

Assessing the Effectiveness of Online Teaching Methodology among Emergency Medical Professionals in Pune, India

Parag Rishipathak¹, Monesh Bhandari², Anand Hinduja³

¹Director, ²Medical Officer, Academics, ³Adjunct Faculty Symbiosis Centre for Health Skills, Symbiosis International (Deemed University), Pune, India

Abstract

Introduction: With rapid evolution of information and research in Healthcare, students find it very challenging to keep pace with the latest knowledge. To overcome this challenge, Healthcare Information Technology should be implemented at multiple levels i.e. during their Under Graduate and Post-Graduate training which shall make them well versed with online learning. During the COVID-19 pandemic many healthcare institutions have adapted to online teaching methodology, to continue with the academic year but it is necessary to assess the effectiveness and impact on students.

In developing countries, where efficient educators in Healthcare are less in number, adapting to online based curriculum shall increase the reach of Healthcare Education to maximum learners.

Objective: To assess the effectiveness of online teaching methodology among Emergency Medical Professionals

Methodology: The study was conducted amongst 100 Emergency Medical Professionals in Pune, India. An online session on Basic Life Support and Emergency Medical Services protocols was conducted via Zoom application. Participants were asked to respond to a pretested and validated tool, the Student Evaluation of Online Teaching Effectiveness (SEOTE).

Result and Discussion: Online teaching was introduced in most of the universities as an alternative to classroom training due to the COVID 19 pandemic. The study is an unique attempt to assess the participant feedback on the effectiveness of a single online session. The results clearly demonstrate that majority of the participants provided a very positive feedback of the online teaching session.

Conclusion: The participants' feedback with regard to online teaching was found to be highly encouraging. Further longitudinal studies are essential to gauge the impactfulness of online teaching as an alternative modality to classroom instruction.

Keywords: Online teaching, effectiveness, healthcare education,

Introduction

With rapid evolution of information and research in Healthcare, students find it very challenging to keep pace with the latest knowledge. To overcome this challenge

Corresponding author:

Dr. Parag Rishipathak,

Director, Symbiosis Centre for Health Skills, Symbiosis International (Deemed University), Pune, India

, Triola *et al* suggested that Healthcare Information Technology should be implemented at multiple levels i.e. during their Under Graduate and Post-Graduate training which shall make them well versed with online learning.¹ Due to the COVID -19 pandemic, various healthcare institutions have adapted their teaching methods to online format instead of classroom training. This has been implemented to ensure continuity in the student academic year. Although online learning is a safe method of educational instruction, the online teaching

methods used during this period need to be assessed for its effectiveness and impact on students.^{2,3}

The current COVID -19 pandemic situation should be used as an opportunity to introduce newer modalities of teaching and provide better solutions in Healthcare Education.⁴ A research study conducted by Peia *et al* recommends that there should be evaluation for assessing the effectiveness of online teaching method and it should be considered as a potential teaching method.⁵ The objective of online teaching is to give optimum training to students, to enhance their knowledge and skills.

Aminizadeh, *et al*, in a study conducted in 2017 concluded that online teaching methods can be recommended for theoretical aspects and the traditional classroom methods can be used for teaching subjects which are more practical and skill based.⁶ Redding *et al* compared online teaching with traditional classroom teaching among pre-licensing insurance students and found that online courses were more effective. They suggested that similar research should be conducted in other fields to determine the utility of online teaching.⁷

Mahadevan *et al* in a study concluded that online courses for emergency medicine can be effective as an add on for classroom-based programs. In developing countries, where efficient educators in Healthcare are less in number, adapting to online based curriculum shall increase the reach of Healthcare Education to maximum learners.⁸

Objective:

To assess the effectiveness of online teaching methodology among Emergency Medical Professionals

Methodology

The study was conducted amongst 100 Emergency Medical Professionals in Pune, India. An online session on Basic Life Support and Emergency Medical Services protocols was conducted via Zoom application. The session covered topics on Activating Emergency Medical Services (EMS), Patient Assessment, Acute Poisoning, High Quality Cardiopulmonary Resuscitation, Rapid Defibrillation, Early transport to Hospital and Post Cardiac Arrest Care. The session lasted for four hours

and the participants interacted verbally, by unmuting themselves and via chat method in the zoom application. Videos depicting scenarios, skills and protocols alongwith power point presentations explaining the theoretical aspects of Basic Life Support were shared. Course assignments were provided to the participants on completion of the session.

