



Evaluation of Professors Toward E-learning During COVID-19 and Its Associated Factors from the Perspective of the Students of Kermanshah University of Medical Sciences (2020)

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Abstract

Background: Teacher evaluation is an essential tool in educational processes, which could be performed by various methods, such as the assessment of students' opinions. Currently, the evaluation of university professors by students is an online process implemented by a questionnaire. However, the questionnaire items do not suit the current conditions, and university classes are held virtually or online due to the COVID-19 outbreak.

Objectives: The present study aimed to identify the influential factors in teacher evaluation regarding e-learning during COVID-19 from the perspective of the students of Kermanshah University of Medical Sciences in 2020.

Methods: This cross-sectional study was conducted on 213 students selected via convenience sampling. Data were collected using a researcher-made questionnaire with 18 items. The face validity of the questionnaire was confirmed by 10 education experts, and its reliability was confirmed at the Cronbach's alpha of 0.96. Data analysis was performed in SPSS.

Results: The most to least significant influential factors in the students' evaluation of professors were respectively teacher's educational skills (54.9%), teacher's personal and ethical characteristics (56.6%), and observance of educational principles and rules (43.2%). The viewpoints of the male and female students toward these factors had a significant difference ($P < 0.001$). In addition, a significant difference was observed between the effects of various factors on the students' evaluation of their professors in different faculties and different educational levels ($P < 0.001$).

Conclusions: According to the results and given the importance of the influential factors in teacher evaluation, the empowerment of professors regarding effective teaching methods and communication skills in e-learning is recommended to improve the quality of virtual education.

Keywords: Evaluation, E-learning, Medical Sciences, COVID-19

1. Background

Professors are the pillar of every educational organization, and their performance plays a key role in the overall efficiency of the organization. Using students' opinions is a common method to evaluate professors. Despite the disagreements regarding the use of students' opinions for the evaluation of professors, this method is highly common and is used in numerous educational institutions (1).

Clicks are the sound of education in the 21st century. A computer mouse is found in the hands of every student (2). In this century, the COVID-19 pandemic is considered to be a monumental challenge faced by educational systems. Numerous governments have ordered educational

institutions to stop face-to-face teaching and turn to virtual/electronic education. Although virtual education has been used for years, it has become extremely different under the current circumstances, causing anxiety in both faculty members and students.

This may be the first time in the history of higher education that a vast majority of people are making small and large changes in teaching, communication with students, and striving to find the most effective method of education for each individual albeit under intense pressure. The changes that are taught are mainly based on the feedback received from students. Almost all educators must redesign courses, apply new evaluation methods, prepare equipment (e.g., home cameras and microphones), and

communicate more with the colleagues facing similar educational challenges in order to learn new technologies and succeed in making this transition.

We all face life pressures, health threats, and family problems due to the COVID-19 outbreak. Under such circumstances, universities need to adopt new strategies and make new decisions regarding their evaluation system. One of these systems is the evaluation of faculty members from the perspective of students (3-5). If instructors are evaluated in the classes that are substantially different from the ones they have planned, it may be unfair to administer these evaluations in an environment that is primarily beyond their control. While it is recommended that student evaluations be implemented, it remains important for students to be able to provide feedback to their instructors regarding their learning experience in the new, remote environment. A formative assessment of the instructor by students, which could be conducted several times throughout the semester at the end of each instructional unit anonymously, could be extremely beneficial for improving pedagogy in the new environment (3).

Normally, students are obliged to evaluate professors at the end of each semester based on a series of indicators. Previously, these indicators were related to traditional and face-to-face courses, while today's virtual classes have also changed these evaluative indicators, so that the principles of e-learning would be considered in the evaluation system of professors. Considering the principles of e-learning helps with investigating the influential factors in the evaluation of professors from students' perspective and preparing a valid and reliable questionnaire to evaluate professors in virtual classes and improve the quality of education through proper feedback.

2. Objectives

The present study aimed to identify the influential factors in teacher evaluation regarding e-learning during COVID-19 from the perspective of the students of Kerman Shah University of Medical Sciences (KUMS) in 2020.

