# Evaluation of Professors' Performance in Online Teaching during Covid-19 Pandemic from the Perspective of Medical Students of Bushehr University of Medical Sciences, Iran

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## Abstract

### Background

One of the popular methods of teacher evaluation is student appraisal. The aim of the present study was to evaluate the professors' performance in online teaching from the perspective of medical students during the COVID-19 pandemic.

*Materials and Methods:* The present cross-sectional study was conducted in Bushehr University of Medical Sciences in December 2020. Sample sizes were selected based on simple random sampling method. Data collection was carried out using baseline characteristics and the valid 12-item questionnaire. Medical students were asked to rate the items based on a five-point Likert scale. The questionnaires were distributed among medical students by the researchers (through telephone interviews, web-based questionnaires, and face-to-face visits in hospitals and colleges), and collected after completing. Data were analyzed using SPSS software version 16.0.

### Results

A total of 90 medical students participated in the study, of which 57.8% were females. The highest satisfaction rate belonged to the items regarding professor's knowledge and ability in the effective use of the educational software (83.4%), their use of online systems and communication software to increase communication and effective interaction (83.3%), and their knowledge and mastery of the educational content (82.2%). A statistically significant relationship was found between marital status and students' opinions about items 1-3, 10, and 11, meaning that single students had a more positive opinion about the ability of professors in online teaching.

### Conclusion

Medical students of Bushehr University of Medical Sciences were relatively satisfied with their professors' performance in online teaching during the COVID-19 pandemic and requested professors to provide timely feedback and answers to their questions.

*Key Words:* COVID-19, Evaluation, Medical Student, Professors, Online Teaching.

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## 1- INTRODUCTION

Evaluation of education probably began in ancient Greece and with Socrates. Back then, the students evaluated their professors formally but not as a regular activity. The first professor evaluation surveys were used by students at the University of Washington in the early 20th century. Today, the educational activities of professors are evaluated via thousands of different types of questionnaires. In most of the prestigious universities, students' appraisal of professors' teaching is the most important source of evaluation (1), and helps eliminate the shortcomings in the teaching method and optimize the transfer of knowledge from the teacher to the student. If this type of evaluation is carried out according to scientific standards and on a permanent basis, the results can be valuable to enhance the teaching quality and eliminate weaknesses and also provide appropriate conditions for educational decisions and planning and promotion of the academic level of the university (1, 2).

Improving the educational quality of universities is an important issue that has been emphasized by many researchers in recent years. One of the important activities to improve the educational quality is to improve the efficiency of teaching through regular evaluation of teaching quality in various ways, with the most effective being the student-based evaluation method. The students' evaluation of teaching is considered as a valuable resource to improve the quality of the educational system. It is therefore necessary to provide appropriate conditions for an accurate and comprehensive evaluation of the quality of the professors' performance. It appears, however, that there are disadvantages in the current methods of assessing the quality of teaching in Iran and some necessary abilities are lacking. One of the popular evaluation methods in many universities is to use the opinion of students (2, 3). In this method, the student is usually asked a number of questions about the quality of the professors' educational activities and is requested to evaluate their professor. The main purpose of evaluation is to inform professors of their strengths and weaknesses so as to enhance their teaching quality. The sensitivity of teaching and attention to educational processes in universities emphasize the need for an evaluation that will improve the quality of education and, ultimately, improve the efficiency of the country's education system (4). Teaching evaluation is regarded as an essential tool to make decisions and determine the right teaching policy, especially at the university level (5-7). According to some authors, students' evaluation of teaching is the only tangible source and the best type of evaluation because students are the only people who are taught directly by professors and, therefore, are in the best position to evaluate their professors' educational activities (8).

Among the types of evaluation in the educational system, the teacher evaluation is of substantial importance and is usually carried out in different ways (students, administrators, and colleagues) in each semester and the results are presented to professors and university officials (9). The COVID-19 outbreak, one of the most challenging threats to public health at the national and international levels since December 2019 (10-12), has caused tension and fundamental changes in the daily lives of many people worldwide, especially students. Following the coronavirus outbreak, the government decided to control the outbreak and cut the chain of transmission of the disease with an emphasis on maintaining public health. Following this decision, all educational institutions were closed and the staff were assigned rotating work shifts. Also, from the onset of the pandemic, universities and

educational centers stopped face-to-face teaching and turned to online teaching. Online teaching has its own particular challenges, disadvantages, and benefits. The challenges should be addressed using the opinions of stakeholders and efforts should be made to promote online education and learning and teaching methods. The aim of the present study was to evaluate the professors' performance in online teaching from the perspective of medical students during the COVID-19 pandemic.