As soon as the session was completed, participants were asked to respond to a pretested and validated tool, the Student Evaluation of Online Teaching Effectiveness (SEOTE). This tool developed by Bangert (2004) to assess constructivist-compatible online teaching practices recommended by Chickering and Gamson's Seven Principles of Effective Teaching (1987).⁹ The questionnaire tool was further validated by Bangert in 2008 recommending that it is best suited and appropriate tool for assessing the quality of online instructional effectiveness of higher education.¹⁰

Out of the original twenty-three item questionnaire, five items based on Web based Course development Tools (WebCT) were excluded from the present study as they were considered inapplicable and eighteen items were retained and comprised of seven key parameters – four items testing Student Faculty Interaction (SF), four items testing Cooperation Among Students (CAS), three for testing Time on Task (TT), two for Prompt Feedback (PF), two for Diverse Talent and Ways of Learning (DTWL), two for High Expectations (HE) and one for Active Learning (AL).

Participant responses were elicited using a six-point Likert scale which ranged from strongly agree (6) to strongly disagree (1) (i.e., strongly agree (6), agree (5), mildly agree (4), mildly disagree (3), disagree (2), strongly disagree (1)). All items were required to be mandatorily filled. The questionnaire was administered through online mode after obtaining informed consent from the respondents. The respondents were given one day deadline to fill the questionnaire and revert. Any queries pertaining to the questionnaire were clarified during data collection.

85 respondents out of 100 participants reverted with completely filled questionnaire. The data was tabulated and statistically analysed with the help of SPSS version 23.

