

# Role of Video Aids in Learning among Higher Education Students: An Observational Study

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## ABSTRACT

*Introduction: Video-based learning is a form of eLearning that allows its audience to acquire skills and gain knowledge via video. This method of training is becoming increasingly popular, and starting to replace the traditional. They improve learner performance by providing visual examples, allowing them to interact, explore and digest the content at their own pace. The aim is to find the role of video aids for learning among the students of higher education.*

*Materials and methods: A simple online survey was carried out to investigate the role of video aids for learning among the students of higher education. 15 self-explanatory questions were framed and distributed to the participants through an Online google forms link. The data collected in google sheets were transferred to SPSS software. Descriptive statistics and Chi-square were carried out.*

*Result: The study shows 81% of students are interested in video learning. Most of the males prefer audio quality but females prefer visual content of the video. We observed that 36% of the participants preferred Line out videos and 31% of them preferred ppt videos. Most of the students use YouTube for learning, it provides free access to a huge volume of educational videos. This service allows users to watch videos and post comments and allows registered users to upload videos. 41% of students prefer the duration of the video to be less than 7 min. 32% of students prefer fast explanation in the video and 51% prefer the normal level of speed in video.*

*Conclusion: The video aids were found to be very useful to students in learning. preference for video aid for learning is high among students if the video has good audio quality, visual resolution and simple methods of explanation. The study found that video length impacts their viewing decision of students indicating that length should play a factor in video learning. The video aids have their own advantages as well as their disadvantages, which should be considered when choosing the video aids.*

**Key words:** Video aids, E-learning, visual content, video learning, innovative technique.

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**Received:** 13/09/2021  
**Accepted:** 06/12/2021

## INTRODUCTION

Video-based learning is a widely-accepted e-learning trend. Video learning is one of the graphical elements of the online learning experience, which enhances the understanding level of the material. Online courses that utilise media-rich educational aids, audio-visual forms for teaching and learning of both knowledge content and skill [1]. Video conferencing has been used successfully for distant learning and has the advantage of offering media-rich audio and visual stimulation covering a wider spectrum of learning styles [2]. Video can be forward, rewind and repeatedly viewed allowing users to use the content within their own time at their place. videos can obtain the maximum benefit from the limited staff resources. As internet access has become available everywhere, online educational resources have become commonplace which replaces more traditional teaching methods However, the development and production of videos can be costly and labour intensive. Creating videos

is more time consuming than the production of traditional educational materials such as lectures. Further technical expertise is required on the part of the designer [3]. Learning is now more independent and interactive as a result of these developments. The use of videos allows students to view techniques with realistic and allow for a richer communication of information that is not present in some of the more traditional teaching resources [4]. Many educators and researchers have proved videos are an important tool for providing the contents and starting point for learning. Videos provide good digitized images, text and sound that can be uploaded to a shared community [5]. Today's children are spending a considerable amount of their time online. At the same time, these developments increase the basic requirements of the schools' educational programs.

Recent work done on YouTube shows the use of YouTube provides free access to a huge volume of educational videos. This service allows users to watch videos and post comments and allows registered users to upload videos [6]. The study done on students at the University of Ghana towards the use of videos as a medium for teaching and learning shows almost all the participants reported that they had problems with the format of all the videos they

watched and the content. But, the majority of the participants perceived that the videos they watched enhanced their learning outcomes and improved their learning approach [7]. The study done by [8], on the impact of educational videos shows students prefer good quality videos and audios for long-term listening of the videos.

Most of the previous studies were done based on video education in the classroom and video podcast impacts, problems and learning process. However, there is no consensus among the various teaching faculties regarding the teaching tool. Our team has extensive knowledge and research experience that has translated into high quality publications [9-28]. The aim of the study is to know the role of video aids for learning among the students of higher educational institutes.

## MATERIALS AND METHODS

### Study setting

It is a prospective observational study. The study was approved by the scientific review board of the institute.

