

Online teaching in the era of Covid-19: Comparison between power-point vs video Tutorial: students' perception

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ABSTRACT

Aim: To compare students perception towards use of video tutorial versus conventional power point presentation for online medical teaching

Study design: Comparative descriptive survey

Place and duration of study: The online study was conducted in the Department of Gyne. & Obs., Islamic International Medical College Rawalpindi & Sialkot Medical College Sialkot on Ms-Teams from 21st July 2020 to 21st October 2020

Methods: One hundred and one students from 4th year MBBS participated in the study. Students were taught a given topic on power point presentation and then through a video tutorial online on Ms -Teams. Data was collected using a validated questionnaire. Students were inquired to express their perceptions & attitudes regarding the online teaching method, using a five point Likert scale. All the data was analyzed on SPSS version 20.

Results: Out of 101, there were 38 males and 63 female students with ages ranged between 22 to 26 years. The mean score for video tutorial was higher than the mean score for Power Point in content understandability. There was a statistical difference in content understandability, effectiveness of teaching technique and attitude towards two teaching techniques ($P < 0.05$). Students had more positive attitude towards watching an online video than PowerPoint, which implied it was more entertaining, engaging and effective. Discussion was more spontaneous with a video tutorial as compared to Power Point. Students were involved more and enjoyed higher level of interaction.

Conclusion: Online video tutorials were more effective as compared to the power-point presentations in content understandability of students and their learning processes.

Keywords: Online teaching, Covid 19, Video tutorial, power point presentation

INTRODUCTION

From the time when the coronavirus infection 2019 (COVID-19) broke-in in the United Kingdom¹, World Health Organization stated the COVID-19 outbreaks as the "global pandemic."² The worldwide lock-down constraints to prevent the further spread of the disease, which affected the all aspects of human life; unavoidably, medical education was also affected.³⁻⁵ All educational activities including lectures, clinical rotations, and examinations were postponed^{6,7} these events have resulted in an abrupt transference in instruction techniques towards the online teaching. The method of online teaching played a vital part in the medical education during these two to three years, proven numerous assistances in augmenting students' learning⁸⁻¹¹.

A new systematic-review proposed that online and offline teaching methods are comparable in relations of results of examinations¹². The exceptional COVID-19 pandemic has initiated a rapid modification to the exclusive implementation of online teaching method, developing the principal basis of the medical education and empowering the students to carry on to study distantly¹³. Learning sessions have enclosed basic medical condition, case revisions and examinations through live-streaming of tutorial videos via a platform like "Zoom and MS-Teams"⁶ shown to have high levels of commitment¹⁴. This permits students to contact teaching irrespective of locality⁶.

However, learning be dependent on internet require to be personalized towards various learning methods to allow it to be impressive and impactful¹³. Apprehensions have been upraised concerning the value of resources created during pandemic, owing to the time restraints, mainly as these means are targeted to recompense for lack of the exposure¹⁵. In a survey, also done in 2020, it was observed that a major fear in students was that distant learning obstructed their capacity to attain clinical capability¹⁶. This

issue also emphasized the probable role of the skilled use of the social media in assisting medical education¹⁷. In future, when the lockdown restrictions will be reduced, the necessity for social-distancing will remain, e-learning and distant education will carry on to form essential source of medical education. Digital health podiums for both; patients and students will be the crucial part of care, even after COVID-19¹⁸.

The use of power point presentation in virtual classroom coaching has meaningfully increased worldwide without analysis of their effects on student learning and approaches. Most online lectures are directed using the power point presentation, supposing that integration of technology would increase students' e-learning and keep interest in different topics. Principally in a modular program, power point has been used by the instructor as a good option since the time is programmed short. On the other hand, online video tutorials are perceived as more interesting and entertaining. Students are able to retain more information as compared to online PowerPoint. The levels of understanding, the concentration of students and their perceptions towards online teaching platform are the key concerns that need to be addressed. That stresses the need to conduct a study in our own population to observe and compare the students' perceptions in both teaching techniques i.e. video tutorials and power point presentations. Subsequently it is advisable to ask students feedback at the end of the session whether the teaching platform enhanced their learning, provided opportunity to interact with teacher and peers, and the need to change or add any other teaching technique for the particular topic.

