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NEW MEDIA IN DENTISTRY EDUCATION: YOUTUBE SAMPLE

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Abstract

YouTube, the world's most widely used free video sharing platform, is increasingly being used as an educational tool in the fields of dentistry and radiology. Interns around the world now could learn about medical imaging at their own pace from the comfort of their homes, without geographical or financial constraints. However, because YouTube is an easily accessible platform, it also carries the risk of spreading inaccurate medical information or low-quality educational content. This article aims to summarize the main issues to consider when creating educational content on YouTube, technical methods, etc., and to research sample educational content using YouTube as a new media tool. In addition, the platform's current use for radiology education, its advantages and disadvantages are discussed.

Keywords: New media, new media and education, dentistry, communication studies, health sciences.

1. Introduction

YouTube (www.youtube.com; YouTube LLC, San Bruno, CA) is a video hosting website that began as a small company in 2005 and has grown to become the most widely used free video sharing platform worldwide. It is also the most used social media platform, reaching 73% of adults in the US, and one of the most downloaded applications (apps) on mobile devices (Staziaki, et al. 2021). Today, there are over 2 billion active YouTube users each month, 91% of whom are between the ages of 18 and 29 (over a billion hours of video are watched every day, and over 70% of these are streamed from smartphones and tablets). According to the company's website, YouTube's viewing time on TV screens exceeded 250 million hours per day as of March 2019 and has shown a marked increase in recent years. Viewing time, which was 6 billion hours per month in 2013, exceeded one billion hours per day in 2020 (Andreassen & Winje, 2010).

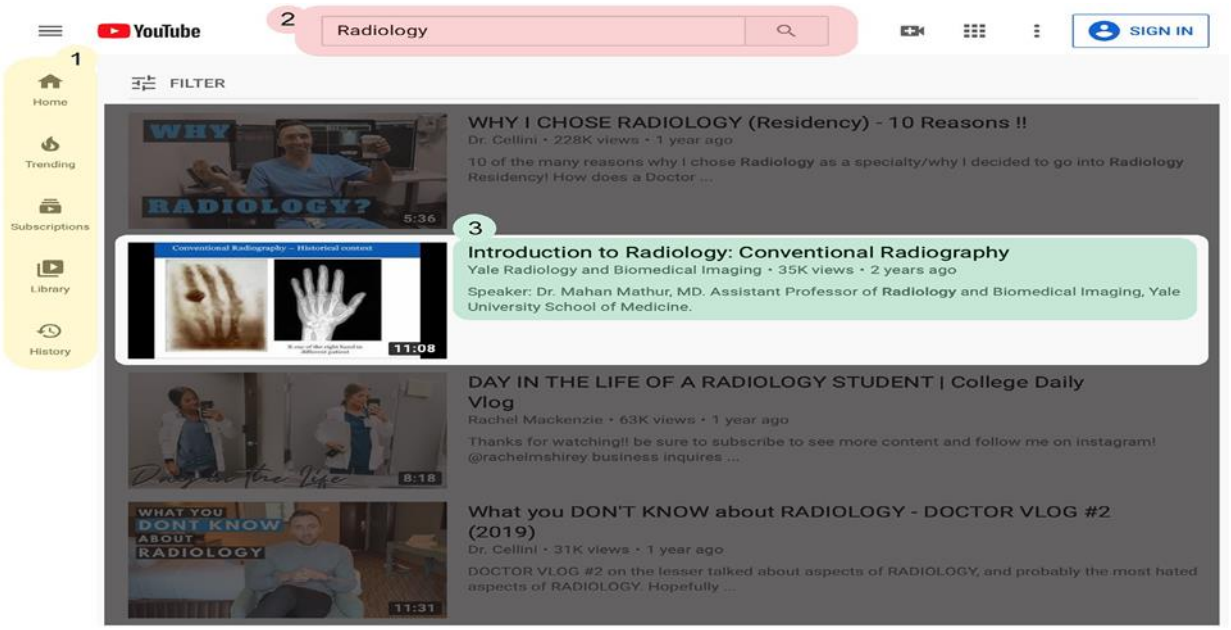
Given its popularity, YouTube is a unique resource (Thomas & Finn, 2018). This article provides instructions on using the platform as an educational tool and maximizing its potential and lists several examples of dentistry-based YouTube channels. New online teaching and learning methods are becoming increasingly popular with the emergence of numerous platforms and services such as Khan Academy, Coursera, LinkedIn Learning or MasterClass (Staziaki, et al. 2021).