### Patient selection and recruitment

The cross-sectional descriptive survey was conducted among 100 college students from Saveetha Dental College. Undergraduate students of 18-22 years, both males and females were included in this and the age group beyond the criteria were excluded.

### Development of questionnaire

Structured questionnaire consisted of 15 self-explanatory questions which were validated by conducting a pilot study containing 5 male and female students. Final structured questionnaire was converted into an online survey form using Microsoft google form. The google form was sent to prospective participants and were asked to provide a response for each of the questions. The participants were contacted through phone after sending the online form as well as in case of delay in response. The study was approved by the Institutional review board.

### Parameter studied

#### Survey (Data collection)

This was conducted through an online survey in one month in February 2021. The responses were collected in the google sheet and tabulated. The results were obtained and analysed using statistical software.

#### Parameter/Outcome

The dependent variables include student's knowledge, and the independent variables are gender, weight, height, and course, year of study.

### Statistical analysis

The descriptive statistics were done using IBM SPSS V22 software. Gender and age were dependent variables and knowledge, perception were independent variables. Chi-square analysis was performed for gender association and  $p < 0.05$  was considered as statistically significant. The statistical test used was the student T test.

## RESULTS

The study shows 81% of students are interested in video learning. The majority of males and females have preferred learning through video aids, however, there was no statistical significance between gender ( $P=0.128$ ). 61% male and 20% of females are interested in video learning, 11% of male and 8% of females are not interested in video learning. Figures 1 and 2 shows the majority of male have answered YouTube and females have answered google search but in analysis, there was no statistical significance between gender and responses about the choice of apps for video learning ( $p$  value=0.014). 32% of the males use YouTube but females use google to search for their learning. Among males 23% use google search, 7% use Byju's. Among females, 7% use YouTube and 9% use Byju's for learning. Figure 3 shows the majority of male have answered line out videos and females have answered PPT videos but in analysis, there was no statistical significance between gender and responses about the choice of apps for video learning ( $p$  value=0.446). 26% of male prefer line out videos and whiteboard techniques but females mostly prefer PPT videos. Among males, 20% prefer PPT videos. Females 10% and 7% prefer line out and whiteboard videos. The majority of male and females answered more than 3 min but in analysis, there was no statistical significance between gender and responses about the choice of apps for video learning ( $p$  value=0.458) (Figure 4). Male 29% prefer video duration of more than 3min, 21% prefer a video duration of 7 min, 14% prefer video duration less than 3 min. Females 12% prefer video duration of more than 3 min, 7% prefer video duration 7 min. 6% prefer a video duration of less than 7 min. The majority of male and females answered normally but in analysis, there was no statistical significance between gender and responses about the choice of apps for video learning ( $p$  value=0.356). Males 37% prefer the normal speed of the video, 25% prefer the faster speed of videos, 10% prefer the slower speed of the video (Figure 5). Females 14% prefer the normal speed of the video, 7% prefer the faster and slower speed of the video. This shows that most everyone prefers the normal speed of videos. 22% of males prefer audio quality but females 10% prefer visual content (Figure 6). Among males 18% prefer visual content, 12% prefer fast loading videos, 20% prefer visual resolution. Females 5% prefer audio quality, 7% prefer fast loading and 6% prefer visual resolution. 38% of male have medium levels of satisfaction, 26% have high levels of satisfaction, and 8% have low levels of satisfaction (Figure 7). Females 10% have medium levels of satisfaction, 11% have high levels of satisfaction, 7% have low levels of satisfaction. 51% of

male and 24% of females are interested in note taking (Figure 8). 21% of males and 4% of females are not interested in note-taking. male 29% watch 3 videos in 1 hour, 17% watch 2 videos in 1 hour. Females 10% watch 3 videos in 1 hour, 8% watch 1 video in 1 hour (Figure 9). 33% of the male can pay 10 min attention, 25% can pay 5min attention, 9% can pay more than 10 min attention (Figure 10). Females 11 can pay 10 min attention, 6% can pay 5 min attention.