MATERIAL AND METHOD

This comparative descriptive study was conducted in order to get the responses of questions after permission from Ethical Review Board, it has set and test the students under 2 different teaching methods. Furthermore, this study was also classified as a media study, as this study was based on two different methods of media

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i.e. online video tutorials and online power-point presentations, to provide learning material to the medical students and to check its impact on their way to learning and attitude. This study was done to assess the perceived teaching method to compare the attitude of 118 students for 4th year MBBS. Study was conducted from 21st July 2020 to 21st October 2020 on MS-Teams online system by faculty of Gynecology and Obstetrics, Islamic international medical college Rawalpindi & Sialkot medical college Sialkot. Ethical approval was gained from the institutional ethical review board of Islamic international medical college. Prior informed consent was obtained from all the respondents and they were assured of confidentiality. The non-probability sampling techniques were used for the present study. All fourth year students coming to gynae / obs department for their rotation between the given time duration were included in the study. Students were taught via online power point presentations and through online video tutorials on MS –Teams platform. Data was collected through pre-validated questionnaire comprising of 14 items that was sent to all students via email. A total of 101 of the respondents were assessed for their perceptions towards two online teaching techniques. Students were required to best express their perceptions as well as their attitudes regarding online teaching methods, using a 5-point Likert scale: i.e. from strongly disagree =1, disagree=2, neutral=3, agree=4 and strongly agree=5. There was pre-requisite demographic information of the respondents regarding their name, age, gender and email address. Firstly, the students are projected to contemplate those courses taking with teachers, who were primarily using power point presentations techniques in educating the students and secondly, where teachers implemented video tutorial technique online. The questions were presented the same for power point and video tutorial. Questionnaire was filled and returned via email by students. Data was analyzed on excel-add-ins named "Took Pak". Descriptive statistics was applied to represent the demographics and preferences of students for teaching method.

RESULTS

Out of 101, there were 38 males and 63 female students with ages ranged between 22 to 26 years (Table 1). Table 2 showed that the mean score of video tutorial was high as compare to the mean score of PowerPoint in effectively fulfilling the learning outcomes of the topic. The close analysis of results showed that there was statistically significant difference in learning course content, constructive feedback to students and student engagement (P is < 0.05). Students had more positive attitude towards watching an online video than PowerPoint, which implied it was more entertaining, engaging and effective. Discussion was more spontaneous with a video tutorial as compared to PowerPoint. Students were more involved and enjoyed higher level of interaction. They were more satisfied with the online interaction with the instructor as well as peers in video tutorials. It was also found to be a better way to provide constructive feedback to students. The need for any other instructional media was less after taking video tutorials by the students.

Table 1: Gender ratio of students

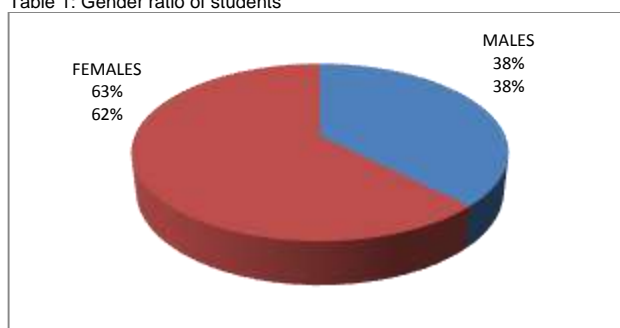


Table 2: Descriptive analysis of 14 items showing statistical difference in student perception towards power point presentation and video tutorial teaching technique through validated questionnaire

