

Students' perceptions on distance learning: Problems to be solved in the post COVID-19 era

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Respected Madam, The COVID-19 pandemic has affected medical education worldwide. While some researchers realised the importance of using information technology before the pandemic,¹ online education has progressed, and synchronous or asynchronous distant learning has become widely adopted in medical education.² Accordingly, recent studies have identified factors that promote or inhibit distance learning.^{3,4} Reinhart et al. interviewed fifth-year German medical students studying clinical medicine. They found that the following five significant factors influenced distance learning: "mental wellbeing," "communication," "structure and self-organisation," "technical issues," and "learning and commitment".³ We felt that the study would be transferable and planned a similar study in a medical school.

We interviewed 21 first-year students at Hokkaido University in Japan. We also interviewed 12 third-year and

5 fifth-year students as additional data for reference. The main research question was, "What problems do students face in online education?" With the students' consent, their interviews were recorded and transcribed. The transcribed scripts were fragmented, codified, and organised into categories. The university ethics committee approved this study (approval number 20-003).

Students' problems were divided into four categories:

1. communication and relationship; 2. content suitability; 3. effects on student life; and 4. technology and network (Table). Many parts overlap with the results of the previous study.³ In our research, first year students with weak relationships and fifth-year students enrolled in clinical practice had a negative attitude towards online education. In contrast, third-year students enrolled in medical lectures had a positive attitude.

The previous research⁵ suggested that it is preferable to adopt a blended approach, a combination of distance learning and traditional face-to-face learning, to increase students' satisfaction and learning outcomes. Our results are consistent with the study mentioned above and suggest that lectures or practice using only distance-

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Categories	Explanation about the categories	Examples of students' comments
1. Communication and relationship	Students can neither build interpersonal relationships on social network service nor contact faculties or colleagues directly in a situation where they don't know each other.	"I couldn't make friends, and I was struggling to do the task alone. It was bad that I couldn't easily ask my friends and teachers questions." "To be honest, it's really hard to do a work by talking only with strangers in the SNS classes."
2. Content suitability	Some contents are not suitable for online education, such as experiments, physical education, and practical training. Many homework assignments will be imposed to confirm attendance.	"The task of being forced to watch a video of an unfamiliar man experimenting instead of actually doing by myself is struck by a feeling of meaninglessness." "Many lessons have assignments to confirm attendance, so I had to spend time outside of class."
3. Effect on student life	Student's daily life rhythm is disturbed by the absence of commute, whereas accessibility and time flexibility are advantages. Assigned task will be postponed until a later date.	"Since I can take classes at home, I somehow continue to have a sloppy and lazy life. It's not good that the rhythm of getting up early in the morning breaks down." "Since you can take on-demand lessons at any time, you will accumulate them more and more afterwards."
4. Technology and network	Some students cannot attend classes as unstable Wi-Fi results in disconnection from the network. Some teachers are not accustomed to operating online teaching applications.	"Wi-Fi sometimes lost connection and caused trouble. Some houses don't have Wi-Fi, so it would be better to take measures such as renting out a mobile Wi-Fi router." "There were teachers who were inaudible and had trouble operating the application. They need to get used to the application."

learning may be inadequate in medical education outcomes.

Memon et al.¹ focused on blended learning using learning management systems in Pakistan before the pandemic. Although we don't know why they had recognised its importance in 2018, we strongly agree that blended learning should be promoted and utilised in medical education, especially since this will become the post-pandemic "new normal." With the current pandemic afflicting numerous countries, we expect our research to help improve global medical education in the post-COVID-19 era.

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