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Rethinking Educational Video Production: Insights for Improving Academic Relevance on YouTube

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ABSTRACT

This research aims to investigate what the influential factors are in creating videos to give a clear idea about educational video creators. Four influencing factors were identified for this research: clarity of YouTube videos, content, attractiveness, and understanding levels. The conceptual framework was developed, and a structured questionnaire was prepared. Ninety-two undergraduate university students in Sri Lanka were selected as a sample. A correlation was calculated between influencing factors and the academic achievement of the students. Hypothesis testing is done by calculating R2 and the model summary. The influencing factor level and its impact were discussed. Since the research was done from students' perspectives, these findings help teachers in the higher education sector when they create their videos for educational purposes. The findings reveal that current YouTube videos are not well supported in achieving the academic goals of students. However, YouTube provides a great opportunity for students to learn about the subject from experts in the field. YouTube provides the ability to watch the video with several functions, such as rewinding, pausing, and replaying. This will help students obtain a better understanding of difficult subject areas. Therefore, YouTube educational video creators need to consider how to enhance the academic quality of video production and provide support for students to achieve their academic goals.

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1. INTRODUCTION

Globalization provides opportunities for higher education students to concentrate on information and communication technologies (ICTs). The internet is useful for doing rapid information searches and helping students with their academic work (Omekwu *et al*., 2014; Savolainen, 1999; Brophy & Bawden, 2005). It also enabled students to communicate with one another from various locations at the same time, sharing ideas and information. The internet is the primary information and communication technology that has resulted in a global dramatic transformation in the information landscape. When incorporating one student's own learning experience with other students into problem-solving procedures, students might acquire multiple views on a particular problem. Internet-based learning may help students to connect, share knowledge, and solve problems.

The objective of this study is to provide better knowledge for YouTube video makers to engage more students in video learning. Better video content, in particular, may encourage viewers to watch and comprehend instructive videos. Unlike entertainment videos, if instructional videos are not appealing to the viewer, they will not be compelled to watch them. As a result, instructional video designers should go above and beyond to make their videos more appealing by considering a variety of factors. This study focuses on numerous elements from the perspective of students to improve video quality and attract more students to learn.

2. LITERATURE REVIEW

2.1. History of Video Learning

Even in recent decades, videos have been more engaging and effective in capturing students' attention than other available media (Caudron, 1997; Salomon, 1984). Compared to other types of technology, most individuals feel that viewing videos is far more entertaining (Fulk *et al*., 1995). Videos have a significant influence on the brain and senses of humans. The availability of online and offline solutions, such as downloads and CDs, enables repeated watching of videos. There are no restrictions on the number of times a video can be watched or the material with which it may be blended (Bonk, 2011). From a practical educational perspective, it is not possible to explain how teachers and learners select quality YouTube videos from a large number of online resources. The popularity of a YouTube video is measured by the number of views, comments, likes, and ratings. However, there is a question of whether the above features are truly core-related to the inside content and educational quality of the video (Bitzenbauer *et al*., 2023).

Traditional classes may benefit from using internet video materials and resources (Bonk, 2011). Tan and Pearce's (2011) research revealed that employing films in the classroom was an effective method for piquing students' attention and enhancing their understanding. The benefits would include a broader diversity of opinions on themes, a variety of presentation forms, and a greater availability of demonstrative examples. Additionally, the question pool was drastically lowered as students' self-learning abilities increased (Bravo *et al*., 2011).

The desire for change and innovation in the delivery of higher education is increasing. Technology for exchanging and disseminating ideas and information has become a fundamental aspect of the educational process. Students make efficient use of the most effective kinds of educational technology. Modern technology may make a difference in two ways: by motivating students and by facilitating the distribution of information. Additionally,

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educational videos give quicker explanations than spoken or written formats (Henderson *et al*., 2015).