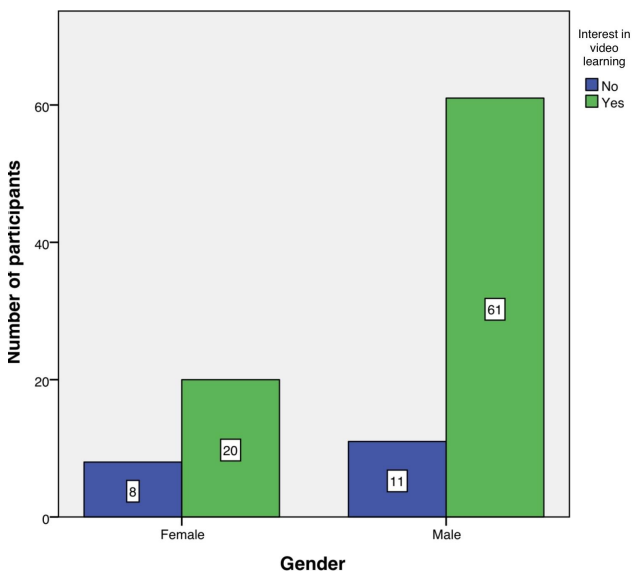


Figure 1: Response rate of the males and females. 61 % and 20 % male and female gave a "Yes" response, respectively.

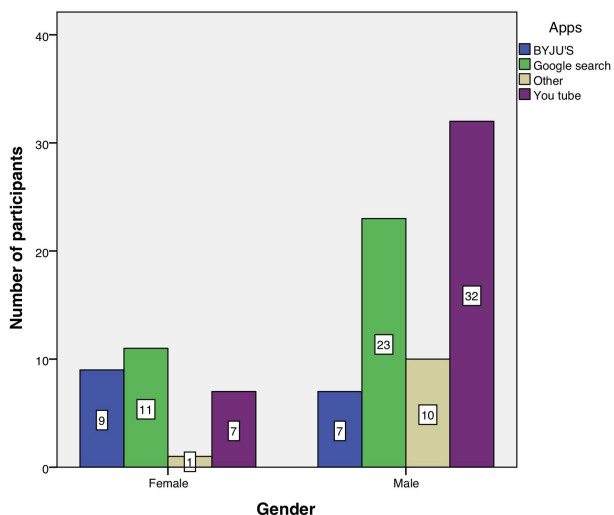


Figure 2: Preference of online learning platform among the males and females. YouTube (32%) was the most preferred online platform for learning among males.

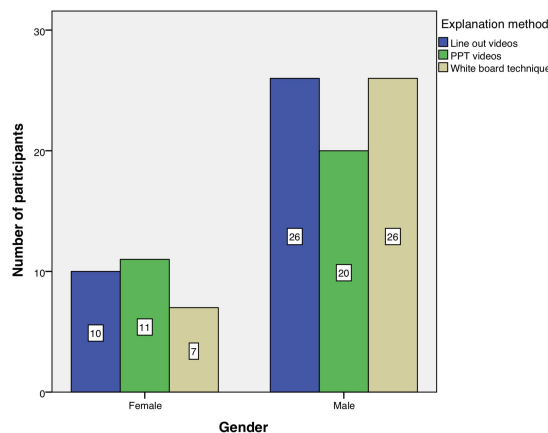


Figure 3: Preference of explanation method among the males and females. Lineout videos (26 %) was the most preferred explanation method for learning among males.

