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Descriptive Analysis on The Factors Influencing Online Learning and The Psychological Status of Undergraduate Students

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Abstract

Psychological status of students in relation to online learning has been an area of concern ever since the pandemic in 2020. There is a lot of concern regarding the isolation experienced by students and the breakdown of social relationships. This study attempts to describe the factors and the psychological status of undergraduate students undergoing online learning which occurred during the recent pandemic. Structured questionnaires were distributed to students via online platform. Of the questionnaires distributed to the final year students, 119 responded. The Mean Analysis was employed to identify the student's agreeableness towards the items representing those factors deemed to be associated with the temperament of their psychological status. This study is descriptive in nature. The degree of agreeableness is ascertained from the responses to the enquiries pertaining to the factors and the effects on their psychological status. These were recorded and analysed. The findings indicated that 36.1 % (43) of the respondents felt distracted with various activities at home and 37 % (44) of the respondents felt that online teaching and learning takes place effectively because they do not have to travel to attend classes while only 10.9 % stated that they could hear the lectures clearly. The study also showed that 45.4 % of the respondents preferred to go through online material that provided additional explanation. On the preferred method or platform for online learning, most of the respondents chose Google Meet. The study also revealed that most of the students felt so restless, found it hard to sit still, worried too much about different things, felt nervous, became anxious, and/or were on the edge, not able to stop or control their worry, and felt afraid that something awful was about to happen. Further research can explore the coping skills employed by the students with regards to their psychological status.

Keywords: Online Learning, Technological, Transition, Psychological Status

Introduction

The Covid-19 pandemic did not only alter the economic landscape but also the academic landscape (Bessler et al., 2020; Liguori & Winkler, 2020). Higher learning institutions had to transition from the conventional face to face classroom setups to online learning platforms to accommodate the learning process and avoid the disruption of the delivery (Bower, 2019; GarciaBotero et al., 2018; Gonzalez et al., 2020). Students, and academicians had to quickly

adapt to the new environment. However, these rapid changes somehow affected and impeded the wellbeing of the students. Among the wellbeing issues that emerged during the pandemic was the psychological status of the students, or in other words the mental wellness among the students (Irawan et al., 2020; Mheidy et al., 2020).

Due to the pandemic, the psychological status of students emerging from online learning had become a highly researched issue of late (Irawan et al., 2020; Mheidy et al., 2020; Moawad, 2020). While most, if not all, business sectors experienced negative effects, education too was among the worst hit sectors. Those academic institutions which have hitherto been learning via physical classrooms, had now to swiftly shift their approach to the virtual or the online learning, despite having only very few virtual learning tools (Kumar et al., 2017). Hence, having to shift from face to face to virtual learning overnight had not been a straightforward process as this alteration has inevitably caused stress and anxiety among students and teachers.

A study conducted in May 2020, after the onset of the pandemic, found that young people—particularly students, females, and other people with poor finances, were more susceptible to psychological state symptoms (Wong et al., 2021). Findings made by Aucejo, et al (2020) revealed that students from less privileged background had to experience larger negative impacts from the outbreak due to their limited income resources, limited access to digital resources, and the prohibitive cost of internet connectivity, which disrupted their academic or learning capacities. According to Lee (2020) about 1.5 billion students around the world lost basic education due to the pandemic.

The shift from classroom learning to virtual or online learning has impacted students in many ways. While this shift is often the best option considering the chaos caused by the pandemic, the impact on the mental status of students have been a great cause for concern. Most of the online or virtual learning are technology driven to enable class delivery as well as to support the flexibility in terms of learning experience (Bower, 2019; Gonzalez et al., 2020). Therefore, it is essential that teachers and students be familiar and confident with the technology to ensure its successful implementation (Bower, 2019). Students and teachers can mutually engage and collaborate if technology is used effectively (Bower, 2019; GarciaBotero et al., 2018; Gonzalez et al., 2020).

