Research Article

Assessment of Online Learning Readiness Among MBBS Students: A Correlational Study

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Abstract

Background: During COVID-19 in Pakistan, regarding education, faculty and students faced numerous challenges such as no faculty training program, lack of well-equipped IT departments, the engagement of online learners, low bandwidth issues and internet connectivity.

Objective: To evaluate online learning preparedness, focusing on self-directed learning, computer and internet self-efficacy, online communication self-efficacy, learner control, and motivation for learning. This study findings provide critical insight especially concerning learner control and self-directed learning in context of online education.

Methods: This study is a correlational study employing a convenient sampling technique to select 257 participants from the MBBS student population of all professional years who were actively engaged in online education at Rashid Latif Medical College during February to July 2023. The validated open access questionnaire for Online Learning Readiness Scale (OLRS) was used. Moreover, to determine the relationship between learner control and self-directed learning as well as between these two factors and motivation to learn, the Pearson correlational coefficient was utilized.

Results: Most students exhibited computer and internet self-efficacy (65.3%), self-directed learning (60.2%), and motivation for learning (82.4%). Learner control positively correlated with self-directed learning (r=0.343**), as well as self-directed learning with motivation for learning (r=0.339**).

Conclusion: Online learning readiness can be improved by increasing learner control and self-directed learning. For effective online education to be possible even in emergency situations, policymakers and institutions should concentrate on infrastructure, training, and support systems. Training should be focused on developing learner control and goal setting for academic achievement.

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Keywords | Online Learning Readiness, Learner Control, Computer and Internet Self-efficacy, Motivation for Learning, Self-directed Learning,

Introduction

The Transition to Online education was equally difficult in the Asian nation just like other countries globally in times of chaos throughout the pandemic of COVID-19. In Pakistan, as a developing country, some

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challenges were exclusive, including least focus on the faculty training program, lack of well-equipped IT departments, the engagement of online learners, low bandwidth issues and internet connectivity.[1] The most important factor in determining the success of e-learning is readiness of learner for online education. Warner Christie and Choy proposed the theoretical underpinning for the readiness of online learning.[2] Hung et al discussed that learners' preparedness for e-learning can be assessed in many dimensions. He conducted mixed-method research on five online courses from three uni-versities to develop and validate online learning readiness. For this purpose, five dimensions were kept in mind[3] (Figure 1).

Figure 1: *Five domains of Online Learning Readiness Scale by Hung et al*.

The idea of a self-directed learner came into light by Knowles in 1975 where he defines self-directed learning as "a process in which individual takes initiative in understanding their learning needs, establishing learning goals and evaluating learning outcomes". Further Guglie constructed a self-directed learning readiness scale (SDLRS).[4] People who can't figure out how to learn and who can't coordinate their learning methodology fall behind goal-directed people. Problem-based learning requires a person to be a self-directed learner.[5,6] Self-efficacy is explained as one's belief in own capability to execute a particular behavior.[7] The Universal theory of adaptation of technology posits that online learning readiness depends on how early the user adapts the e-learning technology.[8] Kalkan defines computer self-efficacy as "an individual's perception of the ability to usability of computer skills in execution of practical work". In other words; it's a judgment of a person towards the utilization of computers.[9,10] If students are proficient in using computers to facilitate their learning process and have a more positive approach, then they are more inclined to accept online learning.[11]

Students' eagerness to engage with peers and teachers through electronic communication is an important key to students' ability to ensure self-sufficiency in online learning. A study including 305 participants explored that in comparison to female students, male students had high level of preparedness for hybrid learning because they have significantly greater online communication self-efficacy. The impeding effect of academic distractions has progressively increased due to multi-tasking on social media and a lack of learner control.[12,13]

Strict lockdown during this COVID-19 crisis not only compromised students' psychomotor domain but also deteriorated their mental health and motivation for learning.[14] This study fills a literature gap in MBBS students' readiness for online learning by re-examining five dimensions of online learning readiness. This study advocates the improvement in factors hindering online learning readiness. The objective was to find online learning readiness in medical students of Rashid Latif Medical College and to find a correlation between learner control and self-directed learning, and between self-directed learning and motivation for learning.

