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Impact of online learning during the COVID-19 pandemic on medical students and faculty members: A cross-sectional study from Majmaah University, Saudi Arabia

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Abstract

Introduction: During the ongoing COVID-19 pandemic, all prospective of life have been affected by the situation. As a result of which, many universities adopted the online way of teaching instead of the traditional classroom teaching or by blending both together. This study was carried out with the objective to assess the perception of teachers and students regarding classes taken online versus those taken in the classroom. **Materials and Methods:** A descriptive cross-sectional study was carried out among students and faculty members of the medical college at Majmaah University, KSA, from October 2020 to April 2021. **Results:** The study found that the majority of teachers have disagreed (91%) that online classes were more effective than classroom mode, and regarding the overall perception of teachers for classes taken online and in the classroom, 62% of teachers agreed that online classes were better than classroom mode, whereas 38% disagreed; 61% of students agreed that online classes were better than classroom mode, and 39% disagreed. **Conclusion:** Educational institutions should be ready to handle pandemic-like situations without disrupting educational activities and to achieve this, appropriate training of the faculty members and students should be carried out to make online teaching effective and also to minimise any associated disturbing factors.

Keywords: COVID-19 pandemic, Majmaah University, online teaching

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During the COVID-19 pandemic, online classes have progressively become an important part of the education system globally. Online classes have made educational processes possible and promptly manageable by almost everyone. The concept of online and distance learning has been there for the past few decades, but its overview, when compared to the traditional classroom method in universities and educational institutes, has been measured only in the past few years in Saudi Arabia. The traditional classroom approach has always been the most evidently used in the Saudi Arabian educational system. In comparison, the knowledge and comfort of using traditional classroom methods and the dearth of the requirement for virtual classes of imparting education, especially among students, have been a major blockade to the implementation of online education.

Nevertheless, as a consequence of the ongoing pandemic condition, the conveyance of computer-based programmes at various institutions has been made obligatory by educational authorities. COVID-19 had fetched a serious and forceful change in the teaching system in Saudi Arabia as well as in the whole world. Academies in the Kingdom of Saudi Arabia as well as globally have adopted computer-based teaching appending traditional classrooms. At present, in Saudi Arabia, online teaching is in its primitive phase of expansion.^[1] Hence, the goal of this study is an assessment of the perceptions and involvement of students and faculty affiliates about online teaching mode.

Recently, many pieces of research were carried out to study the insight of teaching faculty and students regarding online teaching. One of the studies points out that, tutors' perception of online classes was that although online classes save time and could be comfortably taken from home, they could not be as active as confrontational classes. Teachers were of the opinion that there were many problems associated with online teachings, such as the inability to engage the group, minimal communication between students and teachers and nonetheless, the problem related to technical issues such as poor Internet connection, logging problems, etc. In the same study, the student's perception was that the online classes could be attended from their homes at ease which is time-saving to commute to college, it could help them to record lectures, and that classes could be attended anytime, anywhere, giving flexibility and lesser disturbance from classmates.^[2]

A study done at Alfaisal University talks about the challenges to online classes during COVID-19. The majority of faculty members favoured the adoption of online learning. Medical students were of the opinion that online education that it is better than face-to-face teaching. Although few students conveyed the adverse impact of using online education, they believed studying online requires extensive training related to the use of learning applications.^[3]

In another study, students and faculty were charted the pros, hindrances and general efficacy of using cyberspace as a learning and teaching means. Results showed that the student aids involved (a) amplified access to the most contemporary and comprehensive matter available, (b) evocative learning of skilled technology through the incorporation of course content and computer programmes, (c) accessibility and (d) augmented inspiration. Faculty testified a varied range of tasks in the progress and distribution of web-based instruction. The most commonly known blocks included (a) insufficiency of software and inadequate equipment, (b) lack of technical support, (c) deficiency of faculty and administrative backing, (d) the expanse of training time required to do projects and (e) student endurance. Moreover, faculty who responded to the questionnaire constantly acknowledged accessibility and enhanced education as advantages for students registered in web-based teaching.^[4]

In another study, many students felt that online learning classes are easier than regular classes and few felt otherwise. The majority of students utilised the online lectures by recording them and taking notes. Students felt self-assured in joining online classes rather than traditional classes. They are of the opinion that teachers should prepare themselves to adopt the advanced ways of teaching, and they need to be inventive in finding new and effective ways of teaching their students.^[5]

