

*Innovative Teaching
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Perceived value of online video demonstrations as an adjunct to learning surface anatomy for physiotherapy students

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Introduction

An in-depth understanding of the surface anatomy of the body is essential for the development of health science students' safe practice (Ahmed et al., 2010). A conceptual understanding of surface anatomy is more than just rote learning of content; it requires students to be able to visualise anatomical structures, such as bony landmarks, muscles, nerves and blood vessels, in three dimensions. With the explosion of online resources, the way in which students can now access information to supplement their learning has changed considerably. Therefore, it is appropriate that the way we teach reflects this trend. However, research has indicated that the teaching of anatomy has not necessarily kept pace with these changes (Raftery, 2007). The availability of online resources has been shown to increase student access to a variety of content and learning platforms, allowing students to engage in learning at a time and pace that suits their needs (Kiviniemi, 2014). Additionally, these platforms allow students to repeatedly access the content. The inclusion of video demonstrations provides students with both visual and auditory learning opportunities that complement more traditional textbook learning.

Innovation

This study explored undergraduate physiotherapy students' perceptions of the value of using online video demonstrations as an adjunct to learning surface anatomy, which was a topic within a module that focused on lower limb anatomy. The videos were an adjunct to the existing lectures, practical laboratories and student-directed learning, and

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were provided sequentially throughout the module. Prior to the practical laboratory sessions, students were notified via lectures, laboratories and online announcements of the availability of the videos. Second-year physiotherapy students received links to the online video demonstrations of surface anatomy landmarks that they were expected to identify in class and in their practical examination. Sixteen short videos were created. These were combined and edited to form four 8 to 12 minute videos, one each for the hip, knee, ankle and foot regions. Sessions were filmed using an iPad and were posted on YouTube. By posting the videos on YouTube, the students were able to view them at their convenience using different web browsers on their choice of device (smart phone, tablet, laptop, etc.).

Evaluation method

At the conclusion of the module, students provided anonymous feedback on their perceptions of the value of the videos by way of two open-ended questions as part of the module evaluation. The first question asked, "Did the addition of the anatomy online video demonstrations enhance your gross and functional anatomy learning for the module? YES/NO." The second asked, "Please explain your answer." The YouTube analytics were reviewed, with the number and duration of views, the timing of access relative to the timing of the teaching of the various topics of the module and the device used to access the videos identified.

Outcomes

Seventy-two percent (99/136) of students enrolled in the module responded to the two questions. Ninety-six students (97%) agreed that the online videos had enhanced their learning. Three students disagreed, with one student stating, "I didn't use the videos," another responding, "I didn't know the videos were available," and the third commenting, "I didn't watch them but heard they were useful." Overall, the students reported that the videos added positively to their existing teaching resources (see Table 1). In particular, students stated that the videos were good for revising, guided them as to what was important to study in preparation for their examinations and that because they were online, the video presentations could be repeatedly accessed at times and places that suited them. The four surface anatomy videos received 791 views (hip 292, knee 187, ankle 163, foot 149) during the 6 weeks that they were available to the students, with an estimated total viewing time of 5,363 minutes. The number of views peaked in both the 2nd and 6th week that the videos were available, with 25% of the total video views occurring during the 2nd week of the module and 20% occurring during the sixth week, which was the week preceding the examination. The remaining 55% of the views occurred equally across the other 4 weeks of the module. The students accessed the videos from computers (83%), tablets (11%), mobile phones (5%) and unknown devices (1%).

The results indicate that the online videos were well used. The analysis of the two questions indicated that the majority of students who accessed the videos valued them. Furthermore, it indicated that online resources helped to create a more flexible

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Table 1
 Most Commonly Reported Student Feedback to the Two-Item Questionnaire

| Comment | Frequency |
|---------------------------------------------------------------------------------|-----------|
| They were helpful to have something to refer to after labs. | 41 (37%) |
| I watched them many times for revision. | 32 (29%) |
| Guided what was important for examinations and the depth of knowledge required. | 10 (9%) |
| Can watch any time, any place. | 10 (9%) |
| I am a visual learner so it is great. | 7 (6%) |
| Good to watch prior to the labs in preparation. | 5 (4%) |
| Videos made it easier to visualise techniques. | 5 (4%) |

learning, allowing students to learn at their own pace and repeatedly access content. The timing of the access indicated that students used the videos both at the time of their tutorials and as a revision aid for their examination. In addition, the majority of students appear computer literate and can utilise the resources to enhance their learning and understanding. It was surprising to see that despite the prevalence of smart phones and tablets, students predominantly accessed the videos from their computers. The findings suggest that it is important that these technologies be embraced, as online-based resources have become one of the primary ways that our students now access information. A limitation of this study was that it could not identify if the same students accessed the videos on multiple occasions or if many students accessed the videos less often than others. However, the survey results indicate that over 70% of the students used the videos at some point.

What next?

While this type of resource does not replace “face-to-face hands-on” teaching, it has the potential to be an effective adjunct. Further research is required to identify its impact on student learning, examination performance and longer-term knowledge retention. In addition, it would be of value to explore the use of video technology to facilitate the student’s ability to engage in reflective practice to enhance their learning, understanding and clinical application of anatomy.

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