

# Enhancing Clinical Skills through Video: An Innovative Health Professions Educational Tool

Shakila Mushtaq, Alina Saeed, Azka Yaseen, Saria Khalid, Rizwana Kamran and Salar Arsalan

## ABSTRACT

**Objective:** To explore the effectiveness of video clips in enhancing knowledge and retention among undergraduate students of doctor of physical therapy.

**Study Design:** A sequential exploratory mixed-method study

**Place and Duration of Study:** This study was conducted at the School of Allied Health Sciences, CMH Lahore Medical College & Institute of Dentistry Lahore from 1<sup>st</sup> June 2022 to 31<sup>st</sup> December 2022.

**Materials and Methods:** A sequential exploratory mixed-method study design was used and collection of data was accomplished through means of a questionnaire alongside student comments. The study population consisted of 35 undergraduate third-year DPT students who were given a one-hour lecture on ischemic pressure and passive stretch procedures and shown a video clip explaining the procedure. Following this, students were asked to perform the same procedure on patients. Ten students were randomly selected to provide comments on the video clip.

**Results:** The use of video clip as an educational tool can significantly improve students' knowledge and retention. The comments from the students revealed that video clip was engaging, informative, and helped them understand the procedure better. It also highlights the importance of using videos in enhancing critical thinking skills, increasing creativity and motivation in DPT students. The findings of this study suggest that video clips can be a valuable alternative educational method in physical therapy education and can improve students' academic performance and competence as future health care providers.

**Conclusion:** The use of videos in physiotherapy education is viewed positively by a majority of third-year students. Videos can help to maintain interest and visualize concepts, improve critical thinking abilities, create connections between theory and practice, and improve motivation levels.

**Key Words:** Clinical skills, Health profession, Educational tool

**Citation of article:** Mushtaq S, Saeed A, Yaseen A, Khalid S, Kamran R, Arsalan S. Enhancing Clinical Skills through Video: An Innovative Health Professions Educational Tool. Med Forum 2023;34(6):68-72.

## INTRODUCTION

In today's world, the pressure to provide quality education is very high.<sup>1</sup> There are many modes to provide this education.<sup>2</sup> Every student is different and has different learning styles. Some use audio tools while other prefer visual tools for better learning and remembering.<sup>3</sup> To build the knowledge, skill and attitude of the students is the basic aim of the university.<sup>4</sup> However, the mode used to achieve this goal is very important.

Department of Health Professions Education, CMH Lahore Medical College and Institute of Dentistry, Lahore.

Correspondence: Dr. Shakila Mushtaq, Assistant Professor, Health Professions Education, CMH Lahore Medical College and Institute of Dentistry, Lahore.

Contact No: 0300-4398734

Email: drshakila.m@gmail.com

Received: February, 2023

Accepted: April, 2023

Printed: June, 2023

Without visual aids, the effect of isolated spoken words may not act entirely as a powerful trigger sufficient for the student's understanding in health professions' education. Plain words possibly may not provide adequate space for an individual's interpretation and creativity. Conversely, in the learning process, a picture paints a myriad of words.<sup>5</sup> Amongst these, the best tool can be animations or videos. Undoubtedly, images in the form of diagrams, charts and photographs are considered modern tools of information for learning.<sup>6</sup> As educationists, we need to cater the needs of every student. Our traditional system mostly uses only one type of learning.<sup>7</sup> In our research, we want to see if videos being used as an educational tool can help increase knowledge and retention amongst our students.<sup>8</sup> Students can achieve optimal learning when they are engaged by material that is presented in a variety of ways and different formats.<sup>9</sup> Videos can be used as a good example to deliver information to the students.<sup>10</sup> This can also be used in clinical subjects where students need to have a basic knowledge of the subject before acquiring the skills.<sup>11</sup>

This method of using video demonstration as mode of teaching uses the Social Cognitive Model of sequential skill acquisition<sup>12</sup> in which the students learn by observing someone else who is an expert in that matter. After observing they imitate and eventually, they perform individually.<sup>13</sup> To know about the students' preferred modes of learning that can help teacher to develop improved teaching strategies that are tailored for a better learning of students.

