

## Can Online Education Be the New Medical Education in Developing Countries?

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Many institutions were closed initially when the pandemic started. But since it was novel with uncertain duration, they were forced to transition to online education to maintain the continuity of their educational curriculum (1). This unlocked a new world of E-learning for medical education, especially in developing countries. Even after the resumption of normal daily activities, the potential for the role of an online platform in medical education remains a possible opportunity to provide quality education.

Despite overall satisfaction from teachers with a full-time online teaching system, both the local and international students were not pleased with the experience. However, the majority expressed an interest in a hybrid online learning education style. One of the major issues faced by the developing countries was the lack of technological infrastructure (1). Multiple low-income countries, including Ghana, reported factors such as slow speed of internet, lack of connectivity and availability of internet, low quality of videos and images, and constant electrical power shortage being a hindrance to obtaining an education (2). The presence of digital libraries and Wifi resources provided by the respective institutes or government could help solve the technical issues faced by the students (1).

Many nursing students in their clinical years were dissatisfied with the lack of hospital-based patient interactions compared to the non-clinical nursing students in their first and second years taking solely theory-based classes (1). Even though online education cannot replace hands-on clinical experience, it can diversify patient exposure by introducing virtual patients (3). E-learning resources such as videos for surgical methods have also helped students understand and get exposed to unfamiliar procedures, further improving their performance (4).

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A prominent issue students faced was the lack of engagement among the faculty and students. Interactive tools such as quizzes to test the taught knowledge, along with virtual communication using microphones and cameras, would prove beneficial. Also, specific human resources dedicated to establishing regular and constant communication among the students and teachers will help ensure support and increased interactivity (5).

Another significant drawback to online medical education has been the lack of proper online tools training by faculty, staff, and students. Before the pandemic, many medical schools in developing countries did not have a functioning and dedicated Information Technology (IT) department to train faculty staff. Most also followed the traditional physical teaching program lacking any online teaching experience. These issues could be solved by delivering staff with dedicated training courses available for free online or in person. Skilled assessment tools evaluating the technological skills of staff after completing their training should also be provided to maintain the standardization of each individual. Some medical schools with an established IT unit and have successfully implemented online education could share their experience and provide proper guidance to those who do not have the facilities (6).

Despite all the problems associated with e-learning, many advantages still exist. The most significant of that is the ability to enable asynchronous learning. Students have the chance to revisit recorded prior lectures, consequently boosting memory retention and enhancing learning. The cost of traveling, accommodation and other expenses were markedly decreased for students (7). Administrative tasks such as marking attendance, submission, and assignment grading were also eased during online assessment (8).

Although E-learning comes with its many drawbacks, what started as 'emergency remote learning' due to the pandemic, can be harnessed and converted into an opportunity to develop and establish E-learning platforms in medical schools. Combined with the traditional method of education could unlock new dimensions in distant learning that will be invaluable to medical education in developing countries.

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