2. Literature Review

YouTube can be a powerful didactic tool in the field of dentistry, especially for Generation Y and Generation Z. The most common video formats for dental education are lectures and case presentations. Koontz and colleagues published their experiences at Indiana University with the “Case of the Day” educational initiative, which uses email,

social media (including YouTube), and a website to disseminate content. YouTube video lectures received 3,657 views, corresponding to a total viewing time of 10,358 minutes. Overall, they found that viewers were very satisfied with the quality (Koontz, et. al. 2018). with 97% of viewers rating the quality as "good" or "excellent." There is a lack of published experience or original research examining YouTube's impact as an educational platform on dentistry.

Figure 1: Examples of Youtube educational content on radiology (Staziaki, et al. 2021).



Another interesting format is peer learning through case conferences. Chow and colleagues published their experience with one-hour case discussions broadcast via Zoom (Zoom Video Communications, Inc., San Jose, CA) and GoToMeeting (LogMeIn Inc., Boston, MA) online conference software among abdominal and cardiothoracic radiologists in the United States. These were later uploaded to YouTube and made available to viewers worldwide for peer learning and quality assurance purposes.

Table 1: Top Youtube channels related to dentistry and radiology.

Channel name	Subscribers	Videos	Content type	Date created	Views
Dr. Cellini	105,000	72	Vlog, lifestyle	9/21/17	5,185,94
Radiology Channel	75,100	71	Education	9/21/12	2,830,45
Mamdouh Mahfouz	72,600	747	Education	10/13/10	5,974,99
123Radiology	57,900	262	Education	12/16/11	6,727,93
Dr. Nikita's Radiology is Now Very Easy	37,700	177	Education	11/2/17	1,233,73
Easy Radiology	36,300	273	Education	11/2/16	2,190,55
Radiology Video	34,300	616	Education	11/30/11	3,661,62
CTisus	23,400	3,114	Education	9/22/09	4,046,31
Education Radiology Channel ERC	20,500	1,113	Cases	3/28/15	569,475
Chris Beaulieu	19,500	44	Education	8/8/08	1,563,29
Navigating Radiology	18,500	20	Education	7/1/16	765,688
Sarel Gaur, MD	15,800	186	Vlog, lifestyle	2/25/14	1,979,57
Radiology Residency Training UM/JMH	15,300	37	Education	7/8/14	956,221
Radiology Nation	14,300	14	Education	2/8/17	732,300

The most popular YouTube channels in dental education belong to individual radiologists, professional communities, academic departments, or private companies. Various dental associations such as the American

College of Radiology, Radiological Society of North America (RSNA), Society of Thoracic Radiology, and Association of Program Directors in Radiology also frequently publish high-quality educational content. In addition to providing lectures and internships, these communities often include interviews, podcasts, and other ways to interact with the community (Staziaki, et al. 2021). In addition to association channels, there are also several dental departments that have their own YouTube channels. However, most of the content on these channels is aimed at patients.

3. Discussion

Given the increasing use of new media as a digital tool, it is necessary to evaluate the impact of academic contributions made through these platforms. Examples of algorithms used to measure the impact of published research via online platforms through altmetric and PlumX Metrics include altmetric scores, mentions of research articles on social media (e.g., Twitter or Facebook), mentions in non-academic media, reviews, and records in cloud-based reference management systems such as Mendeley, as well as forks on GitHub. Altmetrics could potentially become part of the academic promotion process. PlumX Metrics, on the other hand, reveals how people interact with individual pieces of research output in online environments, such as when research is mentioned in the news or tweeted about. PlumX Metrics has five different metric categories: Citations, Usage, Captures, Mentions, and Social Media; it includes shares, tweets, comments, Facebook likes, YouTube likes, and other social media interactions that reference the research.

