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Scientific Sessions

improvement in scores, there was minimal correlation with CT experience, country of university, year of study, and time taken to complete questionnaires.
Conclusion: The CT simulation tool demonstrates improved student understanding on how CT scan parameters affect patient dose and image quality.

B-1700 14:25
Mapping university skills labs in radiography: students' perspectives
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Purpose: Establishing an effective theory and practice relationship is necessary for every radiography student. The effectiveness of a skills lab (SL) is paramount to ensure student radiographers are prepared for clinical placement (CP). This study will map the perspectives of radiography students regarding the SL.
Methods and Materials: This study was a quantitative one with one qualitative element. A paper-based questionnaire was administered to 26 radiography students from Optimax summer school, who were from seven different countries, and the data were compiled in Excel. The questionnaire contained 3 closed questions concerning demographics, 6 closed questions regarding students' own SL, 3 of which were Likert scale questions, and 1 open question inquiring about how SL could be enhanced, according to students.
Results: Students indicated that a competent lab tutor, smaller group size and simulated patient interaction to be important factors in the SL. Additionally, environmental factors (light, temperature) were less important. Students mentioned that their equipment is of a lower standard than CP, but they also said that they feel well prepared for CP. Students found modern equipment not hugely important.
Conclusion: Students indicate that theoretical and practical skills labs prepare them well for CP. However, they suggest that a competent lab tutor and additional time are important factors in the SL.

B-1701 14:33
Active learning of exposure technique in digital radiography
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Purpose: With increasing evidence of exposure creep in digital radiography, radiography students' understanding of exposure technique in digital radiography becomes paramount. Developing strategies to enhance this understanding is necessary. The purpose of this study was to explore active learning to assist in the understanding of related exposure creep in digital radiography.
Methods and Materials: A demonstration was designed to obtain four x-rays of a phantom hand using a constant kilovoltage, focal film distance, focal spot size, four-sided collimation and using the same computed radiography (CR) cassette. Only the milliampere per second (mAs) was changed for each exposure. Students had to predict the outcome of each exposure prior to the CR cassette being read. After the CR cassette was read, students compared their predicted and the actual outcome. Dose-area products (DAP), exposure indicators and image quality for each exposure were also tabulated. Combining the documented results with theory, students critically evaluated and reported on the effect of mAs in digital radiography.
Results: Students observed that at 120 times the acceptable mAs with 144 times the DAP, a post-processed image would still be diagnostically acceptable. Students found that active learning challenged their understanding of exposure creep in digital radiography. Students predicted outcomes of exposure questioned their comprehension of the theory.
Conclusion: The demonstration allowed students to critically evaluate exposure technique in digital radiography through active learning. It was found to be effective in the understanding of exposure technique, exposure indicators, dose creep and the wide dynamic range in digital radiography.

B-1702 14:41
Integrating CT simulation into radiography undergraduate training
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Purpose: The research will investigate the efficacy of integrating a new open-source CT scan parameter simulator into an undergraduate training programme as an active learning tool. Learning will be assessed across the themes of CT image quality and dose in the context of scan and reconstruction parameters. The use of the CT simulator will allow students to investigate the effects of scan parameter manipulation in a safe environment with no risk to patients.
Methods and Materials: A CT scan parameter simulator has been developed through a collaboration effort involving University College Dublin and the Western Norway University of Applied Sciences. This simulator has been successfully piloted as part of the OPTIMAX Research School 2018 in University College Dublin. A statistically significant improvement in performance was found in the pilot study and ethical approval was given to trial it as part of an overall CT training module in an undergraduate Radiography programme. This semester will see the pilot tested on a cohort of over 50 students where its efficacy as part of an overall training module will now be assessed.
Results: Data from the results of the simulation active learning intervention will be assessed at the end of November using a paired sample T-test to assess if using the CT scan parameter simulation can generate a significant difference in the learning of CT image quality and dose topics.
Conclusion: Results will be available by December 2018 and it is envisaged that this will lead to pan-European trials in 2019.

B-1703 14:49
Peer-assisted learning to improve educational performance in radiography training
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Purpose: During a visit to Sweden in 2017, peer-assisted learning (PAL) was identified as an ideal strategy to address the shortcomings of supervision during clinical placement.
Methods and Materials: To explore the impact of PAL, the first cycle of an action research project was implemented in two undergraduate radiography modules at the Central University of Technology, Bloemfontein, South Africa. PAL was excluded in the first quarter of 2018 in the selected modules. After the first assessment in both modules, 'strong' students were identified to act as the mentors of 'struggling' students. A structured PAL strategy was then implemented during pre-scheduled sessions after each assessment and prior to the following assessment. The performance of mentors and mentees for each consecutive assessment was compared with the performance of the previous assessments to measure the impact of PAL.
Results: The results from the implementation of PAL revealed a significant increase in the students' combined average year-end results when compared to the mid-year results. These results also delivered a p value <0.05, showing a significant difference between mid- and year-end results. Surprisingly, all mentors also showed an increase in their own year-end results.
Conclusion: It is evident from the results that PAL, as an academic advising tool, holds the potential to become an integral part of curricula of programmes including clinical training. Due to the advantages evident from the results, the implementation of PAL in radiography curricula and other health science programmes could assist in enhancing success to previously struggling students.

B-1704 14:57
Factors influencing student radiographers' assessment of chest radiograph image quality
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Purpose: Image quality assessment is a critical part of radiography, with the potential to influence patient radiation dose and outcome. Previous studies have shown cultural influences on image quality assessment. This study aimed to determine whether country of education, percentage of degree completed, or weeks of clinical experience influence student radiographers' decisions to accept or reject chest radiographs, with the goal of understanding what influences might shape attitudes to image quality.
Methods and Materials: 23 radiography students from Ireland, Netherlands, Norway and Switzerland were timed while accepting or rejecting 30 chest radiographs on the basis of image quality. Each participant then gave reasons for any rejections. The total time taken, reject rate and reasons for rejection were compared between students in earlier/later stages of their degrees, with more/less clinical experience, and from different countries using Mann-Whitney U and Kruskal-Wallis tests.
Results: None of clinical experience completed, percentage of degree completed or country of education influenced time taken to view the images ($p>0.05$). Participants with more clinical experience rejected more images than those with less ($p=0.03$). Swiss students rejected significantly fewer images on the basis of "exposure" than Irish ($p=0.04$) or Norwegian ($p=0.03$) students, although overall rejection rates did not differ significantly between countries ($p>0.05$).
Conclusion: Clinical experience influences student radiographers' assessment of chest x-ray image quality in terms of both rejection rates and reasons for rejection of images. Country of education also influenced reasons for rejection. This implies that cultural differences in clinical practice may shape students' behaviours.