

Unleashing the Potential: A Study of the Effectiveness and Impact of YouTube Educational Content on Student Learning Outcomes

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Abstract

YouTube has increasingly become entrenched in popular educational culture, presenting advanced prospects for learning through technological advancements. This research investigates why students rely on YouTube to fulfill their academic learning needs and consider it an authentic educational source. Additionally, the study examines the level students prefer YouTube learning over traditional physical learning methods and explores potential disparities in using YouTube's educational content between male and female students. The research participants consisted of students from Kohat University of Science and Technology. Employing a quantitative research design, the study used surveys to gather data and inferential statistical analysis to test the proposed hypotheses. The collected data was analyzed using the SPSS software, utilizing a percentage-based approach and independent sample T-test to compare the variables of gender (male and female).

The study's findings indicate a positive response from participants regarding using YouTube as an educational learning tool. All students in the study reported utilizing YouTube for educational purposes. Furthermore, the statistical analysis revealed that the mean score for male students was 3.86, with a standard deviation of 0.31. In contrast, female students had a mean score of 3.91 with a standard deviation of 0.24. The calculated t-value was 1.15, with a corresponding p-value of 0.25. As the p-value exceeds the significance level of 0.05, no statistically significant difference was found between male and female students in their usage of educational content on YouTube, leading to the acceptance of the null hypothesis.

Keywords: You tube • Education • Content • Students • Learning

Introduction

The introduction of this research paper explores the role of social media, particularly YouTube, in communication and education. YouTube is identified as one of the most important types of social media in the educational system, offering dynamic opportunities for non-traditional teaching and learning patterns. The growing learning trend through YouTube tutorials and the importance of videos as engaging teaching tools are highlighted. YouTube is described as a popular online platform for accessing video tutorials created by people on various topics [1].

In the past few decades, the Internet, web technologies and Information Communication Technologies (ICT) have transformed the world into a digital village [2]. This digital transformation has revolutionized various aspects of human life, including communication; on the other hand, excessive use of social media can lead to addiction and adversely affect mental health [3].

Social media platforms such as Facebook, Twitter, Instagram and YouTube have emerged as popular means of communication [1]. The rise of social media has significantly impacted how people communicate and interact with each other [4].

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It is noted that there has been a dramatic shift from traditional internet usage to a heavy reliance on social media platforms for communication purposes [5]. These platforms offer various possibilities for individuals, including education, entertainment and socializing [6].

Social media, also known as web 2.0-enabled website applications, allows individuals to communicate their content quickly and efficiently [7].

While social media brings several benefits, it also has drawbacks. On the one hand, it facilitates communication between individuals in similar fields, allows the broadcasting of messages within organizations and enables sharing of photos and videos on social networking sites [8].

Among the various social media platforms, YouTube has emerged as a powerful tool for communication and learning. With over a billion users, YouTube offers many practical and non-traditional teaching and learning opportunities [8].

YouTube tutorials, in particular, have gained popularity as a means of learning new skills and acquiring knowledge [9].

Videos have been recognized as an engaging teaching tool that motivates students and enhances learning [10].

YouTube has taken advantage of this, with tens of thousands of video lessons in the form of "how-to" tutorials on various subjects [10]. This learnhave trend through YouTube tutorials has caught on globally, with foreign colleges incorporating YouTube videos into their classrooms [9].

While the use of YouTube tutorials for education has been extensively studied in foreign contexts, its impact in countries like Pakistan remains unexplored. YouTube is rapidly becoming a popular Web 2.0 technology and its potential as a learning tool needs to be examined [11].

This research paper investigates the role of YouTube as an educational resource and its impact on teaching and learning. By examining the influence of YouTube videos on knowledge acquisition and exploring ways to enhance

teaching and learning, this study aims to contribute to media and communication research. By uncovering the potential and challenges associated with using YouTube as an educational tool, this research aims to provide valuable insights for educators and policymakers.

In conclusion, social media, particularly YouTube, has revolutionized communication and learning. Its impact on education and its potential as an educational resource must be understood and explored. This research paper aims to contribute to the existing literature by examining the role of YouTube in teaching and learning and providing insights into its practical usage in educational settings.

Brief history of you tube

YouTube was founded in 2005 by Chad Hurley, Steve Chen and Jawed Karim, former PayPal employees. The platform started as a means for individuals to share and watch videos online easily. Over time, YouTube experienced rapid growth and became a hub for content creators and media organizations worldwide.

In 2006, Google acquired YouTube for \$1.65 billion, providing the platform with the resources to improve its infrastructure. YouTube introduced various features such as subscriptions, video monetization through advertisements, live streaming and a mobile app.

By 209, YouTube became the primary platform for video content globally, with creators building substantial online followings and making careers out of their channels. It influenced popular culture with viral challenges, record-breaking music videos and the rise of internet celebrities.

YouTube is an American online video-sharing platform headquartered in San Bruno, California, founded by three former PayPal employees—Chad Hurley, Steve Chen and Jawed Karim—in February 2005 [12].

Objective

1. To what extent do students depend on YouTube to meet their educational learning requirements?
2. To what extent do students perceive YouTube as a credible and effective educational tool?
3. This study examines how much students favor YouTube-based learning over traditional physical learning methods.
4. To investigate gender differences in using YouTube as an educational resource and determine its effectiveness in facilitating learning among male and female students.

Research questions

RQ1: What are the reasons behind students' reliance on YouTube to meet their educational learning needs?

RQ2: What factors contribute to students perceiving YouTube as an authentic and reliable educational tool?

RQ3: To what extent do students prefer YouTube-based learning over traditional physical learning methods?