Transitioning from teaching a face-to-face class to teaching online is an aspect which requires rethinking and reconfiguring materials because lectures, activities, and assessments that worked well for classroom teaching must be tweaked or replaced because of the nature of the online environment (Bower, 2019; GarciaBotero et al., 2018). Transitioning to online learning also increased fears of not being able to graduate on time, having communication issues and the inability to balance the studying and the residential responsibilities. The role of the lecturer too is another crucial aspect in virtual learning because lecturers play the central role in deciding how often they log in and participate in the online platforms provided. This could also influence the psychological status of the students.

Even though students are technically savvy, there are concerns regarding access to hardware, software, and internet connectivity. Hence access to technology may be a great cause for concern among the students. Besides transitioning from a classroom setting to virtual learning

prove tough for college kids who have completed a major part of their studies in physical classrooms. Moreover, the role of lecturers is of additional concern as most of them have only been exposed to classroom teaching. A sudden change which involves not only conducting classes online but changes in the way assessments and evaluations of students' performance are made, have created concerns for both the students and the lecturers.

Problem Statement

The Covid19 pandemic changed the landscape of higher learning by transforming the conventional method into the present unorthodox virtual classroom or online learning to facilitate the teaching and the learning activities. As the institutions of higher learning begin to think of the best ways possible in delivering and fulfilling educational needs, it is vital for the institutions involved to understand the factors and the psychological temperament of the students experiencing this novel approach in the mode of receiving education. There is no denying that the current generation of students possess a higher level of knowledge and exposure to information technology than did the previous generation of students. The change from face-to-face classes to online classes demands a deeper level of understanding and concentration with a higher degree of skills. A study conducted by Barnes and Noble in 2020 showed most college students feel that they have the tools needed to move online, but they remain anxious about their own skills in managing their learning in an off-campus environment (Business Wire, 2020). Therefore, it is pertinent to understand in detail regarding the factors, namely the technology, the transition processes, the lecturers, and the psychological status, which may influence the effectiveness of online learning. This study attempts to describe the concerns of the students in relation to online learning.

Literature Review

Covid-19 restrictions have been challenging for people of all ages; however, they may be particularly difficult for adolescents, who at this developmental stage rely heavily on their peer connections for emotional support and social development (Ellis & Zabatany, 2017). It is even more difficult for students with lower academic standing and for females (Baticulon et al., 2021; Magson et al., 2021). A large study among the medical students in Japan recommended the initiation of mental wellness programs that target the enhancement of self-esteem and self-efficacy, with particular focus on resilience training (Arima et al., 2020). Living in urban areas, possessing economic stability, and living with the parents have been shown to be protective factors against anxiety among students in China (Cao et al., 2020).

Issues relating to the psychological status relate to many factors. One is the difficulty to concentrate in homes with many family members. Students can be frequently disturbed, sent for errands or even asked to care for younger siblings while online classes are going on. Although the learning environment may be virtual, physical space remains vital. Having a quiet study area, with the same comfort provided by a classroom or library, is often a privilege not available to all.

A study conducted among medical students in the Philippines (Baticulon et al., 2021) showed a high proportion of students with limited access to technological resources. For example, one out of five students did not have a computer, and an identical proportion had to rely on prepaid mobile data for connectivity. About one out of twenty used only a smartphone. Power interruptions, weak infrastructure, and internet costs restricted the students' access to online

content. However, and interestingly, these students did not perceive the technological limitations to be the most important issue faced during the online learning process (Baticulon et al., 2021). A higher percentage of students experienced challenges relating to their personal study habits, situations at home, and their interaction with their educators. Studies on online learning in the developing countries often concentrated on the students' limited access to the devices and the internet (Daroedono et al., 2020; Mukhtar et al., 2020; Nepal et al., 2020). However, providing the gadgets or a limited internet free access to the students, might not be enough to ensure successful learning outcomes as there could be other barriers at play.

Students have typically engaged in face-to-face learning formats but due to the onslaught of Covid-19, they had to make a sudden transition to online learning. This wholesale shift to online learning will also be more difficult for students who are sheltering in places that are less than optimal and more physically and psychologically confining and which are not very conducive to learning and performing (Bessler et al., 2020). Distance, scale, and personalized teaching and learning are the three biggest challenges for online teaching (Liguori & Winkler, 2020).

