

ABOUT THE PROJECT
Title: Staff and student collaborative development of a digital video library of gas permeable contact lens fits to enhance optometry student training.
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OVERVIEW
Overview, Aims and Context This project sought to involve students in the development of video resources for a specific aspect of contact lens teaching. In keeping with the University's commitment to enhanced collaboration with students as partners, the project aimed to engage a small group of students in an active learning process in developing, producing and evaluating video based learning resources for use with fellow students in the future.
Description One of the areas where optometry students have little opportunity to obtain significant clinical experience is in the fitting and assessment of gas permeable contact lenses. The two primary causes for this are the general decline in the number of such lenses fitted to patients and the limited time available in a busy curriculum and busy clinic to devote to this subject. This leads to a lack of confidence in this area and a tendency to avoid considering such lenses when in practice, thus perpetuating the cycle. As a result, there is a danger that a fundamental skill is being lost amongst the majority of young optometric practitioners entering the profession. Willmot, Bramhall & Radley (2012) demonstrated that use of video and student involvement in production of video resulted in increased student motivation, enhanced learning experience, deeper learning and problem solving skills as well as a range of transferrable skills associated with working as part of a team (Wilmott et al, 2011). This project involved the use a newly acquired slit lamp camera in the production of a series of short video clips for use in contact lens teaching and in developing a video repository for students for ongoing reference.

Design

Ethical approval for this active learning research project was sought from and subsequently granted by the School of Biomedical Sciences Ethics Filter Committee in the University prior to commencement.

The project team, comprising staff and students, met to create a list of the necessary videos of gas permeable lens fits and subsequently developed a realistic working schedule.

The videos were filmed using the new Topcon slit lamp incorporating video capture technology, recently acquired by the Optometry Clinic. The staff/ students project team were directly involved in the production process including the video capture and editing processes.

The video filming sessions permitted opportunity for enhanced small group teaching experiences initially with the project students; and a later with a larger group of 8-10 final year optometry students, utilizing the large screen live playback facility available alongside the filming equipment.

The video material was collated and reviewed and edited to achieve the desired result. The created videos will be used in a Case Study based teaching session with all 2nd Year students taking module OPT303 Contact Lens Practice. Subsequently, further evaluation of resources will be undertaken with these student via a questionnaire and wider discussion session. The team will then revise videos as necessary in light of student feedback and observations.

Given that modern digital devices including tablets and mobile phones are widely used by students, it is planned to make the videos available through BBLearn and/or in MP4 video formats that can be played on mobile devices for ease of future reference.

Dissemination of the work of the team and relevant findings will be undertaken via suitable Faculty L & T events and/or via CHERP and other suitable avenues.

RESULTS

Findings and Conclusions:

Feedback from the student partners involved in the collaborative project has been very positive (see section on Student Engagement for further details) and it is clear that the experience helped to develop their understanding of this aspect of contact lens practice to a higher level through their participative role.

As indicated previously a full evaluation of the resource will be completed in 2017-18 with the OPT303 student cohort.

However, a survey of students has identified the need for a range of other potentially helpful video resources. Students indicated that the three most popular requested resources would be in relation to soft contact lens fitting, use of the radiuscope to verify contact lenses and measurement of corneal curvature using a keratometer (please see summary of full survey results attached at close of this report). Accordingly, work remains ongoing to create a repository of such clips for future reference and enhanced learning.

EVALUATION

Reflective Commentary

Given the simple nature of this active learning project I was expecting it to be relatively easy to complete quickly and efficiently but this did not prove to be the case. Initially I was surprised by the reluctance on the part of students to engage as active partners. I had explained to my

second year cohort in OPT303 CL Practice that I had obtained funding for a teaching project and communicated this an opportunity to engage in developing resources that would benefit not only their own learning and understanding of CL fitting but also that of others further down the line. As whole students respond favourably to this module because of its clinical nature and the opportunity for hands on experience and perhaps I had been complacent that students would be more engaged than it turned out; as they appeared indifferent or unwilling to forgo the time necessary to actively participate. In noting this it is worth recognizing that many modern day students have greater commitments than when I was a student; with some travelling daily to university and others with work and caring commitments which impinge on their time. I was therefore relived when after a second call for support, three students agreed to become involved in the project.

Having established a "capture list" of what was necessary and scheduled video time on the new slit lamp camera with the new project team, the videos themselves were acquired with relative ease and the ability to view these on a large monitor in real time whilst they were being recorded facilitated an excellent teaching/ learning opportunity with the student partners. Having filmed the videos successfully we experienced technical and software difficulties in 'writing' the videos to the drive leading to much distortion and corruption of the files. Whilst I did try to salvage some of the work, the editing process became very tedious due to the clips being only of a few seconds each when the disruption was excluded and it became clear that the film recording would have to be repeated when we were able to get the software and hardware to run effectively to facilitate recording and saving. This regrettably led to a lack of continuity in the project with the process dragging into the next academic year. Ongoing software conflicts related to the instrument has made image and video acquisition a rather unpredictable and frustrating process but sufficient material was acquired in mid-2017-18 to facilitate onward progress. Again the video making exercise itself was used to facilitate a teaching tutorial with approximately 8-10 students who reacted positively to the clear images visible on screen when recording was ongoing, emphasizing the potential of the resource as a video repository.

