

# Educational Programs' Quality Assessment Based on Graduates' Comments

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## Abstract

**Background:** The specific goal of this study was quality assessment the educational programs of basic and clinical sciences of Tehran University of Medical Sciences (TUMS) according to the graduates' viewpoints.

**Methods:** We obtained the list of all 1200 graduates of TUMS in 2007. Using a random generation table, 350 subjects were selected from the seven faculties of TUMS in proportion to the number of graduates from each faculty. The data collection device was a 15 item researcher-made questionnaire according to the existing problems in the educational system of the university. All the items of the questionnaire were constructed and standardized in terms of validity and reliability based on the latest reliable sources and textbooks on educational assessment (Likert indices). Cronbach alpha was estimated to be 0.85.

**Results:** The most satisfaction from educational programs in basic sciences and clinical sciences was related to practical skills ( $4.36 \pm 1.22$ ) versus satisfaction with education ( $4.76 \pm 1.66$ ). The quantity indices in basic sciences were 68.44% (3.42) which is in a fairly optimal range; for clinical sciences it was 77.2% (3.86), being also in an optimum range.

**Conclusion:** TUMS must make an attempt to reach the optimal point in every educational aspect.

**Keywords:** Assessment; Quality; Educational programs; Graduates; Iran

## Introduction

The quality assessment of educational programs in basic and clinical sciences curricula is among the major responsibilities of the universities of medical sciences in Iran because the graduates' efficiency and capabilities in providing health services for the improvement of health indices depend upon the fulfillment of such programs. That is, if the educational programs are not properly designed and executed, irreparable damage and negative social, economic, and cultural effects will be brought about.<sup>1</sup> The optimal situation in every micro- and macro-educational system can be achieved if a) Research and educational assessment are conducted in the related fields,

b) Educational development planning is executed and c) Educational development management is exercised.<sup>2</sup>

Preparing educational development programs are among the functions of the educational management. Educational research, educational development planning, and educational management all prepare the grounds for the achievement of the optimal situation in the educational systems.<sup>2</sup> In every country, educational activities are considered as the investment of one generation for the next.<sup>1-3</sup> The major goal of such investment is to develop human resources. Meanwhile, the evaluation of educational organizations, the assessment of programs, and the evaluation of the employees and their services can play an important role in the attainment of educational quality.

The issue of quality in higher education has attracted the attention of many scholars.<sup>4</sup> The improvement of quality entails competitive benefits for the organizations including higher education institutes; a fact

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which has drawn the attention of many researchers to this field.<sup>5</sup> The aim of the quality system in higher education is to systematically assess all its aspects. Different patterns of evaluation have revealed the positive and negative points of the programs and made it easy to judge and make decisions.<sup>6</sup> The goal of quality assessment of the educational programs at TUMS was to gather data regarding the graduates' viewpoints about the quality of the input, process, output, and outcome to judge about the educational and health programs as well as the effectiveness of such programs, and to provide the information necessary for decision-making regarding future programs.<sup>7,8</sup> The specific goal of this study is quality assessment of the educational programs at Tehran University of Medical Sciences (TUMS) because the most important responsibility of each university is to be updated and evaluate the educational system according to postgraduates' viewpoints.

**Materials and Methods**

350 TUMS graduates were randomly selected from 7 faculties for a cross-sectional study, using a descriptive-case method. In Iran, every student is admitted to university by a national entrance exam called Konkour. They normally study in university for 14 semesters. In the first 2 years, basic science is taught and the next 2 terms constitute the fundamentals of clinical medicine (physiopathology course). In the next five terms, stager course is presented, followed by 18 months for the internship course. Education is discipline based. There are two major exams in this period, one after finishing the basic sciences course and the other before the internship period. First, the list of all 1200 TUMS graduates in 2007 was obtained. Then, using a random generation table and proportionate to the number of graduates of each of

the seven TUMS faculties, 350 subjects were selected for the study. The subjects were all asked to fill out a questionnaire at the time of graduation. Developed by the TUMS Educational Development Center (EDC), the questionnaire was coded so that the subjects could remain anonymous.