RQ4: Is there a gender-based disparity in using YouTube's educational content and its perceived effectiveness for male and female students?

Problem statement

In today's learning and communication landscape, the prevalence of Internet and Web 2.0 technologies has significantly increased. However, there is a dearth of research in the specific domain of social media usage, particularly exploring Students' Consumption of educational content on YouTube as a practical learning tool. Consequently, understanding why students rely on YouTube to meet their educational learning needs and the factors contributing to their perception of YouTube as an authentic educational learning tool remains unknown. Additionally, there is a gap in knowledge regarding the extent to which students favor YouTube-based learning over traditional physical learning methods. Lastly, investigating potential gender-based disparities in

the utilization of YouTube's educational content for effective learning among male and female students is crucial. Therefore, this study addresses these research gaps by examining the reasons behind students' reliance on YouTube, exploring perceptions of YouTube as an authentic educational tool, assessing the preference for YouTube-based learning and analyzing any variability in usage patterns between male and female students.

Importance of the study

This study was conducted about student's usage of educational content of YouTube for seeking it as effective learning this study will help students studying in university which is unaware from YouTube learning and it will be good for instructors as a helping tool in their classes/study.

Limitation of study

This study has its limitations which lead to future research. Although this study fills a gap in the academia, it should be noted that this study only focused on one institution, which is the Kohat University of science and technology in Khyber Pakhtunkhwa. Thus, the results obtained from the surveys done at the institution cannot be generalized and assumed to be true for the rest of Khyber Pakhtunkhwa institutions. Other institutions can however be taken into consideration in further research to find other insightful outcomes. Further research could consider investigating the same platform and purpose.

According to Almobarraz A, YouTube is not only beneficial for students as a learning tool but also an effective tool for teaching common skills and tasks in both formal and home settings [12]. Moghavvemi S, et al. [13] further support this idea by stating that YouTube videos act as effective and supplementary tools for learning general skills and completing tasks for students and teachers in a university setup. Furthermore, Roodt S and Peier D [14] found that the use of YouTube in the classroom has a positive impact on overall student learning. However, Buzzetto-More N [15] argues that student engagement plays a crucial role in enhancing the online learning experience through the use of videos and their services.

Muniyandy S, et al. [16] also highlight the significant improvements in student learning that occur when videos are integrated into the teaching and learning process, with narration in videos playing a pivotal role.

The increasing popularity and usage of YouTube is undeniable, with over 500 hours of video being uploaded every minute as of May 2019 [17].

Agichtein E, et al. [18] emphasize the importance of user-generated content on social networks, as it provides valuable information through links and quality ratings. Younger DW, et al. [19]. Teachers have particularly utilized YouTube videos to teach modeling and provide contextual understanding and these videos foster student learning communities, promote active involvement, enable systematic problem-solving and enhance analytical skills. Moghavvemi S, et al. [13] investigates whether these activities limit teachers' use of YouTube and if they can fully benefit from its videos. Tan E and Pearce N [20] conducted a study on the use of YouTube videos in teaching and learning sociology courses. They found that students perceived YouTube videos as a valid source that aided in their learning process and could be utilized for future explanations.

Similarly, Jaffar, AA [21] found that YouTube videos positively impact teaching and learning in medical subjects, especially in anatomy. Burke SC, et al. [22] examine the role of YouTube videos in medical education and discover that teachers effectively utilize them in their lessons. They also explore how social media can contribute to personal development in Saudi Arabia. Yusuf N, et al. [23] reveal that teachers strive to incorporate social media tools in classrooms to enhance student learning and overall course impact. Alwagait E, et al. [8], on the other hand, challenge the notion that increased social media use negatively affects students' academic performance. The utilization of YouTube videos for teaching literature and languages is also evident in Saudi colleges [24]. Chtouki Y, et al. [25] compare the performance of computer science and non-computer science students when exposed to YouTube videos. They find that visual explanations through videos significantly improve understanding and retention of complex concepts.

Duffy P [26] explores how YouTube contributes to a new learning ecosystem for teaching and learning among students. The study suggests strategies for teachers using Web 2.0 technologies to enhance student learning. Duffy P [26] investigate how medical teachers and students use videos to prepare for surgery. They discover that many participants prefer watching YouTube videos as opposed to reading or discussing with peers.

Many studies in Saudi Arabia focus on the use of social media in higher education [25]. These studies explore how social media can be utilized for learning and its impact on individuals' behavior. Alwagait E, et al. [8] also examine the relationship between social media use and academic performance, refuting the notion that increased social media usage negatively affects students.

Rapp AK, et al. [24] specifically analyze the use of YouTube as a supplement for teaching English literature in a Saudi college. Their findings suggest that YouTube is more effective in addressing students' difficulties compared to traditional textbook-based courses.

Overall, this study aims to fill the research gap by focusing on students' consumption of educational content on YouTube as an effective learning tool.

Theoretical framework

To analyze and understand the phenomenon of media consumption, specifically in the context of YouTube as a learning tool. The Uses and Gratification theory posits that individuals actively seek out and choose media based on their needs and preferences and that media consumption gratifies those needs. In the case of YouTube, users may seek educational content to fulfill their desire for knowledge and skills acquisition.

The Media Richness Theory, on the other hand, focuses on the communication process and the richness of the media used. It suggests that the choice of media in communication situations should match the complexity of the message being conveyed. In the context of YouTube as a learning tool, the theory suggests that the visual and auditory nature of videos provides a rich communication medium that enhances the learning experience.

