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## Medical Students' Perception Regarding Ways to Enhance Efficacy of Online Practical Teaching

Ayesha Asad<sup>1\*</sup>, Fatima Asad<sup>2</sup>, Muhammad Hamza Abdullah Khan<sup>2</sup>, Bibi Hajra<sup>3</sup>

<sup>1</sup>Army Medical College, Rawalpindi, Punjab, Pakistan

<sup>2</sup>Ayub Medical College, Abbottabad, Khyber Pakhtunkhwa, Pakistan

<sup>3</sup>Women Medical College, Abbottabad, Khyber Pakhtunkhwa, Pakistan



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### Abstract

Online education has become increasingly important in modern medical education due to its accessibility and scalability. It gained significant traction during the COVID-19 pandemic. However, teaching practical skills virtually presents specific challenges. This study aims to assess medical students' perceptions of online practical sessions and gather strategies to improve virtual skill acquisition. A descriptive cross-sectional study was conducted at Women Medical and Dental College from March to May 2021. A total of 200 medical students from first and second year MBBS/BDS participated. Data were collected via a structured questionnaire distributed through Microsoft Office Forms, using non-probability convenience sampling. Among the 200 respondents, 68% reported difficulty in learning practical skills online. About 76% expressed concern over potential negative impacts on future clinical competence. Multimedia tools (audio, video, graphic) were preferred by 61%. Additionally, 78% of students recommended teachers take breaks to assess understanding, and 98% supported repetition of key points. The DEDICT (Demonstrate, Explain, demonstrate, Imitate, Coach, Test) teaching method was rated effective by 83%, and 80% preferred receiving pre-session demonstration videos. Peer interaction was seen as beneficial by 82% of students, and 55% preferred wanted practical method of teaching over live sessions. A blended learning model was favored by 66%. Students strongly support a blended approach for teaching practical skills. Key strategies include the use of visual aids, repeated content, interactive teaching, and student engagement. These methods can enhance the effectiveness of online practical education.

**Keywords** Medical students, online teaching, medical education, DEDICT

### 1. Introduction

Online education and teaching became an important tool with the increase in demand for affordability and accessibility of education. Online studying can accommodate more pupils and offers flexibility of self-paced learning (1). This mode of teaching became more popular and essential when the COVID pandemic was announced by WHO (2). The rapid shift to online education during the COVID-19 pandemic forced medical institutions to adopt digital tools for both

theoretical and practical learning. All the educational institutions were forced to adopt a virtual mode of teaching. It was the only effective method of continuing education worldwide and limiting spread of disease. There are several multimedia software available for online teaching (3). Along with software performance and user friendliness the size and the subject of the class being taught in selecting the required teaching media. Different teaching methodologies have been advised to aid in smooth learning during the transition from face to face to virtual learning era (4). While online platforms

**Corresponding author at:** Ayesha Asad  
**Email address:** ayeshaasad129@gmail.com

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offer affordability, flexibility, and broader reach, teaching clinical and practical skills—which traditionally rely on physical interaction—remains a significant challenge. One of the main hurdles for medical students was teaching and learning of practical skills online instead of hands on learning (5). Various platforms such as Zoom, Microsoft Teams and Moodle have been used to facilitate online learning. However, the effectiveness of these platforms depends not only on their technical capacity but also on how they are used pedagogically. This study aims to explore student perceptions of the effectiveness of online practical sessions and identify methods to enhance learning outcomes.

The unforeseen shift to online platforms focuses attention on gaps in infrastructure, faculty preparedness, and curriculum adaptability. While theoretical knowledge is conveyed effectively through virtual means, hands-on clinical or laboratory-based training does not translate in the same manner. Students often feel disengaged from the tactual and empirical learning experiences that form the foundation of essential medical education (6). This progression towards online learning platforms exposes how digital education proves inadequate in mirroring the communicative nature of practical sessions. The lack of hands on patient encounters, constrained use of physical models, and delayed instructor feedback diminish the complexity of clinical skill development (7).

## 2. Materials and Method

Women Medical College first- and second-year MBBS and BDS students participated in a cross-sectional descriptive study to find out how they felt about the effectiveness of online instruction. The study's population consisted of all students in the specified academic years who consented to participate; those who declined were excluded. The convenience non-probability sampling method was applied. Data was gathered using a constructed survey that was distributed via Microsoft Office Forms. Before participating in the study, all students were informed of its purpose and requested to verbally consent. SPSS version 23 was used to enter and evaluate the gathered data.

