

Assessing Video as an Immersive Tool for Teaching and Learning Methods of Attitude, Ethics & Communication (AETCOM) for Undergraduate Medical Students

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Abstract

Background: Teaching Attitude, Ethics & Communication (AETCOM) is a new concept for medical education in India. It has been observed that skills of communication, attitude and ethical implications while taking informed consent is an important facet of AETCOM. In this study, a video has been developed for better understanding of interaction with patients.

Aim: To identify the perception and impact of the video on teachers and learners (undergraduate medical students) to learn complex topics like empathy, confidentiality and informed consent.

Methodology: This prospective interventional study was conducted on 151 MBBS students and 14 faculty members of various disciplines over a period of four months (Aug-Nov 2023). Students were divided into two groups, one group was taught the topic as an interactive lecture while the other was additionally shown the in-house pre-recorded video. The students were assessed on the basis of MCQs on google form and reflections. Faculty members were also given a questionnaire to identify their perceptions. The reflections of students were assessed using the REFLECT Rubric.

Results: On assessment of learning using MCQs 82% and 94% students answered correctly in Groups I and II respectively, which was found to be statistically significant. Most students and faculty gave their opinion in favour of inclusion of video in teaching AETCOM topics.

Conclusion: Inclusion of the video has resulted in a holistic approach to developing AETCOM skills amongst the medical students in this study.

Keywords: Audio-visual Demonstration, Informed Consent, Confidentiality, Communication, Empathy

Introduction

The transformation of a young medical student to a competent health-care professional is a complex journey and requires a combination of activities (Mitra & Saha, 2016).

Experiential learning by trial and error was in vogue for decades. Teaching the Attitude, Ethics & Communication (AETCOM) module is a very complex process and a new concept for medical teachers, who themselves learnt it as a part of the hidden curriculum.

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The process of selection of the students for medical education does not take into consideration the attitude and communication skills required in the medical profession. Therefore, inclusion of the AETCOM module as a formal component in training program of undergraduate medical education was need of the hour (Medical Council of India, 2018).



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Minimizing the risk of negligence and unethical practices along with providing holistic health care to the general population will be the measure of success of implementation of AETCOM module (Coyle *et al.*, 2005).

An Indian Medical Graduate is supposed to fit into the roles of a good communicator, leader, team member, professional, clinician and life-long learner. The AETCOM module designed and implemented in the new Competency Based Medical Education (CBME) framework aims to develop these core competencies. The AETCOM module is designed to move from simple to complex issues while being spread out over the whole course. It is mandatory for students to attain these desired competencies in the respective phases (Medical Council of India, 2018; Mitra & Saha, 2016).

Various teaching learning methods have been proposed in the AETCOM module to facilitate the learning process. These include exploratory sessions, problem-based learning, discussion of case vignettes, interaction with standardized patients, panel discussions, hospital visits and interactions with patients or their relatives, large group sessions, skill labs, self-directed learning, role plays, etc. The objective of these trainings is to improve inter-professional communication and attitudinal skills of learners while following codes of ethics at all times. This in future would help them emerge as leaders and also work as a member of healthcare teams (Balak *et al.*, 2020; Medical Council of India, 2018; Mitra & Saha, 2016).

According to Wittgenstein L, words set us free so that each new moment of language use creates a unique expression, different in at least some respects from another occasion in terms of context, speaker history and intent. Words help in building bridges between minds, sharing of ideas and perspectives that another mind can understand (Wittgenstein, 1953).

With the advent of modern digital technologies, newer tools of education have also emerged. Amongst them, video recordings are being used to teach communication skills to health care real-life scenarios, making the learners

skilled communicators (Salmon & Young, 2011).

The use of videos in classroom teaching has opened up new insights into opportunities to engage students in reasoning, quality learning, and conceptual understanding of topics where complex interactions are discussed. Videos offer rich sources in expressing the processes in extensive detail (Flewitt, 2006).

Videos have an advantage over other modalities of teaching communication skills as they capture the essence of speech, gesture, tone, body language, eye-to-eye contact, etc, demonstrated by experts. Thus, students not only observe but also engage in higher order thinking. Videos, once created become permanent and detailed teaching methodology. Digital video data has its own ethical issues which should be addressed with care while developing videos, related to the identity of the participants and their carefully crafted informed consent (O'Reilly *et al.*, 2011). It is important to maintain diversity and flexibility and encourage creativity while making video recordings. This helps in effectively building knowledge about human activities and wide interdisciplinary understandings of a common subject (Goldman *et al.*, 2007; Wittgenstein, 1953).