By using these theories as a framework, the researcher aims to understand why and how students and teachers utilize YouTube as a learning tool. The Uses and Gratification theory helps in identifying the motivations and needs that drive individuals to seek educational content on YouTube, while the Media Richness Theory helps in understanding how the medium itself enhances the learning process.

In summary, the theoretical framework utilized in this study draws upon the Uses and Gratification theory and the Media Richness Theory to analyze and understand the use of YouTube as a learning tool. By integrating relevant concepts and existing theories, the framework provides a solid foundation for examining the motivations, preferences and impact of YouTube as a medium for educational content consumption.

Uses and Gratification Theory

The Uses and Gratification Theory focuses on how individuals use media to satisfy their specific needs. It was initially proposed by Blumler and Katz in 1974 and emphasizes the active role of media consumers. This theory highlights the autonomy of the audience in selecting and controlling the media content that fulfills their needs and interests.

According to this theory, individuals have various needs such as knowledge acquisition, social interaction, relaxation, awareness, escapism and entertainment. They turn to different media platforms, including YouTube, to fulfill these needs through their daily communication and interpersonal relationships.

The Uses and Gratification Theory emphasizes the audience's active involvement and decision-making in consuming media. It recognizes that individuals have different motives and influences that guide their media consumption choices. The audience is free to choose what they watch and have control over the effects of media on their lives.

In the context of YouTube, individuals use the platform to satisfy their

specific needs. For example, they may watch educational videos to acquire new knowledge and skills (cognitive needs), seek entertainment through video content (tension relief), or engage in emotional experiences by watching dramas or other affective content.

The Uses and Gratification approach takes an audience-centered perspective, focusing on how individuals use YouTube to fulfill their various needs. In the context of the research being conducted, it is evident that individuals turn to YouTube to satisfy their needs, such as the need for knowledge acquisition, social integration and personal development. Specifically, students use YouTube to watch course-related lectures and tutorials, which helps them fulfill their need for learning or skill development in specific subjects or software.

By understanding and applying the principles of the Uses and Gratification Theory, researchers can gain insights into how individuals actively engage with media, particularly YouTube, to satisfy their specific needs. This theory adds value to the study by highlighting the reciprocal relationship between audiences' media consumption choices and the impact on their lives.

In summary, the Uses and Gratification Theory explores how individuals use media, including YouTube, to fulfill their diverse needs. This theory acknowledges the active role of the audience in choosing and controlling media content. In the context of the research being conducted, it is evident that individuals turn to YouTube to satisfy their needs for learning and skill development. Understanding this theory provides valuable insights into the motivations and impact of YouTube as a medium for satisfying audience needs. Kill in a specific software by taking help through videos given on YouTube.

Media Richness Theory

The Media Richness Theory (MRT), introduced by Daft and Lengel in 1986, suggests that technology-based channels of information are more effective in transmitting information compared to other mediums. Essentially, MRT argues that richer media leads to better communication outcomes.

To understand what is meant by richness in this context, we can compare different communication channels. For example, telephone calls are considered less rich than video calls because in a video call, we can not only hear the tone of the other person's voice but also observe their gestures and facial expressions. Video calls provide a more complete communication experience compared to telephone calls, which are limited to voice only. However, both video calls and telephone calls are richer than emails, which rely solely on text.

The crux of media richness theory is that effective communication requires the involvement of a rich source. This richness refers to the ability of the medium to convey information from the sender to the receiver accurately. The richness of a medium can affect the understanding of information within a given time frame.

According to the original proponents of the theory, media richness is determined by several factors such as the medium's capacity for immediate feedback, the number of cues and channels available, the variety of language used and the receiver's ability to focus.

In my study, I have found that YouTube is a highly rich media platform that provides unlimited videos in numerous languages. It offers instant feedback through comments and engages viewers through interactive video content. The combination of visuals and voice-over in YouTube videos makes it easy for viewers to comprehend the message being conveyed. With thousands of videos available in almost every language, YouTube caters to a diverse audience, enhancing the richness of communication.

Methods

The methodology section of this study is divided into nine sections:

1. **Research design:** Explains the overall approach and structure of the study.
2. **Population:** Defines the group of people or entities that are the focus of the study.

3. **Sample:** Describes the subset of the population that will be included in the study.
4. **Sample type:** Specifies the characteristics of the individuals or entities in the sample.
5. **Sampling technique:** Explains the method used to select the participants in the study.
6. **Sample size:** Determines the number of participants in the study.
7. **Tool for data collection:** Describes the instrument or questionnaire used to collect data.
8. **Duration of the study:** Specifies the length of time over which data was collected.
9. **Statistical analysis:** Describes the methods used to analyze the collected data.

Research design

For this research paper, we used a research design called inferential quantitative survey. This means that we collected data through surveys and used statistical analysis to make inferences about a larger population. In simpler terms, we asked people questions and used their responses to draw conclusions about a bigger group of people.

Population

The participants in this study were the students enrolled at Kohat University of Science and Technology. These individuals formed the population from which our sample was drawn.

Sample

The sample for this study consisted of students from various academic levels at Kohat University of Science and Technology. This included bachelor's, master's, MPhil and PhD students. They were selected to represent a diverse group of participants for our research.

Sample type

In this study, the researcher employed a non-probability sampling technique called purposive sampling. Purposive sampling involved selecting participants based on a specific purpose or criteria that aligned with the objectives of the study. It is also known as judgmental, selective, or subjective sampling, as the researcher relied on their own judgment to choose individuals from the population who were most relevant to the research topic. This approach allowed for a targeted and purposeful selection of participants who could provide valuable insights for the study.

