Research artikel medical student perspectives about distance learning

by Muhamad Reza Utama Dosen Fk

Research Article

Medical students' perspectives about distance learning during the early period of COVID 19 pandemic: A qualitative study

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Abstract

Medical education throughout the world has experienced significant changes as a consequence of the presence of the COVID-19 pandemic. The Government of Indonesia has instructed physical distancing so that teaching and learning activities, including in the Faculty of Medicine, must be carried out at home with online methods to reduce the risk of COVID distribution. This study aimed to explore undergraduate medical students' perspectives towards distance learning activities during the early period of COVID 19 pandemic at Muhammadiyah Surabaya University - Faculty of Medicine (MSU-FM), Indonesia. This study used a qualitative study design. The students' online survey responses had been done. Thematic analysis based on the Unified Theory of Acceptance and Usage of Technolgy (UTAUT) constructs was done to explore students' perspectives. As the results, students have a positive perspective related to the performance expectancy of several distance learning platforms towards distance learning activities. This factor has been perceived as a factor that support the behavior of the utilization of distance learning activities to increase cognitive involvement towards the whole learning process. However, in this study, other factors conveyed by students limiting their optimal distance learning experiences. In conclusion, students' user experiences must be developed and maintained continuously during this pandemic era. Longitudinal studies that investigate the long-term impact of various specific distance learning methods, assessments, and platforms' usage also needed.

INTRODUCTION

Over the last six months, Covid-19 has relentlessly spread as a pandemic across the world, severely disrupting the lives of the three-quarters of the world population that reside within low- and middle-income countries (LMIC). These economically disadvantaged countries in Latin America, South East Asia, and Sub-Saharan Africa have not previously developed healthcare and medical education systems to respond to the current challenges presented by the pandemic effectively. The major challenge of the COVID-19 pandemic to all countries, including LMIC, has been to their healthcare systems. Before the COVID-19 pandemic in LMIC there was already the combination of high population health demand and insufficient resources, with low numbers of skilled health professionals and medical educators (Cecilio-Fernandes, Parisi, Santos, & Sandars, 2020). In response to the COVID-19 pandemic, most medical schools across the world, including LMIC, have started to rapidly transfer their curricula from face to face to online delivery using (McKimm, Gibbs, Bishop, & Jones, 2020).

Medical education throughout the world has experienced significant changes as a consequence of the presence of the COVID-19 pandemic. The COVID-19 pandemic requires educators around the world to rethink how they can continue to provide high-quality medical education at a time when medical school is in a situation of large-scale social restrictions. When considering the implementation of distance learning within a medical school or program, robust evidence-based research may strengthen one's position when encouraging faculty to remain abreast of technological advances. It will aid in addressing underlying concerns amongst medical faculty who may be resistant to integrating distance learning into teaching practices.

The Government of Indonesia has instructed physical distancing so that teaching and learning activities, including in the Faculty of Medicine, must be carried out at home with online methods to reduce the risk of COVID distribution. 19. Changes in this condition certainly have the potential to have an impact on general learning activities that were initially dominated by face-to-face methods. Therefore this study aims to explore undergraduate medical students' perspectives towards distance learning platform utilization during the early period COVID 19 pandemic at Muhammadiyah Surabaya University - Faculty of Medicine (MSU-FM), Indonesia. The results of this study can be used as a reference material for evaluating distance learning by other Faculties of Medicine & Health Sciences throughout Indonesia.

METHODS

This qualitative study was conducted from early to late July 2020 at the MSU-FM. The research questions to be explored are;

"What are students' perception towards distance learning activities at the Faculty of Medicine, University of Muhammadiyah Surabaya during early period COVID 19 pandemic era?"

The study population included all undergraduate medical students of the MSU-FM from first to final year, both male and female. Inclusion criteria of this study are:

1. Undergraduate medical students who are registered as active student.

2. Undergraduate medical students who are willing to be involved in this research.

3. Undergraduate medical students who are participated in distance learning during the Covid-19 pandemic.

The exclusion criteria of this study are students who are not willing to be involved in the research.