Online learning is now an essential part of professional education. The wide availability of data-enabled mobile phones and computers has led to the emergence of digital learning as a very popular mode of learning. It gives learners the option to download content and view and read or stream the media. This has provided flexibility in the learning experience. Appropriate use of media helps students in maintaining their attention, it helps in depth of understanding of the topic concerned and helps knowledge retention. This motivates the learners and the media can be used to illustrate the relevance of concepts (Mateer, 2011).

Although developing effective content requires significant expertise, the technical requirements have become more accessible through reduced cost and improved technology, thus allowing teachers to make their own content as never before (Marchionini, 2003).

Ethics are the keystones for good social interaction, more so for professionals dealing directly with human beings. Professional confidentiality is a key moral precept for health care professionals. In healthcare practice, the ethical aspect of confidentiality ensures the privacy of technical and personal information (Leite *et al.*, 2009). Ethics, confidentiality and communication are of extreme importance while dealing with people living with HIV/AIDS. Owing to the fear of stigma, prejudice, and discrimination from society linked to HIV/AIDS, patients stop seeking health services, performing HIV tests and adhering to treatment. Thus, a strong foundation of knowledge of the ethical responsibilities and maintaining confidentiality develops trust and drives users to access health services. On the other hand, breach in confidentiality by a health professional has far-reaching consequences (Salvadori & Hahn, 2019). The code of ethics and maintaining confidentiality has been greatly emphasized in the Hippocrates oath and the Charak Oath as well.

The practice of learning science has been transformed by the rapidly developing and wide availability of affordable and high-quality video technology. Newer video technologies not only provide an effective tool for learning but many research projects have incorporated video component in their studies for collecting, studying, sharing, presenting and archiving detailed cases reports.

The digital and networked technologies can be used in all aspects of education, administration, and research. As a learning method, videos provide rich records of the interactional phenomenon, including eye gaze, gesture, body posture and proximity, the content of the talk, tone of voice, facial expressions and use of physical artifacts, as well as between-person processes like alignment and joint attention.

In this context, the present study was conducted to identify the impact of video and its perception by teachers and learners (undergraduate medical students) to learn complex topics like empathy, confidentiality and informed consent for HIV testing in the AETCOM module (1.3, 1.4, 2.1, 2.2, 2.5, 2.6,

2.8, 3.1, 3.4, & MI 8.14) as mandated by National Medical Commission (NMC) in Competency based Medical Education (Medical Council of India, 2018). This study also intended to analyse perception of students and faculty members for the inclusion of prepared video module as a teaching-learning method (TLM) of the AETCOM modules selected.

Methodology

This prospective interventional study was conducted over a period of six months (July-Dec 2023) in the Department of Microbiology of Shri Guru Ram Rai Institute of Medical and Health Sciences, Dehradun, Uttarakhand. A total of 151 students of the Phase II, MBBS 2021 batch and 14 faculty members of various disciplines of the institute participated.

The study was conducted after the approval from the Institutional Research Board and Ethical Committee. (SGRR/IEC/01/23). Informed consent documents were carefully designed for the student participants, the faculty members participating in the study as well as for the faculty members who were involved in making of the video recordings for this study. Informed consent was taken from all participants of the study (including for video recording).

Videos with case-based scenarios of empathy, confidentiality and informed consent for HIV testing were recorded in-house after being validated by the non-participating faculty members. Faculty members involved in recording of videos did not participate in the study on perceptions.

Multiple choice questions for assessing the knowledge of students and a feedback questionnaire was designed for both participating students and faculty members. All three types of questionnaires were pre-validated by non-participating students and faculty members.

An interactive lecture was delivered for all participating students. Thereafter, the students were randomly allocated into two groups.

Group I constituted 66 students while Group II constituted 85 students.