## 2- MATERIALS AND METHODS

### 2-1. Method

This cross-sectional study was carried out in Bushehr University of Medical Sciences in Bushehr, Iran. The study population consisted of all medical students attending the university. Sample sizes were selected based on available sampling.

### 2-2. Statistical population

After consulting a statistical advisor, 90 medical students were selected using simple random sampling method with a 5% error rate and 90% confidence interval. All medical students who were studying at the Bushehr University of Medical Sciences were eligible to enter the study. Exclusion criteria included unwillingness to participate in the study and incomplete questionnaires.

### 2-3. Data collection

To obtain the opinions of the study participants on virtual teaching during the COVID-19, a valid 12-item questionnaire was designed (13). The questionnaires were distributed among faculty members by the researchers (through telephone interviews, web-based questionnaires, and face-to-face visits in hospitals and colleges) after providing the necessary explanations and were collected after completion.

### 2-4. Ethical consideration

The personal information of participants was extracted as a whole, and providing names and surnames was not compulsory. Participation in the study was optional and the professors were assured that the information would be extracted in a general manner and their names would not be disclosed. The study results were also made available upon request.

### 2-5. Reliability and validity

The validity of the questionnaire was confirmed by content validity method through consultation with experts (two members from the faculty of medical education and three from pediatric faculty). Cronbach's alpha coefficient of 89% was calculated to determine reliability, indicating the appropriate internal consistency of the questionnaire questions.

### 2-6. Statistical Analysis

Data analysis was performed using SPSS software version 21.0. Descriptive analysis (frequency and percentage indices) was performed to describe the studied variables. Chi-square test was also used to compare the frequency of responses to different questions. A P-value< 0.05 was considered as significance level.

## 3- RESULTS

A total of 90 medical students participated in the present study. Of the participants, 57.8% were female, 88.9% were single, and 11.1% were married. A total of 44.4%, 26.7%, and 28.9% of students were admitted in 2016, 2017, and 2015, respectively. **Table.1** shows the students' answer rate to each item of the questionnaire. As the results show, the highest student satisfaction belonged to the items "professor's familiarity and sufficient ability to use the educational software effectively" (83.4%), "the professor's use of online system, software,

and interactive software in order to increase communication and establish effective interaction during the period of use" (83.3%), and "up-to-date knowledge and sufficient mastery of the educational content"(82.2%). The results also showed that the highest student dissatisfaction belonged to items "professors did not give me feedback on homework and class tests in a timely manner" (53.3%), "insufficient use of various teaching methods by the professor to make the teaching process more effective (47.8%)", and "lack of timely and prompt response to the students' questions and educational problems in the classroom" (45.6%).

**Table-1:** Frequency of evaluating the performance of professors in virtual teaching from the perspective of medical students.

| NO. | Item | Totally agree | Agree | No comments | Disagree | Completely disagree |
|-----|------|---------------|-------|-------------|----------|---------------------|
| 1 | The professor had sufficient knowledge and ability to use educational software effectively. | 25.6 | 57.8 | 3.3 | 13.3 | 0 |
| 2 | The professor used virtual systems and communication software to increase communication and establish effective interaction during the course. | 21.1 | 62.2 | 6.7 | 8.9 | 1.1 |
| 3 | The professor was available for clarification and advice throughout the course. | 4.4 | 51.1 | 16.7 | 26.7 | 1.1 |
| 4 | The professor answered my educational questions and problems in class in a timely and useful manner. | 16.7 | 21.1 | 16.7 | 38.9 | 6.7 |
| 5 | The professor was concerned about my learning and felt responsible for it. | 37.8 | 51.1 | 5.6 | 5.6 | 0 |
| 6 | The professor had up-to-date knowledge and sufficient mastery of the educational content. | 28.9 | 53.3 | 13.3 | 4.4 | 0 |
| 7 | The professor explained and presented the material clearly and in an organized manner. | 10 | 56.7 | 20 | 12.2 | 1.1 |
| 8 | The professor used various teaching methods to make the teaching process more effective. | 8.9 | 36.7 | 6.7 | 35.6 | 12.2 |
| 9 | The speed and quality of the professor's teaching was appropriate. | 5.6 | 47.8 | 25.6 | 20 | 1.1 |
| 10 | My professor encouraged me and other classmates to participate in educational activities throughout the course. | 10 | 41.1 | 26.7 | 18.9 | 3.3 |
| 11 | The professor provided me with feedback on homework and class tests at regular intervals. | 7.8 | 27.8 | 11.1 | 40 | 13.3 |
| 12 | Overall, the professor's teaching in this course was satisfactory. | 11.1 | 70 | 5.6 | 13.3 | 0 |