Sample size

For this study, a total of two hundred students were selected as the sample from the larger population. These individuals were chosen to represent a diverse range of perspectives and backgrounds, providing a meaningful sample for the research.

Sampling technique

In this study, an online questionnaire was employed as the data collection tool. The questionnaire was designed using Google Forms, a digital platform that allowed for convenient distribution and collection of responses. The questionnaire was shared with a targeted population of two hundred individuals, who were specifically selected to participate in the study. This sampling technique facilitated efficient and effective data collection for the research.

Tool for data collection

In this study, an online questionnaire was employed as the data collection tool. The questionnaire was designed using Google Forms, a digital platform that allowed for convenient distribution and collection of responses. The questionnaire was shared with a targeted population of two hundred individuals, who were specifically selected to participate in the study. This sampling technique facilitated efficient and effective data collection for the research.

Statistical analysis

In order to analyze the data for this research paper, we utilized the IBM SPSS Statistics 26 software. Our statistical analysis involved computing the mean and standard deviation, as well as conducting a t-test. These methods allowed us to examine and understand the data in a quantitative manner, providing valuable insights for our research.

Results and Discussion

The study was conducted over a four-month period, starting from April and concluding in July. During this time, data collection and analysis took place to examine the research objectives and address the research questions. By considering data across this specific duration, we aimed to obtain comprehensive insights and draw reliable conclusions for our research paper.

Data analysis

Data analysis in this research paper involved calculating the percentage for each surveyed question. The researcher utilized inferential statistical analysis, specifically comparing the variables of male and female participants, with the support of SPSS software.

Before delving into the main analysis, the researchers computed three demographic variables Gender, Age and Education Level, for all respondents. The findings of this demographic analysis are summarized in (Table 1), providing an overview of the participant characteristics.

This meticulous approach to data analysis allowed for a comprehensive examination of the research objectives and a deeper understanding of the patterns and relationships within the collected data.

Demographics of study participants

In relation to the participants' demographics, the researchers discovered that most respondents, comprising 96.5% (n=191), fell within the age range of 18-25 years, as displayed in Table 1. Additionally, six participants (2.3%) were between 26-35 years old, while three respondents (1.2%) were 36 years old or older.

Furthermore, the data revealed that a larger proportion of male participants, accounting for 70% (n=140), were part of the study, whereas 41.5% (n=83) of the participants were female. Regarding educational qualifications, the majority of respondents held a bachelor's degree (89%, n=178), followed by 9.5% (n=19) with a master's degree. Interestingly, a small percentage had an M.Phil. degree (1%, n=2) and only one participant (0.5%) possessed a PhD degree.

Moving on to the usage of YouTube for video search, it was found that all respondents reported using YouTube. However, the frequency of usage varied among students. The highest percentage of students (41.5%, n=83) indicated using YouTube for one hour daily, followed by 31.5% (n=63) using it for 2-4 hours and 23% (n=46) using it for 4-6 hours. A very small number of participants (4%, n=8) reported using YouTube for 8 hours per day.

It visually represents these findings, providing a clear understanding of participants' YouTube usage patterns throughout the study (Figure 1).

Table 1. Demographics of study participants.

Variable	Constructs	No. of students	Percentage (%)
Age	18-25	191	95.50%
	26-35	6	3%
	36 and above	3	1.50%
Gender	Male	117	58.50%
	Female	83	41%
Education	Bachelor	178	89%
	Master	19	9.50%
	M.Phil.	2	1%
	PhD	1	0.50%

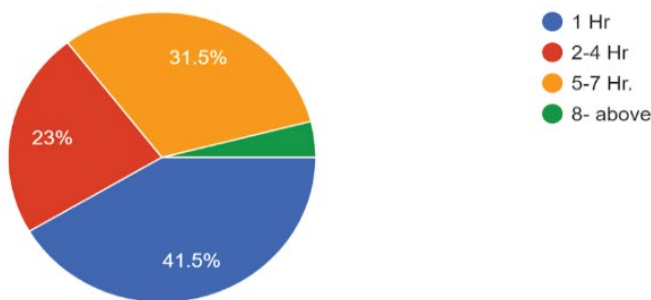


Figure 1. How much time you spent to watch you tube in a day?.

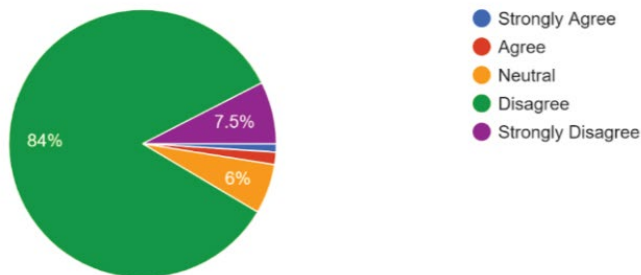


Figure 2. Students are watching you tube for entertainment purpose.

A graphical representation of the data (Figure 2) highlights that a majority of participants, 84%, expressed disagreement with the statement that students watch YouTube for entertainment purposes. Conversely, 15% of participants strongly disagreed, signifying a stronger rejection of this notion. A small percentage, 6%, remained neutral in their response, while 1.5% agreed and only 1% strongly agreed with the statement. These findings shed light on the differing perspectives regarding the entertainment value of YouTube among the surveyed participants.

Figure 3 presents the data illustrating the participants' perspectives on watching YouTube for educational purposes. Only 0.5% of participants strongly disagreed with this statement, while 1.5% remained neutral. Similarly, 2% of participants disagreed. On the other hand, a significant majority of 58.5% agreed, indicating their belief that students do watch YouTube for educational reasons. Additionally, a substantial portion, 38.5% of participants, strongly agreed with this statement. These findings emphasize the prevalent perception among participants that YouTube serves as a valuable platform for educational content and learning purposes.