The data collection device was a 15-item researcher-made questionnaire and the alternatives were either of a closed type, open-ended type or multiple choice format. All the items of the questionnaire had been constructed and standardized in terms of validity and reliability based on the latest reliable sources and books on educational assessment. Moreover, the validity of the questionnaire was determined and Cronbach alpha was estimated to be 0.85.<sup>9</sup> To analyze the obtained data, such statistical analyses as describing the data, computing the frequencies, drawing the frequency tables, computing the percentages, chi-square, and the analysis of variance were employed. All the data were analyzed, using SPSS software (versions 10, Chicago, IL, USA) and applying descriptive and inferential statistical analyses.

**Results**

A sample of 350 TUMS graduates (65.71. % females and 34.28% males) was studied in the present assessment. The mean age of the graduates in basic sciences and clinical sciences were 23.76, 27.25, respectively. The mean of the total GPAs of the program and basic sciences were 15.49, 15.75, respectively and a range of 12-20. The mean of the years in training graduates of basic sciences and clinical sciences were 5.3, 7.8, respectively (Table 1). Most of the graduates (93.4%) had been accepted to the university as free-quota students, among whom 57.4% had entered the university from 2000 to 2007. Their academic and research activities included translation of

**Table1:** Gender, age, years in training graduates in TUMS, 2007

Type of graduate	Gender Male/ female	Age (mean±Sd)	Years in Training (mean±Sd)	Mean score (mean±Sd)	No. of samples
Basic sciences	20/172	9.02/±23.76	1.3/±5.3	15.75	192
Clinical sciences	100/58	8.96/±27.25	1.8/±7.8	2.13±15.49	158
Results of comparison		t=3.59 df=348 P value=0.0004		t=0.9423 df=348 P value=0.3467	
Total	120/230				350

books (.6%), book compilation (5.4%), articles in domestic journals (6.3%), articles in foreign journals (4%), co-researcher in the research projects (26%), and inventions and discoveries (.3%). Most of the graduates (90.1%) were satisfied with educational system of the university (Table 2).

Among the sample members of basic sciences, 68.44% were satisfied with their university and 74.9% asserted that they were willing to continue

their studies at Tehran University of Medical Sciences (TUMS). Some 42.18% of the respondents assessed the basic sciences programs as good and optimal. Besides, 52.8.1% of the graduates regarded technical courses of the program as good and optimal while 77.60% were satisfied with the general courses. Moreover, 48.95% and 33.93% of the graduates' comments were "good" regarding apprenticeship' and interns' courses, respectively (Table 3). Furthermore,

**Table 2:** Frequency and percentages of the graduates' viewpoints on the topics evaluated in terms of sex, TUMS, 2007

Gender Topics	Male No. (%)	Female No. (%)	Total No. (%)	Significance (P value)
Satisfaction with educational quality	81 (79.4)	230 (94.7)	311 (90.1)	$p < 0.0001$
Satisfaction with educational program	61 (90.1)	145 (58.7)	206 (58.9)	$p = 0.960$
Satisfaction with professors' manner of teaching	68 (65.4)	154 (62.6)	222 (63.4)	$p = 0.620$
Satisfaction with professors' evaluation in theoretical courses	54 (51.9)	119 (48.4)	173 (49.4)	$p = 0.540$
Satisfaction with professors' evaluation in clinical wards	27 (26.0)	76 (30.9)	103 (29.4)	$p = 0.350$
Satisfaction with educational management's planning	27 (26.0)	34 (13.8)	61 (17.4)	$p = 0.006$
Satisfaction with educational devices	45 (43.3)	130 (52.8)	175 (50)	$p = 0.100$
Satisfaction with recreational facilities	75 (72.1)	137 (55.7)	212 (60.6)	$p = 0.004$
Mean (%)	35.81	64.186	100	

**Table 3:** The distribution of relative and absolute frequency of satisfaction among graduates of basic sciences TUMS, 2007

Likert Scale Topics	Very weak (1)		Weak (2)		Moderate (3)		Good (4)		Excellent (5)		Average	Standard deviation
	No	%	No	%	No	%	No	%	No	%		
Satisfaction with education n=192	0	0	0	0	54	28.1	138	71.9	0	0	3.6	1.25
Basic sciences n=192	6	3.1	8	4.2	85	44.3	81	42.2	12	6.2	3.4	0.76
Technical courses n=192	0	0	0	0	54	28.1	100	52.8	38	19.8	3.9	0.86
General courses n=192	0	0	0	0	20	10.4	149	77.6	23	12.0	4.0	1.31
Apprenticeship n=192	0	0	0	0	52	27.1	94	48.9	46	23.9	4.0	0.83
Intern's courses n=192	0	0	37	19.3	61	31.8	69	35.9	25	13.0	3.4	0.54
Practical skills n=192	0	0	0	0	0	0	122	63.5	70	36.4	4.4	1.22
Theoretical skills n=192	0	0	0	0	54	28.1	119	62.0	19	9.9	3.8	1.02
Communication of skills n=192	0	0	0	0	26	13.5	100	52.1	66	34.4	4.2	3.98
Methods of educational n=192	0	0	0	0	36	18.8	122	63.5	34	17.7	4.0	1.04