The original value of the article is shaped by the following hypotheses and expectations:

Hypothesis 1: How can social media tools be used correctly and effectively in dental education?

Hypothesis 2: Can the social sciences, communication fields, and health sciences develop collaborative working habits in the development of interdisciplinary cooperation?

A New Field of Research: The article covers a new field of research, such as the digital transformation of traditional educational tools and their integration with new media.

Interdisciplinary Approach: The article adopts an interdisciplinary approach by bringing together different disciplines such as communication sciences, media, health sciences, and dental education.

Technological Innovation: The article has the potential to offer a new perspective on the integration of social media technologies into educational activities.

Social Impact: The article can reach a wide audience through the social media platform to be created and can contribute to the development of new educational methodologies.

Therefore, this research has the potential to make significant contributions to both the academic world and the wider community, pioneering a new educational approach combined with social media tools.

The increasing integration of new media into academic communication practices has transformed the ways in which research impact is produced, disseminated, and measured. Traditional citation-based metrics, while still fundamental

to scholarly evaluation, no longer capture the full spectrum of how academic knowledge circulates in digital environments. In this context, alternative systems—such as altmetric tools and PlumX Metrics—serve as complementary indicators that highlight the diverse pathways through which research reaches audiences beyond academia.

The examples identified in this study—altmetric scores, social media mentions, references in news outlets, online reviews, and engagement through platforms like Mendeley and GitHub—demonstrate the multidimensional nature of research influence. These indicators reveal that scholarly outputs can attract attention not only from academic communities but also from practitioners, journalists, policy makers, and the general public. Such interactions suggest a shift toward a more open and socially engaged model of science communication.

Altmetric scores, for instance, illustrate how quickly and widely research findings can spread through social media platforms such as Twitter or Facebook. This immediacy offers a new temporal dimension to research visibility, showcasing early attention patterns before traditional citations accumulate. As a result, these metrics have the potential to inform academic promotion and evaluation processes by providing a more dynamic representation of scholarly influence.

Similarly, PlumX Metrics offers a structured and comprehensive framework for examining research engagement across five distinct dimensions—Citations, Usage, Captures, Mentions, and Social Media. Each category sheds light on different types of interactions, ranging from scholarly downloads and saves to public conversations and media coverage. The variety of indicators, including tweets, shares, Facebook interactions, and YouTube likes, demonstrates the growing importance of digital environments in shaping the perception and relevance of academic outputs.

However, while these tools provide valuable insights, they also raise critical questions. The reliance on social media attention may introduce biases related to disciplinary differences, language barriers, or the popularity of certain topics. Furthermore, altmetrics can be influenced by short-term trends or media events, potentially overstating the long-term scholarly value of a given work. Therefore, the use of such indicators should be approached cautiously and in combination with more established evaluation systems.

Overall, the findings highlight a broader shift in scholarly communication, one in which the boundaries between academic and public spheres are increasingly porous. As research continues to circulate through diverse digital channels, understanding these patterns of interaction becomes essential for developing more inclusive and comprehensive frameworks of research assessment.

4. Conclusion

In conclusion, this study concludes by highlighting the increasing importance of social media-based research impact measures in evaluating the wider reach of scholarly work in digital environments. These indicators offer important insights into how research outputs circulate, garner attention, and create engagement across online platforms and social networks as scholarly communication increasingly transcends traditional publication channels. The results show that by capturing additional aspects of influence that reflect current patterns of knowledge transmission, such

indicators enhance traditional citation-based techniques. It seems sensible and advantageous to integrate social media-based research impact indicators into evaluation and promotion procedures as academic institutions adjust to quickly changing digital environments. Overall, the findings highlight the significance of ongoing research into digital impact metrics to guarantee a more thorough comprehension of scholarly influence.

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CONFLICT OF INTEREST

The authors have no affiliations with or involvement in any organization or entity with any financial interest or nonfinancial in the subject matter or materials discussed in this manuscript.

AUTHOR STATEMENT

This study did not require ethical approval, and no informed consent or custom software was applicable.

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