first stage: developing data collection instrument:* Developing the components of data collection instrument was done after extensive literature review of valid domestic, and foreign scientific articles in two literature reviews. The purpose of the first part of literature review was to determine the conceptual framework and areas of community-engaged scholarship of faculty (21, 22). The elements for evaluating the faculty members' community-engaged scholarship in each of the domains are taken out and placed in the second section of the literature evaluation. There were three steps done at this point. In the first step, the relevant studies in this area were reviewed, and all the characteristics of the community-engaged

scholarship of faculty were extracted. In the second step, the items for assessing the community-engaged scholarship of faculty were developed. In the third step, these items were organized, and revised in such a way that their order was logical and understandable for the respondents (20).

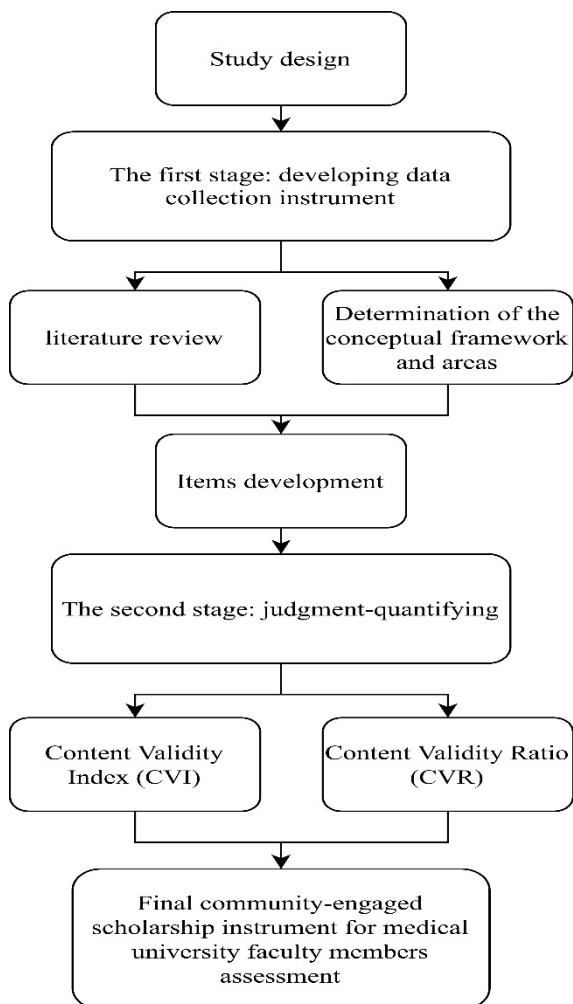


Figure 1. The steps of the study method

*The second stage: judgment-quantifying:* At this stage, a group of elites consisting of ten people who were experienced in the area of medical education, and assessment of faculty were invited. Ten people were selected accordingly, which is twice the minimum number suggested by Lawshe to reach the required consensus, and the validity coefficient with a higher level of confidence (23). These people assessed the developed instrument from two viewpoints: Content Validity Ratio (CVI) and Content Validity Index (CVR). To calculate the content validity index, the elite group was asked to rate each item in the constructed instrument in terms of their link to the assessed structure using a four-point

Likert scale (1 = not relevant, 2 = somewhat relevant, 3 = relevant, 4 = very relevant). Based on the number of items whose score was 3 or 4, the content validity index should be calculated. This index was calculated both at the level of each item and in the entire developed instrument. Which is also acceptable at least for CVI with 0.78. The content validity ratio was used to examine the necessity of each item. At this stage, the elites were asked to assess each item based on a three-point Likert scale (the question is necessary, the question is useful but unnecessary, and the question is unnecessary). Then, the following equation was used to measure the content validity ratio:

$$(1) \quad CVR = \frac{NE - \frac{N}{2}}{\frac{N}{2}}$$

Where CVR is content validity ratio, NE is Number of people who have selected the option of “this question is necessary”, and N is total number of elites.

The number obtained as a result of the calculations in this equation will be between -1 and +1. The larger this number is, the greater the consensus among the elites. The mean content validity ratio of all items was considered the content validity index of whole instrument (24). The criteria for accepting or rejecting each question based on accepted CVR values and the number of panel members are presented in Table 1 (25).

Table 1. Minimum CVR values according to the number of panel members

Number of panel members	Minimum acceptable CVR
5	0.99
6	0.99
7	0.99
8	0.85
9	0.78
10*	0.62*
11	0.59
12	0.56
13	0.55
14	0.51
15	0.49
20	0.42
25	0.37
30	0.33
35	0.31
40	0.29

\*Since there are 10 panel members in this study, if the CVR value of each question is equal to or greater than 0.62, the question will be accepted (25).

## Results

**Extracted items and areas:** Based on the extensive literature review, seven criteria were finally extracted for measuring the community-engaged scholarship of faculty, which were: specific goals, appropriate preparation, appropriate methodology, approach, major findings, presenting important results, and continuous critical treatment. For each of these criteria, items which can measure these areas were determined (Table 2). Finally, 20 items were developed.

**CVR, CVI values and acceptance or rejection results of each question:** Expert judgment was used to evaluate

the content analysis of the acquired instrument's questions. CVR and CVI values were computed for every question by putting the information derived from the expert judgment into Excel software. Table 2 presents the values of CVR, CVI, and the acceptance or rejection results of each question.