Result

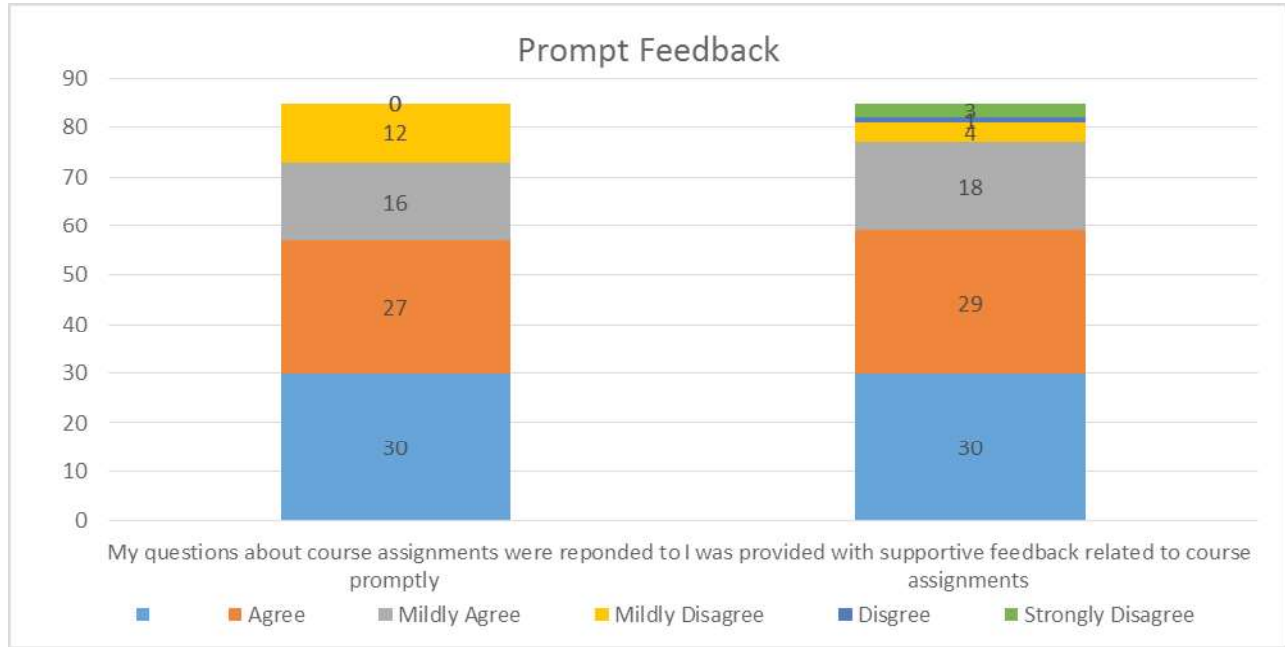


Figure 1: Responses for Prompt Feedback

As seen in Figure 1 majority of the participants were satisfied that their questions about course assignments were promptly responded and they were provided with supportive feedback related to course.

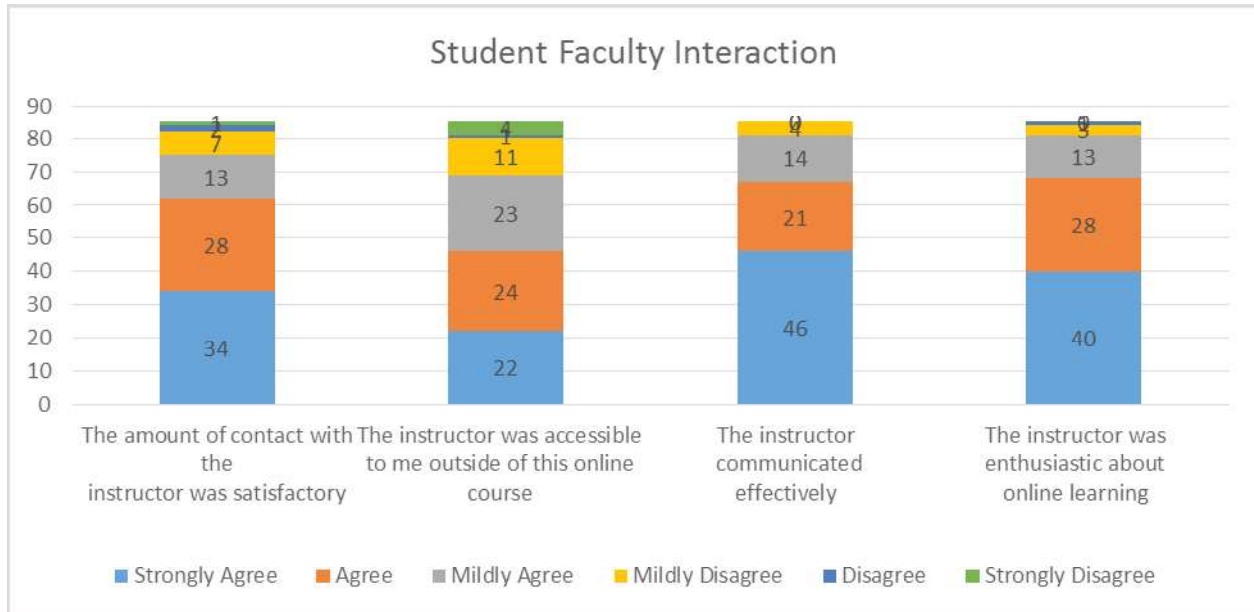


Figure 2: Student Faculty Interaction

As seen in Figure 2 almost all participant felt that the instructor communicated effectively and was enthusiastic about online learning.