A self-administered questionnaire was provided online to all the students' as a web link. The purpose of the study was explained to all the students and digital consent was obtained from all the participants. The survey's data collection period was done within 5 days. This study has been approved by the ethical review committee of MSU (Certificate number 019/KET/II.3.AU/F/2020).

The existing students start from the class of 2016 to 2019. The total number of students in the MSU-FM is currently around 230 peoples. A number of 189 students completed the questionnaire voluntarily and anonymously. No other personal data other than the class-degree program, gender, students' ID number, and age were collected to avoid re-identifiability of individuals, which would otherwise have been possible because of the small cohorts. The questionnaire included open-ended questions regarding students' perceptions of distance learning activities during this pandemic situation.

Thematic analysis of the survey feedback was carried out in the following order;

a. Coding. Two researchers (ER & ALP) coding all the survey responses. Data, in the form of written testimonials from students that have been collected, were grouped based on gender (M=Male; F= Female), class-degree (A=2019 – D=2016), and time-based order of survey submission (number 1-100 for each class).

Formation of themes and sub-themes. Composition of themes and sub-themes were arranged deductively from the existing definition of factors in the Unified Theory of Usage & Acceptance of Technology (UTAUT) (Venkatesh, Thong, & Xu, 2016)

 by two researchers (MRU & YL). Themes and sub-themes that emerge following the theoretical framework were analyzed more deeply in an iterative way to answer predetermined research questions through two sessions of online meetings among all researchers. The data processing software used in this research is Microsoft Excel 2016 and Atlas.ti.

RESULTS

Students have a positive perspective related to distance learning performance expectancy. This factor has been perceived as a factor that supports the behavior of the use of distance learning to increase cognitive involvement in the learning process. However, in this study, other factors such as; effort expectancy, social influences, facilitating conditions, intention to use, and previous experience conveyed by students limiting their optimal use of current distance learning platform.

The following themes were found from thematic analysis of undergraduate medical students' perspectives towards distance learning platform utilization during early 4 months period (March-June) of full distance learning activities at Muhammadiyah Surabaya University - Faculty of Medicine (MSU-FM);

Intention to utilize distance learning depends on quality of the learning media and previous learning experience.

Students' intention to use distance learning platforms (such as moodle-based e-learning, video conferencing, social networks, etc.) depends on the quality of the learning materials' design and format that had been provided on it. Students prefer optimized multimedia than regular text-only PowerPoint slides. The previous direct hands-on learning experience in the practice of medical skills has become a standard of satisfaction for students' psychomotor education activities. Meanwhile, the current online approach on learning medical skills which were delivered through distance learning at homes/ dormitories has brought difficulties, challenges, sense of doubt and uncertainty due to limitations of their training resources.

"... for people like me who have problems with continuously changing learning styles/method, the video becomes a safe enough learning resource to study medical topics, especially if the video content is made interesting." [MA11]

"I personally feel very dissatisfied with PowerPoin that had been given to us through the e-learning platform because it is difficult to understand, especially those PowerPoin that has a lot of pictures and abbreviations. Honestly, it is very confusing. My suggestion is that PowerPoin should be equipped with an explanation video or maybe enhanced by voice-over input on the PowerPoint. Maybe by that, we more interested in visiting e-learning more often" [MC07]

"For the skills lab, it is unfortunate because of the lack of adequate infrastructure or facilities in the home. Those obstacles make us hampered in the application of certain skill topics. It is because basically, the skills lab aims to train our' skills in the medical field, whereas, with the current situation, the lack of practice quality makes us confused and doubting its application in the real world. However, the skills lab' introduction lecture can still be carried out by providing online materials through recorded-demonstration video or PowerPoint with voice over or live streaming video conference" [FD24]

The performance expectancy of several distance learning platforms usages had positive influences on distance learning activities.