Figure 4 provides insights into participants' opinions regarding the statement that YouTube offers opportunities for students to access educational videos and study-related materials. Results indicate that only 0.5% of participants strongly disagreed with this statement, while 2% remained neutral. A small percentage of 1% disagreed, suggesting a slightly differing viewpoint. The majority, comprising 67.5% of participants, expressed agreement with the statement, acknowledging YouTube's potential as a platform for educational content. Furthermore, a significant portion of 29% of participants strongly agreed with this notion. These findings highlight the widespread recognition among participants that YouTube serves as a valuable resource for accessing educational videos and study materials.

Figure 5 presents the analysis of participants' perceptions regarding the statement suggesting that watching educational videos on YouTube can facilitate faster learning of the material. The data indicates that only 0.5% of participants strongly disagreed with this statement, suggesting minimal opposition to the notion. Additionally, 2.5% of participants remained neutral, indicating a lack of firm opinion. Similarly, 2.5% of participants expressed disagreement with the statement, pointing to a slight divergence in viewpoints.

On the other hand, a substantial majority of 72.5% of participants expressed agreement, recognizing the potential of educational videos on YouTube to contribute to accelerated learning. Impressively, an impressive 72% of participants strongly agreed with this belief, highlighting a strong

consensus on the positive impact of watching educational content on YouTube for rapid knowledge acquisition. These findings emphasize the widely-held belief among participants that YouTube serves as an effective tool for enhancing learning speed.

Figure 6 reveals the analysis of participants' perspectives on the statement regarding the potential for students to enhance their understanding of course material by watching videos on YouTube. The findings demonstrate that a mere 0.5% of participants strongly disagreed with this assertion. Furthermore, 4% of participants maintained a neutral stance, indicating a lack of firm opinion. Similarly, 1.5% of participants expressed disagreement, highlighting a minor dissenting viewpoint.

In contrast, a significant majority of 74% of participants agreed with the

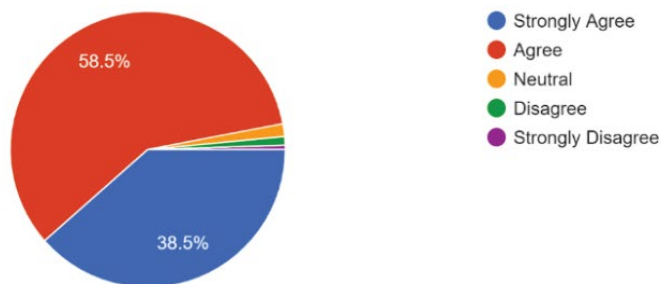


Figure 3. Students are watching you tube for educational purpose.

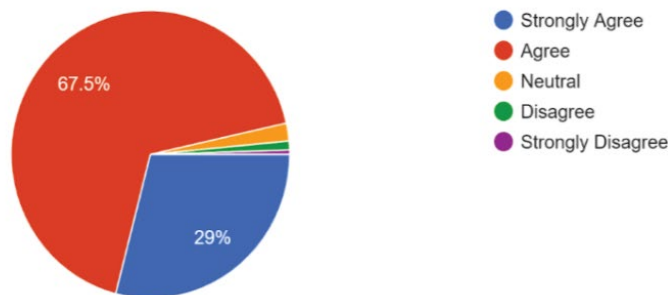


Figure 4. You tube provides opportunity for the students to watch videos and study related material.

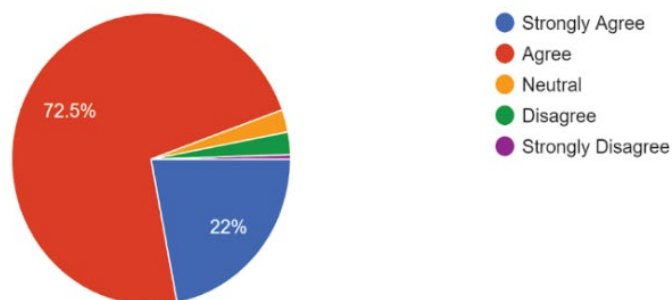


Figure 5. Watching educational videos on you tube can help students learn the material more rapidly.

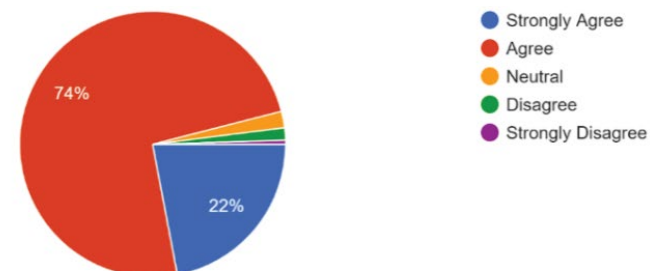


Figure 6. Students can improve their understanding of course material by watching videos on you tube.

statement, acknowledging the efficacy of YouTube videos in improving their grasp of course material. Remarkably, 22% of participants strongly agreed with this notion, underscoring a noteworthy consensus on the positive impact of YouTube videos in promoting a deeper understanding of academic subjects. These outcomes validate the widely held belief among participants that YouTube serves as an advantageous platform for students to augment their comprehension of course content.