Students of Group I were asked to attempt the multiple-choice questions (on Google form) to assess the knowledge gained after the interactive lecture. The students of Group II were shown the pre-recorded video after the interactive lecture and then they too had to attempt the same multiple-choice questions (on Google form). Ten multiple choice questions were prepared to assess the knowledge of the students. To test their knowledge the students were asked:

1. What is empathy?
2. It is easier to empathize with someone when which of the following conditions is true?
3. Which of the following statements is correct?
4. How can we use feeling empathy to help others?
5. Why is doctor-patient confidentiality important?
6. Which of the following is considered a breach of confidentiality?
7. One of the underlying ethics virtues is informed consent, what is the basic right of every patient this is based on?
8. A 20-year-old college going boy has come for HIV testing to ICTC. What is the criteria that must be met for the informed consent process to be considered valid?
9. Who is eligible to give consent for his/her own HIV testing?

10. Which of these employees would have access to the largest amount of confidential information?

Feedback on student's and faculty member's perception on inclusion of video as a tool for learning AETCOM topics were collected on a Google form based on 5-point Likert scale (1-5 as strongly agree, agree, neutral, disagree & strongly disagree respectively). One of the questions regarding student's perception was negatively worded as well.

The students were asked to submit their reflections on the learning experience (using Rolfe's model of reflective writing). The reflections were assessed using the REFLECT Rubric (Wald *et al.*, 2012).

The data thus collected was analyzed using Chi-square test with Yates correction for statistical significance.

Results

A total of 151 students of MBBS Phase II students participated. There were 52 males (42% in Group I & 58% in Group II) and 99 females (44% in Group I & 56% in Group II) participants.

35% of participants in Group I and 38% in Group II had their parent(s) or close relative as doctors. The majority of the students of both groups (58% students in Group I and 51% in Group II) wished to pursue postgraduate studies in medicine and allied specialties.

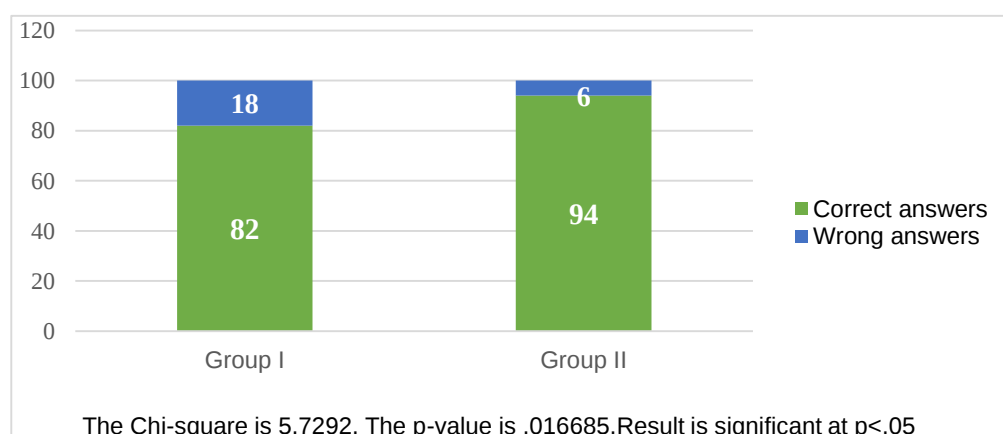


Figure 1: Result of assessment of learning using MCQs (%)

The answers to the MCQs asked were analysed collectively as depicted in Figure 1. The results show that statistically the observations were significant with $p < .016$

The student's perception of Group II taken on the Google form is shown in Figure 2. 53% of students felt that the videos added to their knowledge while 59% students felt they understood the ethical significance of informed consent better after watching the video. 74% students felt that this module would have a positive impact in their future medical journey and 64.7% students realized the importance of interacting in an empathetic manner while taking informed consent. A minority (0.85%) students felt that the video was not helpful and lecture was sufficient for the topics covered. When analysed statistically the results were found to be statistically significant with p value of < 0.00001 .