The results indicated a statistically significant relationship between marital status and students' opinions about items 1-3, 10, and 11, so that single students had a more positive opinion about their professors' ability (P = 0.002) (**Table.2**).

**Table-2:** Frequency of evaluating the performance of professors in virtual teaching from the perspective of medical students based on marital status, n=90.

| The professor had sufficient knowledge and ability to use educational software effectively. | | | | | |
|---|---|---|---|---|---|
| Marital status | Totally agree | Agree | No comments | Disagree | Completely disagree | Total |
| Single | 23 | 47 | 1 | 9 | 0 | 80 |
| Married | 0 | 5 | 2 | 3 | 0 | 10 |
| Total | 23 | 52 | 3 | 12 | 0 | 90 |
| Chi-square=14.712, df: 3 P-value=0.002. | | | | | | |

| The professor used virtual systems and communication software to increase communication and establish effective interaction during the course. | | | | | |
|---|---|---|---|---|---|
| Marital status | Totally agree | Agree | No comments | Disagree | Completely disagree | Total |
| Single | 18 | 49 | 5 | 8 | 0 | 80 |
| Married | 1 | 7 | 1 | 0 | 1 | 10 |
| Total | 19 | 56 | 6 | 8 | 1 | 90 |
| Chi-square=9.95, df: 4, P-value=0.04. | | | | | | |

| The professor was available for clarification and advice throughout the course. | | | | | |
|---|---|---|---|---|---|
| Marital status | Totally agree | Agree | No comments | Disagree | Completely disagree | Total |
| Single | 1 | 44 | 12 | 22 | 1 | 80 |
| Married | 3 | 2 | 3 | 2 | 0 | 10 |
| Total | 4 | 46 | 15 | 24 | 1 | 90 |
| Chi-square=20174, df: 4, P-value<0.001. | | | | | | |

| My professor encouraged me and other classmates to participate in educational activities throughout the course. | | | | | |
|---|---|---|---|---|---|
| Marital status | Totally agree | Agree | No comments | Disagree | Completely disagree | Total |
| Single | 8 | 32 | 22 | 17 | 1 | 80 |
| Married | 1 | 5 | 2 | 0 | 2 | 10 |
| Total | 9 | 37 | 24 | 17 | 3 | 90 |
| Chi-square=11.904, df: 4, P-value=0.18. | | | | | | |

| The professor provided me with feedback on homework and class tests at regular intervals. | | | | | |
|---|---|---|---|---|---|
| Marital status | Totally agree | Agree | No comments | Disagree | Completely disagree | Total |
| Single | 4 | 25 | 9 | 33 | 9 | 80 |
| Married | 3 | 0 | 1 | 3 | 3 | 10 |
| Total | 7 | 25 | 10 | 36 | 12 | 90 |
| Chi-square=12.905, df: 4, P-value=0.012. | | | | | | |

T-test showed no statistically significant relationship between sex and students' opinion about the 12 items (P>0.05). T-test also showed a statistically significant relationship between marital status and students' opinion about professors' feedback on student assignments and tests, so that single students were more satisfied in this regard (P=0.027) (**Table.3**).

**Table-3:** The students' opinion about professors' feedback based on marital status, n=90.

| Item | | F | Sig. | t | df | Sig. (2-tailed) | Mean Difference | Std. Error Difference | 95% CI | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | Lower | Upper |
| Item 11 | Equal variance assumed | 5.039 | 0.027 | -0.183 | 88 | 0.856 | -0.0750 | 0.4128 | -0.8915 | 0.7415 |
| | Equal variances not assumed | | | -0.135 | 10.067 | 0.895 | -0.7500 | 0.5538 | -1.3079 | 1.1579 |

Item 11: The professor provided me with feedback on homework and class tests at regular intervals.

