



The Effect of Psychological Well-Being on Students' Perception of Online Learning During the COVID-19 Pandemic

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DOI: <https://doi.org/10.30880/jtet.2023.15.01.008>

Received 14 December 2023; Accepted 06 March 2023; Available online 31 March 2023

Abstract: The outbreak of COVID-19 has led to a global lockdown, and universities have shifted to online learning. Despite the various efforts made by universities for students' online learning during the pandemic, not much has been identified about how students perceived online learning and how it affected their psychological well-being (PWB). This study examines the differences between male and female students' perceptions of online learning during the pandemic. A quantitative research design was used to measure the effect of PWB among students on online learning during the pandemic. The population consisted of first-year students in Technical and Vocational Education and Training (TVET) from Bachelor of Technology programs; hence, 127 respondents were sampled. A validated researcher-developed questionnaire was used to test the reliability of the study. The collected data were analyzed using descriptive statistics. Spearman Rho correlation and Mann-Whitney U were used to test the hypotheses at a p-value less than 0.05 level of significance. The findings revealed a PWB effect on students' perceptions of online learning. Meanwhile, there was no significant difference between genders affected by PWB in students' perceptions of online learning during the pandemic. Therefore, it is recommended to focus on one of the six elements of PWB regarding the perception of online learning among students.

Keywords: Psychological well-being, online learning, COVID-19

1. Introduction

COVID-19 has been declared a global pandemic that poses a threat to public health, including mental health (Hasan & Bao, 2020). Moreover, this pandemic has significantly changed the lifestyle and norms of education at all levels, with face-to-face learning giving way to online learning (Carrillo & Flores, 2020). While online learning can be beneficial, the sudden changes have presented serious challenges to students, educators, and educational organizations worldwide, particularly in Malaysia. The transformation of online learning during this pandemic has also been associated with psychological problems such as anxiety and depression (Dubey et al., 2020). Studies show that the pandemic has greatly affected the mental health and behaviour of many people, especially students, who may take a leave of absence or drop out altogether (Davis & Hadwin, 2021). The psychological well-being (PWB) of students is the best predictor of their optimism for online learning during the pandemic (Coninck et al., 2019). Furthermore, the transition to online learning has created gender inequalities, with females experiencing lower levels of PWB due to the impact of restrictions on social relationships and limitations on movements on social determinants (Corb et al., 2021).

The transition to online learning has resulted in significant distress with a negative impact on PWB, particularly among students. Additionally, TVET students who have limited access to resources due to low socioeconomic status

struggle to transfer knowledge during their independent studies, resulting in mental frustration to complete their studies. As TVET students have been trained in industry-based education to develop their mental foundation knowledge and application of job-specific skills, it is crucial to take their PWB seriously. TVET students have less technological capabilities when conducting online learning, resulting in a lack of self-efficacy. Technology competencies are key factors in enhancing students' satisfaction, motivation, and presence in online learning. It is, therefore, necessary to examine and intervene promptly among students due to the heavy burden of mental health because of online learning during a pandemic based on the PWB of students on six elements, which are self-acceptance, autonomy, personal growth, positive relations with others, and the purpose of life. This study aims to examine the effects of online learning on student parameters of PWB during the pandemic Covid-19 and students' perceptions of online learning. The objectives of this study are:

- I. To identify the elements of psychological well-being among students towards the students' perception of online learning during the pandemic Covid-19.
- II. To determine if there are any differences between male and female students' perceptions of online learning affected students' psychological well-being during the pandemic Covid-19.

1.1 The Theory of Psychological Well-Being

The sudden shift to online learning during the COVID-19 pandemic has resulted in negative emotions, which could lead to negative interaction patterns that may affect the development and well-being of Technical and Vocational Education and Training (TVET) students. To address this, the Self Development Theory (SDT) proposed by Deci, E. L., & Ryan (1985) could be used as a broad theory of human development and wellness with strong implications for education. Unlike behavioristic approaches, which attempt to shape and control motivation from the outside, the SDT emphasizes people's inherent motivational propensities for learning and growing and how they can be supported.

This theory has practical utility and can explain the effects of needs-based support on students' psychological well-being (PWB) during their online learning. It could be applied to stimulate Malaysian TVET students' interest in online learning during the pandemic, such as flipped classrooms which could motivate them to participate actively in the learning process and promote a collaborative relationship between teachers and students. In addition to SDT, the PWB scale concept could also be used to support the theory of human development and wellness for education. This concept is more philosophical and encompasses multi-dimensional constructs related to trait eudemonic well-being, including wellness of body and mind enabling engagement in living for online learning during COVID-19. To obtain a global score that is particularly relevant to this study, the six dimensions of well-being were used separately: autonomy, environmental mastery, personal growth, positive relationships with others, purpose in life, and self-acceptance.

Figure 1.1 shows the effect of PWB on students on online learning during the pandemic, which was constructed by the researcher after adapting the model from the study by Chiu (2021). By considering these theories and concepts, educators can support the development and well-being of TVET students during the pandemic and beyond.