2.2. Emergence of YouTube as an Educational Tool

The advancement of information and communication technology was transformed into the required resources for development and unlimited opportunities in the ICT sector (Nagy & Bernschütz 2016), Furthermore, with the rapid progress of software developments, the potential to create, modify, and distribute video content at the university level has risen. People may obtain information on subjects ranging from mathematics to politics from videos, especially on YouTube. Therefore, video learning is revolutionizing the world's education system daily. Srinivasacharlu (2020) explained that teachers can use YouTube for better explanations of theoretical content such as concepts, processes, procedures, etc. Additionally, YouTube can display charts and graphs accurately. Even for training teachers, YouTube helps them comprehend and understand complex theories simply. Senior teachers should support junior teachers in accessing quality videos that match the learning outcomes. Video creators, who may be teachers, or anyone engaged in video production, should deliver quality videos by illustrating educational materials professionally and ethically (Mohamed *et al*., 2023).

Sharma and Sharma (2021) mentioned that the human brain may process pictures 60,000 times quicker than words, and 90% of visual information is conveyed to the brain. Studies have demonstrated the significant role of YouTube as an educational tool, as it serves as a global link between teachers, students, and researchers. It provides captivating content, enhancing the creativity and memorability of education.

Individuals visit YouTube every day to discover something new. They are utilizing YouTube to improve their lives with fresh knowledge, whether for academic assignments, learning a foreign language, or pursuing an alternative vocation. Most people tend to visit YouTube to get today's news updates. All media stations started the YouTube channel by emphasizing the importance of online streaming. YouTube boosts creativity by making ideas and concepts available worldwide, breaking geographical boundaries.

Today's university students view more material on the Internet than on any other media. As a result, employing any of these media, particularly YouTube, is an excellent strategy not only to contact students but also to attract their attention and interest while enhancing academic content retention. An essential factor to consider is that all videos must match the intended learning outcome of the course. Since YouTube is freely available and accessible, students can use it in negative ways; therefore, instructors must supervise and list out the necessary educational videos for the students to watch (Abdullah *et al*., 2023).

It is common knowledge that online learning through videos is an engaging learning approach. Online learning provides an attractive background for studies, increases knowledge transfer, makes complicated subject matters easier to understand, and helps increase self-understanding levels.

2.3. Impact of YouTube on Education

YouTube was accessible for teachers and students to utilize successfully inside and outside of the classroom to assist students in learning, generate class debates, and accomplish learning objectives. Many institutions have YouTube accounts where students may watch lecture recordings (Sherer & Shea 2011).

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YouTube videos can be used in the classroom, underscoring the site's potential educational uses. They may be used to get students enthused about learning something new at the start of a course, as a visual aid during teaching, or as a summary at the conclusion to reinforce essential topics (Jones & Cuthrell 2011). YouTube videos may also be utilized in the classroom as a teaching aid. The video may be used as a springboard for further discussion and activities. There are a large number of educational videos available on YouTube, which provides unlimited opportunities for online learning. Additionally, YouTube provides an opportunity to learn outside of the classroom, and a significant number of students have been using YouTube for their educational purposes. In terms of learner engagement, learner engagement in YouTube educational videos is limited (Shen, 2023).

YouTube provides students, educators, and professionals in qualitative research with a collection of films that highlight the principles of fundamental qualitative research, the data via interviews rare and field observations, and the exhibition of finished research projects. Additionally, qualitative researchers may examine the resources of others and contribute their own (Zhang *et al*., 2022).

2.4. Advantages of Video Learning

The main advantage of video learning is that students are enjoyable to watch, and students can see as many times as they desire. Therefore, video learning platforms such as YouTube may provide many opportunities to enhance and create videos according to the course content. The use of YouTube videos as a tool in the learning process has great benefits for students and has a positive impact on their studies (Wahyuni & Utami 2021). Instructional videos are readily accessible to the general population because of low-cost internet and video content makers. At the college level, the capacity to make, edit, and distribute videos has grown in lockstep with the exponential rise of computers and software (Kay & Kletskin, 2012). The advantages of using video as a teaching medium have been thoroughly researched and shown (Rajadell & Garzón, 2017; Gaspich & Han, 2024). There is a vast range of topics available, from mathematics to politics. The growth of online video courses is transforming education across the world.

