



Investigation of the Opinions of Professors of Bushehr University of Medical Sciences Regarding Online Teaching during the COVID-19 Pandemic

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Abstract

Background

Online teaching in many countries, is a new and emerging phenomenon and has not yet been tested in a practical and comprehensive manner. The aim of the present study was to investigate the opinions of university professors about online teaching during the COVID-19 pandemic.

Materials and Methods: The present cross-sectional study was performed in Bushehr University of Medical Sciences, Bushehr, Iran in 2021. Census sampling was used to select faculty members. Data collection was carried out using baseline characteristics and a valid 20-item questionnaire. Faculty members were asked to rate the items based on a five-point Likert scale. Data were analyzed using SPSS software version 16.0.

Results

A total of 60 faculty members participated in the study. Findings showed that 80% of professors were satisfied with online teaching. On the other hand, 40% of the professors rated the access to the services of the online support and technical team as inappropriate, and 28.3% of them also stated that the training provided by the university officials for working with online systems is inappropriate. Moreover, a total of 45% of the professors were dissatisfied with the low speed of the Internet and its frequent unavailability. The results also showed a statistically significant relationship between the field of study, academic rank, and teaching experience and satisfaction with online teaching ($P < 0.05$).

Conclusion

More than two-thirds of professors were satisfied with online teaching. However, they expressed concern regarding the lack of timely access to the support team, the low speed of the Internet and frequent outages, the poor capabilities of online systems in interacting with students, and concerns about the security of the online network.

Key Words: COVID-19, Professors, Online Teaching, Opinions.

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1- INTRODUCTION

The coronavirus outbreak has turned into a global health crisis and has transformed different aspects of human life; social, academic, cultural, economic, and political. Higher education institutions are no exception. Over the past few months, the outlook for global higher education has changed dramatically due to the spread of the coronavirus. Some of the measures taken by universities to withstand the spread of the coronavirus and adapt to the new conditions are closing the universities, investing in online teaching, and supporting the students and staff during the quarantine. However, the outbreak of coronavirus remains a major problem in colleges and universities across the country with most institutions canceling face-to-face classes and dedicating all their resources to online teaching (1-5). Click, click, click. That is the sound of teaching in the 21st century: a mouse in the hand of a student (6).

The World Health Organization (WHO) has stated that distance learning by means of radio, podcasts, television, and online teaching is among the best strategies to continue teaching during the epidemic (7). Online learning encompasses a wide range of processes and applications, including web-based learning, computer-based learning, online classrooms, and digital collaborations and the content is delivered through the internet, intranet, extranet, satellite, video clips and audio tapes, satellite broadcasts, talk TV, and CDs (8).

As with medical education, after the outbreak of the coronavirus, teaching was initially provided irregularly and in the context of social networks. Over time, medical universities were required to use the NAVID system (a special software for university learning) as a centralized educational system. Professors and students, after registering in this system, benefited from its capabilities. This system was pre-designed and used in some

universities, but it was not used globally in all medical universities and it was not particularly popular before the outbreak of COVID-19. Although the coronavirus pandemic imposed many problems on all indicators of society, most importantly public health, it has led to progress in some aspects, including the expansion and advancement of online teaching throughout the country. However, it should be borne in mind that online teaching has created problems for teachers, professors, and educational centers, including unfamiliarity with new technologies and unknown challenges (9).

Researchers conducted a study on the impact of health education in developing countries with emerging infectious diseases through extensive online education. They found that in addition to the beneficial effect on health, online teaching reduces costs, provides comprehensive education, and increases users' access to educational content (10). In a study on traditional teaching and distance teaching of medical students, Kennedy (2002) found that the communication time between the learner and the teacher in distance teaching is more efficient than face-to-face teaching (11). Sharifi et al. (2019) concluded that e-learning can be a good alternative to face-to-face teaching (12).

The coincidence of the COVID-19 pandemic and the school days, and the need to continue education has forced all students to turn to cyberspace and online classrooms and follow their educational programs through social networks or the internet. Despite the fact that online teaching has become specifically important all over the world and has been accepted in formal teaching in schools and universities, and despite all the opportunities it has created in the field of education, it has caused serious challenges for teachers, professors, parents, and students. Online teaching is a new and

emerging phenomenon in many countries, including Iran, it has not yet been used in a practical and comprehensive way. The application of this type of learning, like any other emerging phenomenon and regardless of its benefits and opportunities, has been associated with uncertainties and challenges in developing countries. One helpful way in using online teaching is to use the opinions of professors in this field. The aim of the present study is, therefore, to investigate the opinions of university professors about online teaching during the COVID-19 pandemic and to become more familiar with the possible problems of using this educational method.