Students' were giving positive feedback about the utilization of several distance learning platforms. A few platforms were acknowledged as more convenient and suitable to be used when compared to features on a moodle-based e-learning platform.

"PowerPoint should be inputted with audio to explain difficult terms, charts, and images that are in it. There should still be Q & A sessions/forums using recorded/ streamed videos other than Q&A forums in e-learning. The e-learning application we used today needs to be upgraded, so we don't need to refresh the web page continuously, especially if we want to update information"[MB05]

"For tutorials using video conferencing apps, it can help replace face-to-face meetings with tutors because what is expected from the tutorial is that students are able to have active discussions to find solutions to existing problems. So I think with the presence of video conferencing, you can still run the tutorial "[FC03]

"Online tutorials are useful. Using WhatsApp for the first meeting is more convenient, and the response is faster than using e-learning chats/ forums. During the second meeting, it was easier for us to understand the findings and discussion with the use of Webex / Zoom / other online meeting tools compared to the use of e-learning discussion forums "[MC11]

Effort expectancy of several distance learning platforms usages had less positive influences on distance learning activities.

Students' were giving less positive feedback towards the effort expectancy of several distance learning platforms utilization, especially when it comes to internet speed, bandwidth, and cost. A few platforms, which were recognized as more convenient and more suitable to facilitate learning activities when compared to the moodle-based e-learning platform, have been reported to be cost-dependent to get higher quality performance.

"Skills lab needs a recorded-video to explain detail practical steps. Because when using video conferencing platforms (Zoom / Webex) the problem is that the student's internet connection

is not always good (so the information received at the session is interrupted, and learning becomes ineffective). Besides, not all students have WiFi. On the other hand, Zoom / Webex is very much draining student internet quota"[FD17]

"In carrying out the skills lab ... it needs a smooth connection while the WiFi connection at home is very unpredictable. So sometimes it is necessary to prepare an extra modem to backup the internet supply. "[FA30]

"... but internet signals in my area are difficult to obtain and there is no WiFi at home. I often have to reconnect when a tutorial or skills lab takes place."[MB12]

Facilitating conditions of independent learning, professionalism, & soft skills through distance learning activities were need to be improved

Students perceive formative assignments given in the form of quizzes as an ineffective additional learning burden in terms of duration and scheduling aspects. Some aspects of competence, such as professionalism, ethics, soft-skills, and empathy, are challenging to practice and develop in distance learning situations during this pandemic.

"... it is expected that the assignments can be reduced because by giving quite a lot of assignments and sometimes the collection deadline is very short, making students overwhelmed and more focused on the assignment compared to exploring the material independently after expert lecture takes place. The reality in the field many students are only stunned to search for answers that are makeshift with short time ... because each student has a different pace and style." [FC14]

"... reduce the number of daily quizzes, especially those that require us to work late, because sometimes we have to prioritize these quizzes rather than to study independently ... I

have to pay attention to my sleep during this pandemic."[MA07]

"... the professionalism, confidence, ethics, and empathy cannot be seen and taught optimally in the current conditions."[MD06]

Social influences were inhibiting the optimum usage of some platforms on distance learning activities.

Students' were reporting their adjustment towards shifting into an informal learning environment. Some of them felt their current informal learning environment not yet conducive for them to achieve optimal study.

"Online tutorials using either Webex or zoom can indeed help, but not every individual can focus on online learning when they are at home or not face to face directly, many have seen in some of my friends."[FB18]

"... for example, on the topic of history taking, probandus must understand the contents of the scenario, the family/people in the house/ boarding house will not be competent in this matter"[MA02]

DISCUSSION

In general, distance learning in the context of health professional education has been known to produce positive academic outcomes (Bernard, Borokhovski, Schmid, Tamim, & Abrami, 2014; De Leeuw, Walsh, Westerman, & Scheele, 2018; Fawns, Jones, & Aitken, 2020; Pusponegoro, Soebadi, & Surya, 2015; Taylor et al., 2020)

Six months since the pandemic begin, students' intention towards distance learning and the use of distance learning platforms at MSU–FM still needed to be developed. Attitude and behavioral shifting from just fulfilling academic obligations into independent intentions to optimally use distance learning must be directed and maintained continuously

during this early adaptation phase. Improving the quality of learning media and engagement towards daily learning activities as needed in order tho achieved that shift.