The integration of technology in education has revolutionized the way students learn today.<sup>14</sup> One tool that has gained significant prominence is video clips. Video clips are short multimedia messages comprising images, narration and text.<sup>15</sup> In the recent years, it is observed that there has been an increasing trend towards incorporating videos for educational purposes due to their multiple benefits over traditional learning methods. The utilization of online video clips can enhance the learning experience of Doctor of Physical Therapy (DPT) students by providing a deeper understanding of complex topics through visual and auditory stimulation while catering to different learning styles.<sup>16</sup> Video demonstrations in learning have many advantages. They save time and resources; maximum knowledge can be transmitted in minimum amount of time.<sup>17</sup> So this modality can be used in countries with low economic status and financial constraints. With the advancement of technology, new tools are being introduced to enhance teaching and learning experiences.<sup>18</sup> One such tool is video demonstrations, which have shown to be a valuable alternative educational method in a variety of fields. In the field of urology, recorded videos of surgical procedures can be a viable alternative pedagogical tool to live surgeries.<sup>19</sup> This alternative can resolve ethical problems that arise when using live surgeries as an educational tool. Moreover, studies have shown that video demonstrations can be as effective as traditional live demonstrations in teaching procedures.<sup>13</sup> Additionally video demonstrations are beneficial because they can be tailored to specific learning styles and needs.

This study will also explore how video clips can enhance critical thinking skills, increase creativity and motivation in DPT students. Moreover, this essay will highlight the importance of using videos for DPT students in various areas such as anatomy, physiology and musculoskeletal disorders. Overall, the use of video clips in DPT education can significantly improve students' academic performance and competence as future Physical Therapists.

## MATERIALS AND METHODS

This study population consisted of undergraduate DPT students of third year from the school of Allied Health Sciences CMH Lahore Medical College & Institute of Dentistry Lahore. The study design was sequential

exploratory mix method, and the collection of data was done through a questionnaire designed for the study. A one-hour lecture was delivered to all the third year students together (35 students in total) on the topic of ischemic pressure and passive stretch procedures. Then they were shown a video clip in which these procedures were explained. Then patients were given to these students and asked to perform these procedures on them. Out of the whole class of 35 students, only 10 students were selected randomly and were instructed to write their feedback about the video clip. These remarks from the students were subsequently used to design and develop survey questions using a computer-assisted, qualitative data analysis software CAQDAS (NVivo12)

In the next step, the questionnaire (survey instrument) was distributed to all the 35 students present in the class. The positive and negative sentiment of the study population was then triangulated by using auto-coding technique of NVivo software by taking unit of analysis as a single sentence of each respondent. The chart exhibiting the results of the sentiment analysis was then run through the NVivo software. The software has four grade scale of sentiments i.e. from "very negative", "moderately negative", "moderately positive" to "very positive". Following the submission of the responses of the students into NVivo 12 software, the frequencies were generated. The data collected from the questionnaire and student comments were analyzed using descriptive statistics and content analysis, respectively.

## RESULTS

Many of the participants had favorable opinions and positive views about using videos as part of their learning (Fig. 1). The student's response in form of sentiments regarding the questionnaire were divided into being "very negative", "moderately negative", "moderately positive" and "very positive" where the results mostly were between "moderately positive" to "very positive".

