

THE IMPACT OF TRADITIONAL CLASSROOM BASED TEACHING IN COMPARISON TO ONLINE TEACHING ON THE ACADEMICS AND ATTENDANCE

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ABSTRACT:

OBJECTIVES:

To compare the impact of traditional classroom-based teaching versus online teaching on the academics and attendance of male as compared to female students

METHODOLOGY:

A study was conducted on 51 third year BOS students, College of Dentistry, Sharif Medical and Dental College, Lahore. An aggregate of the scores based on weightage assigned to each test for all the assessments conducted in the regular session and online session was formulated. The attendance record of the months taught in both the sessions was also taken as percentages. Fisher Exact test was used to find the statistical association between the level of academic performance as well as attendance in the regular session and online session with gender of the students. Man, Whitney U test was used to find the statistical difference in the scores of assessments in the regular as well as online session of male and female students.

RESULTS:

There was a significant association between gender and academic performance in the online session ($p=0.002$). Gender and academic performance of students during the traditional classroom-based teaching session had a significant association ($p=0.001$). The attendance of male and female students was found to be significantly associated with the online teaching system ($p=0.009$).

CONCLUSION:

It was observed that females had an overall better academic performance in the online teaching as well as traditional classroom-based teaching system. A similar trend was observed in attendance also, where the females had better attendance record in online and traditional classroom-based teaching set up.

KEYWORDS:

Traditional Classroom Based Teaching, Online Teaching , Academic Performance , Attendance Record

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INTRODUCTION:

Education and learning form the basis of evolution and growth of an individual in turn

making him a contributing member of the society¹. A vast body of research has been done in order to understand and unravel the different methods by which human beings learn, which has had a major impact on the education system². Many different modes and methodologies of teaching have been employed over the period of time³. One widely used method of teaching and learning is the traditional classroom based method⁴. This method ensures an optimum interaction between the teacher and

the student and provides the student with a good social exposure⁵.

Another mode of learning and teaching is the online mode⁶. Online learning has gained a significant popularity and is being opted by many students globally due to its ease of access and availability⁷. The availability of these technologies has improved the student access to learning material and lectures even outside a traditional classroom-based education system and have helped the teachers by providing them with an easy and high-quality mode of teaching⁸. It has been reported in the past that both the traditional classroom based teaching and online teaching and learning have different impacts on the performance of student⁹. According to one study, the students attending online classes performed better academically as compared to the ones who attended traditional face-to-face classes¹⁰. Similarly, it was reported in another study that the performance of students in the final examinations was much better for the students who attended online classes as compared to traditional classes¹¹. On the other hand, it has been in the past that the students who have attended traditional classroom-based lectures have outperformed those who have been taught using the online mode of teaching^{12,13,14}.

Gender differences have been known to impact the academic performance and attendance of students. It has been reported in the past that females are high academic achievers in comparison to males in traditional classroom based teaching¹⁶. In the past many different findings have been reported related to academic performance of students in online teaching¹⁷. Some studies have reported that the students perform well in online education system^{18,19} while others reported it to have a negative impact on their academic performance¹⁷. One research reported that the academic performance of females was better in comparison to the males in online classes²⁰. The level of attendance has also been reported to differ between male and females students²¹. According to one study it was reported that female students were more regular in comparison to male students in traditional classroom based lectures²¹. The rationale of this study is to determine the impact of traditional classroom-based teaching in

comparison to online teaching on the academic performance and regularity of male as compared to female students.

METHODOLOGY:

A cross sectional comparative study was conducted on student record of 51 Third Year BOS students, College of Dentistry, Sharif Medical and Dental college, Lahore over a period of 10 months after obtaining ethical approval from Sharif Medical Research Centre (SMRC). Demographics like name and gender were collected. All students irrespective of their academic and attendance performance were included in the study while any student who had left college during the session was excluded.

The academic record of Third Year BOS students for the session 2019 to 2020 for the subject of Oral Pathology was used. An aggregate score of the weightage assigned to each test for all the assessments conducted in the regular session and those conducted during the online session was formulated. Based on the aggregate of these scores the students were classified into categories reflecting their academic performance²² as shown in Table 1.

Table 1: Classification Based on Academic performance

Excellent (90 to 100%)
Good (80 to 89%)
Average (70 to 79%)
Fair (50 to 60%)
Poor (40 to 49%)

To assess the impact of teaching methodology (online in comparison to traditional classroom based teaching) on the attendance of students, the attendance record of the months that were taught in a traditional classroom based setting and those for the months taught online were used in the form of aggregate percentages. Based on these percentages the students were classified into various categories²² as shown in Table 2.

Table 2: Classification Based On Attendance

Excellent (90 to 100%)
Good (80 to 89%)
Average (75 to 79%)
Poor (below 75%)

SPSS 23 is used for statistical analysis and P-value 50.05 was considered significant. Nominal data was presented as frequency and percentage. Fisher Exact test was used to find the statistical association between the level of academic performance as well as attendance in the regular session and online session with gender of the students. Man. Whitney U test was used to find the statistical difference in the scores of assessments in the regular as well as online session of male and female students.

