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Developing a Virtual Global Dermatology Curriculum: Qualitative Analysis Based on a Pilot Study in Ethiopia

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To the Editor: Access to traditional medical training in developing countries may be severely limited due to political instability and the COVID-19 pandemic. Recent studies have demonstrated that virtual dermatology curricula are effective in such resource-limited settings.[1,2] Essentials of Dermatology, a free online dermatology course, led to better examination performance by learners at the University of Gondar, Ethiopia, in comparison to peers who received standard training only.[3] In order to provide recommendations for improving this course and others like it, we conducted a qualitative analysis of participant feedback on virtual curriculum design.

In total, 104 dermatology learners at the University of Gondar completed the virtual dermatology curriculum. Course directors administered surveys to elicit feedback from participants regarding various aspects of the course. Free text survey responses were collected and coded by researchers using direct content analysis with MAXQDA software. A structured codebook was developed with inductive codes including 16 categories of feedback. Codes were then organized to synthesize key themes present.

The most commonly recurring themes of positive feedback included "adequate coverage of core dermatological concepts" (41, 18%), "convenience of self-pacing," (30, 13%), and "greater accessibility due to virtual format" (19, 8%) (Table I). Most commonly recurring themes of negative feedback included "lack of adequate clinical images" (29, 13%), "lack of compatibility with local network connectivity" (23, 10%), "minimally interactive course" (15, 7%), and "difficulties navigating the registration process" (15, 7%).

Further analysis of positive feedback revealed that self-pacing and greater accessibility were helpful in enabling participants to revisit lessons more so than traditional learning methods. Other participants noted that the course's high quality of audio/video and ample opportunities for self-assessment resulted in higher levels of engagement and active learning.

The most significant negative feedback pertained to the need for more images in the course presentations themselves, as opposed to being located in a supplemental course atlas. This finding, along with the request for more interactive course components, highlights important general characteristics of dermatology education and learning preferences. Despite being satisfied with the overall content and delivery of the course, students sought more interaction and visual learning. This finding is consistent with the nature of dermatology as a practice relying heavily upon visual observation. It is also consistent with data suggesting that approximately 80% of medical students report preference for visual learning.[4,5] Finally, the high proportion of participants reporting network issues (10%) suggests that virtual educational tools may benefit from locally hosted (offline) content (Table I).

This qualitative study faces limitations. The virtual curriculum was deployed at a single institution, limiting the range of perspectives captured. Nevertheless, it adds to the limited pool of existing literature on web-based global dermatology education. Given the benefits of self-pacing and greater accessibility, virtual dermatology courses may be enhanced through maximizing images and interactive features and limiting bandwidth requirements.

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Table I. Qualitative feedback excerpts from 96 dermatology learners, categorized by positive and negative theme and subtheme, ordered by frequency encountered

Theme	Subtheme	Definition	Exemplary quote	Frequency (%)
Positive				
	Adequate coverage of core dermatological concepts	This course was useful and appropriately challenging for learners	This course describes dermatological cases and includes useful topics	41 (18)
	Convenience of self-pacing	The ability for students to take the course at their own pace	The best part is that it affords convenience of taking the course at any time	30 (13)
	Greater accessibility due to virtual format	Virtual accessibility of the course provided the ability to learn in preferable locations compared to standard in-person teaching	It is nice how we could use any device and watch it at any time convenient for us	19 (8)
	New experience	This experience was a positive first-time encounter with virtual learning	It is a good starting point for digital learning; it helps to assess the images clearly	13 (6)
	High audio/video quality	The audio and video quality of the virtual course was strong and aided in facilitating a useful learning environment	The images are clear to see, which is an improvement compared to classroom projector	11 (5)
	Opportunity for self-assessment	The ability for students to test themselves allowed for proactive engagement with the course content.	The quizzes throughout the modules were also very helpful	3 (1)
Negative				
	Lack of adequate clinical images	This course needed more clinical images of dermatologic conditions embedded within the lectures themselves	There are no pictures; you have to look it up and they are not available on the slides	29 (13)
	Lack of compatibility with local network connectivity	Local network issues, combined with a lack of sufficient offline content, hindered participation in the course	There were difficulties while accessing modules on different student accounts due to the internet; modules should be available in PowerPoint format to facilitate download and offline reading, just like in-person classes provide resources	23 (10)
	Minimally interactive course	This course was not interactive enough to hold students' attention	Does not capture students' attention when the teachers just read the slides	15 (7)
	Difficulties navigating the registration process	Students encountered issues while attempting to register for the course	Difficult to register and take the pretest for each student	15 (7)
	Technical issues	The platform used to host this course had technical issues, making it difficult to access content	Some students were unable to access the teaching program (not fully functional)	12 (5)
	Too difficult	This course was too advanced to be useful for the students	Far beyond the Ethiopian students' method of learning so was forced to read handouts instead of video;	5 (2)

Table I. Cont'd

Theme	Subtheme	Definition	Exemplary quote	Frequency (%)
	Not enough time	There was not enough time allotted for course completion	More time should be given to complete the course	3 (1)
	Limited user interface	Limitations to user interface resulted in less-than-optimal participation	It would be more convenient if the video had the ability to play at a faster speed	3 (1)
	Excessive content	Too much information on lecture slides made the content difficult to access	The slides are overly congested	2 (1)
	Irrelevant Content	The content was not relevant to the common dermatologic conditions seen in the setting of this institution	The topics were not enough to diagnose and treat common dermatological cases	1 (0.4)

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Conflicts of interest

None disclosed.

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