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 included all faculty members of Bushehr University of Medical Sciences; sample sizes were selected based on the available sampling.

2-2. Statistical population

After consulting a statistical advisor, 60 faculty members were selected using simple random sampling method with a 5% error rate and 90% confidence interval. All faculty members who were teaching 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 information on online teaching during the COVID-19 pandemic, a valid 20-item questionnaire was used (13). The faculty members were asked to rate the items based on a five-point Likert scale that included options ranging from totally agree, agree, no comments, opposed, and completely opposed. The questionnaire

assessed the following aspects: faculties' satisfaction with the infrastructure in online education, satisfaction with the support team, satisfaction with the software used, satisfaction with network security, etc. 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. The questionnaires were collected after completion.

2-4. Ethical considerations

Participants' personal information was extracted as a whole, and it was not compulsory to provide names and surnames. 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. Also, the study results were made available upon request.

2-5. Reliability and Validity

The validity of the questionnaire was confirmed by the content validity method through consultation with experts (two faculty members of medical education and three pediatric faculty members). Cronbach's alpha coefficient of 89% was calculated to determine reliability, which indicated 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. The Chi-square test was also used to compare the frequency of responses to different questions. $P\text{-value} < 0.05$ was considered as the significance level.

3- RESULTS

A total of 60 faculty members from Bushehr University of Medical Sciences participated in the study. Their average years of work experience was 13.37 ± 6.88 years, and 58.3% of them were assistant

professors. Of the participants, 61.7%, 18.4%, 16.7%, and 3.3% were teaching clinical sciences, nursing and midwifery, basic sciences, and dentistry, respectively (**Table.1**).

Table-1: General characteristics of participants.

| Variables | Sub-group | Number | % |
|--------------------------------------|---------------------|--------|------|
| Degree | Assistant Professor | 35 | 58.3 |
| | Associate Professor | 17 | 28.3 |
| | Instructor | 8 | 13.3 |
| Major | Clinical Medicine | 37 | 61.7 |
| | Nurse | 4 | 6.7 |
| | Midwife | 7 | 11.7 |
| | Basic Medicine | 10 | 16.7 |
| | Dentist | 2 | 3.3 |
| Work experience, year, mean \pm SD | 13.37 \pm 6.88 | | |

SD: Standard deviation.

The response rate to the 20-item questionnaire is shown in **Table.2**. As the results show, 80% of the professors were satisfied with the online teaching method, and 83.4% of them stated that they will use the online teaching in the future semesters. A total of 85% of the professors also recommended teaching online. A total of 36.6% of professors also referred to the

poor functioning of the online systems in teaching and evaluating students. Moreover, 43.4% of professors were concerned about the security of online systems in providing content and online tests. A total of 45% of the professors were dissatisfied with the low speed of the Internet and its frequent outages.

Table-2: Frequency of participants' response to the questionnaire items (percentage).

| No. | Items | Totally agree | Agree | No comments | Opposed | Completely opposed |
|-----|---|---------------|-------|-------------|---------|--------------------|
| 1 | The policies and rules set for e-learning at the university were informed in a timely and appropriate manner. | 8.3 | 73.3 | 5 | 13.3 | 0 |
| 2 | Access to scientific and educational consultants in the implementation of virtual learning was appropriate. | 1.7 | 80 | 1.7 | 15 | 1.7 |
| 3 | Access to the services of the online support and technical team was convenient. | 5 | 46.7 | 8.3 | 36.7 | 3.3 |
| 4 | Overall, the speed of receiving virtual support services was good. | 1.7 | 71.7 | 8.3 | 11.7 | 6.7 |
| 5 | The training provided by the university in working with virtual systems was appropriate and sufficient. | 8.3 | 48.3 | 15 | 25 | 3.3 |
| 6 | Access to virtual systems was convenient. | 3.3 | 61.7 | 15 | 18.3 | 1.7 |
| 7 | Working with virtual systems was a bit difficult for me. | 11.7 | 48.3 | 11.7 | 21.7 | 6.7 |
| 8 | The appearance of the systems platform was attractive and user-friendly. | 35 | 20 | 36.7 | 8.3 | - |
| 9 | Virtual systems had good capabilities and functions for training and evaluation. | 6.7 | 46.7 | 10 | 18.3 | 18.3 |
| 10 | The diversity in the presentation of educational content in the context of virtual systems was | 36.7 | 46.7 | 8.3 | 8.3 | - |