RESULTS:

A study was conducted on 51 Third Year BDS students of College of Dentistry, Sharif Medical and Dental College, out of which 37% were males while 63% were females. There was found to be a significant association between the gender and the academic performance in the online session ($p=0.002$) as demonstrated by Fisher Exact test. It was observed that females had an overall better academic performance in the online teaching session where only females (2%) had an excellent academic record, while none of the males fall in this category. It was also observed that a higher percentage of females had a good academic record in comparison to the males. Furthermore, it was also evident that 8% males had a poor academic record in comparison to females 2% as shown in Figure 1.

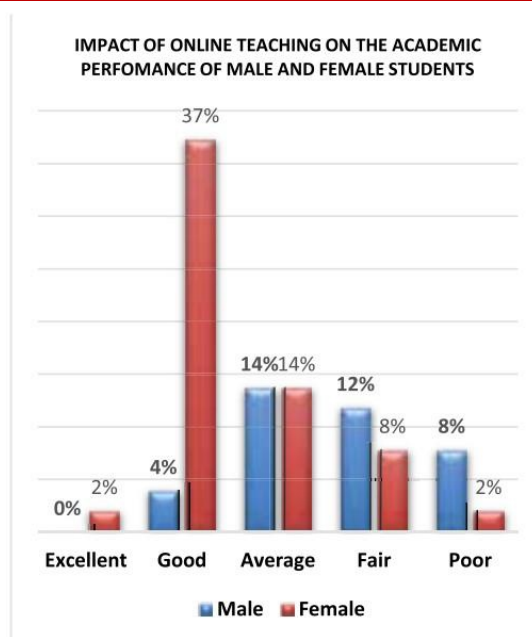


Figure 1: Impact of Online Teaching on the Academic Performance of Male and Female Students

There was found to be a significant association between gender and academic performance of students during the traditional classroom-based teaching session as demonstrated by Fisher Exact test ($p=0.001$). It was evident that the academic performance of females was much better in comparison to males in the traditional classroom-based session. The group of students who had an excellent academic performance was all females (2%) and no males, while those with a poor academic performance were all males (10%) and no females. The female students (28%) predominantly had an average performance, whereas the male students (22%) predominantly had a fair academic performance in the traditional teaching session as shown in Figure 2.

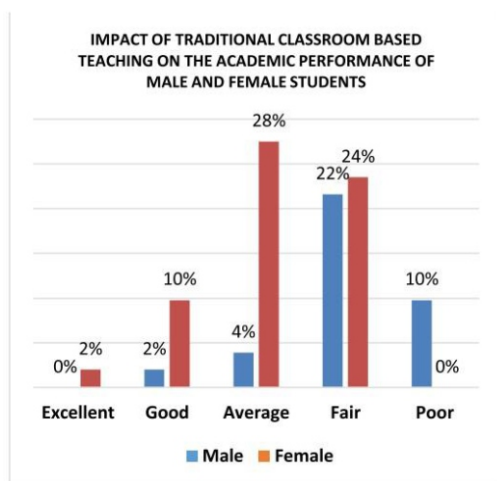


Figure 2: Impact of Traditional Classroom Based Teaching on the Academic Performance of Male and Female Students

There was found to be a statistically significant difference in the scores of male and female students in the online assessments, $U=106.500$, $Z=-3.853$, $p \leq 0.001$ as demonstrated by Mann Whitney U test. Similar was the case with the assessment scores of the regular session where it was seen that there was a statistically significant difference in the assessment scores of male and female students, $U=131.000$, $Z=-3.373$, $p=0.001$.

Although there was no significant association between the attendance of male and female students in the traditional classroom-based teaching system as demonstrated by the Fisher Exact test ($p=0.126$), it was seen that female students were more regular in the traditional classroom based lectures. It was seen that 51% females had excellent attendance, while only 22% males fall in this category. The males predominantly (14%) had good attendance as shown in Figure 3.

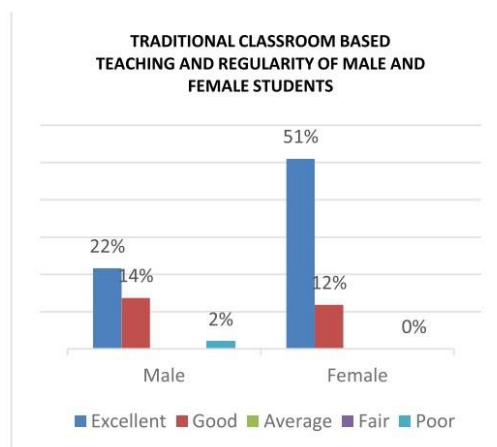


Figure 3: Traditional Classroom Based Teaching and Regularity of Male and Female Students

On the other hand, the attendance of male and female students was found to be significantly associated with the online teaching system as demonstrated by Fisher Exact test ($p=0.009$). It was seen that while none of the students demonstrated an excellent attendance, majority of the female students (33%) had good attendance and the males predominantly (29%) had an average attendance. It was also seen that the percentage of female students with a poor attendance (4%) was slightly higher than the males (2%) as shown in Figure 4.