## 4- DISCUSSION

The aim of the present study was to evaluate the professors' performance in online teaching from the perspective of medical students. The results showed that students were highly satisfied with their professors' knowledge and ability in the effective use of educational software, online systems and interactive software to enhance communication and establish effective interaction during the course, and up-to-date knowledge and sufficient mastery of the content. They were relatively dissatisfied with the professor's timely and quick response to the student's educational questions and problems in the classroom, the use of various teaching methods to make the teaching process more effective, and providing timely feedback. There are various methods for evaluating professors' performance, including evaluation by students, colleagues, and educational officials, examination of educational and research outputs, examination of physical presence in educational environments, etc.

Among the above methods, students' evaluation of teaching is the most popular method that is commonly carried out in universities every semester. To improve the teaching-learning process, both the continuous individual development of faculty members and the evaluation of their performance in the process should be among the indices of a successful university. Considering that professors, along with students, also constitute the most valuable part of the higher education system, evaluations of the professors is a process to assess their adequacy and competence by collecting information and reviewing their capabilities. In the meantime, necessary decisions are made on actions that can help increase professors' competence and improve the experience of learners (14-16). Although the COVID-19 pandemic imposed many problems on all indicators of society,

particularly public health, it led to progress in a few fields in Iran. One example is the advancement and prevalence of online teaching throughout the country. However, it should be borne in mind that online teaching has created challenges for teachers, professors, and educational centers, including unfamiliarity with new technology (17). Considering the emerging infectious diseases, researchers conducted a study on the impact of health education through extensive online education in developing countries. They found that, in addition to the beneficial effects on health, online teaching reduces costs, provides comprehensive education, and increases users' access to content (18).

The results of the present study showed the highest student satisfaction belonged to the items "professor's familiarity and sufficient ability to effectively use educational software (83.4%)", "the use of online systems and interactive software to increase communication and effective interaction during the course of use (83.3%)", and "up-to-date knowledge and sufficient mastery of the educational software (82.2%)". Seif pointed out that learners' evaluation of the professor's performance is less affected by the quality of their teaching and learning; rather, it is mainly influenced by the professor's practice and teaching method (3). Bergman et al. showed in a study that students pay more attention to professors' communication skills and professional ability (19).

The results of the present study also showed that the highest dissatisfaction was related to the items "lack of timely feedback" and "lack of timely and prompt response to students' questions and educational problems in the classroom". The evaluation of professors in universities is a subject that aims to eliminate the shortcomings in the teaching method and ensure the correct and complete transfer of knowledge from the professor to the

student. In the book Educational Measurement and Evaluation Methods, Seif considers the professor's evaluation as one of the most complex types of evaluations due to the unreliable, inaccurate measuring instruments and methods used. He believes that the evaluation methods and the resulting information sources cannot provide appropriate and unbiased information and has suggested that a combination of evaluation information be used for the final judgment (2, 3). Ranjbar et al. also showed that more than half of the professors generally considered the students' evaluation as unreliable, and referred to students' low level of knowledge, dishonesty, and personal biases being involved in their responses to evaluation questionnaires (20). In another study carried out at Iran University of Medical Sciences, 61.9% of professors stated that there was little change in their performance according to the students' evaluation (21). Therefore, in order to evaluate professors, more than one method should be used (e.g., including the opinions of students, colleagues, administrators, etc. in evaluations) in this field to achieve educational impartiality and the professors' satisfaction.

## 5- CONCLUSION

Medical students of Bushehr University of Medical Sciences were relatively satisfied with their professors' performance in online teaching during COVID-19 pandemic. Students expressed high satisfaction regarding items "professors' familiarity and ability in the effective use of educational software", "the use of online systems and interactive software to increase communication and effective interaction during the course", and "up-to-date knowledge and sufficient mastery of the educational content". However, they expressed relatively low satisfaction with items "providing timely feedback" and "answers to students' questions".

## 6- AUTHORS' CONTRIBUTIONS

Study conception or design: AY, and NM; Data analyzing and draft manuscript preparation: RR, RK, and NM, Critical revision of the paper: AY and NM, Supervision of the research: AY and RR; Final approval of the version to be published: AY, RR, RK, and NM.

## 7- CONFLICT OF INTEREST: None.

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