

# YouTube as an Educational Tool for Oral Surgery

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**Abstract Aim:** the aim of the present study is to evaluate the quality of videos related to oral surgery available at you tube website. **Material and Methods:** 39 videos retrieved from [www.youtube.com](http://www.youtube.com) were evaluated by five evaluators according to eight mutually agreed criteria. Each criterion had a score ranging from 0 to 5. The videos were classified in four groups; simple extraction, surgical extraction, extraction of impacted teeth, and management of dental infections by incision and drainage. The mean scores assigned by five evaluators to videos in four groups were estimated. **Results:** The quality of videos regarding their academic relevance, resource reliability, comprehensiveness and accuracy of information had a combined mean score of 3.37 (68%). The display quality including the duration, quality of sound and picture exhibited a mean score of 3.5 (70%). The reliability of the source of information had the least mean scores of 2.99 (59.8%) **Conclusion:** The information material available on YouTube about topics related to oral surgery including simple extraction, surgical extraction, extraction of impacted teeth, and management of dental infections by incision and drainage is of moderate quality.

**Keywords:** youtube, video, evaluation, information, oral surgery

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## 1. Introduction

The health-related information available at different sites on Internet is nowadays being used by a large number of health care professionals as well as by the general public. [1,2,3] The social networks and video-sharing platforms are becoming increasingly important in transmitting information to facilitate decision making by laypersons in health matters, [4] particularly by adolescents. [5]

The web-based learning resources are also becoming popular in academics due to the associated advantages of convenience, time saving and cost-effectiveness. [6]

Many educators recommend that the learners should create a new content on youtube as a requirement of their course. This will not only facilitate deep understand of the subject, but also engage the student in technology. [7]

YouTube forms one of the readily available and cost-effective educational resources. Through its large number of uploaded videos, YouTube may be a valuable resource for situations such as rural areas or students scattered over vast geographic areas. By using YouTube, instructors and their students can create and share their own health related videos, and discuss them with their peers. Students consider these videos more engaging than lecture-based presentations, which may spark their interest in further exploring the topic. [8] YouTube also assists learners who are visually or physically unable to learn with the aid of their own computer-assisted programming. [8]

Although YouTube provide large number of advantages, it has some drawbacks. For example, searching for videos

related to specific topics from amongst YouTube's huge number of videos may prove challenging for most learners. [9]

Another drawback is lack of the accuracy and credibility of some uploaded videos on websites including YouTube. Lastly, personal computer protection is a basic requirement to access web-based resources because the computer hackers may be using online video sources to upload Spyware and viruses. [10] While going through the literature related to e-learning resources, the author noted that the most serious issues of validity and reliability of these resources have received little attention.

The present study was conducted to evaluate the quality of videos related to oral surgery uploaded on the youtube website.

## 2. Materials and Methods

### 2.1. Video Sampling Strategy and Inclusion/Exclusion Criteria

An electronic search was conducted using the website [www.youtube.com](http://www.youtube.com), for videos related to oral surgery. Topics including simple extraction, surgical extraction, impacted wisdom tooth extraction, and incision and drainage of oral and dental infection. The first 10 videos belonging to each topic were retrieved to be included in the evaluation. Some videos were excluded for the following reasons:

- Videos designed from lay people.
- Videos including "Advertising contents" only.

c) Videos not related to oral surgery.

The total number of videos evaluated according to inclusion criteria was thirty nine.

## 2.2. Criteria for Evaluating the Quality of the Videos

The selected videos were evaluated independently by five oral surgeons in the Department of Oral and Maxillofacial Surgery and Diagnostic Sciences, College of Dentistry, Qassim University according to mutually agreed criteria.

The eight criteria for evaluation included; accuracy of information, usefulness and comprehensiveness, reliability of resources, academic relevance, presence and absence of clinical bias, duration of display, audio quality and finally quality of picture. Each criterion was scored on a scale ranging from 0 to 5.

These videos were evaluated using an online spread sheet. The videos were categorized in four groups: simple extraction, surgical extraction, impaction and dental infections. The total number of planned evaluations of all 39 videos by 5 evaluators was 195.

Because of the heavy commitments of the evaluators, their training and calibration according to the agreed criteria was not possible. However it was decided that the results of the study would be considered valid only when at least three of the five evaluators would be nearly comparable in scoring the videos in all four groups.

## 2.3. Calculation and Data Analysis

The score given to each video (maximum:40 and minimum:0) by every evaluator was determined. The mean score for all videos in a group was then calculated for each evaluator. The mean scores of different evaluators were then compared using Test of Analysis of Variance (one-way ANOVA) in SPSS 17.0 program.

