Readiness for Online Learning as a Predictor of Academic Stress and Anxiety

Huma Riaz[1], Wajeeha Tahir[2], Dr. Saira Irfan[3], Dr. Wizra Saeed[4], Umbreen Khizar[5]

[1] Department of Applied Psychology, University of Sahiwal, Pakistan. Email: umbreenkhizar@gmail.com
[2] Lecturer, Department of Applied Psychology, University of Sahiwal, Pakistan. Email: raowajeeha@gmail.com
[3] Assistant Professor, Department of Applied Psychology, University of Sahiwal, Pakistan. Email: sairairfan@uosahiwal.edu.pk
[4] Assistant Professor, Department of Professional Psychology, Behria University, Islamabad Campus, Pakistan. Email: wizrasaeed@gmail.com
[5] Institute of Southern Punjab, Multan, Pakistan. Email: umbreenkhizar@gmail.com

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ABSTRACT

The present study investigated online learning readiness as a predictor for academic stress and anxiety among graduate and undergraduate students. The sample of the current study was (n = 100). Data was collected from District Sahiwal. Readiness for Online Learning Scale (Maggie McVay, 2000; Marguerita McVay, 2001), Perceived Academic Stress Scale (PAS; Bedewy and Gabriel (2015)), and Anxiety Sub Scale from DASS (Lovibond & Lovibond, 1995) were used to measure the readiness for online learning, academic stress and anxiety respectively. The SPSS version 23 was used to analyze the results. The results revealed a non-significant relationship between academic stress and anxiety. While readiness for online learning negatively predicts anxiety and positively predicts academic stress. This research highlights the significance of online learning readiness to ensure students' psychological well-being.

Corresponding Author's Email: umbreenkhizar@gmail.com

1.   Introduction

The use of information and communication technology (ICT) in various elements of education to assist and improve learning in tertiary institutions is referred to as online learning. This could include employing technology to augment traditional classroom engagement, online learning, or combining the two (OECD, 2005). In general, online learning readiness refers to all stakeholders' mental and physical readiness for an online learning process. As a result, various technological, content, organizational, human, and financial resources influence online learning readiness.

In the spring of 2020, global institutions were obliged to close their campuses and shift all their academic programs online (Bao, 2020). Institutions were not ready for such a dramatic move from traditional classroom learning and to totally online mode. Initially, most universities lacked the necessary resources and action plans (W. Zhang, Wang, Yang, & Wang, 2020).

Despite numerous online platforms to promote online teaching (Nash, 2020), institutions found it difficult to plan their learning operations in an online mode. Nonetheless, several underdeveloped countries have reservations about e-learning systems (Thongsri, Shen, & Bao, 2019). Teachers and students also confronted many logistical, technical, financial, and social issues (Lassoued, Alhendawi, & Bashitialshaaer, 2020; Peters

et al., 2020). Moreover, most of the students did not have a suitable studying area at the residence and may not have appropriate internet connectivity, limiting their learning (A. Zhang, Yang, & Wang, 2020). All of the hurdles that students face during online instruction have the potential to cause mental health problems.

Since then, university students have come to be seen as a particularly susceptible group, with higher rates of psychological issues than the overall populace. As a result, due to a new educational experience during the COVID-19 pandemic, the load on this susceptible population's mental health is amplified (Arora, Chakraborty, Bhatia, & Mittal, 2021). Many studies published in the recent year focused on university students' mental health during COVID-19, such as Cao et al. (2020) and Zhai and Du (2020), indicated that COVID-19 had a detrimental influence on university students' mental health and well-being. Academic stress is a prevalent mental health concern among university students, and it is primarily caused by students' anxiety about losing their marks and failing (Goff, 2011). Students were stressed during COVID-19 for various reasons, including fear of poor performance and a delay in completing their studies.