2.5. Transition to MOOCs and Online Learning Platforms

Because of the growing acceptance of social media platforms that help users readily share their ideas, experiences, views, and material during the past decade, the online world has undergone a fast transition. Videos are used as learning materials in massive open online courses (Tzeng *et al*., 2023). YouTube was the most popular platform for creating and sharing videos on the internet (Cheng *et al*., 2008). Massive open online courses, for instance, MOOCs, Coursera, EdX, Udacity, and Udemy, have developed as a dominant trend in higher education in recent years. These digital classrooms provide free, unrestricted access to high-quality instructional Videos (Baturay, 2015). Videos were commonly acknowledged as an effective tool for Internet education. As a result, the usage of video-based instructional websites has grown among today's students. When considering the potential factors that influence student learning on YouTube, it is important to consider the theories and models of technology and their adoption in the new educational landscape (Bardakcı, 2019).

2.6. Utilization of YouTube in Specific Disciplines

Students in nursing courses included various kinds of modules for learning at the undergraduate level and used YouTube's numerous resources for teaching and learning activities. Clifton and Mann (2011) both agreed that "YouTube Fridays" was a fresh concept

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created by engineering lectures that have a substantial influence on students' learning patterns and their capacities to cope with and solve real-world issues in the context of thermodynamics. Interdisciplinary research (Mitra *et al*., 2010) found that YouTube Fridays helped students increase their conceptual grasp of engineering thermodynamics by responding to both subject-related and open-ended questions using YouTube videos.

Teaching biochemistry and organic chemistry using a mix of PowerPoint programs and YouTube videos may aid students in making connections and interacting with essential concepts and ideas even after the lesson has concluded. YouTube videos in nonscience majors' science lectures to determine their influence. Students found these YouTube videos useful for gaining an early comprehension of concepts and ideas; nevertheless, they had difficulties with the printing process and continued to envision simplistic forms even after overcoming these barriers (Liberatore *et al*. 2012; Bonk 2011).

Nonscience majors reported and rated that YouTube students had a greater degree of comprehension. These videos provided a fantastic learning model and analog for theoretical hurdles that would have been impossible to visualize. In this research, students viewed YouTube videos to improve their test recollection, cater to their own intrinsic and extrinsic values, interests, and amusement, and assist those students who had not declared a major in narrowing their studies' breadth and focusing on the areas they needed to know the most. After seeing the microteaching video on YouTube, the succeeding instructors committed to meaningful conversation and collaborative effort (Eick & King, 2012).

2.7. The influence of Video Content Quality on Learning

The variation identified between professional and nonprofessional video clips concerning the main video features recommends that both types of videos can fulfill different objectives (Semet 2023). Nonprofessional videos remained more viewer-oriented, and shorter, and ensured more comments, while professional videos existed lengthier and had higher quality and consistency. The findings of this study indicated that nonprofessional videos might be a helpful tool for teaching and educating patients, while professional videos have provided a better source of knowledge for healthcare professionals. Seventeen percent of videos were of inferior quality, and YouTube videos developed in the healthcare sector should be monitored and controlled (Hakyemez & Ali, 2023).

Since anyone can create a YouTube account and upload a video, the quality of the information is questionable. The quality of information on disseminated platforms should be a growing concern among academics. Several students were impressed by the quality of the information on YouTube channels. The accuracy of content and credibility are crucial factors in making accurate videos on YouTube. Since the number of viewers on the channel generates income for YouTubers, there is a competition to produce more videos (Roy, 2023).

