

Content available at: <https://www.ipinnovative.com/open-access-journals>

Indian Journal of Clinical Anatomy and Physiology

Journal homepage: <https://www.ijcap.org/>

## Editorial

# Digital content on YouTube channels: A boon or bane to teaching and learning in medical education

Ajay Kumar<sup>1</sup>, Ashani Kumar<sup>2</sup>, Deepakshi Goyal<sup>3</sup>, Aneesh Sharma<sup>4</sup>, Anu Sharma<sup>1\*</sup>

<sup>1</sup>Dept. of Anatomy, Dayanand Medical College and Hospital, Ludhiana, Punjab, India

<sup>2</sup>Sharma's Rainbow Hospital, Ludhiana, Punjab, India

<sup>3</sup>Gopal Naryan Medical College, Sasaram, Bihar, India

<sup>4</sup>Dr YS Parmar Medical College, Nahan, Himachal Pradesh, India



## ARTICLE INFO

### Article history:

Received 29-03-2024

Accepted 29-03-2024

Available online 06-05-2024

This is an Open Access (OA) journal, and articles are distributed under the terms of the [Creative Commons Attribution-NonCommercial-ShareAlike 4.0 License](https://creativecommons.org/licenses/by-nc-sa/4.0/), which allows others to remix, tweak, and build upon the work non-commercially, as long as appropriate credit is given and the new creations are licensed under the identical terms.

For reprints contact: [reprint@ipinnovative.com](mailto:reprint@ipinnovative.com)

## 1. Introduction

The advent of digital content and the rise of YouTube channels have transformed the landscape of education. Generation zoomer (Gen-Z) mostly get Connected on YouTube. They actively interact on social media and YouTube and integrate their experiences into their educational needs. YouTube is an established open platform for medical education. Learning human anatomy on YouTube as one of the tough subjects in MBBS becomes a norm in early years due to easy access and being a free service. While YouTube channels offer significant benefits in terms of convenience and diverse content, there are potential drawbacks which can impact the quality and accuracy of human anatomy and other subjects in medical education. We have tried to delve into the advantages and disadvantages of using YouTube as a platform for human anatomy education, exploring whether it serves as a boon or bane.

## 2. Advantages/Boon

### 2.1. Accessibility and global reach

One of the primary boons of YouTube channels in human anatomy education is their accessibility. Learners from all walks of life, regardless of their geographical location, can access a vast repository of anatomy-related content. This accessibility breaks down barriers to education and empowers individuals who may not have had the opportunity to attend formal classes or access specialized learning resources. The global reach of YouTube channels allows learners to access diverse perspectives and expertise from anatomists and medical professionals worldwide.

### 2.2. Visual aids and demonstrations

Visual aids play a crucial role in understanding complex subjects like human anatomy. YouTube channels excel in providing high-quality visuals, animations, and detailed demonstrations of anatomical structures and processes. Visual representations enable learners to comprehend concepts more effectively, reinforcing their understanding of the human body's intricacies.<sup>1</sup>

\* Corresponding author.

E-mail address: [anuashwani@gmail.com](mailto:anuashwani@gmail.com) (A. Sharma).

### 2.3. Interactive learning opportunities

Many YouTube channels in the field of human anatomy offer interactive learning opportunities. Through quizzes, questionnaires, and real-time discussions in the comments section, learners can actively engage with the content and solidify their knowledge. The interactive nature of YouTube videos fosters a deeper level of understanding and critical thinking, which is essential in grasping the complexities of human anatomy.<sup>1</sup>

### 2.4. Engaging and informative content

YouTube channels often present anatomy content in an engaging and entertaining manner. Creators use various storytelling techniques, case studies, and practical applications to make the learning experience enjoyable and relatable. Engaging content encourages learners to remain enthusiastic about the subject and fosters a continuous pursuit of knowledge.<sup>2</sup>

### 2.5. Self-paced learning and flexibility

YouTube channels allow for self-paced learning, giving individuals the freedom to choose when and how they want to engage with the content.<sup>3</sup> Learners can pause, rewind, and rewatch videos as needed, enabling them to fully grasp challenging concepts at their own pace. This flexibility accommodates diverse learning styles and preferences, promoting a more personalized and effective learning experience.<sup>4</sup>

### 2.6. Complementary learning resource

YouTube channels serve as a valuable supplementary resource to traditional classroom settings and textbooks. They can enhance the understanding of complex anatomical topics by providing dynamic visual representations and real-life examples. Instructors can also use curated YouTube content to supplement their lectures, enriching their students' learning experience. A new Pew research study surveyed 4,594 Americans in 2018 found that 51% of YouTube users use YouTube videos to learn new things. This proves true for regular and irregular users. "That works out to be 35 percent of all U.S. adults, once both users and non-users of the site are accounted for," the study reads.<sup>5</sup>

## 3. Limitations/Bane

### 3.1. Questionable quality and accuracy

With the open nature of YouTube, anyone can create and upload educational content, regardless of their qualifications or expertise. This lack of quality control can lead to a proliferation of inaccurate or misleading information.<sup>6</sup> For human anatomy, where precision and accuracy are vital, relying on unverified content can be detrimental to learning.

Viewers may unknowingly absorb incorrect information, leading to misunderstandings and misconceptions about the human body.