| | | | | | | |
|----|---|------|------|------|------|------|
| | effective in improving the quality of my teaching. | | | | | |
| 11 | Using the ability to teach simultaneously (online classes,) and asynchronously (NAVID system), was helpful in achieving the objectives of the lesson. | 45 | 45 | 1.7 | 8.3 | - |
| 12 | Despite possible technical and technological problems, the level of student participation and interaction in the classroom was appropriate. | 6.7 | 58.3 | 26.7 | 6.7 | 1.7 |
| 13 | I was able to have more class interactions with students by using assignments and feedback and creating a forum and exam. | 10 | 43.3 | 18.3 | 25 | 3.3 |
| 14 | I'm concerned about the security of virtual systems in providing content and online tests. | 6.7 | 36.7 | 8.3 | 30 | 18.3 |
| 15 | Due to the slow speed of the internet and its frequent outages, I was not able to do virtual teaching properly. | 13.3 | 31.7 | 6.7 | 40 | 8.3 |
| 16 | Conducting classes virtually gave me enough flexibility to carry out my professional and personal responsibilities. | 6.7 | 60 | 15 | 18.3 | - |
| 17 | I have the necessary technical capabilities for using e-learning platforms. | 23.3 | 60 | 11.7 | 3.3 | 1.7 |
| 18 | Overall, I was satisfied with the virtual teaching. | 10 | 70 | 11.7 | 8.3 | - |
| 19 | I would like to use a virtual platform to teach my courses in future semesters. | 16.7 | 66.7 | 5 | 10 | 1.7 |
| 20 | I recommend the use of virtual teaching to my other colleagues. | 40 | 45 | 5 | 8.3 | 1.7 |

The results also showed a statistically significant relationship between the academic rank of professors and their satisfaction with the availability of scientific and educational consultants in the implementation of online teaching so that the highest satisfaction rates belonged to assistant professors ($P < 0.05$). There was also a statistically significant relationship between professors' rank and satisfaction with using synchronous teaching (online classes), and asynchronous teaching (the NAVID system) in achieving the objectives of the course so that assistant professors expressed a higher satisfaction in this regard ($P < 0.05$) (**Table.3**). The

results also showed a statistically significant relationship between the field of study and dissatisfaction with internet speed so that clinical professors were less satisfied with the low speed of the internet and its frequent outages ($P < 0.05$) (**Table.3**). ANOVA test also showed a statistically significant relationship between professors' years of work experience and satisfaction with asynchronous online teaching (the NAVID system) in achieving the objectives of the course so that dissatisfaction was higher in professors with more years of work experience ($P < 0.05$) (**Table-4**).

Table-3: Relationship between degree and satisfaction of access to scientific and educational consultants.

| Satisfaction of access to scientific and educational consultants in the implementation of virtual education | | | | | | |
|---|---------------|-------|-------------|---------|--------------------|-------|
| Degree | Totally agree | Agree | No comments | Opposed | Completely opposed | Total |
| Assistant Professor | 0 | 25 | 1 | 9 | 0 | 35 |
| Associate Professor | 1 | 16 | 0 | 0 | 0 | 17 |
| Instructor | 0 | 7 | 0 | 0 | 1 | 8 |
| Total | 1 | 48 | 1 | 9 | 1 | 60 |

Chi-square=16.973, Degree of freedom: 8, P-value=0.30.

| Satisfaction with the use of online classes and the NAVID system (Offline) in achieving lesson objectives. | | | | | | |
|--|---------------|-------|-------------|---------|--------------------|-------|
| Degree | Totally agree | Agree | No comments | Opposed | Completely opposed | Total |
| Assistant Professor | 9 | 21 | 1 | 4 | - | 35 |
| Associate Professor | 13 | 3 | 0 | 1 | - | 17 |
| Instructor | 5 | 3 | 0 | 0 | - | 8 |
| Total | 27 | 27 | 1 | 5 | - | 60 |
| Chi-square=13.761, Degree of freedom: 6, P-value=0.32. | | | | | | |
| Satisfaction with internet speed. | | | | | | |
| Major | Totally agree | Agree | No comments | Opposed | Completely opposed | Total |
| Clinical Medicine | 7 | 11 | 2 | 15 | 2 | 37 |
| Nurse | 0 | 1 | 0 | 3 | 0 | 4 |
| Midwife | 0 | 2 | 0 | 3 | 2 | 7 |
| Basic Medicine | 1 | 5 | 0 | 3 | 1 | 10 |
| Dentist | 0 | 0 | 2 | 0 | 0 | 2 |
| Total | 8 | 19 | 4 | 24 | 5 | 60 |
| Chi-square=38.766, Degree of freedom: 16, P-value=0.001. | | | | | | |