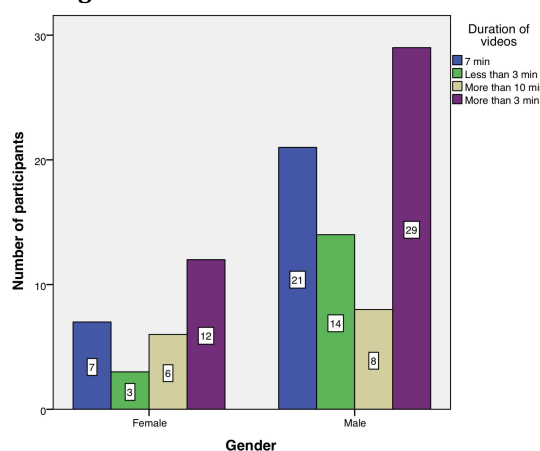


Figure 4: Preference of duration of video among the males and females. More than 3min (29%) was the most preferred duration of video for learning among males and 12% of females.

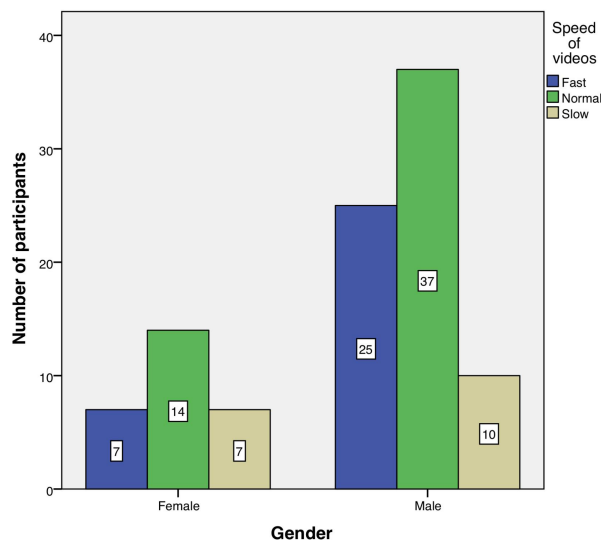
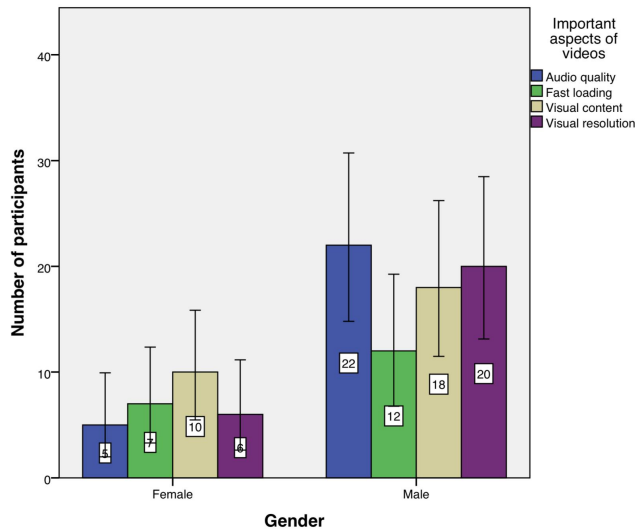
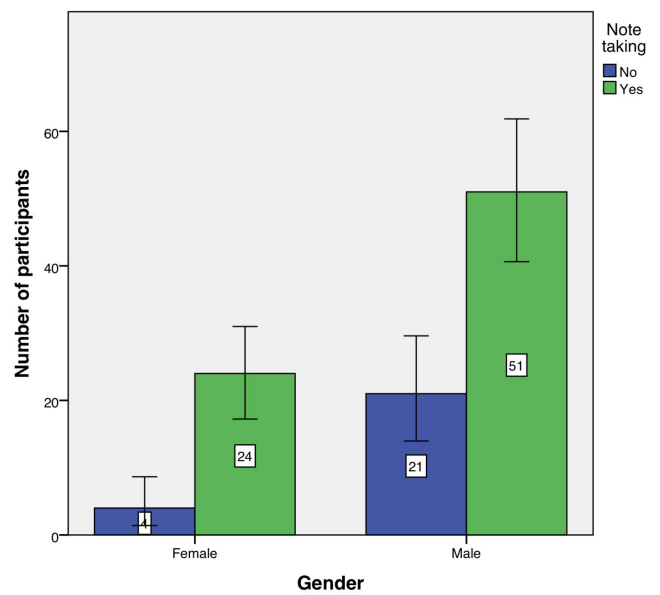