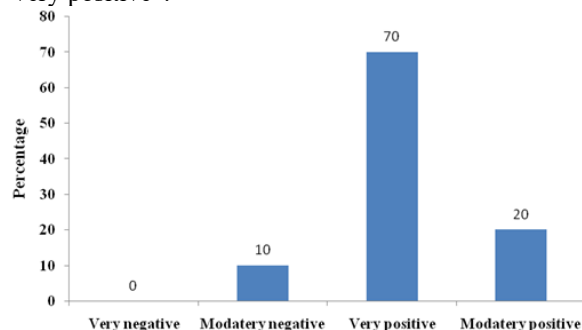


Figure No. 1: Students' responses in graphical representation identified by Nvivo sentiment analysis

Inter-related questions were provided to students for instance, if the addition of video clips in teaching helped in maintaining interest and visualize

conception? if these videos aided them in creating connection between theory and practical learning? How they felt about the video and whether it was helping them to improve their critical thinking abilities or not? Lastly, if the students think that the videos are helping the students in information retention and better handling of instruments. Majority of the students responded notably positively to all the questions (Table No. 1).

**Table No. 1: Students feedback on questionnaire**

Questions	Yes		No	
	No.	%	No.	%
Are you in favor that by adding video clips in teaching, benefits in retaining interest and visualize concepts?	34	97.1	1	2.8
Are you in favor that by adding video clips in teaching, benefits in retaining knowledge better?	32	91.4	3	8.5
Are you in favor that by adding video clips in teaching, benefits in recalling the knowledge while doing procedure on the patients?	33	94.29	2	5.7
Are you in favor of watching more videos in future in teaching?	33	94.29	2	5.7
Are you in favor that by watching videos benefits in fostering critical thinking?	31	88.5	4	11.4
Are you in favor that by watching videos benefit in making linkages between knowledge and skills?	32	91.4	3	8.5

## DISCUSSION

The emergence of technology has brought significant changes in the education sector. One of the most notable shifts is towards e-learning or online learning platforms.<sup>20</sup> E-learning or online learning platforms have become increasingly popular due to their accessibility, affordability, and flexibility. Students can now access quality education from any location at any time, which was not possible with traditional classroom-based learning.<sup>21</sup> Video learning has become a popular tool for education and development, providing an alternative to traditional classroom instruction.<sup>22</sup> The use of Video-Based Learning (VBL) has become a powerful approach to enhance learning results as well as learners' satisfaction.<sup>23</sup> VBL is designed to facilitate the implementation of blended

learning in any programme, allowing students from different educational backgrounds and locations access to resources that can improve their engagement and knowledge acquisition.<sup>24</sup>

Videos provide educators with a platform for sharing educational resources within pedagogical practices.<sup>25</sup> Studies have confirmed that these digital tools enhance student motivation towards continuous learning activities.<sup>26</sup> This innovative method challenges learners by having them participate actively in meaningful educational activities while reflecting on what they learn from instructional videos pre-recorded by certified instructors.<sup>27</sup> Video-clips have become increasingly popular as a means of communication in recent years.<sup>28</sup> This can be attributed to the many benefits that video offers over other forms of communication. One of the advantages that video offer is its ability to provide a visual representation of information. Visual aids can be much more effective in conveying certain types of information, especially complex or abstract concepts.<sup>29</sup> Additionally video can be used to enhance collaborative problem-solving tasks. Research has demonstrated that video-based projects can improve critical thinking and problem-solving skills, as well as communication and collaboration within groups.<sup>30</sup>

The results of the study indicate that a majority of the 35 third-year physiotherapy students have positive opinions about the use of videos in their learning. These positive sentiments were mostly categorized as "moderately positive" to "very positive". The students were asked inter-related questions about the use of video clips in academics, such as whether it helped in maintaining interest and visualizing concepts, improving critical thinking abilities, creating connections between theory and practical, and improving motivation levels. The responses to these questions were largely positive, with 89% to 96% of students agreeing that videos were beneficial.

The finding that students have positive opinions about the use of videos in their learning is not surprising, given the benefits of multimedia in education. Videos can help to explain complex concepts and processes provide visual aids to enhance learning, and promote engagement and motivation. In the field of physiotherapy, where students must learn to perform specific techniques and use specialized equipment, videos can provide valuable demonstrations and tutorials.