In the course of the COVID-19 pandemic in Pakistan, online learning became official in all educational institutions. However, the widespread use of newly introduced online-learning methods was criticized for increasing mental health difficulties such as perceived stress among students (de Oliveira Araújo, de Lima, Cidade, Nobre, & Neto, 2020; Fawaz & Samaha, 2021). Although several institutions have already introduced online courses/programs, students unfamiliar with such practices had a system shock while enrolling in full online instruction-based programs (Ngampornchai & Adams, 2016). Moreover, Kabir, Hasan, and Mitra (2021) reported that the abrupt integration of e-learning into the curriculum across the country caused anxiety among students.

Stress levels ranging from mild to severe may have varying effects on cognition (Sandi, 2013). According to a study, stress affects our brain and cognitive functions (Chaby et al., 2015; McGaugh, 2004) and may limit our learning ability. When a person tries to cope with or adjust to pressures, they experience stress, characterized as a negative emotional, cognitive, behavioral, and physiological reaction (Prabu, 2015). It's vital to remember that stress has positive and negative consequences for people (Bataineh, 2013). Online learning readiness was one of the most significant predictors of satisfaction for students in online courses, according to Yukselturk and Bulut (2009). Therefore, it is essential to encourage students to participate in online learning activities. As a result, readiness for online learning can be seen as a critical issue to consider in creating online learning environments (Ilgaz & Gülbahar, 2015).

2.   Literature Review

According to Lazarus and Cohen (1977), stress is a specific interaction between a person and a situation that individuals perceive as exhausting or exceeding their resources and jeopardizing well-being. The above authors further postulated that stress is best regarded as an interpretive philosophy between stressors and individuals' emotional responses. As a subtype of psychological effects, anxiety has not gotten much consideration, even though it is just as common and perhaps as incapacitating as depression. Uncertainty and thoughts of harm to oneself or others can exacerbate anxiety.

Even though online learning is one of the most viable options for conventional teaching methods, students have an unfavorable perception of it (Rohman, Marji, Sugandi, & Nurhadi, 2020), which could be a substantial consequence that causes emotional suffering. Prior study conveyed that absence of satisfaction in the classroom cause apprehension in pupils (Dewaele, Magdalena, & Saito, 2019).

Extant research has shown that the most critical factors influencing online learning through COVID-19 are technological, academic, and communication concerns (Hao, Shah, Nawazb, Barkat, & Souhail, 2020; Mahyoob, 2020; Sharin, 2021). Besides, students have inadequate learning opportunities as a result of discernment against better family amenities (Chien et al., 2021; Jager & Blaabæk, 2020). During the COVID-19 period, Beaunoyer, Dupéré, and Guitton (2020) looked at digital inequities and observed that most educational

institutions are embracing online classes (Yen, 2020; Zhou, Wu, Zhou, & Li, 2020). The query remains how this strategy helps students from marginalized households and those who live in remote places. According to Pew Research Center research, many pupils come from poor backgrounds (Fry & Cilluffo, 2019). Students from rural businesses and underprivileged groups, in particular, face huge hurdles for study during this pandemic due to poor internet connectivity and an unpleasant study environment (Kapasia et al., 2020).

According to the findings of another study, approximately 91 percent of students felt moderate to high levels of perceived e-learning stress, majority of them were not ready. Moreover, compared to students who reported an optimal level of preparation, those who said a moderate or high degree of perceived e-learning stress had a considerably higher probability of stating a sub-optimal level of preparation (Kabir et al., 2021). Furthermore, distant learning has been linked to psychological effects such as stress and anxiety due to the difficult learning process (Sharin, 2021). Additionally, being alone was found to be connected with higher levels of anxiety. Financial restrictions, distanced online learning, and uncertain academic and career future are the main pressures (Sundarasen et al., 2020).

The e-learning mentioned above issues, along with the current uncertainties, have increased stress levels among students. Continuous stress has harmed their educational functioning and their psychophysiological health since stress has been established as one of the primary causes of a wide range of physical and mental ailments. While e-learning looks to be the accepted norm, students deserve enough attention, support, and guidance from their families and institutions (Malik & Javed, 2021). According to Hasan and Bao (2020), the notion of "e-Learning crack-up" strongly impacts student psychological distress and academic year dread. Similarly, Cao et al. (2020) reported the findings of a survey that about 25% of students are considerably anxious due to e-Learning breakdown. According to another study (Lee, 2020), nearly 83 percent of students undergo critical circumstances, and 26 percent have no access to mental health facilities. Due to the poor view of the e-Learning system, this issue presents a practical necessity to evaluate psychological distress among college students (Hasan & Bao, 2020).