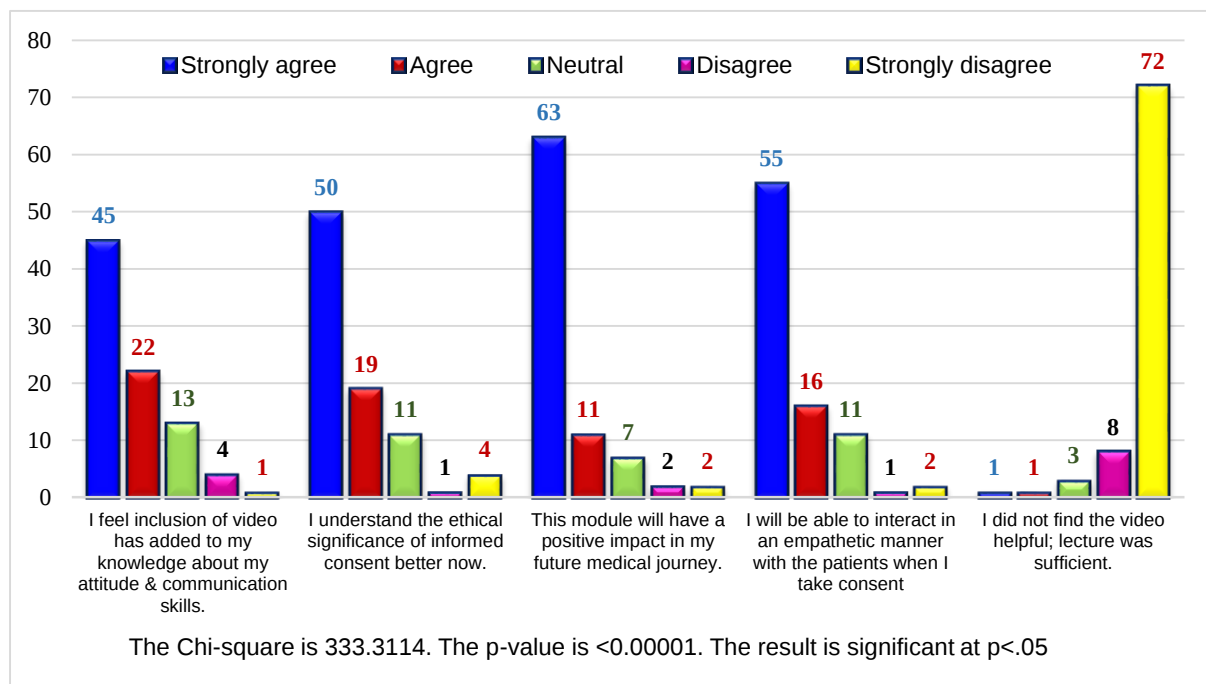


Figure 2: Feedback from students regarding inclusion of video in teaching module of AETCOM (n= 85)