2.8. Purpose of the Present Study

Social media is one of the best platforms on the internet to interact with colleagues, and it has permeated every aspect of society. Social media, especially YouTube, provides new opportunities for academics to disseminate their work. YouTube provides updates and information about everything. However, there are only a few studies on how this can be applied in education. Bataineh (2010) surveyed 760 students who studied English language and literature majors at the University of Jordan to investigate the influence of video consumption on non-linguistic skills for English language students in higher education. The researcher focused on recognizing nonverbal clues such as gestures, facial expressions, and

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signs in a sample of 35 students. After two months, both groups were given a post-exam, and the experimental group fared much better. Savas *et al*., (2012) performed research with a sample of forty male and female students in their third year of undergraduate study at a public university in Turkey to investigate the impact of video usage in teacher training courses. The outcomes of the research validated the benefit of employing films in the classroom since they helped participants increase both their personal English proficiency and their ability to teach the language to others.

Furthermore, Alwagait *et al*. (2015) discussed how social media can be used for individual learning. Rapp *et al*. (2016) discussed YouTube applications in English literature courses. The limited empirical evidence on the usage of video in education (Greeves & Oz, 2024). Since education is the area that is most impacted by social media today, this study was conducted to reveal how YouTube videos can be prepared productively for teaching and learning processes in higher educational institutes.

3. METHODS

3.1. Procedure

This study used a quantitative method (**Figure 1**). A quantitative analysis is often used when a researcher wants to comprehend an event or a procedure, which might be useful if the objective of a study is to quantify the demand for education in the community. As its purpose was to clarify technology-related conditions, technology-integrated learning, such as YouTube videos, must be tied to course goals. Such research would be assisted by a quantitative study.