During this fully online shifting period, our school has been faced with several challenges. Our first challenge was the difficulty in monitoring student engagement. Any online video-conferencing program has its limits on the maximum number of participants that could be viewed on a single screen, and we were unable to see the whole class at a glance. Even if the student is visible on the video-conferencing program, the ability to determine the student's focused attention and full engagement remained elusive. The lack of clear visibility on students' learning behavior could also challenge faculty's ability to monitor student's wellbeing and professionalism, especially in assessment activities.

Our second challenge was that internet connectivity and technological literacy problems hindered the smooth implementation of online courses. Online courses (especially tutorials, skills practices, and any other form of psychomotor activity) in our institution are heavily dependent on the use of multiple technologies and platforms. These include video-conferencing tools, test-taking platforms, and a live shared document for students to discuss pertinent topics to the session. Participants (students and faculty) are expected to have a degree of proficiency in the use of these platforms. The rapid transitioning to online learning made it challenging to ensure all participants were fully prepared beforehand.

Those challenges were coherent with findings from intention to use, previous experiences, performance expectancy, and effort expectancy theme, which has led to the need of our students' on the usage of other distance learning platforms or social media as a learning platform. These findings also emphasized the importance of ethical education and professionalism in the digital learning environment for medical students, which were also stated in facilitating conditions theme. Previous studies before the pandemic situation also acknowledge that the use of those supporting media should also be balanced by the improvement of students' and facilitators' digital literacy skills (O'Doherty et al., 2018; Thorell, Fridorff-Jens, Lassen, Lange, & Kayser, 2015). Related to this, several skills that need to be developed including; productive and constructive behavior in providing feedback at the digital environment, the ability to manage information and feedback in a professional manner, and the development of professional identity from the virtual community of practice (O'Doherty et al., 2018; Mesko et al., 2015; Siddiq et al., 2017; O ,Regan et al., 2018).

Facilitating conditions are things that need to be developed in detail by instructors and instructional design developers. Although learning content has been given on schedule, several aspects such as the balance of the duration of online and off-line quizzes as well as the lack of quality and quantity of multimedia teaching materials, have been reported by students in this study as obstacles to achieving optimal learning outcomes. Thus, the need for a balanced schedule of quizzes/ games (gamification) to optimizing effective spaced-repetition is needed and must be designed contextually based on students' characteristics, lecturers, and learning objectives (Cook, Levinson, & Garside, 2010; Lau, 2014)

The utilization of other distance learning platforms/ social media/ third party applications is also needed to be developed and must be monitored through rigorous learning analytics (McKimm et al., 2020; Samarasekera et al., 2020; Tang et al., 2018; Utama, Yuliawan, Suhoyo, & Doni, 2020).

In the face of this substantial disruption in the clinical and academic learning environments, Hall et al. (2020) stated that students would undoubtedly require an increase in attention to individualized learning plans and longitudinal coaching. Engaging with coaches or academic advisors can help programs to detect impending or active problems in current learning environments or situations and then enhance the situation to find adaptations or solutions. The core features of a coaching relationship include a shared orientation towards growth and development, ongoing reflection, and an embrace of failure (or difficulty in our case) as a catalyst for learning. Engaging with a coach or academic advisor (virtually or in-person) to generate an effective individualized learning plan can help learners focus on pursuing key potential learning activities and acquiring necessary assessments rather than struggling with the difficulties. This may mean more frequent meetings and regular check-ins with program directors, academic advisors, or other assigned coach/mentor figures to jointly ensure trainees are on the right track (Hall et al., 2020)

Factors affecting students' and facilitators' resilience towards daily learning activity, which were affected by the pandemic situation also should be considered and maintained carefully. Resilience in the health professional depends on the dynamic process of interaction between individual factors, environment, and coping strategies, as well as deliberate interventions to improve one's resilience (Huey & Palaganas, 2020).