Figure 7 illustrates the analysis of participants' responses concerning the statement that YouTube provides the opportunity to watch video lectures multiple times in a day. The data indicates that no participants strongly disagreed with this statement, indicating a unanimous acknowledgment of this aspect. Moreover, 2.5% of participants remained neutral, signifying a lack of strong opinion on the matter. Additionally, a small percentage of 2% of participants expressed disagreement, showcasing a minor difference in perspectives.

In contrast, a considerable majority of 73% of participants agreed with the statement, recognizing the ability of YouTube to offer the opportunity to revisit video lectures throughout the day. Notably, 20.5% of participants strongly agreed, reflecting a significant consensus on the value of YouTube in providing such flexibility. These findings validate the widely held perception among participants that YouTube enables students to access and review video lectures multiple times within a given day, facilitating a comprehensive understanding of the subject matter.

Figure 8 presents an analysis of participants' views on the statement regarding whether instructors uploaded academic lectures on YouTube in the correct sequence. It is noteworthy that no participants strongly disagreed with this assertion, indicating a unanimous agreement on the organization of uploaded lectures. Additionally, 3.5% of participants expressed a neutral stance, suggesting a lack of strong opinion on the matter. Similarly, 2.5% of participants disagreed, indicating a minor disagreement with the sequence of uploaded lectures.

In contrast, a significant majority of 73.5% of participants agreed with the statement, recognizing that instructors indeed uploaded academic lectures on YouTube in the correct sequence. Impressively, 20.5% of participants strongly agreed, further underscoring a strong consensus on the appropriate arrangement of these educational resources. These findings validate the widely held belief among participants that instructors take care in ensuring a logical and sequential order when uploading academic lectures on YouTube, thereby enhancing the learning experience for students.

Figure 9 depicts the analysis of participants' perceptions regarding the helpfulness of lectures uploaded by instructors on YouTube for an extended period. The data reveals that 8% of participants remained neutral, indicating a lack of firm opinion on the matter. In contrast, a negligible percentage of 1% of participants expressed disagreement, suggesting a minor opposing viewpoint. However, a significant majority of 77.5% of participants agreed with the statement, acknowledging the lasting benefits of these uploaded lectures. Notably, 20.5% of participants strongly agreed with this notion, underscoring a strong consensus on the long-term utility of instructor-uploaded lectures on YouTube.

These findings validate the widely held opinion among participants that lectures shared on YouTube by instructors offer valuable educational resources that students can access and benefit from over an extended duration. This aspect solidifies the significant role of YouTube as a platform for providing enduring learning opportunities in the academic realm.

Figure 10 displays the analysis of participants' perceptions regarding the authenticity and relevance of lectures related to their academic courses uploaded on YouTube. The findings reveal that 2% of participants maintained a neutral stance, indicating a lack of strong opinion on the authenticity and relevance of these lectures. Additionally, a negligible percentage of 0.5% of participants expressed disagreement, suggesting a minor opposing viewpoint.

However, a significant majority of 77.5% of participants agreed with the statement, acknowledging that the uploaded lectures on YouTube are indeed authentic and directly related to their academic courses. Impressively, 20% of

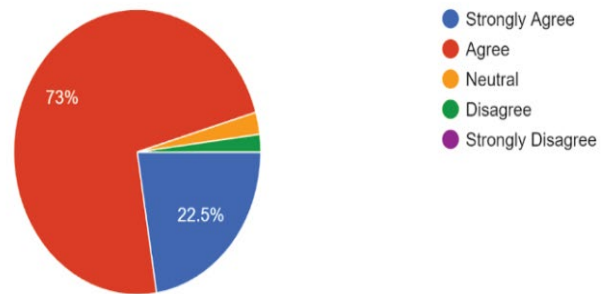


Figure 7. You tube provide opportunity to watch video lectures more than one time in a day.

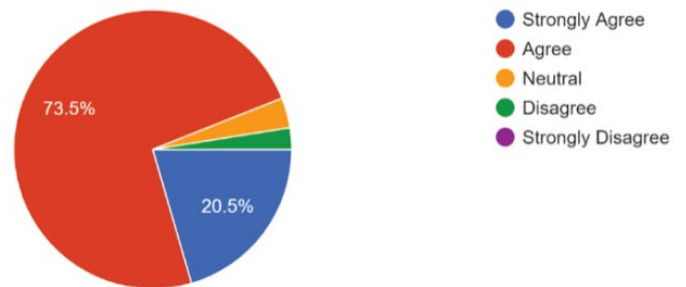


Figure 8. Instructors uploaded academic lectures on you tube in the correct sequence.

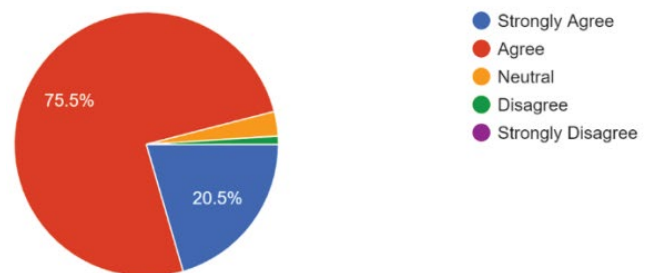


Figure 9. Lectures uploaded by instructor on you tube are helpful for students for a longer period of time.

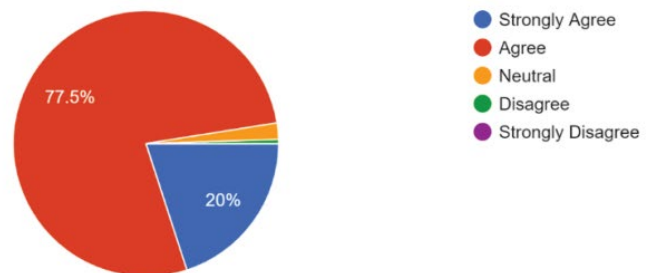


Figure 10. Courses related lectures uploaded on you tube are authentic and are related to ones academic courses.

participants strongly agreed, underscoring a strong consensus on the credibility and relevance of these course-related lectures available on YouTube.