Questions	Mean	Standard Error	Median	Mode	Standard Deviation	Confidence Level(95.0%)
Q1-The use of power point presentation effectively fulfilled the learning outcomes of the topic	2.930693	0.110137	3	2	1.10686427	0.218508892
Q2-The use of video tutorial effectively fulfilled the learning outcomes of the topic	3.722772	0.077228	4	4	0.77612901	0.153217602
Q3-The use of power-point presentation is an effective means for me to learn course content	2.485149	0.089679	2	2	0.90126424	0.177920867
Q4-The use of video tutorial is an effective means for me to learn course content	4.009901	0.058859	4	4	0.59152429	0.116774316
Q5-The use of power point is an effective way for instructors to provide constructive feedback to students	3.336634	0.089307	3	4	0.89752134	0.177181971
Q6-The use of video tutorial is an effective way for instructors to provide constructive feedback to student	3.871287	0.082849	4	4	0.83262676	0.164370968
Q7-The use of power-point effectively engaged students	2.920792	0.098185	3	2	0.98674382	0.194795608
Q8-The use of video tutorial effectively engaged students	4.485149	0.062321	5	5	0.62632039	0.123643501
Q9-How satisfied or dissatisfied were you with the online interaction you had with the instructor using power point?	3.60396	0.078449	4	4	0.78840609	0.155641252
Q10-How satisfied or dissatisfied were you with the online interaction you had with the instructor using video tutorial?	4.039604	0.052503	4	4	0.52765125	0.104164976
Q11-How satisfied or dissatisfied were you with the amount of online interaction you had with other students during power-point presentation	3.336634	0.099779	3	3	1.00276845	0.19795907
Q12-How satisfied or dissatisfied were you with the amount of online interaction you had with other students during video tutorial?	3.574257	0.097845	4	4	0.98332634	0.194120955
Q13-Do you feel the need for any additional instructional media other than power-point for the same topic to continue online classes in future as well?	4.079208	0.076667	4	4	0.77049553	0.152105484
Q14-Do you feel the need for any additional instructional media other than video tutorial for the same topic to continue online classes in future as well?	1.861386	0.07316	2	2	0.73525102	0.145147774

The **online video tutorial** content effectively fulfilled their learning outcomes, 3% students strongly disagreed, 3% disagreed, 8% were neutral, 73% agreed while 14% strongly agreed (Table 3). It is an effective means for me to learn course content, 11% strongly agreed, 83% agreed, 4% were neutral, 3% disagreed no student strongly disagreed. (Table 4) The use of video tutorial is an effective way for instructors to provide constructive feedback to student, 16% strongly agreed, 59% agreed, 18% were neutral, 7% disagreed, 1% strongly disagreed. (Table 5). The use of video tutorial effectively engaged students, 46% strongly agreed, 54% agreed, no one was neutral, 1% disagreed, and no student strongly disagreed. (Table 6) Thirteen percent students were strongly dissatisfied with the online interaction they had with the instructor, 3% were dissatisfied 2% were neutral, 75% were satisfied and 8% were strongly satisfied (Table 7). Four percent were strongly dissatisfied with the amount of online interaction they had with other students during video tutorial, 11% were dissatisfied, 9% remained neutral, 69% were satisfied and 8% were strongly satisfied (Table 8). Twenty seven percent strongly disagreed that they felt the need for any additional instructional media other than video tutorial for the same topic to continue online classes in future as well, 45% disagreed, 25% were neutral, 4% agreed, while no student strongly agreed.