## 2.4. Timing of the Study

The study was carried out from December 2011 to March 2012. The selected videos were retrieved from

YouTube on 3<sup>rd</sup> February 2012.

## 3. Results

Thirty nine videos were categorized in four groups to be evaluated by five evaluators according to mutually agreed criteria. 151 evaluations from a total of 195 planned evaluations were completed giving a response rate of 77.44% (Table 1). Each one of the eight criteria carried a score of 5 with a total score ranging from 0 to 40 for each video. The mean score for videos in each group for different evaluators was estimated (Table 2). The total scores given by different evaluators to videos in each group were then compared using one way ANOVA in SPSS 17.0 software.

### 3.1. Comparison of the Mean Video Scores of Different Evaluators

Statistical analysis demonstrated that the mean scores given by evaluator I were significantly different from those given by Evaluators II, III and IV in all video groups ( $p < 0.05$ ). However, in surgical extraction group, evaluators I had insignificantly different mean scores than evaluators III and V. Furthermore, evaluator V had significantly different mean scores than evaluators II, III and IV in dental infection group ( $P < 0.05$ ) and had a marginally significant difference with evaluator II in surgical extraction group ( $p = 0.044$ ).

Also, it was noted that the mean scores of evaluators II, III and IV assigned to videos in all four groups were found to be insignificantly different (almost comparable) except the difference between evaluator II and IV in case of videos about the incision and drainage of dental infections ( $p < 0.05$ ) and that between evaluator III and IV in simple extraction group ( $p < 0.01$ ).

In view of the above results, the scores of evaluators I and V were excluded from further analysis and it was decided to take into account the scores of evaluators II, III and IV for drawing any conclusions from the study results.

**Table 1. Number (percentage) of videos evaluated by different evaluators in each group**

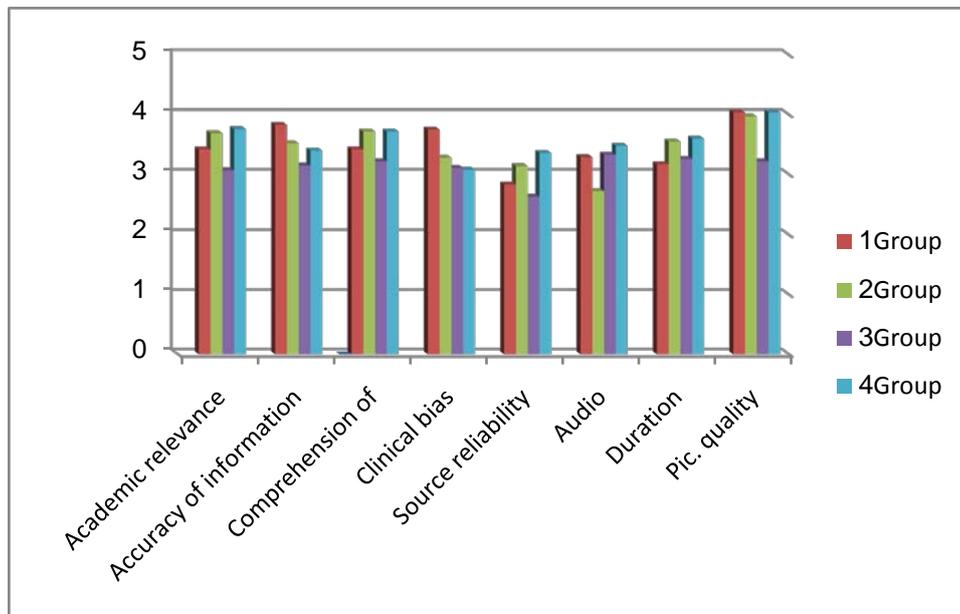
	Group (1)	Group (2)	Group (3)	Group (4)	Total of each Evaluator
Evaluator I	9 (27.27%)	10 (23.26%)	10 (25.64%)	9 (25%)	38 (25.17%)
Evaluator II	7 (21.21%)	9 (20.93%)	7 (17.95%)	7 (19.44%)	30 (19.87%)
Evaluator III	7 (21.21%)	9 (20.93%)	10 (25.64%)	9 (25%)	35 (23.18%)
Evaluator IV	10 (30.30%)	11 (25.58%)	10 (25.64%)	9 (25%)	40 (26.49%)
Evaluator V		4 (9.30%)	2 (5.13%)	2 (5.56%)	8 (5.30%)
Total of each Group	33 (21.85%)	43 (28.48%)	39 (25.83%)	36 (23.84%)	151(100%)