These findings validate the widespread belief among participants that YouTube serves as a platform that hosts authentic and academically relevant lectures, providing valuable resources for students. This aspect solidifies the credibility and educational significance of YouTube as a reputable platform to access course-related content and enhance the learning experience.

Figure 11 presents the analysis of participants' perspectives regarding the statement that students receive assistance from YouTube for their academic courses. The data exhibits that 2% of participants maintained a neutral standpoint, indicating a lack of strong opinion on the matter. Furthermore, 1.5% of participants expressed disagreement, showcasing a minor opposing viewpoint. Conversely, a substantial majority of 79% of participants agreed

with the statement, acknowledging the valuable support that students derive from YouTube concerning their academic courses. Remarkably, 17.5% of participants strongly agreed, emphasizing a robust consensus on the significant aid provided by YouTube in addressing educational needs.

These outcomes authenticate the widespread perception among participants that YouTube serves as a helpful resource, aiding students in their academic pursuits. This underscores the instrumental role of YouTube in enhancing students' learning experiences and underscores its relevance as a platform for academic support in the contemporary educational landscape.

Figure 12 depicts that 5.5% of the participants remain impartial, while another 5.5% disagree and a significant majority of 71% agree with the notion that present-day students prioritize YouTube, potentially replacing traditional teachers in the future. Additionally, 17.5% of the participants strongly concur with this statement. Ent's focus more on YouTube and YouTube may take the role of the teacher in future.

Figure 13 displays that 4% of the participants remain impartial, while 7% disagree and a significant majority of 73% agree with the notion that YouTube is becoming increasingly dominant in comparison to traditional modes of learning. Additionally, 16% of the participants strongly agree with this statement.

Figure 14 illustrates that 2.5% of the participants remain impartial, while a mere 1.5% disagree and a significant majority of 77.5% agree with the notion that YouTube's visual effects captivate the attention of students. Furthermore, 18.5% of the participants strongly agree with this statement. In contrast, students' express feelings of boredom when engaged in reading books."

Figure 15 presents that a negligible 0.5% strongly disagree, while 4% remain neutral and 1% disagree with the statement. On the other hand, a substantial majority of 74.5% agree that students possess the ability to pause YouTube lectures at specific instances to jot down notes. Additionally, 20% of the participants strongly agree with this assertion.

Figure 16 demonstrates that 4% of the participants remain neutral, whereas 1.5% disagree and a significant majority of 73.5% agree with the statement that there is a subset of students in the classroom who exhibit less concentration during traditional lectures by teachers but show heightened attention towards visually engaging activities. Moreover, 21% of the participants strongly agree with this assertion.

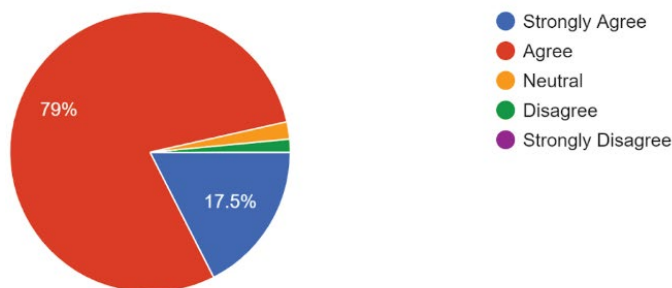


Figure 11. Students gets help from you tube for their academic courses.

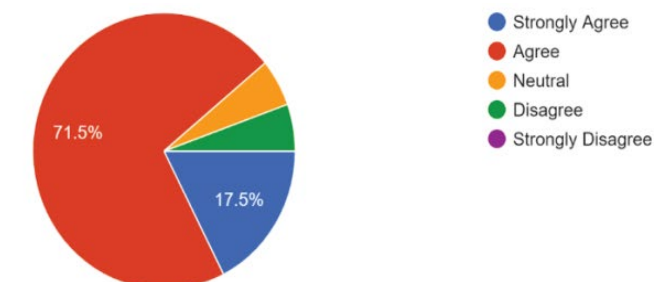


Figure 12. Todays students focus more on you tube may take the role of the teacher in future.

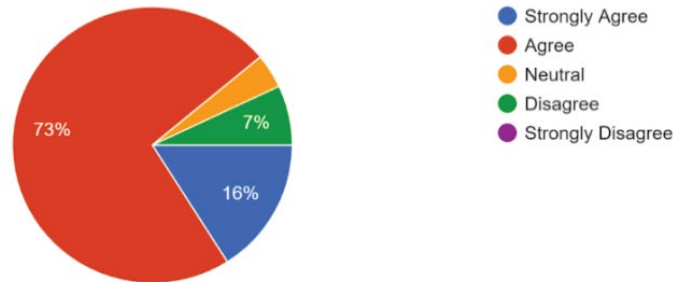


Figure 13. You tube is getting dominant over physical mode of learning.

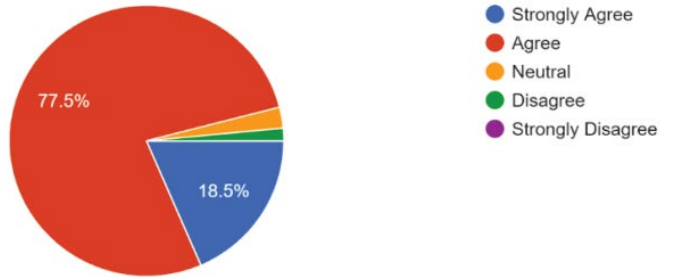


Figure 14. You tube visual effects attract the attention of the students. However, students feel bored when read books.