Table 3: Content effectively fulfilled their learning outcomes

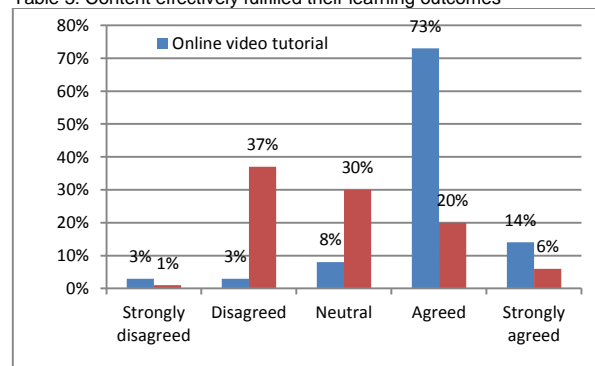
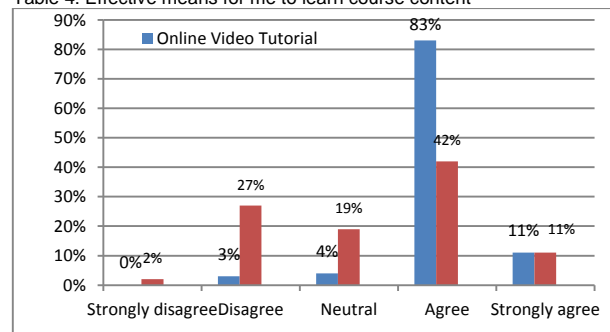


Table 4: Effective means for me to learn course content



The **online Power point presentation** content fulfilled their learning outcomes, 8% students strongly disagreed, 37% disagreed, 30% were neutral, 20% agreed and 6% strongly agreed (Table 3). It is an effective means for me to learn course content, 11% strongly agreed, 42% agreed, 19% were neutral, 27% disagreed, 2% strongly disagreed (Table 4). The use of PPT is an effective way for instructors to provide constructive feedback to student, 5% strongly agreed, 51% agreed, 27% were neutral, 17% disagreed, 1% strongly disagreed. (Table 5). The use of online PPT effectively engaged students, 26% strongly agreed, 44% agreed, 10% were neutral, 13% disagreed, 8% student strongly disagreed (Table 6). Two percent students were strongly dissatisfied with the online interaction they had with the instructor, 12% were dissatisfied, 13% were neutral, 68% were satisfied and 4% were

strongly satisfied (Table 7). Two percent were strongly dissatisfied with the amount of online interaction they had with other students during video tutorial, 17% were dissatisfied, 31% remained neutral, 41% were satisfied and 10% were strongly satisfied (Table 8). No student disagreed or strongly disagreed that they felt the need for any additional instructional media other than video tutorial for the same topic to continue online classes in future as well, 19% were neutral, 66% agreed, 16% student strongly agreed (Table 9).

Table 5: Effective way for instructors to provide constructive feedback to student

