ACS 2023 Surgeons and Engineers: A Dialogue on Surgical Simulation Meeting

Research Abstracts

They want Clinical Context and Protocols: Analysis of Engineers' Feedback from a National Segmentation Boot Camp Experience

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Introduction: Segmentation is a key step in the creation of patient centered pre-surgical models. As part of our system wide efforts to provide broad exposure to this critical step, we undertook a national segmentation boot camp (SBC) in April 2022. We surveyed learners as it pertains to the quality of design, conceptual framework, quality of instructors and quality of course experience. We sought to understand differences in reaction to this training event as it pertains to engineers (E) and non-engineers (non-E).

Methods: An anonymous program survey was distributed to all participants of a national two-day SBC. Key questions utilizing a 5-point Likert scale (5=strongly agree) as it pertains to quality of design (stated learning objectives, guidelines for daily activities, aligned activities, delivery methods and technology support), conceptual framework (clinical areas presented and potential future content), quality of instructors and quality of course experience (challenging the learner, appropriate workload, cadaveric lab time, presentation evaluation, software hand-on sessions, safe/effective practice and over all course rating) were asked. Of note, minimal content addressed clinical scenario linked to the segmentation task nor ideal protocol workflow. All participants self-designated if they were engineers (E) in the organization or not (NE). Student's t-test was utilized.

Results: A total of 31 participants (79.9 % of total attendees) responded to the SBC survey. Of these, seventeen (54.8%) self-identified as engineers. There was no statistically significantly difference as it pertains to the quality of the course design, quality of instructors and quality of course experience. E compared to non-E were more likely to react negatively to a lack of clinical scenario (mean Likert score of 3.6 ± 1.4 vs. 4.5 ± 0.8;p=0.03) and minimal segmentation protocols presented (3.8 ± 1.0 vs. 4.6 ± 0.6;p=0.01) respectively.

Conclusions: Our analysis of learners attending a national SBC, self-identified engineer attendees seem to desire clinical context and segmentation protocols when training on segmentation cases. This data should inform educators at the point of care within the 3D Printing space to modify future curricula.