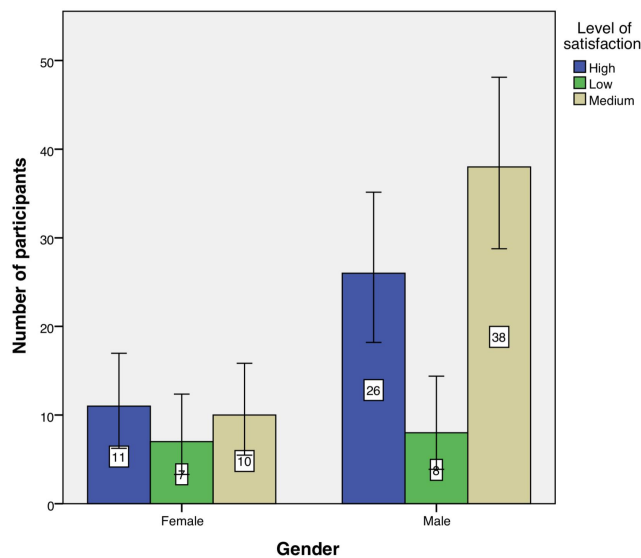
Figure 5: Preference of speed of video among the males and females. normal (37% was the most preferred duration of video for learning among males and 14% of females.



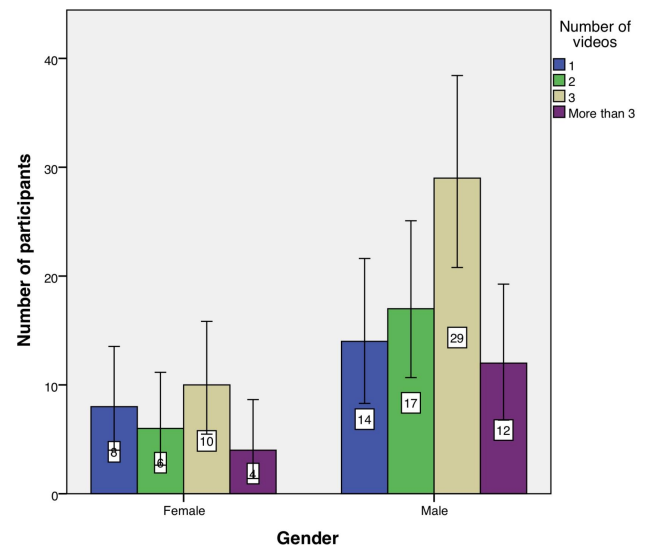
**Figure 6:** Bar chart showing the association between gender and the responses on important aspects of videos. X axis represents gender and Y axis represents the number of participants. The majority of male have answered audio quality and females have answered visual content but in analysis, there was no statistical significance between gender and responses about the choice of apps for video learning. Chi-square value=3.870, p value=0.144 (p>0.05 statistically not significant).



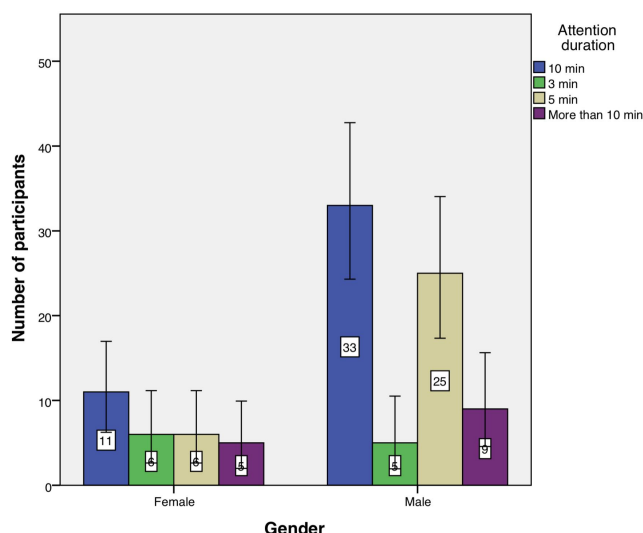
**Figure 8:** Bar chart showing the association between gender and the responses about interest in notes taking. The majority of male and females have answered yes but in analysis, there was no statistical significance between gender and responses about interest in video learning. Chi-square value=2.381, p value=0.123 (p>0.05 statistically not significant).