A shift in the curriculum delivery, which require a simultaneous adjustment in learning styles, prove difficult for the students. Sharing power point slides or lecture notes with students without interaction or sending them links to lectures delivered by foreign university lecturers might not augur well with most students. Educators should minimize the cognitive load of learning activities to what is essential. Multimedia learning tools should be engaging and entertaining, but at the same time, devoid of clutter and distracting content (Grunwald & Corsbie-Massay, 2006). Enhancing interactivity, the use of practice exercises, repetition of the study materials, and providing feedback are the recommended ways to improve the learning outcomes (Cook et al., 2010).

Methodology

The study is exploratory and quantitative in nature. The main purpose is to examine the student's agreeableness with regards the items representing the factors associated with psychological status of students facing online learning during the pandemic. This study was setup in a non-contrived setting with minimal interference by the researcher. The unit of analysis for this study are the individuals, namely the final year students, and the study is cross-sectional whereby the data is collected only once. The target population for this study are the final year students at UiTM comprising 168 students from the various programs. Non-probability sampling using the purposive sampling technique is applied in the study as it is deemed to be the most appropriate one in reaching the samples. Data was collected through an online questionnaire consisting of five sections, namely demographics, technological issues, concerns with the transition to remote learning, difficulty experiences with lecturers and the psychological status. A descriptive analysis using SPSS 24.0 was conducted to understand the phenomena under study.

Analysis and Results

Out of the 168 students, 119 responded to the questionnaire recording a response rate of 70.8 percent. In terms of the demographic profile of the 119 respondents as shown in Table 1, 83.2 percent were females and 16.8 percent were males. The respondents belonged to the

Bottom 40 (B40) income category (Monthly income below RM4850) (68.9%), followed by the Middle 40 (M40) income category (between RM4851-RM10970) (18.5%).

Table 1

Demographic Analysis

Item		Frequency (n)	Percent (%)
Gender	Female	99	83.2
	Male	20	16.8
Family income status	Below RM4850/month (B40)	82	68.9
	Between RM4851 - RM 10970 (M40)	22	18.5
	Above RM10971 (T20)	15	12.6
Internet connection	Wi-Fi	61	51.3
	Mobile Data	58	48.7
Internet speed	Less than 8Mbps	28	23.5
	Between 8-30Mbps	42	35.3
	30-50Mbps	28	23.5
	More than 50Mbps	21	17.6

In terms of internet connection, 51.3 % relied on Wi-Fi while the rest used mobile data. The internet speed used by a higher proportion of the respondents measured 8-30Mbps (35.3%). An equal proportion of 23.5 % used less than 8Mbps and between 30-50Mbps.

About their experiences with online learning (Table 2), more than 50% had issues with studying at home 36.1 % of the respondents felt distracted with various activities at home and 16% felt that the situation at home is not suitable for learning), 24.4 % believed that they could learn better at home with uninterrupted network connectivity while 23.5 % (28) believed that they are comfortably learning at their own pace.

The study also indicated that 37 % (44) of the respondents felt that online teaching and learning takes place effectively because they do not have to walk distances to attend classes. Only 10.9 % stated that they can hear the lecture clearly while 39 % and 23 % believed that online teaching and learning takes place effectively because the slides are easily visible and they can clarify their doubts instantly, respectively.

Table 2

Frequency analysis on student's online learning experiences

Item		Frequency (n)	Percent (%)
My experience with online learning from home digitally	I am learning at my own pace comfortably	28	23.5
	My situational challenges are not suitable	19	16.0
	I can learn better with uninterrupted network connectivity	29	24.4
	I am distracted with various activities at home, viz. TV, chatting, etc	43	36.1
Online teaching–learning takes place effectively because	Every student can hear the lecture clearly	13	10.9
	PPTs are available right in front of every student	39	32.8
	Students can ask doubts without much reservation	23	19.3
	Students need not walk long distances before reaching the class	44	37.0
What is your most preferred method for clearing doubts in online learning?	Ask the lecturer during/after an online lecture	26	21.8
	Post the query in a WhatsApp group of your class and get help from your peers	39	32.8
	Go through online material providing an additional explanation.	54	45.4
My most preferred method for online learning	GMeet	87	73.1
	GClassroom	5	4.2
	Recording	26	21.8
	WA	1	.8

Respondents were also asked to indicate their most preferred method for clearing doubts through online learning. The analysis yielded 45.4 % of the respondents preferred to go through online material that provided the additional explanation. The remaining respondents preferred to post queries via WhatsApp group (32.8%) or ask the lecturer during or after the online lecture (21.8%). On the preferred method or platform for online learning, 73.1 % of the respondents chose Google Meet as their preferred method or platform for online learning.

