

# A web-based movie library and PeerMark benefits student learning

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## Overview

- We developed a comprehensive and interactive three-tiered web-based movie library of basic and advanced optometric procedures (Figs 1 & 2).
- An integrative on-line peer and self review process using Vimeo and PeerMark (through Turnitin) on LMS was created involving multiple year levels.

## Methodology

### Web-based movie library:

- 71 movies were developed comprising of three tiers: model movies, movies with scripted errors, and student movies. They were conducted by academic staff and filmed by Learning Environments at UoM.
- Students were assessed via theoretical and practical examinations, with and without prior access to the movies in two techniques:
  - History Taking (Practical assessment: 17 item 5-point Likert scale and a 44 item check list; Written assessment: 5 items, 15 marks)
  - Anterior Chamber Depth (ACD) Assessment (Written assessment: 4 items, 14.5 marks).
- Statistical analyses (ANOVA and Levene's test) were used to investigate the impact of the movies on student learning.

### Peer and self review process:

- Students were trained on how to peer and self review by completing an on-line audio-visual tutorial prior to the activity.
- Students videoed themselves performing a clinical technique using their smartphones on tripods. They uploaded their own videos onto Vimeo, created a password, and submitted the link and password as an assignment through Turnitin. A step-by-step guide was created to assist students in this process.
- PeerMark randomly distributed password for students to review the video of a same-year peer. The senior mentors reviewed at least two videos each.
- Rubrics used to evaluate the videos were embedded within PeerMark. Each student had to complete his/her own self and peer review before receiving de-identified peer and mentor feedback.
- Students were surveyed regarding the benefits of both educational tools.

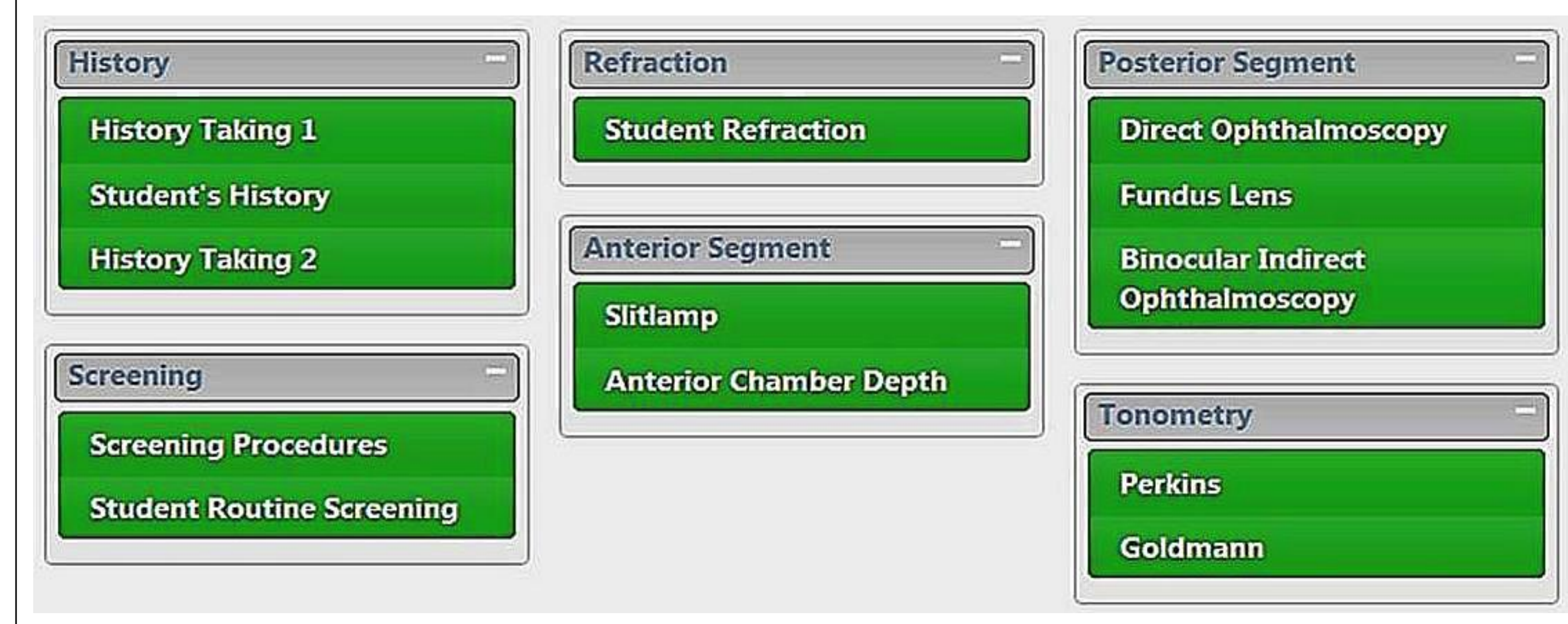


Fig 1. Movies types within the library.

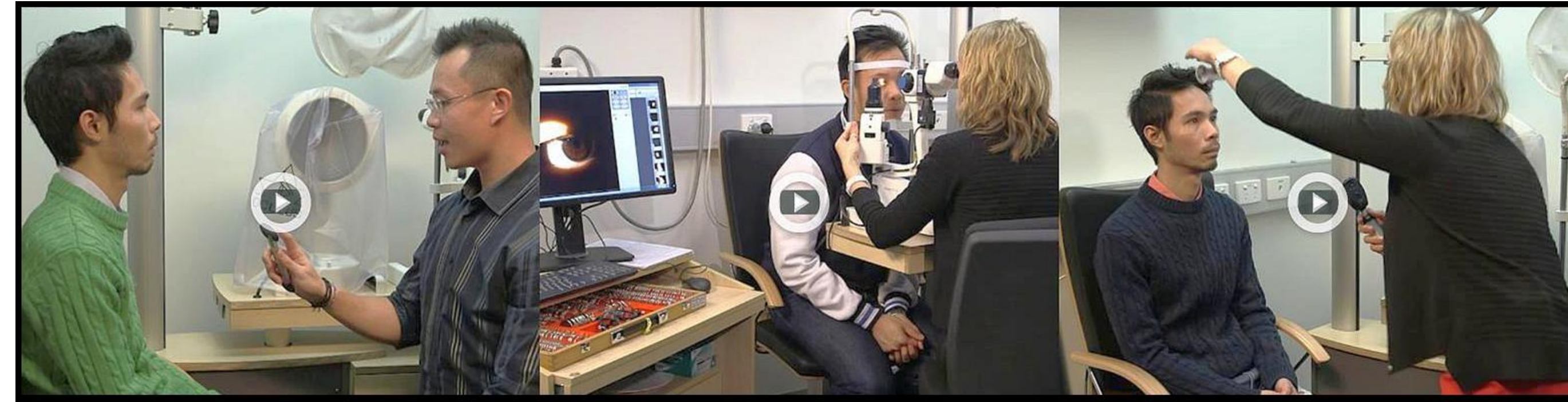


Fig 2. The library home page is made up of mini video clips whereby visitors can view a sample of the movies produced.

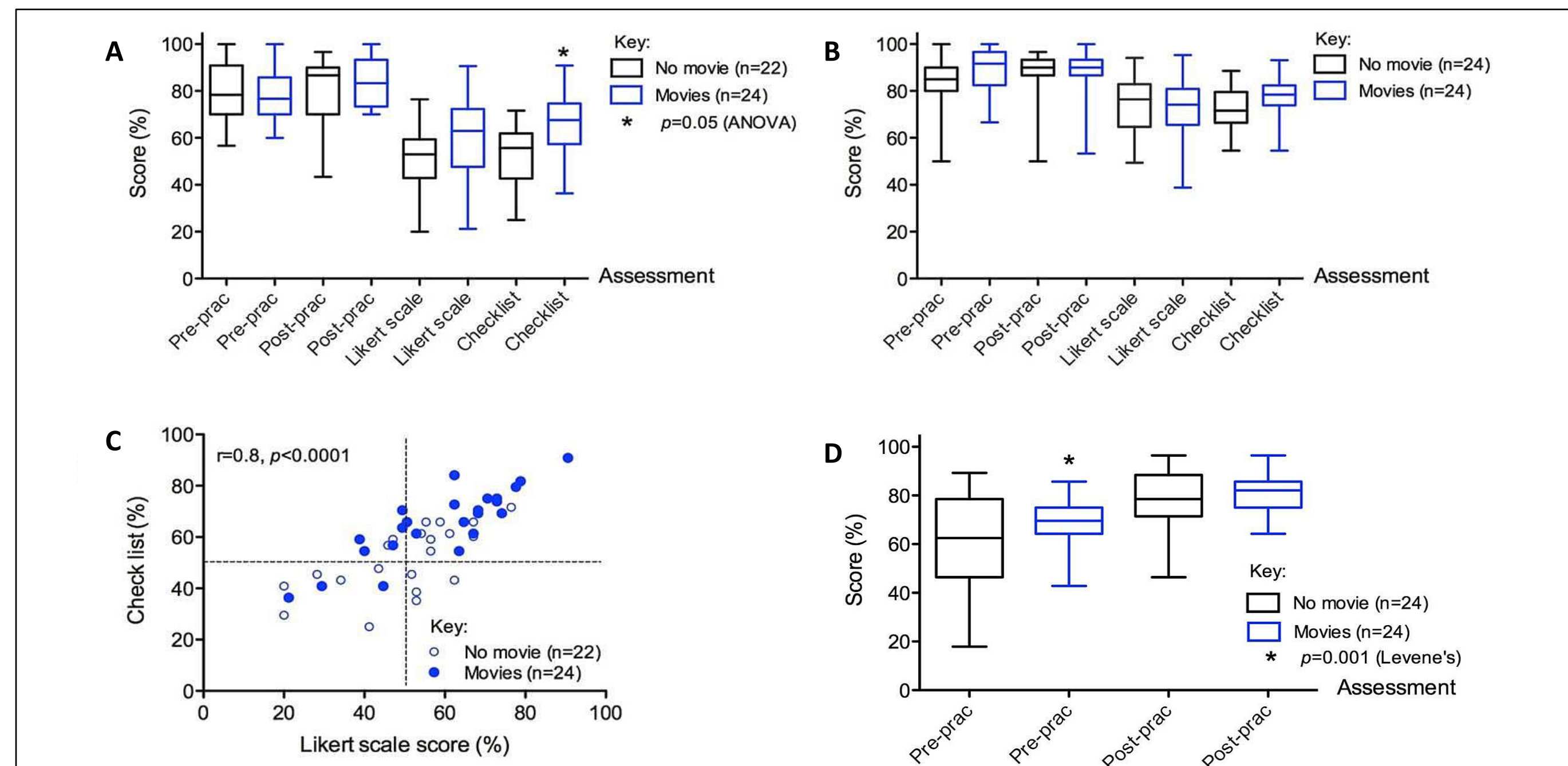


Fig 3: History taking evaluation: A) Students new to history taking achieved higher scores on their written recording of a patient history after watching the movies. B) Students revising history taking did not perform better in assessment after watching the movies. C) Checklist and total Likert scale scores were correlated. D) Students new to ACD measurement demonstrated significantly less spread in their performance in a theory-based written assessment after viewing the movies.

## Evaluation & Outcomes

### Web-based movie library:

- Students new to history taking with access to the movie library scored 14% higher on their written recording of a patient history (n=24, 66 ± 14%) relative to students without access (n=22, 52 ± 13%; ANOVA p=0.05). Written quiz and total Likert scale scores did not vary between groups (Fig 3A).
- Students revising history taking did not score significantly higher in assessment after watching the movies (Fig 3B).
- Total checklist and Likert scale scores (reflecting practical application) were significantly correlated (OD1 r=0.8 p<0.0001, OD2 r=0.6 p<0.0001, Fig 3C), but the written quiz scores were not.
- Students new to examining the eye's ACD demonstrated less spread in assessment performance after watching the movies (n=24; 64 ± 9%) relative to students without access (n=24, 57 ± 19%; var ratio=4.9; Levene's test p=0.001, Fig 3D).
- All students reported that the movies helped them prepare for preclinical training and supplemented their lecture and practical notes.
- More than 90% of students reported that the movies:
  - ✓ Improved their confidence taking and documentation of a patient history.
  - ✓ Made them more aware of professional and unprofessional behaviour, appropriate language, communication and how to take an ideal history.
  - ✓ Improved their confidence and understanding of assessing the ACD using four different methods.
- Only 11% of students found the model movies alone beneficial, highlighting the usefulness of both tiers.

### Peer and self review process:

More than 80% of students strongly agreed or agreed that:

- ✓ They felt prepared for the self and peer review exercise.
- ✓ They had a clear understanding of how to peer and self critique.
- ✓ Reviewing and critiquing both self and a peer's performance helped to identify own strengths and weaknesses in performing clinical techniques.
- ✓ Feedback received from both the same-year and senior peer were useful.

## Discussion & Conclusions

Both educational innovations have increased student-student interactions, promoted self-evaluation and maximised student learning through engagement with teaching and learning resources and peer feedback.

### Web-based movie library:

- The web-based movie library has facilitated and enriched self-directed in-situ and off-site learning, with students achieving greater proficiency in newly learned clinical techniques.
- Movies of simulated clinical procedures better prepared students for class, supplemented their current learning tools, and improved their confidence, understanding and/or awareness regarding the ideal clinical performance of each technique.
- Student access to the movie library should translate to better use of valuable preclinical teaching time and space, with clinical teachers able to spend more one-on-one time with more students in class, and build on skills more efficiently.

### Peer and self review process:

- Students felt prepared and understood the peer and self review process, and reported PeerMark on the LMS was easy to use.
- Peer feedback was valuable, and peer-assisted learning activities should be incorporated into the curriculum.

## Other research interests

- Simulation
- OSCEs using iPads (OptomOSCE App)
- Online Simulated Interactive Case Studies

## Support

- Learning and Teaching Initiative grants at The University of Melbourne