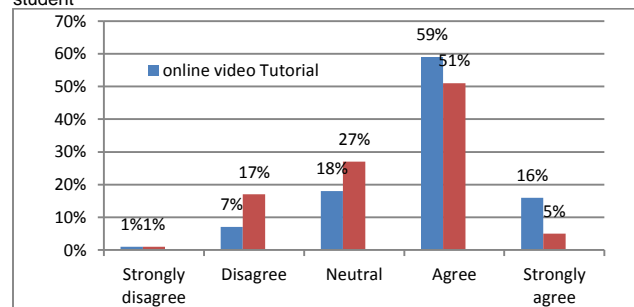


Table 6: Effectively engaged students

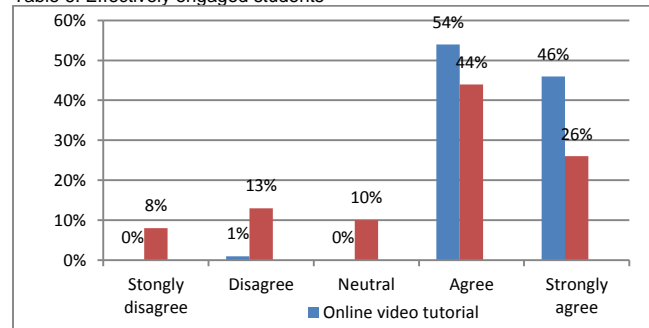


Table 7: Online interaction with the instructor

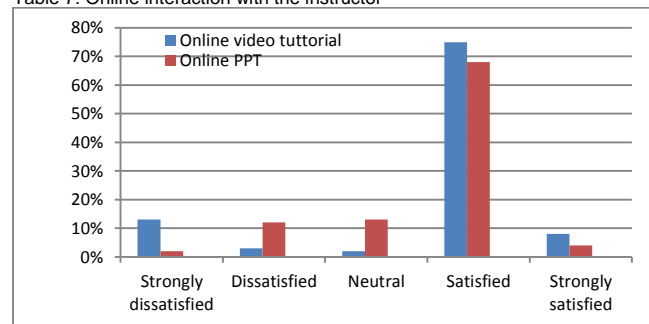


Table 8: Online interaction they had with other students

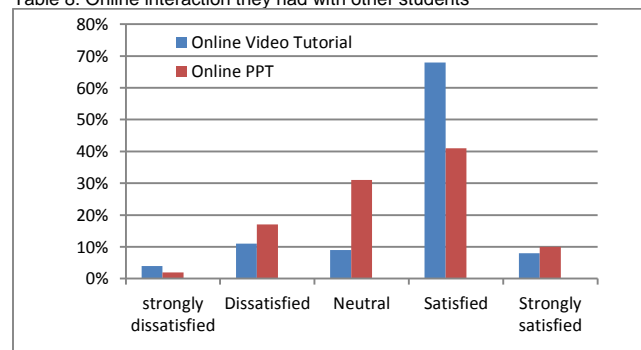
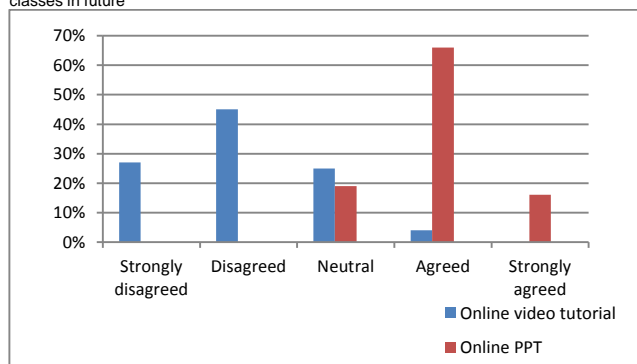


Table 9: Need for any additional instructional media for the same topic to continue online classes in future



DISCUSSION

In this study, it is observed that there was significant difference in fulfilling the learning outcomes of the topic in both teaching techniques. This significance directed that the video tutorial technique is more powerful than PowerPoint presentations in achieving the learning outcomes. This finding is consistent with another study where videos assisted the students to make an accurate picture of the disease being taught and tested them to intricate the case truly and were more unforgettable than the text based cases.¹⁹ The video tutorials cases were mostly professed as a valued stimulus for students' group discussions. The second issue was effective means to learn course content, and in this study, we observed that the online video tutorials are highly very effective in teaching / learning processes and the further analysis showed that video tutorials are more effective by far for the students 'learning as compared to the power point, as the averages showed wide gap.

Incongruous use of PowerPoint presentations by the instructors, when the style of instructor for video presentation might be the main part of the difference between the current results and other results where the students prefer the PowerPoint presentations²⁰.

On the other hand, discussion tends to be more natural with video resulting in more student engagement. Thus, the students were more involved and enjoyed higher level of communication in different sections, which were taught without PowerPoint.²¹ The use of PowerPoint not the technology itself might lessen the quality of student teacher communication. Lectures on PowerPoint presentations though decreasing the association between teacher and student would also decrease learning outcomes. PowerPoint is less engaging for students than videos. As a result, pupils feel sick and tired of Power Point, but not so much of video. Students may believe that the information not shown on the presentation is unimportant. As a result, individuals may believe there is no need to take more notes next to each slide, and as a result, they pay less attention. Videos, on the other hand, are less monotonous than Power Point presentations. Students choose to take courses that allow for more participation and interaction because involvement emphasizes the students' active participation in the learning process and increases interaction²². Based on these findings, we can state that the use of media technology can improve the learning processes of medical students particularly, and thus great care should be taken while adopting this mode of communication and teaching.

CONCLUSION

Online video tutorial was more effective than power point presentation in fulfilling the learning outcomes, student engagement and interaction in teaching learning process. In order to raise students' accomplishment levels, teachers must make judicious use of teaching tools and approaches.

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