Methods

This cross-sectional study was conducted at Rashid Latif Medical College Lahore after getting ethical approval from the institutional review board (IRB/2023/101). A convenient sampling technique was used. The sample size of 257 MBBS students (exposed to online teaching and learning) was calculated with the help of a sample size calculator with 95% confidence and a 5 % margin of error having with the population size (MBBS students) of the institute is 750. Google Classroom

was utilized as an online learning platform and online classes were conducted via Google Meet. The data was collected by distributing e-questionnaire via email addresses among students of all professional years after taking consent with 15 days allotted time for responses. The questionnaire was self-administrated. A reminder was sent out one week after the initial circulation of the questionnaire. The OLRS (online learning readiness scale) comprises 18 items which consist of five domains which are mentioned in Figure no. 1. In the OLRS questionnaire, the Likert scale for agreement was used in which it is rated from strongly disagree to strongly agree[1-5] by Hung. Internal consistency of the questionnaire was sought by Cronbach alpha and sample adequacy was tested using Kaiser-Meyer-Olkin Measure of Sampling Adequacy (KMO).

Results

The SPSS 24.0 version was used for data analysis and the significance level was adopted as $p < 0.05$. In the results, the quantitative variables are presented in frequency and percentages. The Pearson correlation coefficient was used to find correlation between learner control and self-directed learning, and correlation between Self-directed learning and motivation for learning.

Table No. 1 reveals the demographic details of the study participants. There is a discernible gender distribution, and age variation among the 257 responders belonging to different professional years.

Reliability of the OLRS questionnaire (Cronbach alpha) came out to be 0.875. KMO test for sample adequacy value resulted 0.858, which indicates a high level of sampling adequacy. Table no. 2 shows responses of students on statements of OLRS questionnaire. Of the 257 participants, 39 (15.3%) people strongly disagreed, while 167 (65.3%) participants expressed agreement with this statement about their self-efficacy with computers and the internet. Among them, 37 (14.41%) of the participants disagreed with the assertion that they are good self-directed learners, while 155 (60.2%) agreed to be self-directed learner. In this group, 126 (50.02%) participants agreed that they have control over their online learning experience, whereas 66 (26%) disagreed. Out of the total, 124 (48.4%) individuals agreed that they have self-efficacy in online communication, while 55 (21.2%) disagreed. 48 (18.6%) people disagreed with this statement, which was endorsed by 212 (82.4%) participants, who said they were motivated to learn online. So concisely, motivation to learning (82.4%) is highest ranked domain of online learning readiness while lowest ranked domain was self-efficacy in online communication (48.4%) in our participating students.

Table 1: *Demographic Characteristics of participants*

Demographic variables	Frequency	Percentage
Female	169	65.8%
Male	88	34.2%
Age(Years)	**Mean ± SD** 21.12±1.54	
Age		
15-20	95	(37%)
21-25	161	(63.2%)
26-30	1	(.38%)
Professional Years		
1st year	53	(20.6%)
2nd year	84	(32.7%)
3rd year	18	(7.0%)
4th year	86	(33.5%)
Final year	16	(6.2%)

As we explored the relationship between "Learner Control" and "Self-Directed Learning" a moderately positive correlation between these two variables is shown by the Pearson correlation coefficient, which is r= 0.343**. This correlation appears to be extremely significant at level (p-value) of 0.000. Simply said, self-directed learning improves as learner control does. This suggests that people tend to engage in self-directed learning behaviors more actively when they feel like they have more control over their learning and aren't being distracted by social media while learning online.