While numerous researches have been performed on the influence of COVID-19 on the mental health of students (Browning et al., 2021; Son, Hegde, Smith, Wang, & Sasangohar, 2020) and the psychological impact of COVID-19 on online learning, students' primarily in foreign nations (Thandevaraj, Gani, & Nasir, 2021). However, few studies have looked into the impact of online learning on student academic stress and anxiety (Bao, 2020; Kabir et al., 2021; Kapasia et al., 2020; Mahyoob, 2020; Malik & Javed, 2021; Ramadhana et al., 2021). The majority of studies on these variables have been undertaken in Middle East and West. The findings of these studies cannot be applied to the Asian world, especially in Pakistan. There is, however, a paucity of research that looks into online readiness as a predictor of academic stress and anxiety.

Nonetheless, in the zeitgeist of contemporary online learning, resolving the obstacles is critical for the successful implementation of a growing country like Pakistan and being prepared for any future emergency. Consequently, the online learning readiness of graduate and undergraduate students was explored in this study as a predictor of academic stress and anxiety.

The current research results can help higher education teachers, administrators, and policymakers develop strategies for improving students' readiness for online learning while also ensuring their mental and psychological well-being.

Hypotheses

Based on the previous literature following hypotheses are formed:
- There will be a significant positive relationship between academic stress and anxiety.
- Readiness for online learning will significantly and positively predict academic stress and anxiety.

2.1. Research Framework
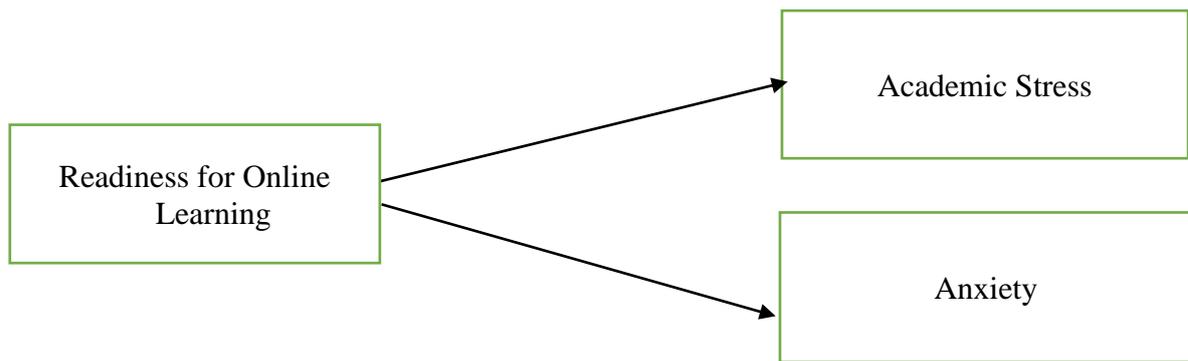
Figure 1: Figure shows the overall framework of the study.

3. Research Methodology

The present study investigated online readiness as a predictor of academic stress and anxiety among students using a cross-sectional online survey. Data were collected from District Sahiwal. A Convenient sampling technique was used to draw the sample.

The sample comprised of graduate and undergraduate students (N = 100). Students were issued a survey invitation via WhatsApp messaging, along with occasional reminders, via Google Forms. The survey was completely optional, and students' permission was asked before the commencement of the study. Participants were assured that their responses would be kept private.

3.1. Instruments
3.1.1. Readiness for Online Learning Questionnaire

Readiness for Online Learning questionnaire developed by (Maggie McVay, 2000; Marguerita McVay, 2001) was applied to measure online learning. It is a 13-item questionnaire with a 4-point Likert scale as 1 = low level of agreement and 4 = high level of agreement. This scale measures the two dimensions related to online learning. The first factor of the scale is "self-management of learning / self-directed learning" (item # 4, 8 9, 10, 11, 12, and 13), and the second factor is "comfort with e-learning" (items 1, 2, 3, and 5). The current study used a total scale score.