Editing and producing the final videos has been a stop/start process sandwiched between the other responsibilities of the project team and achieving a uniformity of quality and style was felt important in students identifying with them as a learning tool. Regrettably this has meant that they were not available for students this academic year which has been frustrating; but will be uploaded to BBLearn for 2017-18 and it is anticipated at that this will permit a more robust evaluation with a full student cohort by means of a retrospective questionnaire.

Student Engagement (to be completed by the student partners): Impact on learning experience and sense of belonging.

Report from Aisha Saddiq

Why did you wanted to get involved in this project?

To gain more knowledge about the RGP fitting and to provide a better learning resource for other optometry students as I myself struggled finding any contact lens fit related videos online whilst revising and practising for the exams.

How did you hope it might benefit you as a student?

I hoped to increase my knowledge in this field and be able to assess the fit of RGPs confidently by the end of the making of the videos. By assessing the fit of different parameters of CLs I had a variety of experience in assessing whether it's flat or a steep fit.

Comment on the positive and negative aspects of the experience.

Positive: Other than learning about the fit of the RGPs, I also improved my insertion and removal technique of RGPs, as well as enhanced my skills on the use of slit lamp.

Negative: The computer/camera system used to view the image of the eye was quite tricky at the start as it didn't work as planned at all times. However, with time and experience it was better handled. Also maybe anaesthetic could have been used in the eye prior to trialling the CLs.

What did you learn from the project?

I learnt how to assess the fit of RGP and how this differs from a soft CL fit. Also learnt how different parameters can affect the fit overall and how to interpret the fluorescein patterns.

Do you think using videos is a good way to learn?

Yes, most definitely. Videos help students especially those who are visual learners. It also makes learning more interesting, especially nowadays with the use of technology growing, it is a very useful resource for learning.

How might the resources be utilised in lectures or are they best used in clinical scenario?

It is best used in clinical scenarios, however it can be very useful in lectures too especially prior to the practical classes, whilst learning the theory. Animated videos explaining different eye disease and pathophysiology can also be very helpful and engaging.

Report from Sahaar Ahmed

Why did you want to get involved in this project?

The reason as to why I took part in the project was to firstly help out one of the best lecturers! Secondly, I knew it would enhance my knowledge on RGP lenses and it would enhance my skills on insertion and removal and overall increase my confidence within this area of contact lenses.

How did you hope it might benefit you as a student?

I hoped that I would become more confident and understand the different types of RGP lenses and how to differentiate between the different fittings of each lens.

Comment on the positive and negative aspects of the experience.

The positives are the fact that Arnold is a great lecturer, he explained everything very well making me understand RGP's which built my confidence more. Another positive was watching it on a few student numerous times and there were many lenses used so I was able to assess quite a few RGP's. One of the negatives were that RGP's are very uncomfortable at first, however you get used to it after a while!

What did you learn from the project?

I have learnt how to differentiate between a steep and a flat fit and the characteristics of each fit. I have also learnt the correct fluorescein required which allows you to make a decision of the fit.

Do you think using video clips is a good way to learn?

I think making videos is one of the best ways to learn as it's incredibly helpful and visually seeing a CL's fit really helped me understand RGP's better. Videos are a very useful source to use, especially for students.

How might the resources be utilised in lectures or are they best used in clinical scenario?

Videos would be a very useful source to use in lectures as students will find them very helpful especially after learning about the theory. You're also able to pause a video to explain to students in case they don't understand. Videos are also useful to use in lectures as students are able to visually what the lecturer is talking about.

Report from Miriam Hallak

Why did you want to get involved in this project?

I wanted to get involved to broaden my own knowledge on RGPs and fitting. Also, to allow other students to gain beneficial knowledge on RGP fitting. Finally, because my lecturer kindled my interest in contact lenses with his enthusiasm towards the topic.

How did you hope it might benefit you as a student?

I hoped that it would widen my knowledge on this topic to enable a better assessment of RGP fitting. I wanted this experience to increase my confidence when assessing CL patients.

Comment on the positive and negative aspects of the experience.

The main positive is the increased confidence this experience has given me when assessing CL fits using different parameters. It enabled me to confidently analyse the fit in terms of whether it was steep, flat or aligned. To be honest, there were no negatives of this experience as it was beneficial to myself and others.

What did you learn from the project?

I have learned to carefully assess CL fits and how to choose different parameters to better suit patient needs. I learned to assess movement and what constitutes a normal movement. I learned to use the CL movements to determine what the fit may be. I learned to accurately interpret fluorescein patterns.

Do you think using video clips is a good way to learn?

I definitely believe these video clips are a good way to learn. As a student, I struggled to find good RGP learning resources online to use as a revision tool. They allow students to visualise the different RGP fit for use within clinic. Many students require visual learning resources as it is evident that not everybody learns in the same way.