Technical problems, domestic obligations, changing daily routines, and many other forms of behavioral adaptation would become barriers to achieve optimal positive adaptation. Several interventions by school management system such; mindfulness programs, work/ study-life balance activity programs, resiliency workshops, and many other forms could be adapted to enhance resiliency and engagement towards daily learning activities (Huey & Palaganas, 2020; Kangas-Dick & O'Shaughnessy, 2020).

Our program anticipates that the disruption caused by COVID-19 will eventually lessen or end. It is important that we have to prepare for this post-pandemic period of education and clinical catch up with a plan to help and support students in their quest to be competent and independent practitioners. This will be the time to refocus on medical education. During the pandemic disruption, students may have missed or had variable training experiences. Our Medical Education Unit already plans several movements to assure readiness for the post-pandemic period. Enhance and maintain students' and faculties' engagement/ empowerment along this process will be key as priorities during this time of disruption. A view of those plans are;

1) Periodically deploy a survey to update socio-economical and health status of each students & faculties;

2) Periodically deploy a survey to update students' and faculties' facilitiating learning needs & experiences;

3) Complete a detailed review of each student's progress in attaining competencies and training experiences through students' digital portfolio;

4) Revamp and updated the schedule both broadly and individually for students together with academic coach and program's directors;

5) Develop a student support sub-unit which puts attention on student's customized coaching or mentoring needs and also collaborate with them in organizing self-development/ improvement online sessions.

It is also important for programs to anticipate the ongoing impact of COVID-19. There will be pressure to manage the immense backlog of practical and medical skill achievements or comprehensive procedural-related assessments caused by the pandemic. There may also be increasing pressure to limit student involvement in procedures in the interest of efficiency. In this situation, every program will need to consider innovative ways to maintain casual training while balancing economic demands to ensure the acquisition of competencies. For example, we may use student-specific learning goals based on entrustable professional activities to direct a student's involvement in a procedure to a specific part of the task. Programs should also explore additional possible training sites (including on community-based/ family practices education) to avoid student crowding and improve individual training experiences.

Finally, with its own unique contextual characteristics, there are opportunities to collaborate and share resources from each diverse undergraduate medical program in Indonesia. Inter-regional featured-lecturer, international guest speaker/ panelist, shared-digital learning resources/ repositories through open resource facilities, national/ international massive open-online courses which approved/ recognized as electives curriculum, etc. are few ideas of collaboration movements. By these movements, students' learning experiences could be enriched through shared-resources, shared-experiences, and virtual or digital collaborative learning activities among various medical programs in the midst of current limitation.

CONCLUSION

Most studies around distance learning in Indonesia only focus on one learning module/ topic or restricted by the contextuality of one medical program/ faculty. Therefore, generalization becomes a problem in itself. The researcher recommends implementing large-scale implementation studies from other educational institutions to look for evidence of generalization.

Longitudinal studies that investigate the long-term impact of using distance learning also need to be conducted. However, if all learning programs are redesigned by integrating flipped-classroom/ blended-learning with the utilization of various distance learning platforms for each block/ module, then the adequacy of the time allocation to adequately prepare themselves from the instructors, students, and all stakeholders involved needs to be evaluated. Besides, to achieve this, longitudinal assessment techniques that are able to measure the dynamics of changes in clinical reasoning, the level of cognitive engagement, and changes in behavior towards the learning process in the digital learning environment need to be developed first. In addition, issues surrounding the validity and reliability of online exams need to be prepared and evaluated.

The use of various learning methods, other distance learning platforms, usage of social media as main/ supporting media, and third-party applications for learning analytics, both separately and as a combination of components in the digital learning environment, needs to be explored continuously. By using quasi-experimental designs, a comparative study between all of them can identify the effectiveness and impact of continuously growing learning methods and media on medical students' outcomes.

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