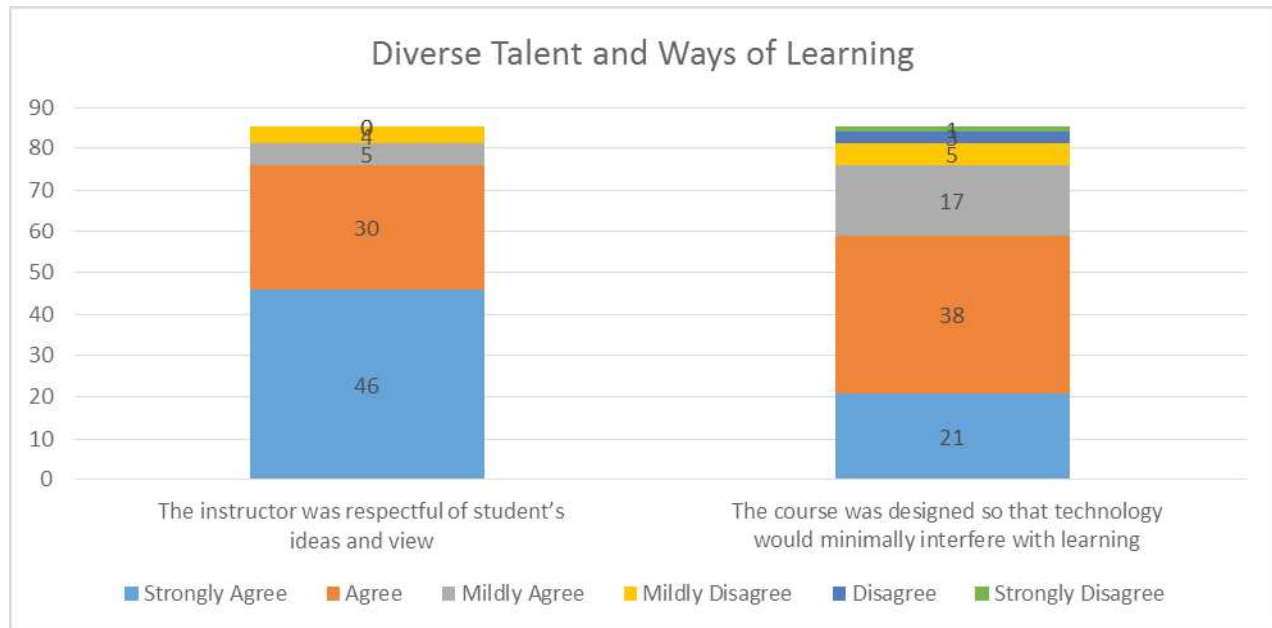


Figure 3: Diverse talents and ways of learning

As seen in Figure 3, most students agreed that the instructor was respectful to students' ideas and views as well as the technology did not interfere with learning.