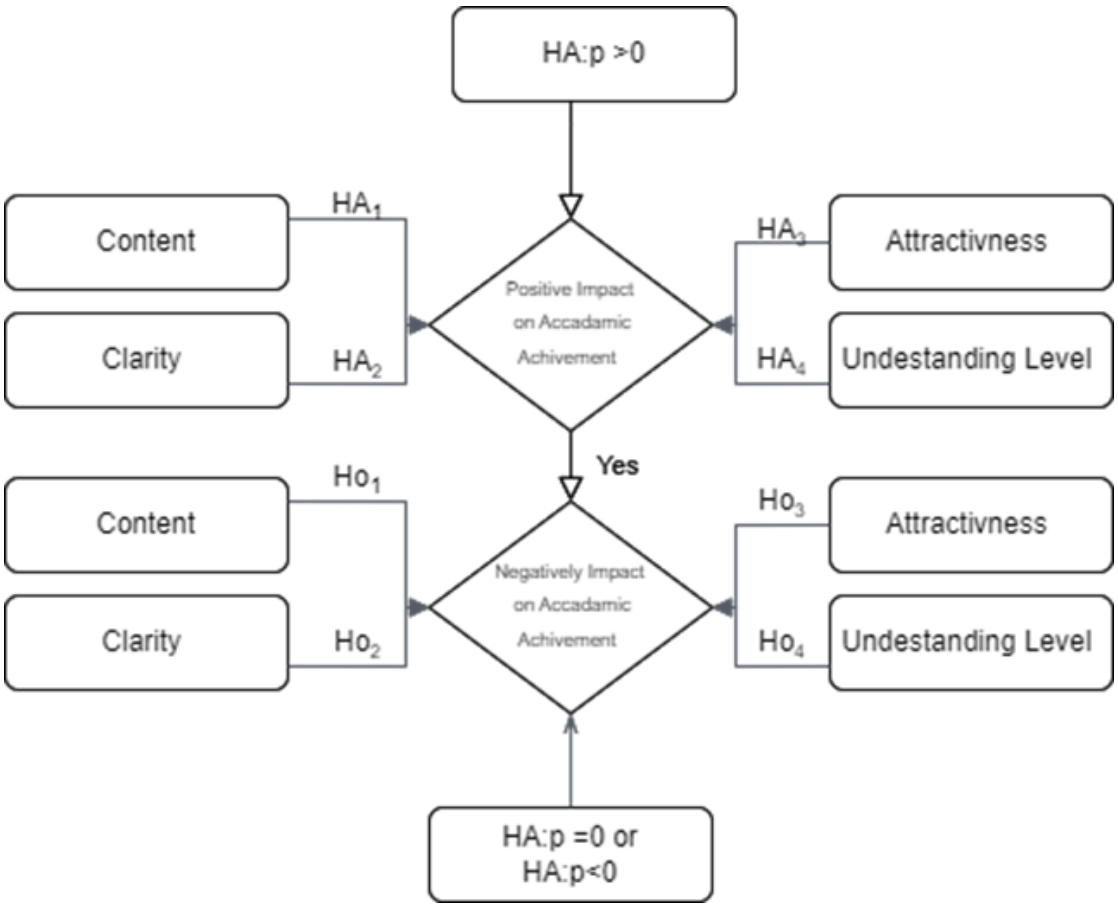

Figure. 1 The proposed conceptual framework (Own elaboration, 2023).

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The conceptual framework in Figure 3 indicates the relationship between outcome and predictive variables. In this research, we used predictive variables such as the video's clarity, content, attractiveness, and understanding levels. The outcome variable is the degree to which these YouTube videos improve students' academic achievement. Alternative (HA) and null (H0) hypotheses were developed to check the relationship between the variables. The alternative hypothesis is accepted when HA:p > 0, and the null hypothesis is accepted when Ho: p = 0 or Ho: p < 0.

The survey method is used to obtain empirical data unavailable via conventional study. A survey is a research method that collects data from respondents using a questionnaire. A survey is a compilation of questions and answer categories.

In the research, respondents were questioned about the indicators in the conceptual framework. Without establishing the criteria, it cannot begin collecting data and creating surveys. Five-point Likert scale questions require respondents to choose their level of agreement or disagreement on a continuum ranging from "Strongly Agree" to "Strongly Disagree," for instance (Joshi *et al.*, 2015). Without offering a "yes" or "no" answer, a psychologist devised this kind of inquiry to assess the respondents' sentiments. Thirty questions were included in the questionnaire. A Google Form questionnaire was produced and sent to the specified target audience. The collected data were exported to Excel before being entered into SPSS for analysis.

3.2. Sample

A sample is a group of cases or agents (people, organizations, and nations) having specified common qualities that will be researched alongside those traits. A sample is a small, limited number of individuals from the population at hand. The primary purpose of sampling is to generalize the results, i.e., to draw broad conclusions from a small sample. How a suitable sample is acquired, how sample cases are selected, and what size a sample must be critical since improper sampling leads to invalid findings and analysis (Hasan Polas, 2024).

To choose a good sample for analysis, we looked at the sample's characteristics. Students currently studying at higher education institutes were invited to participate in this research. No student has been omitted. On the grounds of age, ethnicity, topic, or years of experience. For this analysis, the population size was 120, the sample was 92 students, and the calculation was performed with a confidence level of 95% and a margin of error of 5% (Taherdoost, 2016).

3.3. Reliability and Validity

The widely used method to measure internal consistency is by calculating Cronbach's alpha (**Table 1**). In the scholarly literature, various analysis approaches have been developed. Despite the range of scientific literature, Cronbach's alpha coefficient, which was developed by Cronbach (1951) and named after the researcher who created the coefficient, is widely used in most literature. As Cronbach's alpha coefficient, whose value is between 0 and 1, approaches +1, it is reported that internal consistency is strong.

Table 1. Reliability Statistics- Cronbach's Alpha.

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
0.900	0.901	26

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The Cronbach's alpha coefficient for this study's 36 items is 0.90 (**Table 1**). Consequently, the study's data set reliability is recognized.

Validity refers to whether a measuring instrument accurately evaluates a certain behavior or the standard it is intended to compute, as well as the device that performs the standard. Due to the analyses, the significance and sufficiency of their analysis determine the quality of the data acquired by the measuring device. Truth is the ability to measure what researchers seek to observe. Validity testing, which indicates if the expressions on the scale include evidence pertinent to the purpose of the analysis, is emphasized in this circumstance. Durability concerns are crucial to the validation of an instrument, even if establishing its dependability is more crucial. For accurate measurements, the measuring instrument must properly compute its claims. Using a reliable instrument helps ensure that the acquired data are accurate and genuine.