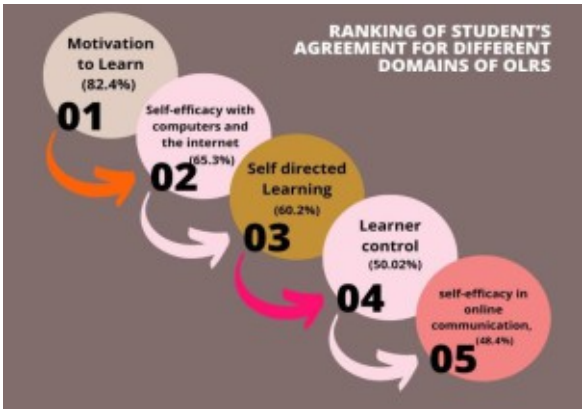

Figure 2: *Ranking of students' agreement for different domains of online learning readiness scale*

Following that, the relationship between "Self-Directed

Learning" and "Motivation for Learning" was examined. The Pearson correlation value in this case is 0.339**, which shows a moderately positive correlation. Once again, the significance level of 0.000 is very significant. This research implies that learning motivation tends to rise along with self-directed learning. It suggests that people who actively seek knowledge and take control of their learning process are more likely to be motivated to study.

In a nutshell, these relationships imply that encouraging learner control and self-directed learning may improve students' willingness to learn in online courses. Though correlation does not necessarily imply causality, it is crucial to keep in mind that further research is required to demonstrate causal linkages. Nevertheless, these findings provide insightful information about the dynamics of readiness for online learning.

Table 2: *Correlation between self-directed learning and learner control, and self-directed learning motivation to learn*

		Learner control	Self-directed learning
Learner control	Pearson Correlation	1	.343**
	Sig. (2-tailed)		.000
	N	257	257
Self-directed learning	Pearson Correlation	.343**	1
	Sig. (2-tailed)	.000	
	N	257	257
		Self-directed learning	**Motivation for learning**
self-directed learning	Pearson Correlation	1	.339**
	Sig. (2-tailed)		.000
	N	257	257
Motivation for learning	Pearson Correlation	.339**	1
	Sig. (2-tailed)	.000	
	N	257	257

Discussion

In this study, we explored the readiness of MBBS students for online learning, considering dimensions such as self-directed learning, computer and internet self-efficacy, online communication self-efficacy, learner control, and motivation for learning within the context of online education.

Our study revealed a high agreement of students for Self-directed learning. Moreover, there is a moderate positive correlation between learner control and self-directed learning. A study carried out at universiti Kuala Lumpur using a quasi-experimental design with un-equivalent groups to find association between self-control or learner control and self-directed learning, focusing on two distinct semester cohorts as control (n=24) and intervention groups (n=30) with first year nursing students as participants. The control group was taught by face-to-face lectures and practical work, while the intervention group received online lectures, animated videos, and e-books. Self-directed learning readiness scale was used for data collection. Results revealed that intervention group (with blended learning, i.e. online and on campus) revealed high score of self-directed learning and self-control. Blended learning was found to enhance self-management and self-control. This study augmented the results in our inquiry executed for online learning readiness regarding learner control.[15]

Our findings reveal some interesting insights into the landscape of online education readiness among medical students in Pakistan. Firstly, it is noteworthy that majority of students agreed to have computer internet self-efficacy which aligns with the idea that students who are proficient in using technology for learning are more inclined to accept and benefit from online education. In a systematic review that collected and analyzed factors influencing the online learning included 25 relevant quasi-experimental studies out of 2174 search results. The results revealed that computer experience, computer playfulness, and e-learning system self-efficacy can improve self-efficacy in online learning.[16,17]

A positive attitude towards computer self-efficacy can enhance the realization of the advantages of e-learning. A study conducted at HEC recognized universities of Pakistan with sample size of 340 university students, acknowledges that motivation for online learning was the top-ranked dimension of OLR (mean score of 3.88). Pearson's correlation showed positive and significant correlations between OLR dimensions. The learner control was the lowest-ranked dimension. Computer/internet self-efficacy strongly correlated with self-directed learning, motivation for learning, and online communication self-efficacy. It underscores the importance of factors such as motivation for learning and computer/internet self-efficacy, which were also highlighted in our study.[18]