**Figure 7:** Bar chart showing the association between gender and the level of the responses of satisfaction. The majority of male have answered medium and females have answered high but in analysis, there was no statistical significance between gender and responses about the choice of apps for video learning. Chi-square value=3.870, p value=0.144 (p>0.05 statistically not significant).



**Figure 9:** Bar chart showing the association between gender and the responses to the number of videos. The majority of male and females have answered 3 videos but in analysis, there was no statistical significance between gender and responses about the choice of apps for video learning. Chi-square value=0.984, p value=0.805 (p>0.05 statistically not significant).



**Figure 10: Bar chart showing the association between gender and the responses on attention duration. The majority of male and females answered 10 min but in analysis, there was no statistical significance between gender and responses about the choice of apps for video learning. Chi-square value=5.604, p-value=0.133 (p>0.05 statistically not significant).**

### DISCUSSION

Hamdan AK et al shows Participating students were found to be most likely to visit YouTube from a mobile device. The accessibility of YouTube by students through mobile devices is significant [29]. Fong KK et al shows Online procedural videos as learning resources had a small but positive effect on objective structured clinical examination performance for a group of postgraduate students [30]. Sherman J et al shows the use of different audio-visual materials makes the class interesting and enjoyable [31]. The use of different types of interesting videos can take away the monotony of the students as they make learning more attractive and attentive. Visual aids help the learners to learn a language in diversified ways. The audio clip helps them to learn the correct pronunciation. Réka et al shows Visual aids impact and adds interest to a presentation. They can create excitement. Visual aids enable students to use more than one sense at the same time [32]. Parsons et al found that audio-visual materials can make lessons easy to understand. Images that learner views on the screen can be easily comprehended and remembered than descriptive reading materials. Learners feel that they can remember the information for a longer duration due to the use of audio-visual aids. Therefore, having something visual in the lesson is always helpful for the learners [33]. Zhao Y et al expressed both preferences of a short and long length of videos through qualitative feedback from students and supported by experimental design too. Shorter videos are found to be more engaging, increasing learning outcomes [34]. Harden et al. and influence students' decisions to use video again for future learning [35]. The benefits of video increasing access to practical demonstrations. Students can learn from field experts and with the option to view them repeatedly if necessary

[36]. Borup et al. shows video learning has the risk of isolation and lack of self-motivation Computer anxiety is found to be a key factor affecting learner satisfaction in e-learning. Video-based communication methods can be used as a tool through which to interact and assess student performance and comprehension [37].

The findings of this study have to be seen in light of some limitations. Sample size of study was a small and particular group of students were surveyed.

### CONCLUSION

The video aids were found to be very useful to students in learning. preference for video aid for learning is high among students if the video has good audio quality, visual resolution and simple methods of explanation. The study found that video length impacts their viewing decision of students indicating that length should play a factor in video learning. The video aids have their own advantages as well as their disadvantages, which should be considered when choosing the video aids.

### ACKNOWLEDGEMENT

The authors are thankful to Saveetha Institute of Medical and Technical Sciences, Saveetha Dental College and Hospitals, Saveetha University for giving a platform to conduct the study.

### SOURCE OF FUNDING

The present project is supported by:

- Saveetha Dental College and Hospitals, Saveetha University, Saveetha Institute of Medical and Technical Sciences, India
- Royal Hospital, Thanjavur.

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