Using a Pearson correlation analysis (**Table 2**), the validity can be determined. If the significance level Sig < 0.05 is considered valid and Sig > 0.05 is deemed invalid, the data should be deleted from the database. For this study, the significance level for all variables is 000. As it is less than 0.05, the study's validity is considerable.

When the sample size exceeds 50, the Kolmogorov–Smirnov test can be used (along with a degree of freedom parameter) to test the normality. The Kolmogorov–Smirnov statistic accepts values of 430, 308, 200, and 219, with degrees of freedom of 7, 57, 22, and 3. In this analysis, the p-value ranges from 0.000 (reported as p < 0.001). The data in this table come from a normal distribution (**Table 2**).

Table 2. Tests of Normality- Lilliefors Significance Correction.

	C004	Kolmogorov–Smirnov[a]		
		Statistic	df	Sig.
C005	1	0.430	7	0
	2	0.308	57	0
	3	0.200	22	0
	4	0.219	3	.

4. RESULTS AND DISCUSSION

4.1. Results

The hypothesis is tested by correlation and regression between IV and DV. The first IV is YouTube video content (YVC), and DV is the academic achievement (AA) of the students (**Table 3**). H1 is that there is a significant impact of YVC on AA. YVC significantly predicted AA F (1,88) = 26.752, p < 0.000, which indicates that the YVC can play a significant role in shaping AA (b = 0.483, p < 0.000). These results direct the positive effect of the YVC. Moreover, R2 = 0.233 depicts that the model explains 23.3% of the variance in AA.

However, if R2 is positive, its value is too small (0.233), indicating that the relationship is not very strong. Thus, YouTube's video material must be enhanced to assist academic work (Alias *et al*., 2013). Video content comprises all media formats that include or utilize video. Typical types of video content include animated GIFs, live videos, client endorsements, recorded presentations, and webinars (Malaga & Koppel, 2016). Infographic videos can significantly improve student learning (Lackmann *et al*., 2021). Always offer mobile-friendly video formats. Teachers must pay greater attention to the quality of video production. A captivating title and thumbnail will increase interest. It is recommended to provide more informative content understandably.

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Table 3. YouTube video content.

Hypothesis	Regression Wight	Beta Coefficient	R^2	F	*p* Value	Hypothesis Supported
H1	YVC to AA	0.483	0.233	26.752	0.000	Yes

Note-* p = 0.005. YVC: YouTube Video Content, AA: Academic Achievement.

The second IV is the clarity of YouTube videos (CYV), and DV is the AA of the students (**Table 4**). H2 is that there is a significant impact on CYV to AA. YVC significantly predicted AA F (1,87) = 13.8, p < 0.000, which indicates that the YVC can play a significant role in shaping AA (b = 0.370, p < 0.000). These results direct the positive effect of the YVC. Moreover, R2 = 0.137 depicts that the model explains 13.7% of the variance in AA.

Even though R2 is positive, its value remains small (0.137), suggesting that it has a weak relationship. Video clarity influences the viewer's ability to understand video content. When talking about the video clearly and if it is audible, viewable, and comprehended with no visual or audio distractions, it is easy for the students to understand (Yang *et al*., 2022). A YouTube video's clarity can be improved through a variety of aspects, such as excellent audio and video quality, short and clear narration, conversation, suitable visuals, and graphics, and effectively developing and sequencing content materials. Subtitles or Captions can also add value for students who are visually impaired, deaf, hard of hearing, or speak English as a secondary language. The clarity of the video is important in many ways, such as YouTube video to communicate its desired message while engaging its viewers (Gökçeoğlu *et al*., 2024). Therefore, when creating video courses for educational purposes, lecturers must pay attention to enhancing video clarity, especially in the video production stage. Sometimes, the teacher may require technical assistance during production, and schools must have the appropriate technical staff and equipment to help them during video production.