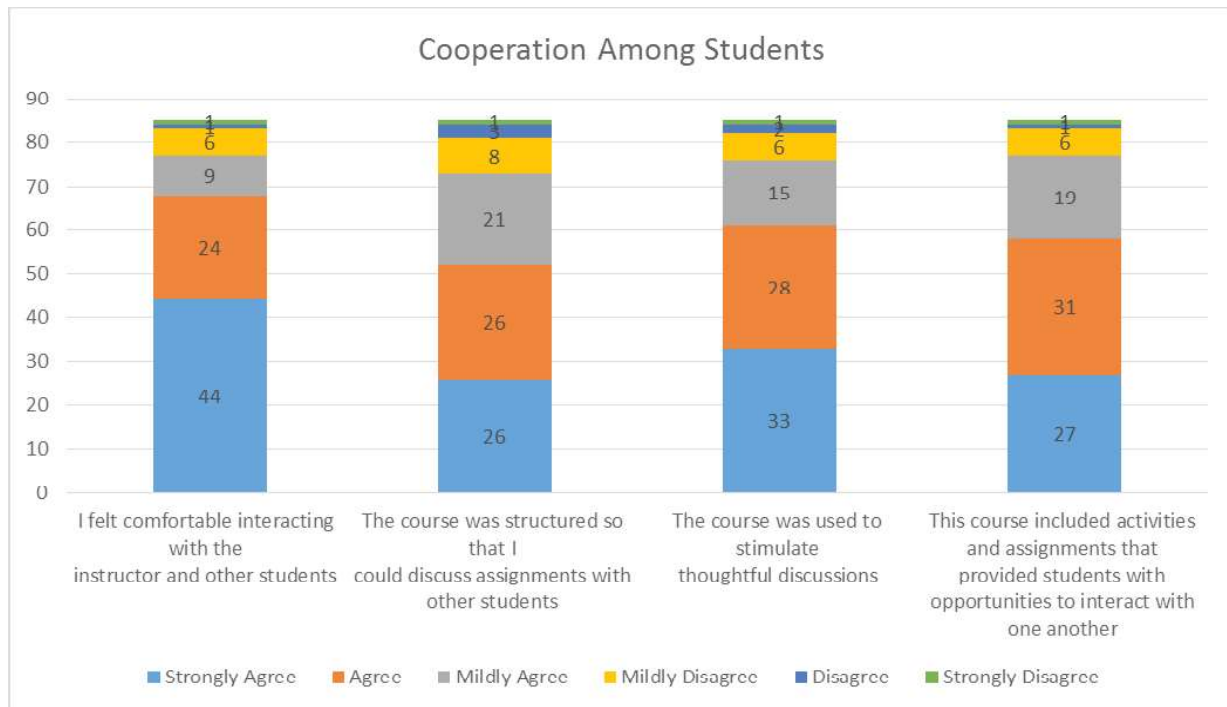


Figure 4: Cooperation among participants

Figure 4 shows almost all participants felt comfortable interacting with the instructor and other participants as well as the course design stimulated thoughtful discussions.

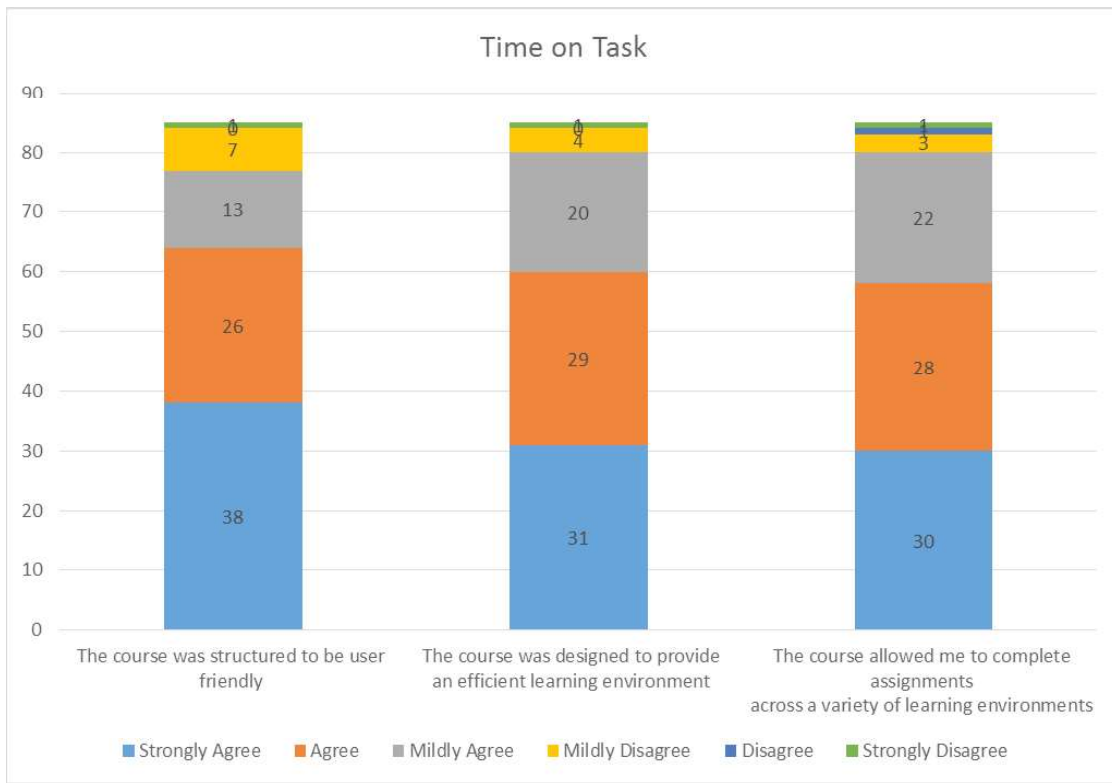
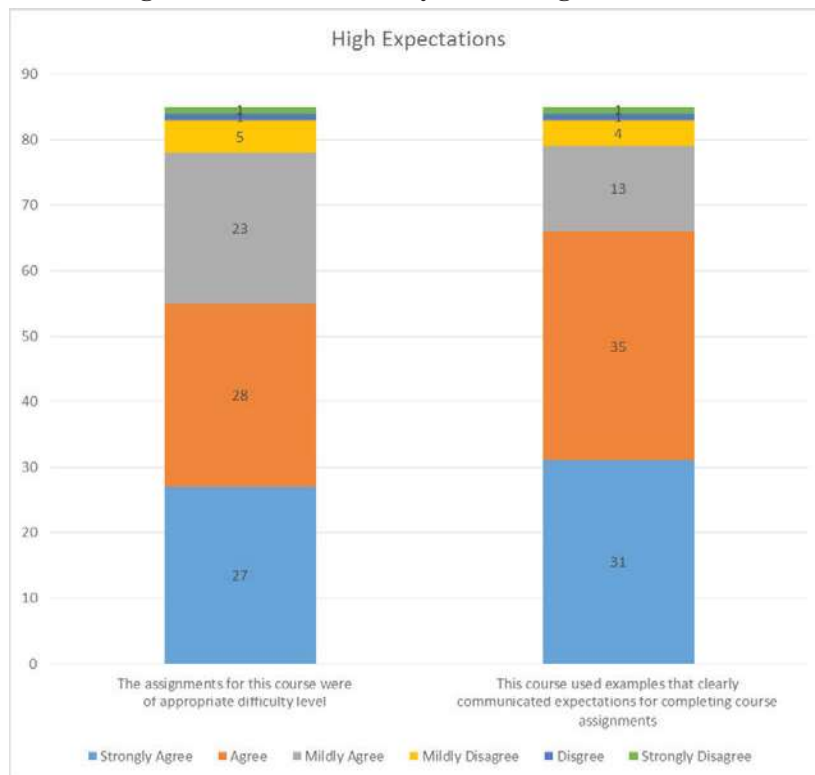