A study done on online learning by students of pharmacy at King Saud bin Abdulaziz University found a good impact and had positively perceived the institutional instructors and their own preparedness for online learning. The students felt that the path was not free of barriers and continuous evaluation for improvement was necessary for the success of these new teaching methods.^[6]

The effect of COVID-19 on the college of pharmacy in the Kingdom of Saudi Arabia was done in one study, and they found that there were some limitations in conducting online classes, such as a lack of experience and technological problems. They were of the opinion that it is important that the teaching methodology should be userfriendly and should help them to better understand the teaching material.^[7]

With the above background of review of literature, this research focuses mainly on the influence of online learning on medical students and faculty members of the medical college Majmaah University, KSA, during the COVID-19 pandemic. The specific objective of this research is to compare and correlate teachers' perceptions of online classes, to determine teachers' personal factors in online teaching, to determine teachers' perceptions of their student's factors in online classes, to identify the student's perception of online classes and to determine students' personal factors in online classes.

Materials and Methods

A descriptive cross-sectional study was carried out at the College of Medicine, Majmaah University, Saudi Arabia, from October 2020 to April 2021. The study participants included all male and female teaching faculty and medical undergraduates of all years of study. Any student or faculty member outside the medical college, Majmaah University, was excluded from this study. The total number of teaching faculty (approximately 150, including male and female) and an entire list of registered pupils in the medical college, Majmaah University, KSA, as per the current E-Register statistics, was 475 (330 male and 145 female), were included, the actual number of participants was 197 (22 faculty members and 175 students with response rate of around 30%). The complete listing technique was used for data gathering. The study participants were sent an online Google Form to collect their responses. Data were retrieved on an Excel file and were evaluated using IBM SPSS Statistics 24 (1 New Orchard Road Armonk, New York 10504-1722 United States). Frequencies and percentages were utilised for qualitative variables. Ethical consent was attained from the Majmaah Research Institutional Ethics Committee of Basic and Health Science Research Centre, Al Majmaah, vide reference number MUREC-December 28/COM-2020/17-1. An informed agreement was obtained from all participants. The data were kept secret and used for this study only.

Results

This study was carried out to get a better insight and experience of faculty members and students in the college of medicine about the newly applied online teaching method. The study outcomes were divided into two groups, first for faculty members' perception and second for students' perception of online classes.

The majority of teachers disagreed (91%) that online lectures were more useful than classroom teaching, the non-existence of teacher–student communication in online lectures (77%), not easy to engross students in online lectures (91%), many were of the opinion that online programmes are exciting and collaborative (95.5%), but it is hard curbing group discussions during online classes (77%), methodological problems affect the movement and pace of virtual classes (86%) and regarding the overall perception of teachers' on online classes and traditional classroom teaching, 62% of teachers agreed that online classes were better than classroom mode, whereas 38% disagreed [\[Table 1\]](#).

Item	Agree (%)	Disagree (%)
1. Online classes are more effective than classroom mode	9.1%	90.9%
2. Online classes are more interesting than classroom mode	20.8%	79.2%
3. There is lack of teacher-student communication in online classes	23.4%	76.6%
4. It is difficult to engage students in online classes	9.1%	90.9%
5. Online classes are more useful than classroom mode	38.0%	62.0%
6. Online classes are more exciting and collaborative than classroom mode	95.5%	4.5%
7. Online classes are more collaborative than classroom mode	95.5%	4.5%
8. Online classes are more collaborative than classroom mode	95.5%	4.5%
9. Online classes are more collaborative than classroom mode	95.5%	4.5%
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46. Online classes are more collaborative than classroom mode	95.5%	4.5%
47. Online classes are more collaborative than classroom mode	95.5%	4.5%
48. Online classes are more collaborative than classroom mode	95.5%	4.5%
49. Online classes are more collaborative than classroom mode	95.5%	4.5%
50. Online classes are more collaborative than classroom mode	95.5%	4.5%

Table 1: Teacher's perception of online classes and online versus classroom teaching (n=22)

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[\[Table 2\]](#) shows the different teachers' personal factors in online teaching. Many (59.1%) disagreed that lack of computer skills will make it difficult to use and others agreed (40.9%); the majority (68.2%) agreed about lack of work satisfaction, whereas others disagreed (31.8%); the majority (63.6%) showed lack of motivation in online classes and only 36.4% disagreed; 54.5% agreed for easy distraction among students and remaining 45.5% disagreed; 63.6% showed online classes could trigger anxiety, whereas 36.4% disagreed. The overall teachers' personal factors in online teaching show that 54.5% disagree and 45.5% agree [\[Table 3\]](#).