Table 4. Clarity of YouTube videos.

Hypothesis	Regression Wight	Beta Coefficient	R^2	F	*p* Value	Hypothesis Supported
H2	CYV to AA	0.370	0.137	13.8	0.000	Yes

Note-* p = 0.005. CYV: Clarity of YouTube Videos. AA: Academic achievement

The 3rd IV is the attractiveness of YouTube videos (AYV), and DV is the AA of the students (**Table 5**). H3 is that there is a significant impact on AYV to AA. AYV significantly predicted AA, F (1,88) = 16.9, p < 0.000, which indicates that AYV can play a significant role in shaping AA (b = 0.402, p < 0.000). These results direct the positive effect of the AYV. Moreover, R2 = 0.162 depicts that the model explains 16.2% of the variance in AA.

Table 5. Attractiveness of YouTube videos.

Hypothesis	Regression Wight	Beta Coefficient	R^2	F	*p* Value	Hypothesis Supported
H3	AYV to AA	0.402	0.162	16.9	0.000	Yes

Note-* p = 0.005. AYV: Attractiveness of YouTube videos. AA: Academic achievement

Although R2 is positive in H3, its value is too low (0.162), which shows that the association between variables is weak. A YouTube video's attractiveness is affected by various factors,

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such as the quality of the materials, the quality of the video, the runtime (Liu *et al*., 2023), its title and thumbnail (Song *et al*., 2016), and the degree of interaction it creates.

Video Viewers prefer to watch YouTube videos containing helpful and instructional material if included in the video. Viewers are typically engaged in films that give them something useful and interesting, whether it is an instructional lesson or an assignment brief. Visual appeal: A visually appealing video will attract more viewers. Excellent video, graphics, animations, and other visual components help students understand the learning content.

Good videos may have excellent audio, and proper lighting can also be more attractive to viewers. Poor production quality can be distracting and cause viewers to lose interest quickly. If a viewer is interested in health, a video should provide information about good eating habits.

Videos that appeal to the viewer's emotions, whether via humor, inspiration, or moving tales, are more interesting to watch. Emotionally captivating materials have increased the viewer's attachment to the video, increasing the likelihood that they may share it with others (Burrill *et al*., 1994). Overall, YouTube video attractiveness is managed by the audience and content-specific elements. Content makers can engage their target audience and help them achieve their academic goals by producing what makes a video engaging.

The 4th IV is the understanding level of YouTube videos (UYV), and DV is the AA of the students. H4 is that there is a significant impact of UYV on AA (**Table 6**). UYV significantly predicted AA, F (1,88) = 32.5, p < 0.000, which indicates that UYV can play a significant role in shaping AA (b = 0.520, p < 0.000). These results direct the positive effect of the AYV. Moreover, R2 = .270 depicts that the model explains 52.2% of the variance in AA.

Table 6. Understanding level of YouTube videos.

Hypothesis	Regression Wight	Beta Coefficient	R^2	F	*p* Value	Hypothesis Supported
H4	UY to AA	0.520	0.270	32.5	0.000	Yes

Note-* p = 0.005. UYV: Understanding the level of YouTube videos. AA: Academic achievement.

Although if R2 is positive in H4, its value is too small (0.270), it shows that the relationship is not very strong between variables. Students' degrees of understanding may vary based on variables such as age, prior knowledge, learning style, and cognitive abilities. By using several instruction methods, such as hands-on activities, real-world examples, and discussions, teachers may help students gain a transferable understanding of the subject (Rajadell & Garriga-Garzón, 2017). In addition, teachers may provide an opportunity for students to implement and practice the knowledge received and provide suitable feedback that facilitates the growth of a deeper understanding of a particular subject.

The level of understanding of YouTube videos may depend on several factors, such as the topic's complexity in the video, the intended audience, the presenter's communication clarity, and the viewer's degree of prior knowledge and expertise.