Based on Table 1, the minimum CVR values due to the number of 10 panel members is 0.62, and questions with CVR values greater than 0.62 are accepted. CVR, CVI values and acceptance or rejection results of each question in developed instrument is shown in Table 2.

**Table 2.** CVR, CVI values and acceptance or rejection results of each question

Item	Criterion	Question	CVR	CVI	Status
1	Specific goals	Has the faculty stated the goals of his work and its value for the development of the community?	0.8	1	Acceptance
2		Is the desired activity in line with the professional role of the faculty and the mission of his educational department?	0.8	0.9	Acceptance
3		Are the goals defined by the faculty realistic and achievable?	1	1	Acceptance
4		Does the faculty have enough skills to engage in the project?	1	1	Acceptance
5	Appropriate preparation	Have the important economic, social, cultural and political factors been included in the review of the topics?	0.8	1	Acceptance
6		Have the conditions provided for engagement of the people and other organizations?	0.8	0.9	Acceptance
7	Appropriate methodology	Are the proposed methods appropriate to the goals, questions and the desired work area?	1	1	Acceptance
8		Has it been explained how different partners engage in the program components (assessment, development, implementation and evaluation)?	0.8	1	Acceptance
9	Approach	Is the program appropriate and based on the culture of the community?	0.8	1	Acceptance
10		Is the desired activity based on creative and original approaches?	1	1	Acceptance
11	Major findings	Has the program led to positive results for the community?	1	1	Acceptance
12		Has the program led to positive results for the university?	1	1	Acceptance
13		Has the program led to the creation of new resources (for example, funding for research) for the program itself, the community, or the institution?	0.8	0.8	Acceptance
14		Does the program have required sustainability?	0.8	1	Acceptance
15		Does community believe that obtained results are important?	1	1	Acceptance
16	Presenting important and significant results	Are the process and results of this collaborative work published in the community?	1	1	Acceptance
17		Have the process and results of this collaborative work been published in academic communities?	1	1	Acceptance
18	Continuous critical treatment	What lessons have been learned by the faculty from this community-engaged scholarship?	0.8	1	Acceptance
19		Will these lessons have an impact on the professional programs of the faculty in the future?	0.8	0.9	Acceptance
20		Have the performers assessed and criticized their performance carefully and thoughtfully, and have they used the results of this reflection along with the results of others' assessments to improve their work development?	1	1	Acceptance

**Introduction of the final questionnaire:** After examining the validity of the questions, all questions were approved and accepted. The final instrument for assessing the community-engaged scholarship of medical university faculty in Iran consisted of 20 items which were on a 0–2 Likert scale (no = 0, somewhat = 1, and yes = 2).

### Discussion

In today's world, the duties of faculty members in teaching have become wider than in the past and they are considered people who bring development and progress for the community.

Through activities, such as holding public educational lectures, engaging students in the community, producing content, and resources for enhancing public knowledge, such as books, pamphlets, applications, podcasts, active presence on television and radio, launching websites, and discourse creation in the community, faculty is encouraged to provide services to external communities (outside the university), communicate with these communities, and play a leadership role in community engaged organizations. In order to accomplish this, it is imperative to assess their endeavors, specifically the protocols governing faculty advancement, with an eye toward more than just academic, research, and management/service undertakings; encompass endeavors that contribute to the socioeconomic and cultural progress of the local community as well. A 20-item instrument was developed to assess the community-engaged scholarship of medical university faculty. The instrument utilized in this research was constructed through an exhaustive literature review and input from esteemed institutions worldwide. Its validity was assessed using quantitative methods of content validity (26-28). The present study is the first domestic and foreign study that used CVI and CVR methods to design an instrument for assessing community-engaged scholarship of medical university faculty in Iran. The mean CVR and CVI of all questions were 0.90 and 0.925, respectively, indicating high and acceptable validity for the developed instrument. Polite et al. proposed a score of 0.90 and above for the mean content validity index (29).

To assess the community-engaged scholarship of medical university faculty, the criteria of specific goals (4 questions), appropriate preparation (2 questions), appropriate methodology (2 questions), approach (2 questions), major findings (5 questions), presenting important and significant results (2 questions), and

continuous critical treatment (3 questions) were used. Table 1 shows that the minimum CVR values for a panel of ten individuals are 0.62, and questions with CVR values greater than 0.62 were approved. Therefore, based on CVR and CVI values, all 20 initially developed questions were accepted for the final instrument. To score the community-engaged scholarship of faculty in the final developed instrument, three-point Likert method was used. One of the limitations of this study was lack of domestic, and foreign studies that explain the process of developing the assessment instrument items, and calculating its content validity. However, in the prestigious universities of world, assessment instruments are sometimes placed on the sites, including American universities (30), and Canadian universities (31, 32). The other limitation was that our work was limited to domain identification, item generation, and assessment of content validity (i.e., item development). We did not implement the steps of scale evaluation (i.e., testing reliability and construct validity).

### Conclusion

Considering the need for the active presence of faculty members in the community in the world's prestigious universities, the issue of assessing the community-engaged scholarship of faculty should be included in the promotion regulations sooner or later. As a result, it is essential to create evaluation tools in this field that take into account the indigenous and cultural circumstances of our nation. This study showed that the instrument for assessing the community-engaged scholarship of medical university faculty has a good content validity with twenty items.

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