Item	Statement	Agree (%)	Disagree (%)
1	I lack the required skills to teach in an online mode	45.5	54.5
2	I have a good understanding of the online teaching method	54.5	45.5
3	I have a good understanding of the online teaching method	54.5	45.5
4	I have a good understanding of the online teaching method	54.5	45.5
5	I have a good understanding of the online teaching method	54.5	45.5
6	I have a good understanding of the online teaching method	54.5	45.5
7	I have a good understanding of the online teaching method	54.5	45.5
8	I have a good understanding of the online teaching method	54.5	45.5
9	I have a good understanding of the online teaching method	54.5	45.5
10	I have a good understanding of the online teaching method	54.5	45.5

Table 2: Teachers' personal factors in online teaching (n=22)

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Item	Statement	Agree (%)	Disagree (%)
1	Students do not take online classes seriously	91	9
2	Students show a lot of excuses for not attending online classes	86.4	13.6
3	Students show a lack of interest in students during online classes	95.5	4.5
4	The overall teaching perception is positive during online classes	45.5	54.5

Table 3: Teacher perception on students' factors in online classes (n=22)

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On teachers' perception of students, most of the teachers mentioned that students do not take online classes seriously (91%), 86.4% of teachers show students make a lot of excuses and about 95.5% of teachers believe that there is a lack of interest in students during online classes.

The overall teachers' perception on students' factors in online classes shows that 91% agree and only 9% disagreed that students' factors play an important role in the success of online teaching mode.

About students' perception of online classes, 50.9% believe that online classes are more effective, 54.9% are of the opinion that there is a lack of interaction, 57.1% agree about low quality in the discussion, a majority (93.1%) show online classes save time, 66.3% agreed about technical issues and around 66.3% think that it is not easy to clarify the queries during online lectures [\[Table 4\]](#).

Item	Statement	Agree (%)	Disagree (%)
1	Online classes are more effective than traditional classes	50.9	49.1
2	There is a lack of interaction in online classes	54.9	45.1
3	Quality of discussion in online classes is low	57.1	42.9
4	Online classes save time	93.1	6.9
5	Technical issues are common in online classes	66.3	33.7
6	It is not easy to clarify queries during online lectures	66.3	33.7
7	Students do not feel motivated to attend online classes	52	48
8	Students do not feel comfortable to participate in the discussion	70.3	29.7
9	Students are less anxious with online learning	54.3	45.7
10	There is difficulty in concentration during online classes	68	32

Table 4: Students' perception of online classes (n=175)

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About students' individual influences in online classes, 68% believe that there is an absence of computer expertise, making it uneasy for the students, 70.3% feel comfortable to participate in the discussion, 44% of students report that it is difficult to grasp and follow online classes, 70.9% think students are less anxious with online learning and 54.3% agreed that there is difficulty in concentration and students tend to get distracted easily, whereas 54.5% feel lazy with online learning, and 52% find that they do not feel motivated to attend online classes [\[Table 5\]](#).

Item	Statement	Agree (%)	Disagree (%)
1	Students do not have computer expertise	68	32
2	Students feel comfortable to participate in the discussion	70.3	29.7
3	It is difficult to grasp and follow online classes	44	56
4	Students are less anxious with online learning	54.3	45.7
5	There is difficulty in concentration during online classes	68	32
6	Students tend to get distracted easily during online classes	54.5	45.5
7	Students feel lazy with online learning	54.5	45.5
8	Students do not feel motivated to attend online classes	52	48
9	Students do not feel comfortable to participate in the discussion	70.3	29.7
10	Students are less anxious with online learning	54.3	45.7

Table 5: Students' personal factors in online classes (n=175)