In terms of internal consistency of the instrumentation for this study, all the dimensions under study yielded Cronbach's Alpha coefficient above 0.7 as shown in Table 3.

Table 3

Reliability analysis

Variables	No of items	Cronbach's Alpha
Technology	8	0.767
Transition	8	0.821
Lecturer	6	0.718
Psychological status	6	0.899

The transition and the psychological status measurement yielded an alpha coefficient above 0.8, while both the technology and the lecturer yielded an alpha coefficient more than 0.7 indicating an acceptable level of internal consistency. The mean and the standard deviation analysis of each factor are as shown in Table 4.

Table 4

Descriptive analysis (variables)

	N	Mean	Std. Deviation
Technology	119	2.2532	.57316
Transition	119	3.2122	.68069
Role of lecturer	119	2.9272	.63359
Psychological status	119	3.7017	.83386

The transition and the psychological status, both, recorded a mean above 3 indicating that most of the responses are prone toward an agreement with all the statements. The technology on the other hand recorded a mean of 2.2532 indicating that majority of the respondents disagreed with the statements representing the variable. As for the role of the lecturer, most of the respondents either disagreed or were neutral with all the statements yielding a mean of 2.9272. The standard deviation for all the factors is above 0.5, indicating that the data points are respectively above the mean and spread out over a wider range of values.

Table 5 shows the descriptive analysis on technology consisting of eight statements. For the first statement pertaining lecturer's unfamiliarity with technology, 79.9 percent disagreed, indicating that most lecturers are familiar with the technologies and applications supporting online learning.

Table 5

Perceived responses on technology towards online learning

	Mean	Std. Deviation	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
The lecturer is not familiar with the required technologies or the applications	1.95	.769	34 (28.6%)	61 (51.3%)	20 (16.8%)	4 (3.4%)	0 (0%)
I am not familiar with the required technologies or the applications	1.98	.748	30 (25.2%)	65 (54.6%)	20 (16.8%)	4 (3.4%)	0 (0%)
I do not have access to a reliable internet/service	2.38	.948	20 (16.8%)	51 (42.9%)	33 (27.7%)	13 (10.9%)	2 (1.7%)
I do not have access to other computer hardware (e.g., printer, scanner)	2.86	1.244	18 (15.1%)	37 (31.1%)	18 (15.1%)	36 (30.3%)	10 (8.4%)
I do not have access to the library resources	2.55	1.031	20 (16.8%)	39 (32.8%)	36 (30.3%)	22 (18.5%)	2 (1.7%)
I do not have access to a reliable communication software/tool (e.g., Zoom, Skype, Google)	1.89	.757	37 (31.1%)	62 (52.1%)	16 (13.4%)	4 (3.4%)	0 (0%)
I do not have access to a specialized software (e.g., Adobe, SPSS)	2.55	1.031	14 (11.8%)	54 (45.4%)	27 (22.7%)	19 (16.0%)	5 (4.2%)
I do not have access to a reliable digital device (e.g., laptop, mobile device)	1.86	.784	41 (34.5%)	59 (49.6%)	14 (11.8%)	5 (4.2%)	0 (0%)

The second statement pertaining to the students' unfamiliarity with the required technologies and applications also show that most of them are familiar based on the 79.8 % disagreement towards the statement. In terms of the students' lack of accessibility toward

reliable internet service, computer hardware, library resources, communication softwares, specialized softwares and reliable digital devices, it is obvious that most of the students do not have any accessibility issues. This is based on their responses indicating their disagreements on the availability of a reliable internet service (59.7%), computer hardware (46.2%), library resources (49.6%), communication softwares (83.2%), specialized softwares (57.2%) and reliable digital devices (84.01%).