The fact that a majority of students believe that videos help to improve critical thinking abilities and create connections between theory and practice is also noteworthy. These skills are essential for success in the field of physiotherapy, as practitioners must be able to apply their knowledge to real-world scenarios and think critically to make informed decisions about patient care. By using videos to bridge the gap

between theory and practice, students may be better equipped to develop these skills.<sup>31</sup>

The finding that students believe that videos help to improve motivation levels is also important. Motivation is a key factor in learning, and students who are motivated are more likely to engage with the material, participate in discussions, and seek out additional resources to enhance their learning. By using videos to promote engagement and interest in the subject matter, instructors may be able to increase motivation levels among students.

## CONCLUSION

The use of videos in physiotherapy education is viewed positively by a majority of third-year students. Videos can help to maintain interest and visualize concepts, improve critical thinking abilities, create connections between theory and practice, and improve motivation levels. While further research is needed to confirm these findings, instructors may want to consider incorporating videos into their teaching to enhance the learning experience of their students.

### Author's Contribution:

Concept & Design of Study:	Shakila Mushtaq
Drafting:	Alina Saeed, Azka Yaseen
Data Analysis:	Saria Khalid, Rizwana Kamran, Salar Arsalan
Revisiting Critically:	Shakila Mushtaq, Alina Saeed
Final Approval of version:	Shakila Mushtaq

**Conflict of Interest:** The study has no conflict of interest to declare by any author.

## REFERENCES

- Rodríguez-Abitia G, Martínez-Pérez S, Ramirez-Montoya MS, Lopez-Caudana E. Digital gap in universities and challenges for quality education: A diagnostic study in Mexico and Spain. *Sustainability* 2020;12(21):9069.
- Das K, Das P. Online teaching-learning in higher education during lockdown period of COVID-19 pandemic in India. *Int J Orange Technologies* 2020;2(6):5-10.
- Husmann PR, O'Loughlin VD. Another nail in the coffin for learning styles? Disparities among undergraduate anatomy students' study strategies, class performance, and reported VARK learning styles. *Anatomical Sci Educ* 2019; 12(1):6-19.
- Wardana LW, Narmaditya BS, Wibowo A, Mahendra AM, Wibowo NA, Harwida G, et al. The impact of entrepreneurship education and students' entrepreneurial mindset: the mediating role of attitude and self-efficacy. *Heliyon* 2020; 6(9):e04922.
- Dahan S, Shoenfeld Y. A picture is worth a thousand words: art and medicine. *Isr Med Assoc J* 2017; 19(12):772-6.
- Pateşan M, Balagiu A, Alibec C. Visual aids in language education. *InI Conference Knowledge Based Organization* 2018;24(2):356-61.
- Toetenel L, Rienties B. Analysing 157 learning designs using learning analytic approaches as a means to evaluate the impact of pedagogical decision making. *Br J Educ Technol* 2016;47(5):981-92.
- Srinivasa K, Chen Y, Henning MA. The role of online videos in teaching procedural skills to post-graduate medical learners: A systematic narrative review. *Medical Teacher* 2020;42(6):689-97.
- Mizrachi D, Salaz AM, Kurbanoglu S, Boustany J, ARFIS Research Group. Academic reading format preferences and behaviors among university students worldwide: A comparative survey analysis. *PloS one* 2018;13(5):e0197444.
- Miner S, Stefaniak JE. Learning via video in higher education: An exploration of instructor and student perceptions. *J Univ Teaching Learning Prac* 2018;15(2):2.
- Kim JW, Myung SJ, Yoon HB, Moon SH, Ryu H, Yim JJ. How medical education survives and evolves during COVID-19: our experience and future direction. *PloS One* 2020;15(12):e0243958.
- Dinndorf-Hogenson GA, Hoover C, Berndt JL, Tollefson B, Peterson J, Laudenschlager N. Applying the flipped classroom model to psychomotor skill acquisition in nursing. *Nursing Educ Perspectives* 2019;40(2):99-101.
- Zhang Y, Xiang T, Hospedales TM, Lu H. Deep mutual learning. In: *Proceedings of the IEEE conference on computer vision and pattern recognition* 2018; 4320-28.
- Raja R, Nagasubramani PC. Impact of modern technology in education. *J Appl Adva Res* 2018; 3(1):33-5.
- Mayer RE. The promise of multimedia learning: using the same instructional design methods across different media. *Learning Instruction* 2003; 13(2):125-39.
- Sankey M, Birch D, Gardiner M. The impact of multiple representations of content using multimedia on learning outcomes across learning styles and modal preferences. *Int J Educ Development Using ICT* 2011;7(3):18-35.
- Al-Ansi AM, Garad A, Al-Ansi A. ICT-based learning during Covid-19 outbreak: Advantages, opportunities and challenges. *Gagasan Pendidikan Indonesia* 2021;2(1):10-26.
- Fakhretdinova G, Dulalaeva L, Suntsova M. Integrating soft skills into English language