Table-4: Relationship between work experience and satisfaction with the use of online classes and the NAVID system (Offline) in achieving lesson objectives.

| Item | Sub-group | Sum of squares | df | Mean square | F | *P-value |
|---|----------------|----------------|----|-------------|-------|----------|
| Satisfaction with the use of online classes and the NAVID system (Offline) in achieving lesson objectives | Between groups | 23.533 | 20 | 1.177 | 2.272 | 0.014 |
| | Within groups | 20.200 | 39 | 0.518 | | |
| | Total | 43.733 | 59 | 1.695 | | |

*ANOVA test, df: Degree of freedom.

4- DISCUSSION

Coronavirus disease is an infectious disease caused by a newly discovered coronavirus. The corona virus pandemic has caused fundamental changes in the world (14). These changes have also affected universities and other aspects of the education system. The epidemic has led to a shift from face-to-face education to online teaching. This, however, may be challenged in some aspects. The first major consequence of the coronavirus outbreak was the closure of all public and private spaces and the traditional and former patterns of social institutions. With face-to-face classes canceled in educational centers and universities in Iran, the issue of online teaching has emerged. Online teaching and online

classrooms, which had not been considered in Iranian universities until now, are now in the spotlight. In the meantime, universities took measures to establish online teaching systems for their students. In fact, with the advancement of technology, online teaching became known as a new teaching method for everyone (15-18). The results of the present study showed that professors were not satisfied with the development of infrastructure for online teaching, so that 43.4% of professors were concerned about the security of online systems in providing content and online tests, and 45% of them were also dissatisfied with low internet speed and the frequent outages. On the other hand, 40% of the professors were dissatisfied with the delayed access to the

support and the information technology team. A review of the selected studies reveals that there are still aspects of online teaching that challenge the assessment of its quality. The major barriers and challenges in the use of online teaching include inadequate infrastructure, such as unprepared professors and students, defects in the network and organizational decisions, shortage of the appropriate online equipment and technologies, characteristics of this type of teaching such as restrictions on face-to-face interaction and the problems associated with the learning of practical and theoretical courses online, high costs, and concerns about the security of personal information and disregard of ethical considerations in the cyberspace (18,19).

The corona outbreak crisis is an opportunity to identify its resulting changes and to seek smart solutions to deal with its consequences and to develop new methods and approaches to face the challenges, so that we can move from the current situation to a more desirable one. Instead of canceling their curricula, many universities encouraged professors to offer teaching materials and assess learning through distance learning and online teaching. The NAVID system and Adobe Connect software are the main learning assistance tools used in medical universities. Other systems and software such as Skype and Skyroom are used by professors for their teaching purposes. Online teaching has advantages such as access to teaching content from anywhere, creating online discussions and groups outside the classroom, holding online exams, etc. However, learning disabilities, limited access to physical facilities such as laboratories, and loss of interest in learning are among the negative factors associated with online teaching. Also, at the onset of the coronavirus crisis, professors and students faced challenges such as unfamiliarity with online teaching systems,

lack of proper installation of related software on their systems and smartphones, and lack of workshops and in-person conferences to address these challenges, which were among the substantial problems of university teaching and information technology units (19). The findings of the present study showed that 80% of professors had a positive experience with the teaching method during the COVID-19 pandemic, and 83.4% stated that they will use the online teaching method in the coming semesters. A total of 85% of the professors have also recommended the online teaching to their colleagues. It seems that online teaching has entered a new phase in Iran and attracted more attention. On the other hand, relevant officials are increasingly aware of the importance of distance teaching and e-learning.