3.1.2. Perceived Academic Stress Scale (PAS)

PAS was utilized to measure the academic stress of university students. The scale has three subscales: (1) the academic expectations subscale (four items; 6, 9, 13 & 14), (2) workload and examinations subscale (eight items; 4, 5, 10, 11, 12, 15, 16 & 17), and (3) students' academic self-perceptions subscale (six items; 1, 2, 3, 7, 8 & 18). The students were requested to respond in a 5-point Likert response format. 1=Strongly disagree, 5 = Strongly agree for 1- 5 and 1=Strongly agree, and 5 = Strongly disagree for items 6-18. The PAS has satisfactory internal consistency as measured by Cronbach's alpha (.07). The current study used a total scale score.

3.1.3. Anxiety Sub Scale from DASS

In this study, DASS (Lovibond & Lovibond, 1995) was used. The DASS items #2, 4, 7, 9, 15, 19, and 20 assessed anxiety. It's a four-point Likert scale ranging from 0 (didn't apply to me at all) to 3 (didn't apply to me at all) (applied to me very much, or most of the time). It is not intended to be used as a diagnostic tool. DASS has an internal consistency of 0.81-0.91. The scale's convergent, concurrent, and divergent validities are moderate. There are no items on the scale that have a negative score.

3.2. Analysis of Data

The results of the online survey were entered into SPSS IBM Version 23.0 for analysis. The inferences were discovered using descriptive and inferential statistical tests. The forecast was made using linear regression analysis. Bivariate correlation was used to determine the relationship between variables.

4. Results
4.1. Reliability Analysis of all Variables

Table 1 demonstrates the alpha coefficient of all scales. Reliability of readiness for online learning is .802; academic stress is .818. It also indicates the anxiety scale's reliability which is .805.

Table 1
Internal consistency

Scales	No. of Items	α
Readiness for Online Learning Scale	13	.802
Perceived Academic Stress Scale	18	.818
Anxiety Sub Scale of DASS	7	.805

4.2. Descriptive Statistics of all Scales

Table 2 shows the descriptive statistics of all employed variables. Results reveal that the mean value of readiness for online learning (ROL) is 33.65 with a 5.34 standard deviation value. At the same time, the mean values of academic stress and anxiety are 63.00 and 10.63, respectively. Further, statistic figures show that Skewness values of all variables are fairly less than -1.00, which indicates that data has skewed distribution (Hair, Hult, Ringle, Sarstedt, & Thiele, 2017). Moreover, results about kurtosis values highlight that all the values lie in the normal range.

Table 2
Descriptive Statistics

Scales	No. of Items	M	SD	Skewness	Kurtosis
Readiness for Online Learning	13	33.65	5.335	-.335	.312
Academic Stress	18	63.00	10.38	-.021	-.279
Anxiety	7	10.63	5.192	-.316	-.661

4.3. Correlation Analysis

Before estimating the regression, it is required to confirm that variables don't correlate with each other. Table 3 presents the Pearson correlation matrix outcomes. Results highlight that all the correlation values are fairly less than (+ or -, 70) as per the recommendation of Kervin and Kervin (1972). Hence, conclude that there is no multicollinearity issue among the variables. Table 3 shows that readiness for online learning is negatively and significantly correlated with anxiety ($r = -.27^{**}$) and significantly and positively correlated with academic stress ($r = .43^{***}$) while academic stress and anxiety have non-significant correlation (r = -.01).

Table 3: Correlation Matrix

	Variables	(1)	(2)	(3)
1	Readiness for Online Learning	1.00	.43***	-.27**
2	Academic Stress		1.00	-.01
3	Anxiety			1.00

$***p < .001, **p < .01$

4.4. Regression Analysis

Table 4 reports the results of two different linear regressions where ROL is separately regressed on academic stress and, anxiety respectively. Concerning with equation 1, the result shows that with a coefficient .829 value, the influence of ROL on academic stress is positive and significant ($p < 0.001$). This result reveals that ROL activity

is directly linked with academic stress. In contrast, the result of equation 2 indicates that the response of ROL to anxiety is negative and significant in estimated coefficients ($p <$ 0.01). It shows that change in ROL is inversely associated the anxiety. Further, in both equations, the values of R-square show that ROL reasonably explains 70% and 81% variations in anxiety and academic stress.