- teaching in Engineering education. In 2020 IEEE Global Engineering Education Conference (EDUCON) 2020;27:1352-6.
19. Schuettfort VM, Ludwig TA, Marks P, Vetterlein MW, Maurer V, Fuehner C, et al. Learning benefits of live surgery and semi-live surgery in urology - informing the debate with results from the International Meeting of Reconstructive Urology (IMORU) VIII. *World J Urol* 2021;39:2801-7.
  20. Zalat MM, Hamed MS, Bolbol SA. The experiences, challenges, and acceptance of e-learning as a tool for teaching during the COVID-19 pandemic among university medical staff. *PLoS one* 2021;16(3): e0248758.
  21. Chen H. A Contrastive Analysis of Classroom-Based Language Assessments. *English Language Teaching* 2020;13(5):110-4.
  22. Jung G, Lee J, Kim I. Tracklet pair proposal and context reasoning for video scene graph generation. *Sensors* 2021;21(9):3164.
  23. Sablić M, Mirosavljević A, Škugor A. Video-based learning (VBL)—past, present and future: An overview of the research published from 2008 to 2019. *Technol Knowledge Learning* 2021;26(4): 1061-77.
  24. Galatsopoulou F, Kenterelidou C, Kotsakis R, Matsiola M. Examining students' perceptions towards video-based and video-assisted active learning scenarios in journalism and communication courses. *Education Sci* 2022;12(2):74.
  25. Akbar M. Digital technology shaping teaching practices in higher education. *Frontiers ICT* 2016;3:1.
  26. Tao YH, Cheng CJ, Sun SY. What influences college students to continue using business simulation games? *Taiwan Experience. Computers Educ* 2009; 53(3):929-39.
  27. Tomas L, Evans NS, Doyle T, Skamp K. Are first year students ready for a flipped classroom? A case for a flipped learning continuum. *Int J Educ Technol Higher Educ* 2019;16(1):1-22.
  28. Clerici CA, Veneroni L, Bisogno G, Trapuzzano A, Ferrari A. Videos on rhabdomyosarcoma on YouTube: an example of the availability of information on pediatric tumors on the web. *J Pediatr Hematol Oncol* 2012;34(8):e329-31.
  29. Winarto W, Syahid A, Saguni F. Effectiveness the use of audio visual media in teaching islamic religious education. *Int J Contemporary Islamic Educ* 2020;2(1):81-107.
  30. Sharpnack PA, Goliat L, Baker JR, Rogers K, Shockey P. Thinking like a nurse: Using video simulation to rehearse for professional practice. *Clin Simulation Nursing* 2013;9(12):e571-7.
  31. Barisone M, Bagnasco A, Aleo G, Catania G, Bona M, Scaglia SG, et al. The effectiveness of web-based learning in supporting the development of nursing students' practical skills during clinical placements: a qualitative study. *Nurse Educ Prac* 2019;37:56-61