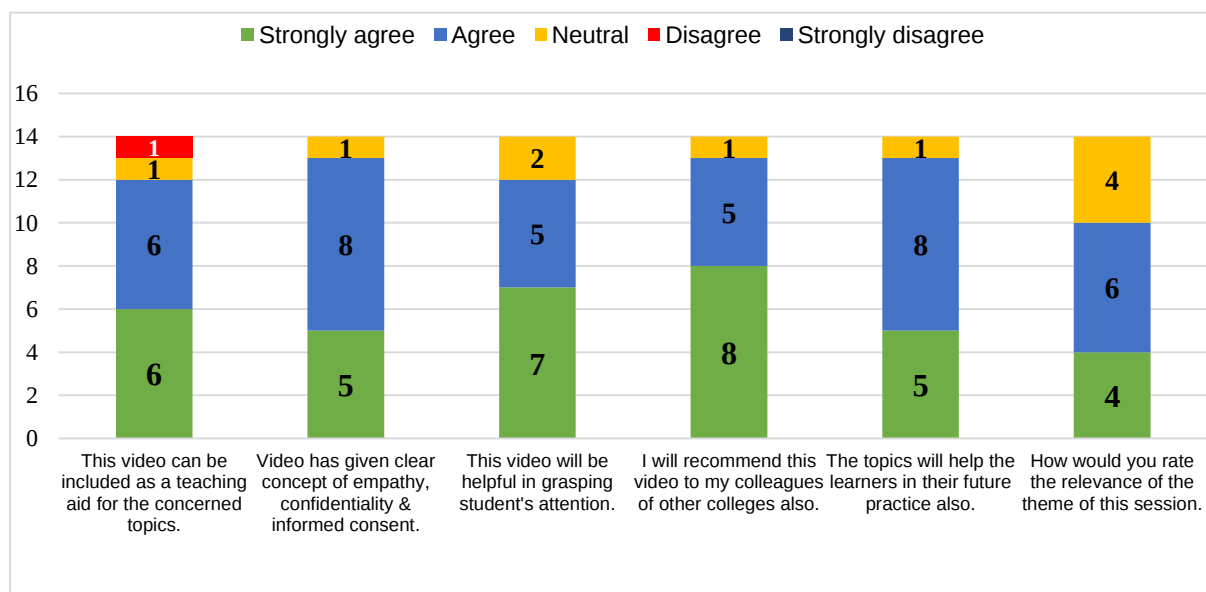


Figure 3: Feedback from faculty members regarding inclusion of video in teaching module of AETCOM (n= 14)

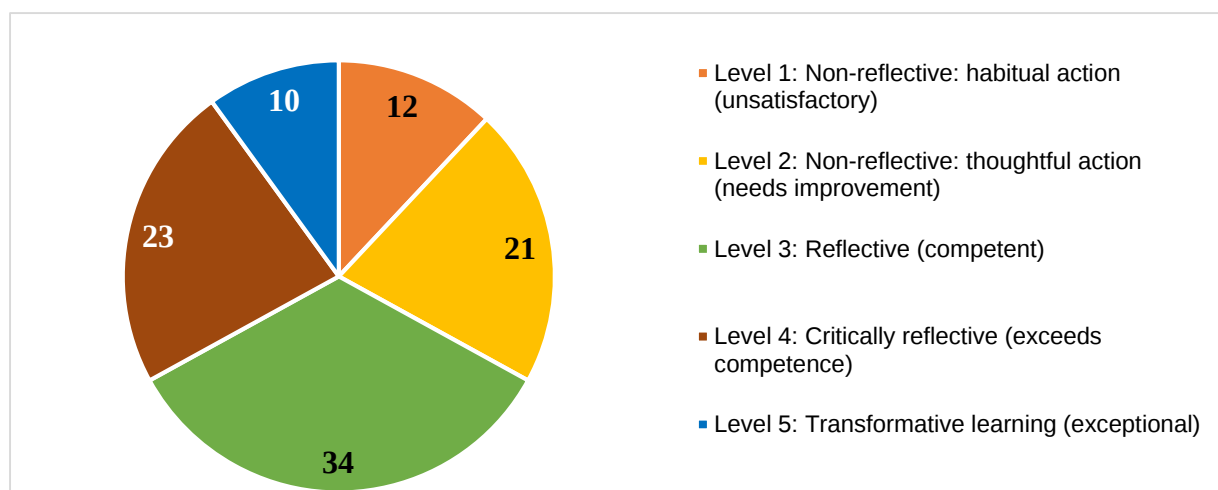


Figure 4: Assessment of reflective writing (%)

Feedback from participating faculty members was also taken on a Google form (Figure 3). The results showed that 57% (8/14) of faculty members agreed that the video has given clear concept of empathy, confidentiality & informed consent and they agree that the topics covered in the video will help the learners in their future practice. 57% (8/14) of faculty members strongly agreed that they would recommend this video to their colleagues of other colleges as well.

Reflective writings of the students assessed using the REFELCT rubric showed that 34% of all the students participating in the study attained level 3 i.e., they could express at a competent level of their experience with the learning process. However, only 10% of the students could attain exceptional or transformative learning (level 5).

Discussion

Systematic study in learning processes using online and blended learning have revealed consistently that active, problem-based learning activities built around a complex topic is preferred over lecture approaches, for in-depth learning, understanding the concept and finally applying that knowledge practically (Hakkarainen *et al.*, 2007).

Videos have both audio and visual spectrum. Making a video is a complex and resource-intensive process. For best outcomes, a

rigorous planning in the form of scripting, storyboarding, cast, prior arrangement of supporting material is required. The importance of video is that it can show aspects of places and interaction between people. Moreover, video-based virtual learning can happen where it is not possible to take the students to the actual place of interest (Koumi, 2006).