### 3.2. Limited interaction and personalized guidance

Unlike in a traditional classroom setting, YouTube channels offer limited opportunities for real-time interaction with educators. This lack of personalized guidance can hinder a learner's ability to ask questions, seek clarifications, and receive tailored feedback. Human anatomy is a complex subject, and without personalized guidance, learners may struggle to grasp certain concepts fully.<sup>7</sup>

### 3.3. Potential distractions and time management

YouTube is infamous for its potential to distract viewers with endless recommendations and unrelated content.<sup>8</sup> While the platform offers valuable educational resources, learners may find themselves falling down a rabbit hole of unrelated videos, thus hindering effective time management for focused human anatomy learning. YouTube is an inadequate source of information for learning surface anatomy. This open platform allows for the proliferation of misinformation and pseudo-scientific content, which can mislead learners and undermine the foundation of accurate anatomical knowledge.

### 3.4. Limited accountability

The vast amount of content available on YouTube becomes challenging for learners to distinguish between accurate and misleading information. While some channels offer reliable and evidence-based anatomical lessons, others may present unverified claims, out dated information, or subjective interpretations.<sup>9</sup> This can lead to misunderstandings and misconceptions about human anatomy, which is especially concerning in fields where precision is crucial for understanding the human body. YouTube creators often produce content independently without being subject to rigorous peer review or quality assurance measures. Consequently, there is limited accountability for the accuracy and validity of the information presented. Errors or out-dated information may remain uncorrected, perpetuating misconceptions among learners.<sup>10</sup>

### 3.5. Distractions and lack of focus

YouTube's recommendation algorithm is designed to keep users engaged by suggesting related videos. While this feature can enhance entertainment value, it often leads to distractions during the learning process.<sup>11</sup> Learners searching for human anatomy content may find themselves being redirected to unrelated or even irrelevant videos, making it difficult to maintain a focused and structured learning experience.

### 3.6. Insufficient personalized guidance

Unlike traditional classroom settings or one-on-one tutoring, YouTube channels lack personalized guidance for learners.<sup>12</sup> Human anatomy is a complex subject that requires interaction, feedback, and tailored explanations to address individual learning needs effectively. Without this personalized attention, some learners may struggle to grasp challenging concepts, leading to frustration and disinterest in the subject.

### 3.7. Lack of hands-on experience

Human anatomy education is not solely about acquiring theoretical knowledge but also involves hands-on experience, such as dissection in medical and biology labs. YouTube cannot fully replicate these essential practical aspects of learning, which are crucial for a comprehensive understanding of the subject.

## 4. Conclusion

YouTube channels have undoubtedly revolutionized education, providing a convenient and accessible platform for learners to explore various subjects, including human anatomy. The plethora of diverse content and engaging visual aids have the potential to inspire a deeper interest in anatomy. However, caution must be exercised due to the questionable quality of information and the lack of personalized guidance. To maximize the benefits and minimize the drawbacks, learners should supplement YouTube content with reputable educational resources, seek guidance from qualified instructors, and maintain discipline in managing their time effectively. When used wisely, YouTube channels can indeed be a valuable boon to human anatomy teaching and learning.

## 5. Conflict of Interest

None.

## References

1. Jaffar AA. YouTube: An emerging tool in anatomy education. *Anat Sci Educ.* 2012;5(3):158–64.
2. Barry DS, Marzouk F, Chulak-Oglu K, Bennett D, Tierney P, O’Keeffe GW. Anatomy education for the YouTube generation. *Anat Sci Educ.*

- 2009;9(1):90–6.
3. Reveron R. The use of youtube in learning human anatomy by Venezuelan medical students. *MOJ Anat Physiol.* 2016;2(7).
4. Trelase R. Diffusion of innovations: Smartphones and wireless anatomy learning resources. *Anat Sci Educ.* 2008;1(6):233–9.
5. Berry S. Study shows half of YouTube viewers are there for education; 2018. Available from: <https://www.videomaker.com/study-shows-half-of-youtube-users-are-there-for-education/>.
6. Farnan J, Paro JA, Higa J, Edelson J, Arora VM. The YouTube generation: implications for medical professionalism. *Perspect Biol Med.* 2008;51(4):517–24.
7. Osman W, Mohamed F, Elhassan M, Shoufan A. Is YouTube a reliable source of health-related information? A systematic review. *BMC Med Educ.* 2022;22(1):382.
8. Six Dangers of Using YouTube in the Classroom; 2024. Available from: <https://www.boclips.com/blog/the-dangers-of-using-youtube-in-the-classroom>.
9. Syed-Abdul S, Fernandez-Luque L, Jian WS, Li YC, Crain S, Hsu M, et al. Misleading Health-Related Information Promoted Through Video-Based Social Media: Anorexia on YouTube. *J Med Internet Res.* 2013;15(2):e30.
10. Kohler S, Dietrich TC. Potentials and Limitations of Educational Videos on YouTube for Science Communication. *Front Commun.* 2021;6:581302. doi:10.3389/fcomm.2021.581302.
11. Koessmeier C, Büttner OB. Why Are We Distracted by Social Media? Distraction Situations and Strategies, Reasons for Distraction, and Individual Differences. *Front Psychol.* 2021;12:711416. doi:10.3389/fpsyg.2021.711416.
12. Curran V, Simmons K, Matthews L, Fleet L, Gustafson DL, Fairbridge NA, et al. YouTube as an Educational Resource in Medical Education: a Scoping Review. *Med Sci Educ.* 2020;30(4):1775–82.


## Author biography

**Ajay Kumar**, Professor

**Ashani Kumar**, Director Consultant

**Deepakshi Goyal**, Intern

**Aneesh Sharma**, MBBS First Year Student

**Anu Sharma**, Editor-in-Chief (IJCAP), Professor  
 <https://orcid.org/0000-0003-3052-4051>

**Cite this article:** Kumar A, Kumar A, Goyal D, Sharma A, Sharma A. Digital content on YouTube channels: A boon or bane to teaching and learning in medical education. *Indian J Clin Anat Physiol* 2024;11(1):1-3.