Some YouTube videos may have prepared for a broad audience, while others may target a specific audience with specific background knowledge or technical expertise. Videos intended for educational or instructional purposes may be more organized and transparent, whereas those designed for entertainment or humor may be less informative or clear. Students who previously watched entertainment videos may be hesitant to view educational videos. Therefore, video content creators must identify their target audience before creating a

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YouTube video; otherwise, students will not achieve their objectives. However, peer groups influence their members (Kohler & Dietrich, 2021).

Video length, the use of visual aids, and the presenter's ability and manner will affect the degree of comprehension of YouTube videos. The degree of comprehension of a YouTube video can ultimately depend on the viewer's ability to understand and engage in the subject matter.

4.2. Discussion

This study addresses how YouTube video content needs to be created and how it helps students' academic achievement. The major literature, which has been conducted in a similar context, verifies that YouTube videos were more engaging and effective in capturing students' attention. The long YouTube videos caused neck pain in the students; therefore, making short videos is advisable to minimize health issues (Zhang *et al*., 2022). As a result of this, within a short period of video time, the lecturer should organize the content properly to give maximum output to the students (Liu *et al*., 2023).

Most videos were uploaded by non-academic content developers, and there was no proper peer review process conducted. The low quality and unproductive, misleading information are included in the majority of videos (Uzel *et al*., 2023). Therefore, YVC is a very important factor from an educational perspective. The results show that YouTube video content and academic achievement have a significant relationship, and the model explains R2 = 0.233 of the variability in AA.

Video clarity and sound quality improved the overall rating of the video. The low lighting conditions and camera angles made a difference for the high-clarity videos (Öztürk,2023). The second variable in this research, the clarity of YouTube videos (CYV) and AA had an R2 = 0.137 relationship, where the clarity of YouTube was not fully satisfied at the expected level of the students.

Most students agreed that the attractiveness of YouTube encouraged them to study during the COVID-19 pandemic (Sofiana *et al*., 2023). Students can watch and listen at the same time and get a better understanding of learning content at any time. The attractiveness of YouTube videos (AYV) has a significant impact on academic achievement. However, the small value (R2 = 0.162) indicates that the relationship is not very strong in the video watched by the students who participated in this research.

YouTube has provided peer-to-peer learning collaboration, which enhances the understanding level of the viewers. The visuals in the YouTube video provided a better understanding for the students. YouTube provides immense support for learners by providing diverse learning content to help them understand complex content (Rigdel *et al*., 2023). The understanding level of YouTube (UYV) Videos indicates a positive relationship in this study; however, a small value indicates a weak relationship (R2 = 0.27). Overall, all four developed hypotheses tested were positive, indicating that all independent variables had an overall impact on DV (Academic achievement). Thus, the research serves the purpose of identifying IV as an element that impacts the academic achievement of students. Since this paper highlights the perspectives of students, it will be valuable for lecturers when they generate video footage for instructional purposes. The findings of this study may help all educational video creators make better academic videos.

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5. CONCLUSION

YouTube video content has a significant effect on student academic achievement, although with varying levels of relationship between variables. Short YouTube videos are more effective in increasing students' attention and reducing the risk of health problems such as neck pain. However, many videos are uploaded by non-academic content creators, so the quality and accuracy of the information is often inadequate. Variables such as video clarity and sound quality improve the overall value of a video, but there is still dissatisfaction regarding video clarity. The attractiveness factor of YouTube videos also encourages students to learn, even though the performance is not very strong. Understanding of video content provided through collaboration and YouTube visuals helps students understand complex material, although this relationship is also relatively weak. Overall, research shows that YouTube video content contributes positively to academic achievement, reminding lecturers and educational content creators of the importance of optimizing the creation of learning videos.

6. AUTHORS' NOTE

The authors declare that there is no conflict of interest regarding the publication of this article. Authors confirmed that the paper was free of plagiarism.

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