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Discussion ↑

As is it understandable that variations are persistent and unavoidable; therefore, many things would become outdated with any new development and expansion. Hence, cleverness beholds the capability to adjust to any kind of uprising issues. E-learning denotes the usage of technology such as web communication for imparting knowledge principally. It can also be called a technology-aided transmission that imparts useful skills and beneficial knowledge to many recipients.^[8] The upsurge of the COVID-19 pandemic universally has called for the use of these online courses. The findings of our study, which was conducted to assess teachers' and students' perception of online classes versus classroom teaching in the college of medicine at Majmaah University, were in accordance with a similar study conducted recently, which presents the observations that, although online teaching had a more substantial role in delivering in the future, it cannot be standby to traditional classroom courses. A complete conversion to online education is somewhat difficult and subtle. However, the gains resulting from e-learning cannot be overlooked. Hence, there is a necessity to recognise the hindrances that come in the path of adopting online learning and take necessary measures to overcome them promptly.^[9] Furthermore, our study assesses the possible factors that affect online teaching, students and faculty members such as work satisfaction, computer skills, consciousness about teaching skills, adaptation and motivation. It was observed in our study, as shown in [\[Table 2\]](#), around 45.5% of overall faculty members agreed that personal factors play an important role in undertaking online teaching, whereas 54.5% disagreed; 61% of students agreed that personal factors play an important role in undertaking online teaching, whereas 39% disagreed [\[Table 4\]](#).

The observations of our study regarding students' factors in online classes were in accordance with another study

which points out that students feel contented with the online programmes and are receiving sufficient help from their tutors, but they are against the view that virtual classes will substitute traditional face-to-face classroom mode. One more fact cannot be unnoticed that tutors are going through, such as the complications in carrying out online lectures due to the dearth of necessary training required for directing online classes. Problems related to technical issues are the main factors responsible for the challenges faced during the implementation of the online classes.^[10]

Another study was done to focus on the significance of active learning with a distinct emphasis on personal communication followed by appropriate advice. Their observations highlighted that personal interaction and communications were the chief focus for high-yield teaching efficacy with quality outcomes.^[11]

Our study found that the majority of students were not very serious about online classes, tried and make excuses for not attending online classes and their authenticity could not be judged. Students showed minimal interest and participation during online classes. These findings were also observed in some prior studies, which revealed that properly structured online learning stages fetch profits for students when they are used as balancing tools for the traditional learning process.^[12] Moreover, few other studies showed that students mostly have a positive attitude toward online means of education,^[13] despite encountering technical issues and reflecting that they process information better in the traditional courses. Furthermore, a similar study reveals that online modes of learning yield better results in integrating information, familiarising courses with the need of the students, student specifications, eradicating the hurdles of space and time, flexibility and things that persuade students to join in on discussions and exchange ideas.^[14]

It is noteworthy to mention that online learning is profound in planning out strategies of advices with numerous available concepts and models, but this movement of the educational institutes to virtual teaching becomes a question as these attempts have seen poor planning strategies and progress of online teaching programmes due to the ongoing pandemic. As it is understandable that online learning programme is driven by technology and rely mainly on Internet services, the scholastic organisations may team up with telecommunication companies to sponsor the fee of Internet charges for subscriptions and/or offer free browsing data to students and tutors as one of the ways to fulfil their corporate social obligation and responsibility.^[15]

Teacher–student ease with online class strategy, organisation, level of communication, the eminence and extent of class content, technological backing support and an inclusive understanding of online class delivery impacts the overall instruction and education experience and governs the ultimate achievement or failure of the online mode of education.

Conclusion



Despite there being no definitive agreement about the effectiveness of online classes, it is still the only option available in COVID-19 pandemic situations. Furthermore, as most countries are applying this online teaching strategy instead of traditional teaching, it is recommended from our study that the educational institutions should be ready to handle pandemic situations without disrupting educational activities and to achieve this, appropriate training of the faculty members and students should be carried out to make the online teaching effective and also to minimise any associated disturbing factors. It is recommended that awareness need to be improved, converging on the possible opportunities and availability aspects to maximise the implementation of an online channel of communication between students and teachers. The limitation of the study was that the population was limited. Further research with a larger sample size needs to be conducted.

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Conflicts of interest

There are no conflicts of interest.

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