Figure 5: Time on Task

Figure 5 shows that the participants found the course to be user friendly and allowed them to complete assignments across a variety of learning environments



As seen in Figure 6, participants found the assignments for the course to be of appropriate difficulty level.

Discussion

Online teaching was introduced in most of the universities as an alternative to classroom training due to the COVID 19 pandemic. As the pandemic continues to be a global healthcare challenge, novel modalities are essential to ensure the continuity of student education. Online teaching should just not remain a formality to complete the curriculum instead it should be an effective and impactful teaching tool.

The study is an unique attempt to assess the participant feedback on the effectiveness of a single online session. The results clearly demonstrate that majority of the participants provided a very positive feedback of the online teaching session. The participants found the instructor to be accessible even outside of the online course which is essential because it is difficult to communicate all aspects of a subject within the limited time available online.

Technology at times can be a barrier in effective communication of the subject but if the course is well designed, technology doesn't interfere with the learning process as was found in this study.

Classroom teaching allows a free flow of interaction between the instructor and students as well as within themselves. The study found that participants experienced similar satisfaction with regards to interaction even during an online session.

Majority participants agreed that the course used examples that clearly communicate expectations for completing online assignments. This is crucial because the assignments are utilized to judge the level of understanding of the students with regard to the course subject.

Conclusion

The students' feedback with regard to online teaching was found to be highly encouraging. The current study is limited by its sample size as well as the feedback being collected only for a single online session. Further longitudinal studies are essential to gauge the impactfulness of online teaching as an alternative modality to classroom instruction. Repetitive practice with hands on training for skills based courses is very essential.

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Ethical Clearance: Taken from IEC, SIDU committee

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