among the graduates, 41.1% had some problems with the educational programs (Table 2). Such problems were mostly related to the stagers' courses, faculty members' methodology (36.6 %) (Table 2), technical courses in clinical departments (28.12%) (Table 3), and faculty members' evaluation in theoretical courses, clinical wards, and general courses (50.6%, 70.6% and 10.41% respectively) (Table 2 and 4).

About 89.9% of the graduates of clinical sciences were satisfied with the methodology and design of the educational programs (58.9) (Table 2 and 4). Most of the graduates were satisfied with physiopathology (82.3) and basic sciences (80.4) (Table 4). So, the graduates of clinical sciences (55.7%) had some problems with internship courses and theoretical and practical skills (Table 4).

Only 3.7% of the graduates had problems with the elective courses; the figure was 12% for the stagers' courses. Meanwhile, 17.4%, 50%, 44.3%, and 60.6% of the respondents were dissatisfied with the educational and treatment responsibilities in different wards of the hospitals, supplementary educational devices and facilities, coupons for the purchase of books, and recreational facilities, respectively. The most satisfac-

tion with educational programs in basic sciences and clinical sciences was related to practical skills, 4.36 versus satisfaction with education, 4.76 respectively (Table 3 and 4). The most dissatisfaction with educational programs in basic sciences and clinical sciences was related to internship course, 3.42 versus 3.44, respectively (Table 3 and 4).

The graduates participating in the present study considered the quality assessment of educational programs not favorable. Their suggestions for the enhancement of the quality of health, research, and educational programs are as follows: 1) Recruitment of distinguished faculty members, 2) Respect for the learners, 3) Learners' participation in health, research, and educational programs, 4) Delegation of responsibility to interns in their courses in clinical sciences, 5) Compilation of written stagers' and internship programs in basic and clinical sciences, 6) Compilation of the details of the wards' responsibilities and of comprehensive educational programs in basic and clinical sciences, 7) Enrichment of educational and research programs, 8) Review of course programs, 9) Updating theoretical and applied courses with regard to the needs of the society and based on international

**Table 4:** The distribution of relative and absolute frequency of satisfaction among graduates of clinical sciences TUMS, 2007

Likert Scale	Very weak (1)		Weak (2)		Moderate (3)		Good (4)		Excellent (5)		Average	Standard deviation	No.	
	No	%	No	%	No	%	No	%	No	%				
Topics														
Satisfaction with education n=158	0	0	0	0	2	1.3	34	21.5	122	77.2	4.8	1.66	1.66	
Basic Sciences n=158	0	0	0	0	31	19.6	127	80.4	0	0	3.8	1.39	1.43	
Physiopathology n=158	0	0	0	0	28	17.7	130	82.3	0	0	3.82	1.43	1.28	
Stagers, courses n=158	0	0	0	0	41	25.9	117	74.1	0	0	3.7	1.28	0.94	
Intern's courses n=158	0	0	0	0	88	55.7	70	43.3	0	0	3.4	0.94	0.93	
Practical skills n=158	0	0	0	0	74	46.8	79	50	5	3.2	3.6	0.93	0.91	
Theoretical skills n=158	0	0	0	0	77	48.7	76	48.1	5	3.2	3.5	0.91	0.61	
Communication of skills n=158	10	6.3	11	7	47	29.7	60	38	30	19	3.6	0.61	1.58	
Methods of educational n=158	0	0	0	0	16	10.1	142	89.9	0	0	3.9	1.58		

standards, 10) Development and enhancement of students' researches, 11) Periodic control and supervision over the physicians' treatment activities and 12) Evaluation of clinical, attitude, and communication skills.

