Creating an Ophthalmology Medical Education Video On A Budget

Sirj hun Patel, Arsalan Cheema, Stewart Gillan
NHS Tayside, Ophthalmology Department, Ninewells Hospital, Dundee

Introduction

- Group slit lamp tutorials for students are no longer permitted due to social distancing rules.
- There has been a shift in the demand for medical education favouring online, electronic and socially distanced learning[1].
- Video education has many advantages, including efficiency, convenience, and individualized learning[2].

Methods

Step 1 – Preparation

Slit Lamp Examination Tutorial - Virtual Learning

Step 2 – Video and Voice Recording

Figure 3 and 4: Equipment setup for the video recording. A first person video perspective has shown to be an effective teaching technique as it does not demand additional cognitive load to transpose action to the performer’s perspective.[3]

Video recording was made with a smartphone.

Step 3 – Video Editing and Audio Mixing

Figure 5 shows a screenshot of video editing software used (FFmpeg).

Step 4 – Feedback Survey

A pre- and post-video survey was sent to viewers. They were asked to rate themselves (Score 1-5) on aspects of the slit lamp examination. They were also given white space to leave any comments.

Results

The completed video is available to watch here:

https://youtube.be/kC8-o84Xmc

The video contains:

- An introduction to the basic functions and features of a slit lamp
- A systematic approach to examining the anterior segment of the eye
- Additional close-up and point of view footage from an examiner’s perspective

Results – Video Tutorial

Figure 6 (Left): Animated text used on screen highlight important points. Figure 7 (Middle): Close-up of beam height control. Figure 8 (Right): Example of examiner perspective

Survey Results

Table 1: Results of the surveys. Participants included medical students, foundation doctors, nurses, and a GP trainer. 22 pre-video and 10 post-video surveys were completed. Participants were asked to rate their confidence at approaching different aspects of the examination 1–5. The mean score increased for all areas post-video tutorial. The overall average increase in score was 1.7. Feedback from the white space answer were all positive.

<table>
<thead>
<tr>
<th>Table 1</th>
<th>Survey Mean Score (1-5)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pre-video</td>
<td>Post-video</td>
</tr>
<tr>
<td>Adjusting slit lamp position</td>
<td>2.7</td>
<td>4.3</td>
</tr>
<tr>
<td>Illumination settings</td>
<td>2.1</td>
<td>3.9</td>
</tr>
<tr>
<td>Eyepiece adjustments</td>
<td>2.5</td>
<td>4.5</td>
</tr>
<tr>
<td>Focusing slit lamp</td>
<td>2.2</td>
<td>3.6</td>
</tr>
<tr>
<td>Anterior segment examination</td>
<td>2.1</td>
<td>3.3</td>
</tr>
<tr>
<td>Utilise cobalt blue light</td>
<td>2.2</td>
<td>4.1</td>
</tr>
<tr>
<td>Average scores</td>
<td>2.3</td>
<td>4.0</td>
</tr>
</tbody>
</table>

"Very well put together short video which gave enough information without overloading and confusing the watcher."

"Precise and informative video. Liked the modern feel."

"Excellent Video for someone with no knowledge of how to use a Slit Lamp."

"Very well presented clear and concise"

Conclusion:

It is possible to create a high quality medical education ophthalmology video on a slit lamp examination without expensive professional filming equipment. The pre and post video surveys showed a subjective improvement all aspects in basic slit lamp examination with positive feedback. We believe that video tutorials can be a powerful adjunct to clinical teaching in a time where face-to-face tutorials are challenging.

References: