

2:00 PM 1 hour  
P-12

Room 225 A-B  
**Papers: Optometric Education**  
Moderator: Helene M. Kaiser, OD, FAAO, Jean Marie  
Pagani, OD, FAAO

2:00 PM. **STUDENT USE OF THE IPAD IN OPTOMETRIC EDUCATION**  
(120388)

Jay M. Rumsey, OD, FAAO, Chris Woodruff, OD, FAAO, Gregory M. Fecho, OD, Nova  
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**RESULTS:** We analyzed the daily usage logs from the tablet users as follows:

Educational functions: The top three used educational functions were for course notes (60.6%), web references (30.0%) and course corresponding with other students (7.5%). The remaining functions (e-books, podcasts, notes) were used less than 1% for each.

Recreational functions: Top recreational usage was web surfing (35.7%), social media (28.1%) and other non-supplied applications, primarily games (18.1%). Music, e-book and shopping functions were used less than 18% of the total time. Time reported spent daily was: Educational: 2.95 hours Recreational: 1.21 hours Of the iPad apps supplied the most frequently used were: email (28%), web browser (27%), notes (27%), review (7.6%), ebook reader (5.7%), spreadsheet (2.0%) and drawing (1%).

**PURPOSE:** We studied the use of iPad tablets to enhance the education experience for a limited sample of students at Nova Southeastern University - College of Optometry. We are interested in determining the usefulness of new technologies and how to integrate them into our curriculum. We wanted to study technology acceptance and try to adapt educational materials to new formats. Student opinions were gathered on the usefulness of iPad tablets and specific applications (apps) in their studies. Apps that allow the student to take notes over PDFs, download scientific articles, browse the web and email could prove to be useful.

**METHODS:** Five iPads were distributed to optometry students for a period of one semester. Each tablet had a selection of apps the authors believed to be beneficial for student study. Students kept a daily log on their use. At semester's end a survey was distributed to help determine the impact on their educational experience.

**CONCLUSIONS:** In our study we found that: 1. The device usage was primarily (>70%) for education purposes. 2. The greatest benefits were for note taking, organization of study materials and test preparation. 3. All participants agreed that the iPad enhanced the quality of their educational experience.

2:15 PM. **SIMULATED CLINICAL SCENARIOS WITH PATIENT ACTORS**  
**IMPROVES DOCTOR-PATIENT COMMUNICATION SKILLS** (120644)

Michael D. Twa, OD, PhD, FAAO, Heather Anderson, OD, PhD, FAAO, Jack Young, MFA, Danica J. Marrelli, OD, FAAO, D. Rudolph Black, OD, FAAO, University of Houston College of Optometry

**RESULTS:** Students who received enrichment were rated more improved between their first and last encounters using a visual analog scale compared with students who did not receive enrichment (-11% vs +18% P=.04). Students rated themselves more improved

(+79%;  $P < .001$ ) than instructors (+18%;  $P = .04$ ) and patient actors (+31%;  $P = .24$ ) did. Similarly, the proportion of instructors who rated the student as recommended was greater following enrichment (61 vs 94%;  $P < .001$ ). Cumulative survey scores were not significantly different in any group.

**PURPOSE:** Effective doctor-patient communication is highly correlated with better health outcomes and higher patient satisfaction. Here we evaluated student communication skills in simulated patient encounters with patient actors.

**METHODS:** Novice student clinicians were video recorded during encounters with patient actors portraying 5 different clinical scenarios. Students were assigned to either an enrichment group who performed all 5 interactions with instructor feedback following each session ( $n = 6$ ), or a non-enrichment comparison group who performed only the first and last encounters without instructor feedback ( $n = 4$ ). Student performance on first and last encounters were scored using 3 metrics: (1) subjective rating of change in performance between 1st and last encounter using a visual analog scale (anchors: much worse/much better); (2) yes/no response: Would you recommend this doctor to a friend or relative? (3) cumulative score on the American Board of Internal Medicine assessment of doctor communication skills. Scores were provided by patient-actors, students (self-evaluation), and by clinical instructors who were masked to both student group assignment and the order of the encounters that they viewed (e.g. first/last or last/first).

**CONCLUSIONS:** There was measurable improvement in patient communication skills after as few as 5 simulated patient encounters. When compared with ratings from a masked instructor, students generally rated their improvement much higher than clinical instructors.

**ADDITIONAL COMMENTS:** Faculty Development Grant: UH (MT)

## 2:30 PM. **DEVELOPMENT AND EVALUATION OF A NOVEL MORPHING SOFTWARE TO GRADE SLIT LAMP FINDINGS** (120671)

Daniela Oehring, BSc, Wolfgang Sickenberger, MS Optom, Dipl Ing (FH) AO, Ernst Abbe University of Applied Sciences

**RESULTS:** Grade limits were on average: Grade 1 ( $17 \pm 8$ ), 2 ( $39 \pm 8$ ), 3 ( $62 \pm 7$ ) and 4 ( $81 \pm 8$ ). All findings were graded similarly irrespective of whether grading scale or MS was used (t-test paired samples;  $p > 0.667$ ), with exception of corneal neovascularization for which grades were higher when using grading scale (t-test paired sample;  $p = 0.012$ ). Both groups had no significant deviation between grading the actual-scale image with printed scale and MS ( $p = 0.089$  t-test paired samples).

**PURPOSE:** To develop and to evaluate new morphing software for eight different slit lamp findings and to compare the grading results with the new morphing software and with a printed grading scale.

**METHODS:** The morphing software (MS) was coded in ActionScript (V2.8; Adobe Systems). The 8 most common slit lamp findings: bulbar, limbal, tarsal redness, corneal neovascularisation, corneal staining, 3h/9h staining, SICS and polymegathismus were used in the MS based on a novel grading scale (JenVis Contact Lenses Grading Scales). For each finding, 101 images were modified from normal to severe using image editing software (Adobe Photoshop CS4). In the software images were arranged chronologically and converted into a video clip. 67 participants (22 students, 45 professionals) assessed

these findings. Five grades were evaluated. For this purpose, the image number was coded into running time. The participants had to fix the video position where they had identified the limit of the current grade. The study was divided into three phases. First, five actual-scale images were evaluated using grading scale. Second, the limits of grades were determined using MS. Third, actual-scale images were graded by software, too.

**CONCLUSIONS:** New MS was developed to carry out training units which are useful for educational purposes and particularly in clinical research to train different observers to grade uniformly. Limits of grades of findings for morphing software could be determined. Limits are valid and can be integrated in the software.

2:45 PM.      **VALIDATION OF A TEST OF EVIDENCE-BASED PRACTICE KNOWLEDGE AND SKILLS FOR OPTOMETRY (120496)**

Taghreed A. Alnahedh, MOptom, Catherine M. Suttle, Kirsten Challinor, Rachel Thompson, University of New South Wales, School of Optometry and Vision Science, Konrad Pesudovs, PhD, FCLSA, FAAO, Flinders University Optometry and Vision Science

**RESULTS:** EBP-experts scored higher than EBP-novices ( $138 \pm 22$  vs  $97 \pm 13$ ;  $p < 0.001$ ). Person-item mapping showed that item difficulty was high for most novices and experts. Persons were aligned with mid to low level item difficulty, with experts aligned with more difficult items than novices.

**PURPOSE:** Evidence-based practice (EBP) is central to optometric practice, yet no method exists for the assessment of EBP skills and knowledge specific to optometry. The Fresno Test evaluates four of the five steps of EBP and has been validated for several health professions. The purpose of this study was to develop and validate a modified Fresno Test to assess EBP knowledge and skills in optometry practice.

**METHODS:** The Fresno Test for physical therapy was modified to include optometry-specific scenarios and content. An expert panel reviewed the test for content validity. A standardised scoring rubric was developed. Eight EBP-novice and 6 EBP-expert optometrists completed the test. Two masked, trained raters independently scored the responses. The psychometric properties of the modified instrument were evaluated using Rasch analysis.

**CONCLUSIONS:** The modified Fresno Test for optometry shows promise as a test of competency in EBP. Educators may use this tool to evaluate the effectiveness of EBP teaching in optometry curricula.

**ADDITIONAL COMMENTS:** The first author is funded by a grant from the Ministry of Higher Education, Saudi Arabia.