3. Methods

This cross-sectional, descriptive-analytical study was conducted on the students of the second and higher semesters of KUMS, who were selected from the schools of medicine, pharmacy, dentistry, nursing and midwifery, paramedics, health, and nutrition and various educational levels. The minimum sample size was estimated to be 163 with 95% confidence interval and 0.05% accuracy, assuming 88% positive attitudes regarding the influential factors in the evaluation of professors (6).

Data were collected using a researcher-made questionnaire to evaluate the students' viewpoints. The items of the questionnaire covered the three domains of teacher's educational skills (TES; eight items), teacher's personal and ethical characteristics (TPEC; five items), and observance of educational principles and rules (OEPR; five items). The validity of the questionnaire was confirmed by the experts of the Evaluation Committee of the Educational Development Center (EDC), and its reliability was confirmed at the Cronbach's alpha of 0.96. In addition, the reliability of the questionnaire in the domains of TES, TPEC, and OEPR was confirmed at 0.93, 0.88, and 0.86, respectively.

The questionnaire consisted of two sections, including demographic characteristics and the influential factors in teacher evaluation. It was designed in Google Forms, and a link was provided to the students via WhatsApp groups. Afterwards, the questionnaires were coded, and data analysis was performed in SPSS. The required data were obtained by descriptive and analytical statistics. The Kolmogorov-Smirnov test was employed for the analytical section, and the normality of the obtained scores was also determined. Due to the non-normal distribution of the variables, Spearman's correlation-coefficient was used to assess the correlation with the nonparametric method. Furthermore, Chi-square was applied to compare the influential factors in teacher evaluation considering upper, medium, and lower effects. In all the statistical analyses, the P-value of less than 0.05 was considered significant.

4. Results

In total, 213 students completed the questionnaire, among whom 16 cases (7.5%) were selected from the medical school, 30 (14.1%) were selected from the pharmacy school, 84 (35.4%) were selected from the nursing school, 21 (9.9%) were selected from the paramedics school, 11 (5.2%) were selected from the dentistry school, 38 (17.8%) were selected from the health school, and 13 cases (6.1%) were selected from the nutritional sciences school. Notably, 126 students (58.2%) were female. Undergraduate students constituted the largest proportion of the participants (66.7%), while master's degree students accounted for the smallest proportion (8%).

In the TES domain, 104 students (48.8%) considered the ability to communicate and transfer content to be the most significant influential factor, while the assignment of the content of each session was considered the least significant factor in the viewpoint of 34 students (16%). In the TPEC domain, the most significant influential factors in the students' viewpoint were counseling, guidance, and helping to solve learning problems ($n = 92$; 43.2%), and the

least significant factor was the teacher's ability to keep students active ($n = 12$; 13.1%). In the OEPR domain, 80 students (37.6%) considered regular and active presence in educational activities as the most significant influential factor in teacher evaluation, while using interactive educational content was considered the least significant factor as stated by 32 students (15%) (Table 1).

The results of Spearman's correlation-coefficient indicated the significant correlation of the students' grade point average (15.85 ± 1.61) with TPEC ($P = 0.023$) and OPER ($P = 0.041$), while the correlation was not considered significant with TES. The mean scores of each student's opinion toward each domain were calculated separately for each individual and classified as low, medium, and high. Non-parametric tests were also used to determine the role of gender, education level, and faculties in the evaluation of teachers (Tables 2 - 4).

Overall, our findings indicated that 70.4% of the female students considered the evaluation components to have a high impact, and a significant difference was also observed between the viewpoints of the male and female students toward teacher evaluation ($P < 0.001$), indicating that the female students cared more about their evaluation than the male students. Furthermore, a significant difference was denoted between the students' viewpoints toward teacher evaluation at different education levels ($P < 0.001$). Accordingly, 65.7% of undergraduate students believed that the three domains of evaluation were equally effective in this regard as opposed to the students of other education levels. With respect to the impact of students' school on different domains of teacher evaluation, nursing and midwifery school students considered 38% of the evaluation domains to be of high impact, which indicated a significant difference between the schools in this regard ($P < 0.001$).