The target of the present study was the perception and understanding of the attitude and communication, while maintaining confidentiality. The study comprised of two groups in which participants of Group I felt that they gathered the basic concept of the theme of the lecture but still did not feel confident to interact with the patient and take informed consent for HIV testing. Since the pre-test and post-test counseling and taking informed consent for HIV is an ethically sensitive issue, students cannot witness it first hand in the Integrated Counselling and Testing Centres. On the other hand, students belonging to Group II in their reflections mentioned that they felt confident that with the aid of the video it has become easier for them to face a situation if they have to take an informed consent keeping all ethical aspects in mind. The faculty members also felt that it would be easier to convey the communication part with the help of the video. Many students and faculty members have suggested that more such videos should be made for AETCOM topics for better understanding and acquiring communication skills (including tone and body language)

In the present study, students were also assessed on their reflective writing using the REFLECT rubric. It was observed that the majority of the students had competent levels or higher, suggesting the ability to introspect and attend to emotions involved. They were able to draw connections between their experience in watching video to intentions to apply this learning in future medical practice.

Many students commented “Before seeing the video I did not know how to start communication with a patient on these topics”, “I think the video should be inclusive to make us understand the aspects to a much deeper level”, “I felt more connected while watching the video”, “I will be able to retain the knowledge for a longer time”, “Inclusion of video made the topics more interesting, more easy to learn, less time taking and more efficient way of teaching.”, “More such videos on AETCOM would help us a lot”. Overall the methodology to make the learners understand AETCOM was perceived well by all stakeholders.

Due to time constraints the students could not be assessed in real-life situations which would require a long term follow-up. Only participants of a single batch of MBBS course were included in this study and a small number of faculty members participated. So, in future a larger number of faculty members and inclusion of students from more batches would give more strength to the outcomes of this research work.

After the study was completed the Group I participants were also shown the video, and the students felt that inclusion of the video as a tool in the subject discussed made the learning process more holistic.

After being used in the research study, the video was shared through open access on the YouTube channel of the institute to reach a wider audience such as undergraduate and postgraduate medical students of other institutes, nursing students and counsellors (<https://youtu.be/qX638O0ifVM?feature=share> d). However, the video lacks English subtitles and therefore may not be helpful for the non-Hindi speaking audience. This limitation can be rectified when making videos in the future.

Sharma & Mahajan (2020) conducted a study with sixth-semester MBBS students using interactive lectures, role plays, and small group discussions. They assessed the communication skills of the students using pre and post-test OSCE using the Kalamazoo checklist. They also proposed a method for capacity building of persons imparting skills to students (Sharma & Mahajan, 2020).

Vijayasree (2019) conducted a cross-sectional study on first-year MBBS students on AETCOM module, in which feedback (on a Likert scale) from students was taken after the conduction of four sessions (Vijayasree, 2019). Further, Adam et al (2017) report that the majority of students positively rated patient-centred videos, and the majority of comments highlighted enhanced engagement as well as enhanced learning and retention. Comments from focus groups mirrored the course evaluation comments and highlighted different usage patterns for the videos (Adam *et al.*, 2017). Another study concluded that video and live lectures are equally effective in preparation for the clinical part of the medical exams. Video lectures offer many benefits for the students and for the faculties, and may complement and partly replace conventional live events (Brockfeld *et al.*, 2018)

Various studies have reported that the use of low-cost educational videos are an invaluable support in teaching, has added benefits of being low cost, ease of handling, without being intensive and requiring specific training, videos are effective in facilitating comprehension of the abstract concepts, it makes the learning more motivational and, hence improve the teaching-learning processes. Videos reduce face-to-face students' tutoring and improve the ability of students to learn autonomously. Videos also encourage discussions and peer learning (Bravo *et al.*, 2011; Lumma-Sellenthin, 2013).

Conclusion

Creating videos is far easier than it has been in the past. To encourage experimentation in teaching and transformation of pedagogic practice, university leaders also need to offer positive, supportive and well-aligned success

measures, while also supporting academic self-directedness and autonomy.

Teachers need to be able to connect their own goals and visions with institutional aims, and at the same time know that experimentation is not only permitted but encouraged. Making and using videos for teaching can be enormous fun, and it is through play that much of the best learning occurs.

The video made for the purpose of this study has been added to the YouTube repository of our institutional website as (<https://youtu.be/qX638O0ifVM?feature=share> d).

Acknowledgment

The investigators of this study are grateful to Dr. Dimple Raina, Dr. Anjali Chaudhary, Dr. A.V. Mathur, Dr. Reshmi C Roy, Dr. Malvika Singh, and the photography section of SGRRIM&HS for sparing their valuable time for the recording of the video.

