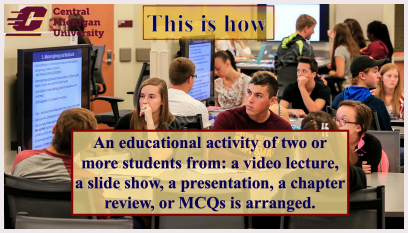
The Impact of COVID-19 on Surgical Education and Distance Education Practices

Connor Shea MS2, Faiz Tuma MD, MME, MDE, EdS, DABS, FRCSC

CMU Central Michigan University | College of Medicine

BACKGROUND

- The COVID-19 pandemic caused a significant impact on medical education.
- Many face-to-face educational activities became difficult after the limitation of healthcare services and the social physical distancing.
- Programs, educators, and students have had to compensate. Distance education using educational technology is a valuable alternative.
- The use of distance education and education technology in medical education is increasing drastically.
- Exploring and examining the extent, depth, and applications of distance education and educational technology helps understanding and guiding the current and future applications as the future is uncertain.



METHODS

- Experiences and applications of distance education during the pandemic will be analyzed based on the principles of education.
- The use of educational technology will formulate a baseline for the effectiveness and practicality of distance education during, and after the pandemic.
- Aligning the educational practices to serve the surgical curriculum objectives and milestones development will then be optimized.

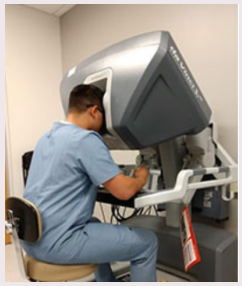
MODELS

- Live streams of non-emergent surgeries with a resident/faculty surgeon moderator to field questions from students attending the session[1].
- Virtual reality simulation models monitored by a supervising surgeon either in the same room or from distance[2].
- Learning surgical skills via cognitive learning which involves watching a recording of a procedure with students and facilitating discussion[2].
- Virtual Conferencing using live communication with students on rounds using platforms such as Microsoft Teams, Zoom, Cisco WebEx, etc.

RESULTS

- The pandemic forced programs and educators to adapt new educational forms in order to compensate for the presented circumstances,
- Shared educational resources have been optimized. Learning objects like video lectures, animations, modules, seminars, and short courses have been extensively integrated.
- Virtual group meetings, lectures, and discussions became widely, conveniently, and practically used and acceptable methods to learn, experience, discuss, and further develop learning schemas.
- The biggest challenge was the hands-on practice of surgical procedures. It requires developing high observational skills, analysis, critical thinking and decision making then executing the necessary steps followed by evaluation of the result.





CONCLUSIONS

- Diverse distance education applications are integrated into surgical education.
- The pandemic enhanced the acceptability and practicality of implementation.
- Re-evaluating the objectives and milestones of surgical education in the vision of the new educational practices need to be considered.

REFERENCES

1. Faiz T, Marar O, Kamel MK, Vance S. Teaching Operative Surgery to Medical Students Using Live Streaming During COVID-19 Pandemic. *Surg Innov*. 2021;28(2):253-254. doi:10.1177/1553350620967242
2. Tuma F, Kamel MK, Shebrain S, Ghanem M, Blebea J. Alternatives surgical training approaches during COVID-19 pandemic. *Ann Med Surg (Lond)*. 2021;62:253-257. doi:10.1016/j.amsu.2021.01.057
3. Images curtesy of https://www.cmich.edu/colleges/med/Pages/