The data collected from the graduates were all analyzed in terms of their sex, using a Chi Square test. Table 2 indicates that there is a statistically significant relationship between the graduates' sex and their satisfaction with the educational quality, educational management planning and recreational facilities ( $p < 0.05$ ); however, there was no statistically significant relationship between sex and educational programs or faculty members' methodology assessment methods in theoretical or clinical courses and recreational facilities ( $p > 0.05$ ). Graduates with more research background were more satisfied with educational programs ( $p < 0.0001$ ). Changing the faculty members' methodology from conventional to up-to-date types was one of the most common suggestions mentioned by the students. Changing the evaluation system of faculty members' methodology in theoretical and clinical courses, cooperation between faculty members and students in the students' projects, revision of the educational program according to community requirements, and augmentation of educational programs in stager and internship levels were the other comments mentioned.

## Discussion

Program evaluation is a potentially valuable process<sup>10</sup> and a positive attitude towards education and research, hospital and clinical issues, and quality assessment exists at the universities. Studies show that such an approach leads to an improvement in the quality of educational programs.<sup>11,12</sup> The graduates participating in the present study considered educational programs quality assessment not valuable.

Based on the research studies conducted in Iran and some other countries and after comparing their findings with those of the present study, the following results are obtained. Najafipour, studying the graduates' viewpoints about their years of education in Shiraz University, Iran, found out that 65% of them believed the knowledge they attained was based on community medicine while 62% said that their knowledge was based on clinical diagnoses and decision-making in the treatment of diseases.<sup>13</sup> The results of the above-mentioned study revealed a higher degree of satisfaction compared with those of the

present study. The figure for TUMS graduates' satisfaction with the clinical skills was found to be 36.3%.<sup>14</sup> At the international conference of the European Medical Education Association in Scotland, Farzianpour asserted that the TUMS educational quality as commented by those who graduated in 2002 was as much as 81%. The most important suggestion of her subjects was reported to be the teaching of medicine in an advanced way and based on modern technology.<sup>14</sup> Whelan *et al.* from the US did a study on behalf of the research committee for the International Medical Graduates (IMGs). The results of that study revealed that all general medicine graduates at the international level needed web-based international educational standards for the improvement of their medical knowledge.<sup>15</sup> The findings of that study are similar to the suggestion number 9 of the present evaluation. Maclellan *et al.* in a study conducted on the International Medical Graduates (IMGs) at Quebec medical school, Canada, commented that the treatment activities of all general practitioners should be assessed by a team of specialists every three months.<sup>16</sup> This finding is in line with suggestions numbers 11 and 12 of the present study. In a study done on the international graduates in Canada, Zulla *et al.* found out that the graduates' communication skills was 4.33 and their clinical skills was 4.28 on the Likert scale. These scores were considered good.<sup>17</sup> In terms of percentages; these scores are equal to 46.9 and 36.3, respectively.

Couser from Australia asserts that the international general practitioners' clinical and communication skills should be at such a level that they can satisfy the needs of the society and that they should be supported by a powerful management system. Such a finding is completely similar to suggestions 6, 9, and 12 of the present study.<sup>18</sup> Reporting the results of the evaluation of medical education programs based on the comments of the graduates of Alkeniz University of Medical Sciences in Turkey, Alimoglul *et al.* assert that the comprehensive approach to educational programs is  $4.5 \pm 1.2$  and the learning itself is  $4.4 \pm 1.1$ . Management and leadership in the scientific diagnosis of diseases and their treatment are  $3.8 \pm 1.3$  and  $3.9 \pm 1.1$ , respectively.<sup>19</sup> It is concluded that medical schools should be in close contact with their graduates and that the educational methods should be improved. Such a suggestion is quite similar to the graduates' suggestions numbers 3, 6, 7 and 9 of the present study. The results of the above-mentioned studies show that educational programs quality as-

assessment from the graduates' point of view is so valuable not only in Iran, but in other countries as well. In other studies they found that students who had more access to online information had a higher level of satisfaction.<sup>13</sup> That is due to the fact that all medical graduates at the international level need modern advanced medical knowledge and wish to enhance their clinical, attitude, and communication skills. Therefore, gathering data on the educational quality of the university and judgment about the positive and negative points of the university's educational programs result in a better understanding of the role of education and planning. According to this survey our educational systems need revision, so we designed a project which is called internal evaluation in every department for improving educational programs.

Meanwhile, considering the government's extensive investment in physical, financial and human

resources for the improvement of higher education centers, the assessment of different aspects of the educational programs in basic and clinical sciences departments is deemed necessary. So, it is quite important for the medical education management to be equipped with suitable devices for supervision and control over the educational programs.

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