How might the resources be utilised in lectures or are they best used in clinical scenario?

It could be applicable to both lectures and clinics. In exams we are often told to portray our knowledge on fluorescein patterns, therefore, this is a good tool to allow students to learn the different types of RGP patterns. It would be a key tool in clinical scenarios to prepare students for what they are going to encounter with patients and therefore allow the students to provide alternative CL according to the fit.

Learning Environment and Engagement: your views on the appropriateness and effectiveness of physical spaces for engagement and virtual spaces to enhance learning.

The new camera system (when working) and monitor was highly effective in demonstrating to students the dynamic fits of gas permeable contact lenses on eye and allowed them to visualize an extensive range of fitting patterns which would have taken considerably time in a more traditional clinical session. Students were able to collectively and interactively discuss what they saw on screen engage with the staff member during filming in identifying important features and changes to fits

Given the feedback from student partners presented previously it is clear that they all found the experience a positive one that enhanced their abilities and skills and developed their confidence in this subject area. Overall they are of the opinion that students as whole will engage positively with such videos and these will be available for use in lectures and clinical sessions next academic year as well as through BBLearn and/or other hosting facilities. The fact that we now have a series of video clips means that students can return to these again and again, rather than just seeing a patient on one occasion and thus learn in a more flexible manner in their own time as well as through direct patient contact.

Impact (please provide evidence of the impact on learning and/or teaching)

All student partners have commented positively on the impact the videos had on their learning experience. See responses previously and quotes below from student partners.

"Videos help students especially those who are visual learners. It also makes learning more interesting, especially nowadays with the use of technology growing, it is very useful resource for learning."

"..... built my confidence more. Another positive was watching it on a fellow student numerous times and there were many lenses used so I was able to assess quite a few RGP's."

"I think making videos is one of the best ways to learn as it's incredibly helpful and visually seeing a CL's fit really helped me understand RGP's better. Videos are very useful source to use, especially for students."

"The main positive is the increased confidence this experience has given me when assessing CL fits using different parameters. It enabled me to confidently analyse the fit in terms of whether it was steep, flat or aligned. To be honest, there were no negatives of this experience as it was beneficial to myself and others."

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STRATEGIC DEVELOPMENT

Transferability (consider how this activity might be used by colleagues in other schools/faculties and if it could be developed for a further Faculty interdisciplinary learning project)

Video resources are widely used in many forms of teaching and are particularly suited to visual and clinical subjects where students are required to make observations and judgements as part of their training and practice. In optometry such resources have the potential to be particularly effective and beneficial in situations where students have limited opportunity for real clinical experiences perhaps due to reduced access to patients/ clinics; or where there concerns over them having adequate competence at a particular stage of their training to engage effectively with patients.

With the wide use of tablets and mobile phones and the familiarity with You Tube and other video platforms, students are very much at ease using such mediums and such access permits students to learn in their own time and at their own pace, which appears to be widely favoured. In addition, such access provides opportunity for learning resources to be available to a wider number of students through distance and blended learning mediums.

Dissemination (internal and external) (School and Faculty briefings, workshops, resources developed)

The new videos will be used in a case study based teaching sessions with all 2nd Year students taking module OPT303 Contact Lens Practice and made available to students initially through BBLearn and potentially via other platforms. Subsequently, a further evaluation of resources will be completed via questionnaire.

There is potential for dissemination via suitable Faculty L & T events and/or via CHERP.

Following recent discussions with other optometric educators across the UK there is also potential for resources to be more widely disseminated and evaluated through collaboration with the British Universities Committee of Contact Lens Educators (BUCCLE); a body comprising academic members of staff from all the training institutions in the United Kingdom and Ireland involved in the teaching of contact lenses.

SUPPORTING INFORMATION

<p>References (using Harvard style, list literature and other resources that influenced your work)</p>

<p>Willmot P, Bramhall M & Radley K (2012) Using digital video reporting to inspire and engage students. Higher Education Academy.</p>
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<p>http://www.hestem.ac.uk/sites/default/files/using_digital_video_reporting.pdf</p>
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<p>Farley H, Murphy A, Johnson C et al (2015) How Do Students Use Their Mobile Devices to Support Learning? A Case Study from an Australian Regional University. Journal of Interactive Media, 2015: Vol 1.</p>

<p>http://doi.org/10.5334/jime.ar</p>
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<p>University of Ulster Learning & Teaching Strategy 2013/14-2017/18</p>
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<p>Robert Rainey, Optometry Technician, r.rainey@ulster.ac.uk</p>
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<p>For assistance with technical issues with instrumentation.</p>

<p>Attachments List (attach relevant documents/images in support of project activities)</p>
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<p>Application Learning Landscape Transition Faculty Active Learning Projects</p>

<p>Year 2 Questionnaire Developing Video Resources</p>
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<p>Results Summary Year 2 Questionnaire Developing Video Resources</p>
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<p>Sample Video</p>