5. Discussion

From the students' perspective, several factors affected the three studied domains of teacher evaluation by students. Giving answers to students' questions contribute significantly to their evaluations of the professors in the TES domain. These factors also affect each other, and although professors have sufficient scientific mastery of the subject, they may have problems in expressing and conveying the concepts to students, which ultimately influences the students' evaluations. If professors have sufficient mastery of the content and are able to convey the educational material eloquently, they will be more successful in their educational career. In line with our findings, the studies conducted by Golsha & Charnaei (2020) and Vakili *et al.* (2011) also considered the power of expression and

the ability to communicate as significant influential factors in the students' evaluation of teachers (7, 8). However, assignments on the content of each session were considered to be less important, and less than half of the students regarded this variable as an influential factor in the evaluation of the professors; this is consistent with the study by Gharatapeh *et al.* (2015) (9).

Involvement of students in the educational material of the course largely benefits the students' assignments, thereby providing professors with more accurate estimations of the time spent to study and learn the lesson. It also determined the level of academic achievement and the strengths and weaknesses of students, thereby providing immediate and continuous feedback. Given the limited communication between professors and students in virtual classrooms, assignments provide the students with the opportunity to become more aware of the professors' viewpoints regarding their performance and have a better and deeper interaction. If the professors are familiar with lesson design methods and adequately creative and initiative, they can design assignments that not only have considerable educational and learning dimensions, but also increase the learning enthusiasm and academic motivation of the students. Although students do not welcome assignments within the traditional context, the results of the present study indicated that they find the component of feedback on assignments more effective in the evaluation of professors.

TPEC was the second important domain to the students. The observance of ethical and professional principles in the virtual space was one of the components of this domain, as well as the most significant influential factor in the evaluation of professors from the students' perspective. Considering and respecting the dignity of professors and students goes beyond academic courses. In this regard, the results of the qualitative study by Ghorbankhani *et al.* (2017) showed that successful professors should have electronic skills and knowledge, along with research, educational, moral, and behavioral competencies. Ethical issues are important in every field and cannot be overlooked, especially in the case of educational matters. If professors observe ethical principles, they could undoubtedly lead the students toward the realization of educational goals (10). However, the results of the study by Moradi & Kordlo (2019) indicated that despite the unique opportunities of online education, the grounds for moral growth are not provided due to the lack of face-to-face communication and moral modeling of students from the real behaviors of their professors. This gap could be bridged by making the learning environment more interactive and using more multimedia technologies (11).

OEPR was the third domain associated with observing

Table 1. Frequency Distribution of Questionnaire Responses in Different Evaluation Domains^a

Evaluation Domains/Evaluation Components	Very Low	Low	Moderate	High	Very High
Teacher's Educational Skills					
Power of expression and ability to communicate and transmit content	21 (9.9)	19 (8.9)	39 (18.3)	30 (14.1)	104 (48.8)
Assignment of content of each session	36 (16.9)	23 (10.8)	67 (31.5)	53 (24.9)	34 (16)
Providing feedback on students' assignments	39 (18.3)	20 (9.4)	49 (23)	45 (21.1)	60 (28.2)
Students' assessment of content presented in midterm	35 (26.4)	22 (10.3)	52 (24.4)	63 (29.6)	41 (19.21)
Answering students' questions	34 (16)	17 (8)	27 (12.7)	38 (17.8)	97 (45.5)
Teaching in accordance with educational goals and time defined in virtual curriculum	31 (14.6)	30 (14.1)	35 (16.4)	42 (19.7)	75 (35.2)
Providing conditions for active participation of students in learning process	34 (16)	27 (12.7)	39 (18.3)	45 (21.1)	68 (31.9)
Proper and fair assessment by modern approaches	26 (12.2)	25 (11.7)	42 (19.7)	36 (16.9)	84 (39.41)
Teacher's Personal and Ethical Characteristics					
Professor's interest in virtual education	31 (14.6)	19 (8.9)	42 (19.7)	46 (21.6)	75 (35.2)
Professor's ability to keep students active	48 (22.5)	92 (43.2)	23 (10.8)	22 (10.3)	28 (13.1)
Observing ethical and professional principles in cyberspace	25 (11.7)	11 (5.2)	31 (14.6)	56 (26.3)	90 (42.3)
Advice, guidance, and help in solving learning problems	31 (14.6)	17 (8)	38 (17.8)	35 (16.4)	92 (43.2)
Recognizing teacher as a suitable professional model	25 (11.7)	19 (8.9)	42 (19.7)	48 (22.5)	79 (37.1)
Observance of Educational Principles and Rules					
Introducing and loading course plan in Navid system	37 (17.4)	22 (10.3)	52 (24.4)	51 (23.9)	51 (23.9)
Using interactive educational content (slides, films, multimedia)	44 (20.7)	91 (42.7)	21 (9.9)	25 (11.7)	32 (15)
Regular and active participation in educational activities	27 (12.7)	19 (8.9)	40 (18.8)	47 (22.1)	80 (37.6)
Attention to the presence of students and observing educational regulations	30 (14.1)	20 (9.4)	48 (22.5)	50 (23.5)	65 (30.5)
Access to teacher outside of virtual classroom	38 (17.8)	20 (9.4)	45 (21.1)	43 (20.2)	67 (31.5)