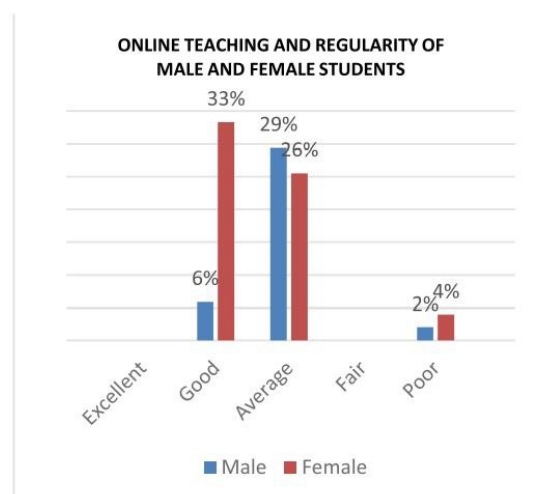


Figure 4: Online Teaching and Regularity of Male and Female Students

DISCUSSION:

A cross sectional comparative study was conducted on Third Year BOS students, Sharif Medical and Dental College to assess the impact of online in comparison to traditional classroom based teaching on the academics and attendance of male and female students.

Literature supports that among many other factors that impact the academic performance of students, gender plays a major role²³. It has also been reported that the mode of teaching also has an impact on the performance of students. It has been reported previously that online learning is better in comparison to traditional learning²⁴.

According to one study in traditional classroom based teaching system, the percentage of males who acquired marks less than 80% was the same as the females (50%)²⁵ that is contrary to our study where a greater percentage of females (28%) had marks below 80% as compared to males (4%). It was also reported that a greater percentage of the females (51.8%) had marks more than or equal to 80% in comparison to the males 48.2%²⁵ which is very similar to our study where 10% females had scored equal to or above 80% as compared to males 2%. Another study conducted on the academic performance of male and female students based on the type of question attempted, reported contrary results and showed that a higher percentage of males (2%) attained 80% marks in multiple choice questions, while none of the females were able to achieve that percentage²³ It was seen in our study, that more females (28%) had academic record in the range of 70% to 79% in comparison to males (4%). These results are very different from another study where it was seen that males scoring 70% to 79% in their assessments were 16.7% with 17.3% females scoring in the same range²³.

According to our study there was a significant difference in the scores of male and female students during the online session assessments where the mean score for females (78.19±10.030) was higher than the males (60.63±19.463). Another study reported that although there was no significant

difference in the scores for Oral Histopathology assessments between male and female students, but the mean score for females (83.71±10.87) was higher than the males (80.54±9.90)²⁶. One study reported a result contrary to our study where the mean exam scores for online assessments for males (87.06±1.37) was higher than females (83.51±0.94)²⁷.

Although there is not enough literature that provides us information regarding the difference in attendance of male and female students in online classes, but ample research supports a difference in the regularity of male and female students in traditional classroom-based teaching. According to one study, the gender to occupy the category of attendance from 90 to 100% was mainly females (31%) with 6% males in that category²⁸. These findings are very similar to our study where a higher percentage of females (51%) had attendance in the range of 90 to 100% as compared to males (22%). The above study²⁸ also reported that the category of 80 to 89% attendance had more females (33%) as compared to males (15%). These results are contrary to our study where more males (14%) had attendance in the range of 80 to 89 % as compared to females (12%).

CONCLUSION:

The females performed better academically in the online teaching session as well as traditional classroom-based teaching. A similar trend was seen in regularity of students in online and traditional classroom based teaching, where the female's students were found to be more regular than the male students but it was also seen that although the male students were not as regular as the female students, they maintained a good attendance record throughout.

LIMITATIONS:

Microscopic evaluation of the histopathological slides plays a pivotal role in helping the students appreciate the various histopathological features. So, one limitation that was faced in this study was that although the students were shown histopathological slides in PowerPoint

presentation but due to the suspension of the regular session the students could not be given access to direct microscopic evaluation, which can be a factor that can impact their academic performance in the subject.

RECOMMENDATIONS:

The difference in the academic performance and attendance levels of male and female students in both online session and traditional classroom based teaching implies that more steps should be taken to identify the problems faced by the male and female students pertaining to both the teaching methodologies. Coining appropriate solutions to these problems will alleviate the difference in performance between the male and female students and help them improve their performance.

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CONFLICT OF INTEREST: None

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