The respondents were also asked to provide their agreement on eight statements pertaining the transition to online learning. The descriptive analysis results are as shown in Table 6.

Table 6

Perceived responses on transition towards online learning

	Mean	Std. Deviation	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I have difficulty keeping up with coursework	3.02	1.008	6 (5.0%)	34 (28.6%)	38 (31.9%)	34 (28.6%)	7 (5.9%)
I am not performing well in class	3.08	.988	6 (5.0%)	28 (23.5%)	42 (35.3%)	36 (30.3%)	7 (5.9%)
I am not able to balance classes with other priorities	3.02	1.008	7 (5.9%)	31 (26.1%)	41 (34.5%)	33 (27.7%)	7 (5.9%)
I have difficulty communicating with the lecturer	2.55	.946	14 (11.8%)	47 (39.5%)	40 (33.6%)	15 (12.6%)	3 (2.5%)
I have communication problems with classmates	2.44	1.063	21 (17.6%)	51 (42.9%)	26 (21.8%)	16 (13.4%)	5 (4.2%)
I am worried about possible delays in graduating/completing my program	3.86	1.115	5 (4.2%)	11 (9.2%)	20 (16.8%)	43 (36.1%)	40 (33.6%)
I am missing out on extracurricular/on-campus activities	3.55	1.072	5 (4.2%)	13 (10.9%)	38 (31.9%)	38 (31.9%)	25 (21.0%)
I am worried about completing my internship or practicum requirements	4.19	.959	2 (1.7%)	6 (5.0%)	15 (12.6%)	40 (33.6%)	56 (47.1%)

Based on the results, it is apparent that most of the students either agreed or disagreed on the difficulty of keeping up with the coursework (31.9%), unable to perform well in class (35.3%), ability to balance classes with other priorities (34.5%) and missing extracurricular/on-campus activities (31.9%). Whereas most of the students disagreed on having difficulty in communicating with the lecturer (39.5%) and communicating problems with classmates (42.9%). The results also indicated that 69.7 percent of the students are worried of delays in graduating or completing the program. The students are also worried about completing their internship or having their practicum requirements fulfilled (80.7%).

Table 7 shows the responses on the roles of lecturers in relation to online learning. For the first statement, most of the students agree (32.8%) or strongly agree (30.3%) that they do not feel like they are receiving the same quality of education compared to studying in a physical (face-to-face) class. However, 35.3 % (42) of the students were unsure whether their lecturer has struggled with remote instruction on the course content. Regarding whether there was an actual increase in the course workload, 33.6 % of the students agreed and 22.7 % strongly agreed that they do feel an increase in the course workload. For the fourth statement on feeling disconnected from the lecturer, a total of 36.1 % totalling 43 students disagreed with the statement while 31.9 % were unsure and a total of 38 students (31.9%) felt disconnected from their lecturer.

Table 7

Perceived responses on roles of lecturer in online learning

	Mean	Std. Deviation	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I do not feel like I am receiving the same quality of education compared to studying in a physical (face-to-face) class.	3.75	1.122	5 (4.2%)	12 (10.1%)	27 (22.7%)	39 (32.8%)	36 (30.3%)
My lecturer has struggled with remote instruction on the course content.	3.09	1.073	6 (5.0%)	31 (26.1%)	42 (35.3%)	26 (21.8%)	14 (11.8%)
My lecturer gives unclear instruction on assignments, exams, and/or quizzes	2.03	.868	36 (30.3%)	50 (42.0%)	28 (23.5%)	4 (3.4%)	1 (0.8%)
I feel an increase in course workload	3.64	.998	0 (0%)	18 (15.1%)	34 (28.6%)	40 (33.6%)	27 (22.7%)
I feel disconnected from my lecturer	2.96	.995	6 (5.0%)	37 (31.1%)	38 (31.9%)	32 (26.9%)	6 (5.0%)
I feel that my lecturer ignores me	2.10	.807	29 (24.4%)	52 (43.7%)	36 (30.3%)	1 (0.8%)	1 (0.8%)

The descriptive analysis also yields that the majority of the students disagree with the statement that they feel that the lecturer ignores them (43.7%) and strongly disagree (24.4%) respectively. The descriptive analysis on student responses on psychological status is outlined

in Table 8. Based on the analysis, most of the students agreed that they are becoming easily annoyed or irritable due to online learning indicated by the composition of the agree (44.5%) and the strongly agree (15.1%), totalling 59.6 % of the agreeableness.