^a Values are expressed as No. (%).

in the current research. The students regarded all the components of this domain (except using interactive educational content) to be of great importance in the evaluation of professors. In other words, the students did not place great emphasis on the type of multimedia used by the professors for communication and interaction. This is in line with the results obtained by Jung (2011), which demonstrated that students did not consider the content to be a significant influential factor in the quality of education (12). However, Ghorbankhani et al. (2017) stated that successful professors should have electronic competencies and skills, along with research, educational, moral, and behavioral capabilities, with electronic skills considered to be of the greatest importance in this regard (10).

The results of the present study indicated significant correlations between the students' gender and the three domains of teacher evaluation. Accordingly, the female students paid more attention to these domains compared to the male students. According to a study by Basow (1995), male students gave female professors lower ratings compared to female students (13). In another study performed

by Kierstead et al. (1988), both male and female students rated their female professors lower than their male professors. The authors believed that not only professors should be highly qualified, but they should also act in accordance with the traditional expectations of gender roles possibly because the two genders have different expectations of male and female professors. In the mentioned study, it was concluded that even if women display certain feminine behaviors, male and female professors will receive the same evaluation scores for performing in the same profession (14).

According to the results of the present study, the students of different schools had significant views toward the discussed domains, which is in line with the results obtained by Sepahi et al. (2015). In terms of different education levels, the students considered educational skills and personal/moral characteristics of the professors to be the most significant influential factors in teacher evaluation. However, the views of the students at different education levels were not significantly associated with the component of the observance of educational principles and rules.

Table 2. Correlation of Gender, Education Level, and School with TES Domain ^a

Teacher's Educational Skills	Low	Moderate	High	P-Value
Gender				0.005
Female	14 (36.8)	32 (55.2)	78 (66.7)	
Male	24 (62.2)	26 (44.8)	39 (33.3)	
Education level				0.003
BSc	21 (55.3)	43 (74.1)	78 (66.7)	
MSc	0 (0)	2 (3.41)	15 (12.8)	
PhD	17 (44.7)	13 (22.4)	24 (20.5)	
School				0.003
Medicine	2 (5.3)	4 (6.9)	10 (8.5)	
Nursing and midwifery	11 (28.9)	24 (41.4)	49 (41.9)	
Health	0 (0)	10 (17.2)	28 (23.9)	
Dentistry	2 (5.3)	2 (3.4)	7 (6)	
Pharmacy	12 (31.6)	8 (13.8)	10 (8.5)	
Paramedics	8 (21.1)	7 (12.1)	6 (5.1)	
Nutritional sciences	3 (7.9)	3 (5.2)	7 (6)	

^a Values are expressed as No. (%).

