

Integrating Live Broadcast Technology into Medical Education: A Pilot Study in Endoscopy

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Background

Traditional clinical placements are limited by increasing student numbers and restricted access to clinical environments. Integrating live broadcast technology into medical education allows for scalable, real-time observation of procedures without overcrowding. Previous studies show improved engagement, retention, and access to complex cases through streaming technology. This pilot evaluates a live endoscopy broadcast for final-year students using validated education frameworks—the Community of Inquiry (Col) and Kirkpatrick Level 1 models.

Objective

To evaluate the feasibility, acceptability, and perceived educational value of live broadcast endoscopy sessions for undergraduate students through Col and Kirkpatrick frameworks.

Methods

Nine medical students attended a half-day session comprising a pre-brief, contextual teaching on anatomy, indications, pathology, and hands-on endoscope handling.

Six live upper GI procedures were streamed via a Trust-approved CHIP device with real-time commentary and interactive discussion. Students observed in a supervised teaching room with a teaching fellow to facilitate discussion and ensure confidentiality.

All patients provided informed consent.

Anonymous feedback was collected using *Community of Inquiry* (Col) survey and *Kirkpatrick Level 1* questionnaire assessing teaching, social, and cognitive presence, as well as course quality and learning environment.

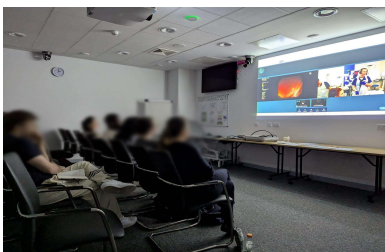


Figure 1 – Students watching live streamed demonstration



Figure 2 – Students practicing with endoscope

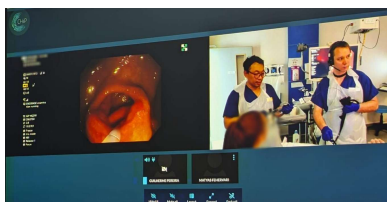
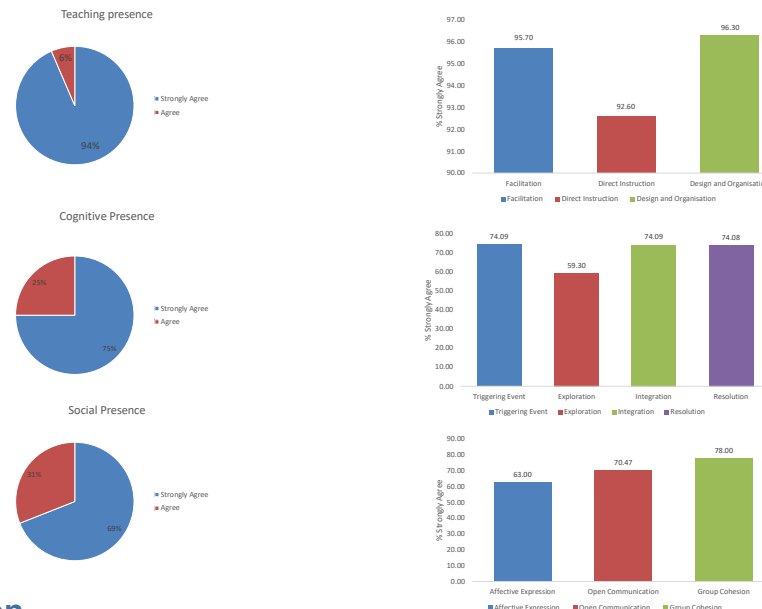


Figure 3 – Chip stream from endoscopy suite

Results

All students (9/9) completed the evaluation. Across 90 scored items, 90% were rated 'Strongly Agree' and 10% 'Agree'. Facilitation (95.7%) and Direct Instruction (92.6%) achieved the highest ratings, confirming clarity of objectives and instructor presence. Resolution (74.1%), Exploration (59.3%), and Affective Expression (63.0%) were lower, suggesting opportunities to enhance interactivity and peer dialogue.



Discussion

Live broadcast endoscopy teaching demonstrated strong teaching presence and high student satisfaction. Students valued clear procedural commentary and visual quality. Moderate scores for Exploration and Affective Expression highlight opportunities to improve interaction through structured peer discussion and integrated Q&A tools. These results align with previous evidence supporting digital scalability in medical education.

Conclusion & Future Directions

Live broadcast endoscopy sessions represent a scalable, safe, and evidence-based approach to expand undergraduate access to clinical learning. Future studies should evaluate long-term knowledge retention and compare outcomes with traditional in-person placements. Integration of dual-location interactive tools may further enhance engagement and cognitive presence.

Acknowledgements

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