## 3. Results

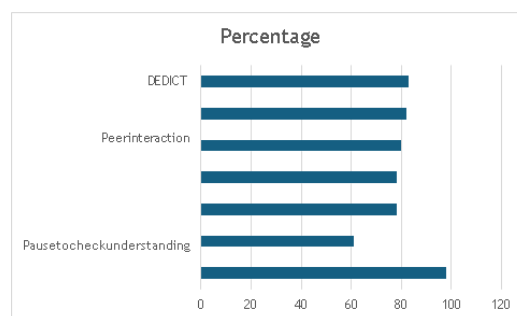
The medical camp was attended by 72 patients. The patients' ages ranged from 2 months to 80 years, with a mean age of 27.19 years (SD=19.51). Of all the patients

attending the medical camp, 26(36.1%) were children. Mean household size was 1.3 (SD=0.48). Majority of villagers were from low socioeconomic status (earning <Rs 10000/ month). Likewise, the majority had Kucha houses 49(68.1%) and only 13(18.1%) had Pacca houses. The people came from multiple villages (14) all around: 16(22.2%) were from Tharyati and 10 (13.9%) belonged to Barahotar proper.

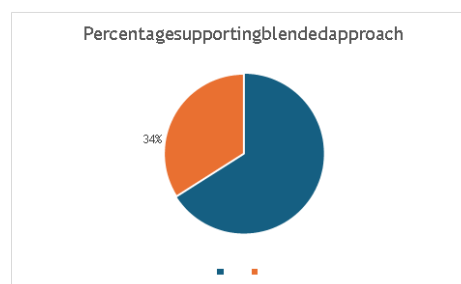
Majority of the people were uneducated 24 (33.3%) whereas 12 (16.7%) had primary education, 16 (22.2%) were Middle pass and 15 (20.8%) had secondary education. Most of the people who attended the camp were unemployed 60(83.3%).

**Table 1:** Showing common perception of students regarding online teaching.

Perception of students	No (%)
Difficulty in learning online	134 (68%)
Concerns for negative impact on future competence	151 (76%)
Too much theoretical content	154 (77%)



**Figure 1:** Percentage of students preferring different methods of Online Teaching



**Figure 2:** Student preferences for blended learning model.

#### 4. Discussion

Our study revealed that 68% (n=134) of MBBS/BDS students had trouble in learning skills through online platforms. This finding aligns with previous research that online learning can be as effective as traditional classroom-based instruction, but challenges remain regarding technology access and social interaction (8).

Additionally, 76% (n=151) of participants expressed concern that this could negatively impact their future clinical competence. A similar concern is shown in literature highlighting the challenges of acquiring clinical skills through virtual teaching methods, which deprive students of direct communication with patients and tutors (9).

Furthermore, a large percentage felt that online practical sessions often focused too much on theoretical content. This perception is consistent with findings from another research that suggest e-learning is effective in increasing clinical skills compared to regular face-to-face learning (10).

Regarding recommendations for enhancing online learning, 61% (n=122) of students suggested using multimedia tools such as videos, images, and audio to enhance understanding. This preference aligns with a previous study that emphasizes the importance of incorporating various multimedia tools to enhance comprehension in online learning environments (11).

Pre-recorded demonstration videos were preferred by 56% and 80% stated that receiving these videos before live sessions improved their ability to follow and understand the content. These findings are similar to a research that showed the utility of pre-recorded videos in skill-based teaching is well-documented, often proving more effective than theoretical instruction alone (12). 83% found the DEDICT method effective in enhancing online practical learning in our study, This finding is consistent with studies that highlight the effectiveness of structured methods like DEDICT in enhancing online practical learning (13).

Furthermore, 78% supported the inclusion of post-lecture quizzes to reinforce learning, and 98% favored the repetition of key points during sessions. These preferences are corroborated by literature supporting the role of formative assessments in improving understanding and academic performance (14, 15) 78%(n=156) also appreciated periodic pauses by the teacher to check for understanding. This appreciation aligns with findings from prior research emphasizing the

importance of teacher presence and interactive activities in online settings.

Regarding interaction and learning models, 82% (n=163) found peer-to-peer interaction beneficial. This finding supports literature emphasizing the educational benefits of student- student interaction in digital environments (16).

Finally, 66% (n=130) preferred a blended learning model combining online teaching with hands-on, small-group demonstrations. This preference is consistent with studies demonstrating that students achieve a better understanding through a hybrid approach that integrates both online and face-to-face components (17).

In summary, our study's findings align with existing literature, highlighting both the challenges and potential solutions in online medical education. Addressing the identified challenges and implementing their commended strategies can enhance the effectiveness of online learning platforms in medical education.

#### 5. Conclusion

Most students expressed concern about the inefficiency of online-only practical training. They recommend adopting interactive strategies using diverse media, ensuring repetition, encouraging peer engagement, and incorporating assessments. A blended approach combining online modules with hands-on sessions was favored. Further research and teacher training are essential to optimize online delivery of practical skills.

**Conflict of interest** The author declares no conflict of interest.

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