References

- Adam, M., Chen, S.F., Amieva, M., Deitz, J., Jang, H., Porwal, A., Prober, C., 2017. The use of short, animated, patient-centered springboard videos to underscore the clinical relevance of preclinical medical student education. *Academic Medicine* 92, 961–965. <https://doi.org/10.1097/ACM.0000000000001574>
- Balak N, Broekman MLD, Mathiesen T., 2020. Ethics in contemporary health care management and medical education. *J Eval Clin Pract* 26, 699–706.
- Bravo, E., Amante, B., Simo, P., Enache, M., Fernandez, V., 2011. Video as a new teaching tool to increase student motivation, in: 2011 IEEE Global Engineering Education Conference, EDUCON 2011. pp. 638–642. <https://doi.org/10.1109/EDUCON.2011.5773205>
- Brockfeld, T., Müller, B., de Laffolie, J., 2018. Video versus live lecture courses: a comparative evaluation of lecture types and results. *Med Educ Online* 23. <https://doi.org/10.1080/10872981.2018.1555434>
- Coyle YM, Mercer SQ, Murphy-Cullen CL, Schneider GW, Hynan LS, 2005. Effectiveness of a graduate medical education program for improving medical event reporting attitude and behavior. *Qual Saf Health Care* 14, 383–388.
- Flewitt, R., 2006. Using video to investigate preschool classroom interaction: education research assumptions and methodological practices. *Visual Communication*, 5, 25–50.
- Hakkarainen, P., Saarelainen, T., Ruokamo, H., 2007. Towards meaningful learning through digital video supported, case based teaching, *Australasian Journal of Educational Technology*.
- Koumi J, 2006. *Designing video and multimedia for open and flexible learning*: Routledge.
- Leite AIT, Claudino HG, Santos SR., 2009. A importância de ser ético: da teoria à prática na enfermagem. *Cogitare Enferm* 14, 172–177.
- Lumma-Sellenthin, Antje, 2013. *Learning Professional Skills and Attitudes Medical Students' Attitudes Towards Communication Skills and Group Learning*. Linkopings Universitet.
- M. Vijayasree, 2019. Perception of Attitude, Ethics and Communication Skills (AETCOM) Module by First MBBS Students as a Learning Tool in the Foundation Course. *Journal of Evidence Based Medicine and Healthcare* 6, 2750–2753. <https://doi.org/10.18410/jebmh/2019/571>
- Marchionini G., 2003. Video and learning redux: New capabilities for practical use. *Educational Technology*, 43, 36–41
- Mateer, G., 2011. *Using media to enhance teaching and learning. Starting Point: Teaching and Learning Economics*.
- Medical Council of India. *Attitude, Ethics and Communication (AETCOM) Competencies for the Indian Medical Graduate*, 2018.
- Mitra J, Saha I., 2016. Attitude and communication module in medical curriculum: Rationality and challenges.. *Indian J Public Health* 60, 95–98.
- O'Reilly, M., Parker, N., Hutchby, I., 2011. Ongoing processes of managing consent: The empirical ethics of using video recording in clinical practice and research. *Clin Ethics* 6, 179–185.
- Ricki Goldman, R Pea, B Barron, S Derry, 2007. *Video research in the learning sciences*, 1st ed. Routledge.
- Salmon P, Young B, 2011. Creativity in Clinical communication: from communication skill to skilled communication. *Med Educ* 45, 217–226.
- Salvadori M, Hahn GV, 2019. Medical confidentiality in the care of patients with HIV/AIDS. *Rev. bioét. (Impr.)* 27, 153–163.

Sharma, P., Mahajan, N., 2020. Development Of Competency In Communication Skills In Third Year MBBS Students Based On AETCOM Module: A Pilot Study. Sharma Parul Natl J Integr Res Med 11, 35–40.

Wald, H.S., Borkan, J.M., Taylor, J.S., Anthony, D., Reis, S.P., 2012. Fostering and evaluating

reflective capacity in medical education: Developing the REFLECT rubric for assessing reflective writing. Academic Medicine 87, 41–50. <https://doi.org/10.1097/ACM.0b013e31823b55fa>

Wittgenstein L., 1953. Philosophical investigations. Macmillan, New York.