Therefore, it is expected to see a significant growth in online teaching in Iran with the development of the necessary infrastructure such as a high-speed global internet network, the production of interactive learning software, and the use of experiences gained during this pandemic. This type of teaching will continue alongside face-to-face teaching even after the end of the coronavirus outbreak. The spread of the coronavirus has been one of the most important threats to world today and has affected various sections of society, including universities. As with any challenge, the coronavirus pandemic has posed many threats and opportunities for universities and the scientific community. This phenomenon has enabled the scientific community to gain valuable experience in the field of electronic teaching and in being ready to enter a new way of teaching, including online teaching.

5- CONCLUSION

More than two-thirds of the professors were satisfied with teaching online. The

most important factors leading to dissatisfaction included lack of timely access to support services, few empowerment courses on online teaching for professors, concerns regarding capabilities and functions of online systems for teaching and evaluation, concerns regarding the security of online systems while providing content and online tests, and poor internet speed. There was a statistically significant relationship between professors' work experience and satisfaction with synchronous teaching (online classes) and asynchronous teaching (NAVID system) in achieving the course objectives. Assistant professors were more satisfied with online teaching than other faculty members.

6- CONFLICT OF INTEREST: None.

7- REFERENCES

1. Symonds Q. The impact of the coronavirus on global higher education.2020.
2. Smalley A. Higher education responses to coronavirus (COVID-19). National conference of state legislatures.2020.
3. Mian A, Khan SH. Medical education during pandemics: a UK perspective. *BMC Medicine*. 2020; 18(1): 100.
- 4 Sajed AN, Amgain K. Corona Virus Disease (COVID-19) Outbreak and the Strategy for Prevention. *Europasian Journal of Medical Sciences*. 2020; 2(1): 1-4.
5. Ghafourifard M. The promotion of Virtual Education in Iran: The Potential which Turned into reality by Coronavirus. *Iranian Journal of Medical Education*. 2020; 20: 33-34.
6. Lowenstein, A. (2001). Education: Virtual is becoming reality. *Rockford Register*.
7. Bender, L. (2020). Key Messages and Actions for COVID-19 Prevention and Control in Schools. *Education UNICEF NYHQ*.
8. Cao, J. (2005). Learning with virtual mentors: How to make e- learning interactive and effective? Retrieved from <http://proquest.umi.com>.
9. Maggio, L. A., Daley, B. J., Pratt, D. D., Torre, D. M. Honoring Thyself in the Transition to Online Teaching. *Academic Medicine*, 2018; 3 (8): 1129-34.
10. Liyanagunawardena, T. R., & Aboshady, O. A. Massive open online courses: a resource for health education in developing countries. *Global health promotion*, 2018;25 (3): 74-6.
11. Kennedy, D. M. Dimensions of distance: A comparison of classroom education and distance education. *Nurse Education Today*, 2002; 22 (5): 409-16.
12. Sharifi M, Fathabadi J, Shokri O, Pakdaman Sh. The Experience of E-Learning in the Educational System of Iran: MetaAnalysis of the Effectiveness of E-Learning in Comparison to Face-to-Face Education. *Quarterly Journal of Research in School and Virtual Learning*, 2019; 7(1): 9-24.
13. Masumipour M, Amini M, Sohrabpour AA, Ebrahimpour F, Shahkarami F, Sharifian Gh, et al. Design and psychometric evaluation of virtual education quality evaluation tools of Tehran University of Medical Sciences from the perspective of students and professors. *Royesh*, 2021; 20: 41-8.
14. Ghodsi A, Azarfar A, Ghahremani S. A Review of Coronavirus Disease (COVID-19) in Children. *Journal of Pediatric Nephrology*. 2020; 8(3):1-6.
15. Bassett R-M, Amhold N. Education for Global Development. *WORLD Bank BLOGS*. 2020.
16. UNESCO.2020. Availave from <https://en.unesco.org/covid19>.
17. Ahmady S, Shahbazi S, Heidari M. Transsition to virtual learning during the coronavirus disease-2019 crisis in Iran: opportunity or challenges?
18. Sadeghi mahali N, Arsalani N, Rad M, Nematifard T, Khaki S, Fallahi-Khoshkenab M. Comparison of Virtual Education Challenges in Nursing Before and After COVID-19; A Systematic Review. 3. 2020; 1 (3): 81-103
19. Dastani M. COVID 19: A New Beginning in Virtual Education at the Medical Universities of Iran. *Horizon of Medical Education Development*. 2020;11(1):1-4.