Table 8

Perceived responses on psychological status

	Mean	Std. Deviation	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I feel I am becoming easily annoyed or irritable	3.60	.951	3 (2.5%)	12 (10.1%)	33 (27.7%)	53 (44.5%)	18 (15.1%)
I feel so restless that it's hard to sit still	3.61	1.009	1 (0.8%)	17 (14.3%)	35 (29.4%)	40 (33.6%)	26 (21.8%)
I worry too much about different things	3.97	.961	3 (2.5%)	6 (5.0%)	20 (16.8%)	52 (43.7%)	38 (31.9%)
I feel nervous, anxious, or on edge	3.71	1.143	7 (5.9%)	12 (10.1%)	21 (17.6%)	47 (39.5%)	32 (26.9%)
I am not able to stop or control worrying	3.46	1.103	4 (3.4%)	22 (18.5%)	31 (26.1%)	39 (32.8%)	23 (19.3%)
I feel afraid as if something awful might happen	3.85	.953	2 (1.7%)	9 (7.6%)	25 (21.0%)	52 (43.7%)	31 (26.1%)

Most of the students also feel so restless that it's hard to sit still, worry too much about different things, feel nervous, anxious, or on edge, not able to stop or control worrying, and feel afraid as if something awful might happen, with the agreeableness rate of 55.4 %, 75.6 %, 66.4 %, 52.1 %, and 65.8 % respectively.

Conclusion and Discussion

This study set out to describe the factors affecting students' psychological status during the pandemic. The most striking and worrying finding was that more than 50% of the students portrayed deteriorating psychological status, showing signs of distress, worry and anxiety. Female students are found to show higher levels of anxiety and depression (e.g., Chen & Lucock, 2022) and interestingly in this study, around 83% of the respondents were females. In addition, a higher proportion of the respondents belong to the B40 group (family income below RM4850 per month).

One of the highlighted issues leading to anxiety and worry among the respondents is having to do chores at home and other situational factors that hinder the learning process. Respondents also feel that they missed the extracurricular and the on-campus activities. A high proportion of the respondents were understandably worried about graduating on time, and on completing their practicum/internship requirements. Another cause for worry was

that the quality of education was not as high as what they would have received if they were attending physical classes. Respondents also voiced their concern on the increase of the workload and the disconnection from their lecturers. These are valid issues that the education institutes need to be concerned about when virtual or hybrid classes are introduced.

There are several limitations in this study. This is a cross-sectional study and there was no pre or post-test, hence there is no information of the respondents' psychological status prior to or after this study. The respondents were also limited to a particular university and hence the findings cannot be generalized. Notwithstanding these limitations, the findings were still significant.

Recommendations

The first recommendation is to have more variables introduced into the study. This will facilitate a thorough understanding on the problems faced by students during online learning. Psychological status is a critical area of concern especially among young adults. Although studies like this result from the ramifications of the forced virtual learning upon institutions caused by the pandemic, the state of the students' psychological wellness must be dwelled upon. Social isolation brought on by the pandemic caused young adults and students to experience mental health related issues. The mental health of young adults needs to be accorded prominence in the national health agenda. Hence, the recommendation that programs for improving and enhancing the psychological status of students must be in place in all educational institutions.

It is also recommended that future studies cover a wider group of respondents and longitudinal studies be conducted to ascertain the impact of programs that are organized for students. Lecturers are also facing the changes from physical to virtual teaching with anxiety and hence, they must also be supported by the Ministry of Education and the educational institutions in terms of training in virtual learning tools and exposure to virtual learning platforms.

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