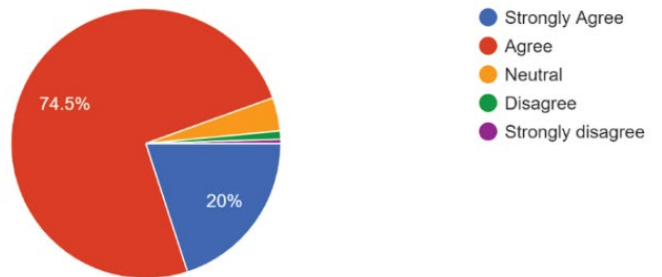


Figure 15. Students can pause a lecture on you tube at a certain points to take notes.

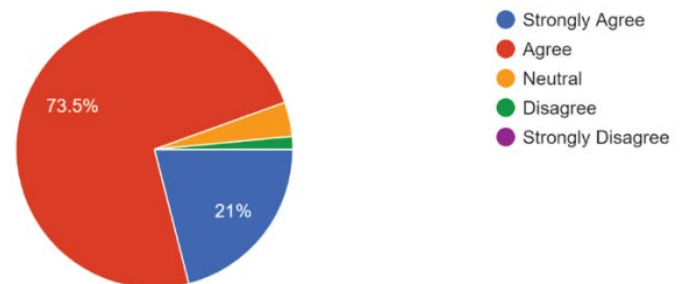


Figure 16. There are few students in class who concentrate less when teacher is giving a lecture but, pay more attention to visually stimulating activities.

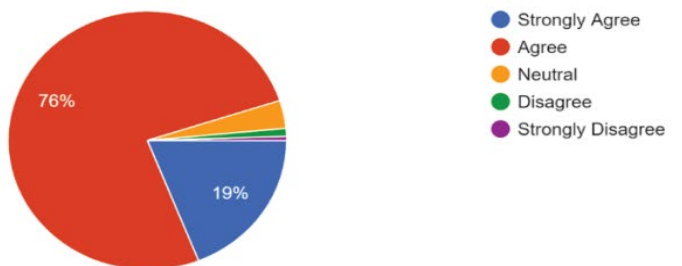


Figure 17. Sometimes there are complex theories or topics, you tube gives us an alternative educational tool to learn and obtain effective results.

Figure 17 showcases that a mere 0.5% strongly disagree, while 3.5% remain neutral and 1% disagree with the statement. However, a substantial majority of 76% agree that YouTube serves as an alternative educational tool

Table 2. Comparison between male and female usage of YouTube for educational content on YouTube for seeking it as effective learning.

Variable	No	Mean	Standard Deviation	t	p
Male	117	3.86	0.31	1.15	0.25
Female	83	3.91	0.24	-	-

for comprehending complex theories or topics, delivering effective results. Additionally, 19% of the participants strongly agree with this assertion.

Comparison between male and female usage of YouTube for educational content on you tube for seeking it as effective learning

Table 2 presents the descriptive statistics for male and female participants. The mean score for males is 3.86 with a standard deviation of 0.31, while the mean score for females is slightly higher at 3.91 with a standard deviation of 0.24. The t-value, calculated as 1.15 and the associated p-value of 0.25 are also provided. As the p-value exceeds the significance level of 0.05, it indicates that there is no statistically significant difference between male and female students regarding their usage of YouTube educational content as an effective learning tool. Consequently, the null hypothesis is accepted.

Conclusion

The researcher devised a questionnaire based on the research objectives, questions and hypotheses. The survey questionnaire was distributed among 200 students from Kohat University of Science and Technology. Data analysis was conducted using SPSS software, focusing on the completed questionnaires. Among the respondents, 58.5% were male and 41.5% were female students. The majority (89%) of respondents were enrolled in bachelor's programs, while 19% were pursuing master's degrees, 1% were enrolled in MPhil programs and a small number (0.5%) were pursuing PhD studies.

Analyzing the data, it was evident that YouTube videos play a significant role in both supporting and supplementing the learning process for students. Students find YouTube videos enjoyable and believe that these educational resources enhance their understanding of academic courses and improve their performance. Notably, students actively engage with YouTube videos as educational tools by taking notes and demonstrating a strong motivation to utilize them in the classroom.

Furthermore, students firmly believe that YouTube videos contribute to their academic knowledge and help them in their courses, mainly due to the availability of authentic and relevant material. As such, YouTube videos are crucial for the educational learning process and future research should explore ways to enhance their effectiveness and expand their utility in serving additional purposes.

Future Recommendation

Based on the findings of this research, it is recommended that future studies further investigate the impact of YouTube on student performance. This exploration will provide a clearer and more comprehensive understanding of the significance of video materials within the education system. By examining the relationship between YouTube usage and academic outcomes, researchers can gain insights into the effectiveness of incorporating video resources in educational settings. This could involve exploring the correlation between YouTube engagement and academic achievements, as well as investigating any potential disparities in outcomes between students who utilize YouTube as a learning tool and those who do not. Furthermore, researchers can delve into the specific strategies or approaches that yield the most favorable results when incorporating YouTube videos into instructional practices. Such investigations can contribute to the development of evidence-based guidelines and recommendations for educators and institutions seeking to leverage YouTube effectively for educational purposes.

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