Moreover, our study accentuates the importance of learner control over their online learning experience. A mixed method study by Chan et al at New Zealand University on 75 participants enrolled in online course precisely focused on learner control and online learning readiness among students. A scatter plot unveiled a positive correlation between learner control and online learning self-efficacy. The correlation suggested that heightened learner control correlates with increased online learning self-efficacy. Potential explanations include learner control enabling tailored learning activities, fostering motivation, and providing opportunities for skill practice and feedback. Factors like prior online learning experience and personality traits may influence learner control. Our study complements theirs by stressing the significance of self-directed learning and learner control. Together, these studies suggest that a holistic approach is essential to report the unique readiness challenges in medical education.[19]

Furthermore, the positive relationship between self-directed learning and motivation for learning is a substantial finding. It suggests that students who take initiative in setting their learning goals and plans are more inspired to study. This matches with the Knowles' concept of self-directed learning (1975) and highlights the importance of encouragement of self-directed learning skills among students, particularly in online education environments. In another study conducted in northeast China, recruited 1689 high school students in first year and 1049 college students from college to explore relationship between online learning readiness, emotional intelligence and academic performance. They utilized structural regression model to examine association between these variables, where the results revealed correlation between online learning readiness, academic performance and emotional intelligence.[20]

According to a meta-analysis which included 12 studies, by addressing these challenges and leveraging the insights from this study, we can strive to create a more conducive environment for online learning, even in times of crisis. The self-regulating strategies such as meta-cognition, time management, reflection, effort regulation and peer learning should be the part of students development program to curb the problems like social media distraction culminating in good learner control and more online learning readiness.[21]

The study implicates that learner control over social media use is crucial for enhancing self-directed learning and that motivation for learning is closely linked to students' ability to regulate their online behavior. This highlights the need for strategies that support both digital self-regulation and sustained motivation in an online learning environment. It is recommended to integrate self-regulation and motivation training at an institutional level. Institution must offer training programs that not only teach digital self-regulation techniques but also include motivational strategies such as goal setting and progress tracking to keep students engaged. Institutes must design distraction resistant learning platforms with features that minimize distractions like social media blockers and tools that boost motivation such as personalized feedback and achievement badges. Institutions must identify students at risk of low motivation or higher distraction and provide tailored intervention including mentoring and regular check-ins to help them stay focused and motivated. The generalizability of this study is limited because it was carried out in a single institute. Although it offers insightful information about connections, it does not prove causation or take into account potential changes in online learning preparedness over time. To better comprehend the dynamics of online learning preparedness and how it changes over the course of a student's academic career, longitudinal research would be required.

Conclusion

The findings of this study have significant ramifications in today's age of digital revolution which emphasize the unquestionable influence and focus pivotal aspects of online learning readiness which is crucial for MBBS students. The discerned positive correlation strongly advocates for the cultivation of self-directed learning, learner control, and motivation for learning to significantly elevate students' readiness and success in the landscape of online education. It is imperative to recognize the challenges associated with the integration of online education, particularly in developing nations. To surmount these challenges, educational institutions and policymakers must proactively tackle the issues by establishing essential infrastructure, implementing targeted training programs, and developing robust support systems. This concerted effort is paramount in

creating an environment conducive to online learning, resilient even in the face of formidable challenges.

Ethical Approval: The Institutional Review Board, Rashid Latif Medical College, Lahore, approved this study vide letter No IRB/2023/101.

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Authors' Contribution:

SY: Conception & design, critically revision for important intellectual content

AS: Acquisition of data, analysis & interpretation of data

NK: Drafting the article

AA: Acquisition of data, analysis & interpretation of data

SQ: Acquisition of data, analysis & interpretation of data

MI: Final approval of the version

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