Table 3. Correlation of Gender, Education Level, and School with TPEC Domain ^a

Teacher's Personal and Ethical Characteristics	Low	Moderate	High	P-Value
Gender				0.001
Female	17 (43.6)	28 (45.2)	79 (70.5)	
Male	22 (56.4)	34 (54.8)	33 (29.5)	
Education level				0.061
BSc	24 (61.5)	46 (74.2)	72 (64.3)	
MSc	0 (0)	5 (8.1)	12 (10.7)	
PhD	15 (38.5)	11 (17.7)	28 (25)	
School				0.001
Medicine	1 (2.6)	4 (6.5)	11 (9.8)	
Nursing and midwifery	11 (28.2)	33 (53.2)	40 (35.7)	
Health	1 (5.1)	11 (17.7)	25 (22.3)	
Dentistry	2 (5.1)	0 (0)	9 (11)	
Pharmacy	11 (28.2)	8 (12.9)	11 (9.8)	
Paramedics	8 (20.5)	5 (8.1)	8 (7.1)	
Nutritional sciences	4 (10.3)	1 (1.6)	8 (7.1)	

^a Values are expressed as No. (%).

In general, the differences in the perspectives of the students of different schools and education levels could be attributed to the differences in their expectations, judgments, and perceptions of the university, professors, and their academic motivation (6).

As the evaluation of professors is of great importance in improving the quality of education and accurate response of learners, and since it is also a significant component of educational systems that facilitates the process of teaching and learning, it would be beneficial to consider

Table 4. Correlation of Gender, Education Level, and School with OEPR Domain ^a

Observance of Educational Principles and Rules	Low	Moderate	High	P-Value
Gender				0.002
Female	17 (38.6)	43 (55.8)	64 (69.6)	
Male	27 (61.4)	34 (44.2)	28 (30.4)	
Education level				< 0.001
BSc	23 (52.3)	60 (77.9)	59 (64.1)	
MSc	0 (0)	8 (10.4)	9 (9.8)	
PhD	21 (47.7)	9 (11.7)	24 (26.1)	
School				< 0.001
Medicine	3 (6.8)	3 (3.9)	10 (10.9)	
Nursing and Midwifery	14 (31.8)	40 (51.9)	30 (32.6)	
Health	1 (2.3)	14 (18.2)	23 (25)	
Dentistry	2 (4.5)	4 (5.2)	5 (5.4)	
Pharmacy	5 (34.1)	4 (5.2)	11 (12)	
Paramedics	7 (15.9)	8 (10.4)	6 (6.5)	
Nutritional Sciences	2 (4.5)	4 (5.2)	7 (7.6)	

^a Values are expressed as No. (%).

the factors and elements identified in our research in designing the evaluation forms of professors. On the other hand, it is essential to provide professors with the findings of such research, so that they would incorporate these data into their communication with students and classroom management.

One of the limitations of our study was the absence of students in the university due to the COVID-19 pandemic, and the link to the questionnaire was shared via WhatsApp groups by the professors.

Considering that the evaluation of professors is an important strategy for improving the quality of education, it is suggested that the factors and elements identified in our research be incorporated into the teacher evaluation forms of university students. Furthermore, our data could be provided to professors in order to enhance their communication with students and manage their classrooms. Since students' evaluation of professors is influenced by their attitudes, interests, and perceptions, it is necessary to repeat such research in wider academic fields to identify more influential factors in the evaluation of professors by students in virtual classrooms so as to ensure the development of more comprehensive evaluation forms. It is also recommended that the influential factors in the evaluation of professors be assessed from the perspective of professors in an independent study, so that the results could be compared with our findings.

5.1. Conclusion

Students' evaluation of professors is a multidimensional process influenced by several factors and elements. According to the results, the most significant influential factors in this regard were the power of expression, the ability to communicate and convey educational content, observance of ethical and professional principles in the virtual space, consultation, and assistance in solving learning problems. The factors with a lower impact included answering students' questions, professors' ability to keep students active, and using interactive educational content; therefore, professors must pay attention to these factors. Notably, these findings do not negate the role and impact of other components and factors influencing the evaluation of professors and the need for the improvement of each component separately.

Footnotes

Authors' Contribution: Study concept and design, Vida Sepahi; Analysis and interpretation of data, Mansour Rezaei; Drafting of the manuscript, Farhad Salary; Critical revision of the manuscript for important intellectual content, Vida Sepahi and Ahmad Khoshay; Statistical analysis, Mansour Rezaei.

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