Table 4
Linear Regression Analysis

Predictor variable	*B*	*SE B*	t-stat	R^2
Academic Stress				
ROL	.829	.178	4.65***	0.81
Anxiety				
ROL	-.258	.095	-2.71**	0.70

***p* <.001, ***p* <.01

5.   Discussion and Conclusion

The current research investigated the impact of readiness for online learning on academic stress and anxiety during COVID-19. The study's first hypothesis was not supported as the results showed a non-significant relationship between academic stress and anxiety. These results are contradictory to the existing literature. Such as Thakkar (2018) reported that extreme academic stress can lead to a high occurrence of psychophysiological problems such as depression, anxiety, nervousness, and stress-related disorders, all of which can negatively impact their academic performance. Moreover, extant research shows that academic stress is related to reduced well-being and increased chances of developing anxiety or depression (Pascoe, Hetrick, & Parker, 2020). These disparate outcomes in diverse studies necessitate a more thorough investigation that considers other potentially influencing variables.

Results also showed that readiness for online learning is a significant positive predictor of academic stress and a significant negative predictor of anxiety. This finding is supported by the study of (Adnan & Anwar, 2020), who revealed that the e-learning modality could not deliver the expected results in nations like Pakistan, where most students had connectivity issues. They were enduring academic stress and worried as a result of this. Stress is one of the major causes of various physical and mental disorders. If students are exposed to it regularly, it will affect their psychological and physical health (Li et al., 2020). Regarding the finding that readiness for online learning is a significant negative predictor of anxiety, literature established that students who had no technological and connectivity issues reported feeling tired and anxious due to lockdown and unusual daily routine during COVID-19 (Yasmin, Khalil, & Mazhar, 2020). In light of the foregoing scenario, the researchers concluded that online learning readiness is critical for achieving contentment from online classes.

5.1.   Limitations and Recommendations

This study underlines the relevance of student readiness for online learning as a predictor of their psychological well-being. However, this study still has some limitations, and more research is needed to see which types of online learning can reduce academic stress and anxiety. One study discovered various elements of online learning readiness that require additional care, including learner control and online communication self-efficacy (Ramadhana et al., 2021). Furthermore, the study's data was gathered solely from District Sahiwal, which may limit its applicability. This study mainly relied on self-reported questionnaires to assess academic stress and anxiety symptoms and made no clinical diagnoses. In future studies, organized clinical interviews may be used to diagnose academic stress and anxiety.

Prior researchers have suggested attention, recognition, and pressure (ARP) strategies as a way to raise or maintain readiness levels. The level of preparation was predicted to rise due to the teacher's regular interaction with pupils. The teacher provides periodic briefings regarding course assessment by having social engagement through a virtual platform. Question and answer sessions and any motivational remarks should be

used to help students maintain their concentration and strive for greatness. In terms of reward, any positive conduct is awarded, such as full attendance, participation, and the best students' performance for the lesson or evaluation (El-Seoud, El-Khouly, & Taj-Eddin, 2016). This initiative by the teacher piqued their interest in continuing to accomplish and perform at their highest levels. The next step is to put less strain on them. Setting no rigid deadlines for attendance, participation, or submission resulted in better engagement with the courses and a propensity to stay for the entire online study session (Allam, Hassan, Mohideen, Ramlan, & Kamal, 2020).

Teachers can also use more learning styles, such as group discussions, to improve student interaction and may establish instant messaging systems so that they can respond to and assist students promptly. In this way, academic stress and anxiety can be reduced.

According to the report, universities should also provide counseling and behavioral techniques to help students manage their academic anxiety. Furthermore, the government sector must remove barriers for students with limited access to the internet—the availability of devices, which are a requirement for enrolling in online learning courses.

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