**Table 2. Means (standard deviation) of evaluators for different groups of videos**

	Simple extraction videos	Surgical extraction videos	Impaction videos	Dental infection videos
Evaluator I	13.11 (1.17)	17.9 (8.65)	10 (4.03)	15.78 (4.76)
Evaluator II	25.43 (5.86)	29 (3.35)	27.71 (1.70)	31.43 (3.69)
Evaluator III	22.29 (7.09)	24 (5.02)	22.90 (7.50)	28.44 (5.39)
Evaluator IV	30.30 (1.64)	27.18 (2.44)	23.60 (4.01)	24.22 (3.35)
Evaluator V	X	18.5 (8.96)	X	12.5 (6.36)

**Table 3. Combined mean scores of evaluators II, III and IV for different groups of videos regarding each evaluation criterion:**

Mean Score	Academic relevance	Accuracy of information	Comprehension of information	Clinical bias	Source reliability	Audio	Duration	Pic. quality	Average
Group 1	3.42	3.83	3.42	3.75	2.83	3.29	3.17	4.04	3.47
Group 2	3.69	3.52	3.72	3.28	3.14	2.72	3.55	3.97	3.45
Group 3	3.07	3.15	3.22	3.11	2.63	3.33	3.26	3.22	3.12
Group 4	3.76	3.40	3.72	3.08	3.36	3.48	3.60	4.04	3.56
Average	3.49	3.48	3.52	3.31	2.99	3.21	3.40	3.82	3.40

**Figure 1.** Combined mean scores of evaluatorII, III and IV for different groups of videos regarding each evaluation criterion

The average mean score for the quality of videos in all four groups was 3.37 (68%) with regard to academic relevance, source reliability, accuracy of information and comprehensiveness of information.

The quality of display of videos in all four groups with regard to quality of audio, picture quality and duration of display, had mean scores ranging from 3.21 to 3.82 (64-77%).

The mean scores of videos for source reliability in all four groups especially simple extraction and impaction groups were the lowest among all evaluation criteria 2.99 (59.8%) as shown in [Table 3](#) and [Figure 1](#).

## 4. Discussion

There are very few studies reported in the medical and dental literature related to the objective of the research under discussion. The closest study is the one reported by Murugiah et al [11] who evaluated youtube site as an informational resource for videos about Cardiopulmonary Resuscitation (CPR), 48% of which were prepared by lay persons. In that study the criteria for evaluating videos was specific to the subject of CPR such as chest compression, compression-ventilation ratio and checking for pulse. On the contrary the evaluation criteria in the present study were a general one that can be adopted to evaluate videos related to any discipline. However their results regarding the source of videos were approximately similar to that in present study (50%).

In another study evaluating the bias and intention of videos related to orthodontics [1], the authors reported that the majority of the videos were assumed to be posted by patients (58%) which differ slightly from current results.

The usefulness and comprehensiveness of information contained in videos evaluated in the present study was given a mean score of 3.52 out of 5 (70.4%) which differ from findings of a study conducted by Sood et al [12]. They reported that useful information was 58.3% and misleading information was 18.3%. The study in view did not deal with the misleading information but considered the presence of clinical bias that turned out to be 1.49 out of 5 (29.8%).

Regarding the credibility and reliability of the material presented in videos included in the present study, multiple factors including reliability of the sources of information, comprehensiveness and accuracy of information, academic relevance and absence of clinical bias were considered producing a mean score of 3.39 out of 5 (67.16%). This finding is in contradiction to the results of a previous study by Michael and Klaus [13] in which the credibility rating ranged from 3.2 to 4.4 out of 10 (32-44%).

The quality of audio and picture which play an important role in conveying the message of video were discussed in the current study. Previous presented studies did not cover these important issues. Similar was the case with the duration of the video.

The findings of the present study cannot be considered conclusive because of certain limitations. The first one was the inability of the researcher to calibrate the

evaluators according to the mutually agreed evaluation criteria. This resulted in some evaluators giving significantly different scores from other evaluators. In addition, the number of evaluations completed by one evaluator was too small to yield statistically significant outcome.

## 5. Conclusion

The videos related to oral surgery available on YouTube site is of a moderate quality.

## 6. Recommendations

1. For YouTube site: Exhibit each video before uploading it on the site to specialized committee to be criticized and evaluated.
2. For instructors: Present these videos to the students and let them try to find out the mistakes.

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