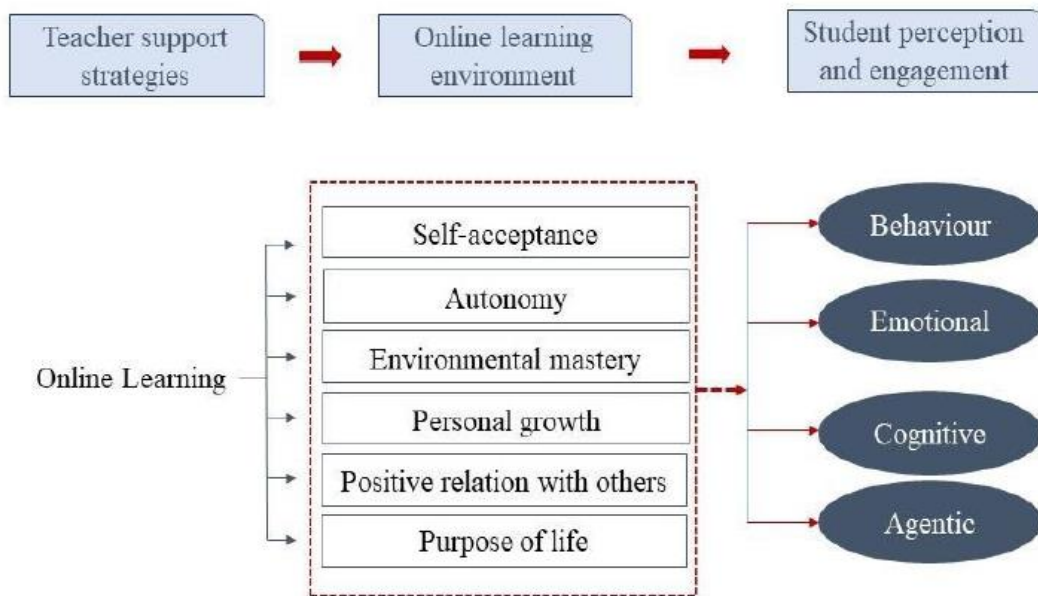


Fig. 1 - Model Psychological Well-Being (PWB) of students on online learning (source: Chiu, 2021)

1.2 The Effect of Elements of Psychological Well-Being on Students' Perception of Online Learning during Covid-19

One of the ultimate goals of any educational system is to develop autonomous, lifelong learners who can resolve life and job problems independently and collaboratively by fostering learner autonomy to the extent (Serdyukova & Serdyukov, 2013). Furthermore, the same research adds that technology-based education aims to engage students in truly independent, lifelong learning, where motivation has attained an excellence that leads to higher academic achievement. Hence, it is important to understand what contributes to and interferes with the independence of online learning classes among students. Additionally, students need to exert a higher level of self-control in their online learning or increase their level of autonomy offered in online courses to overcome learner isolation and less spontaneous online interaction, which can cause procrastination in online learning. This has an impact on the effectiveness of online learning that relies on students' self-directed learning attitude or personality rather than their ability to master the use of technological devices (Hong et al., 2021). While online learning systems are perceived as useful teaching platforms, students need to conduct their studies independently, which may have fewer spontaneous interactions. Moreover, the same research explains that procrastination is a serious barrier that could be preventing students from succeeding in their studies that require learning mastery, resulting in an impact on student PWB (Hong et al., 2021). Thus, using the online learning platform for effective learning is concerning and could affect the PWB among students, specifically during the pandemic Covid-19 (Hong et al., 2021).

It is critical to know and understand the conditions for students to succeed in the online learning environment. According to Hamzeh (2021), the basis of student needs must be met first for education programs to succeed regarding students' mental health and well-being. Thus, it is necessary to study the impacts of online learning among students on mental health and emotional well-being to ensure students' health, academic success, equity, and inclusion. The same research also adds that the design of real-life models and simulations, along with students' interaction with those models and simulations, can help students conduct their online learning. Equally important, students' PWB in the online learning environment should not be limited to their proficiency with technology platforms because other factors such as social-economic status, family, educational institution, and external environment are all important components (Deng & Yang, 2021). This is also supported by another study because students' PWB is not only related to their skills and technical proficiency but also associated with social norms and user expectations for technology (Gui et al., 2017). Similarly, multitasking can be detrimental in educational environments, and in certain situations, it implies relevant increases in safety risks (Gui et al., 2017). This could happen among students during their online learning classes whenever media interrupts while they engage in solving demanding cognitive tasks, such as hearing notifications or calls from their smartphones. Even the interruptions caused by the sound of the devices appear to be potentially detrimental to students' cognitive performances (Stothart & C.M., 2015). Hence, staying focused on a task for an appropriate length of time appears to be vital among students during their online learning.

Prior studies have investigated the negative effect of family obligations and personal growth circumstances, such as health problems and emotionally stressful events, on academic achievement, which is a significant obstacle for students (Burrus et al., 2013). This connection has become a significant stressor for online learners, who face the challenge of effectively navigating the online learning environment (Schwartz et al., 2018). The previous study on positive computing has suggested introducing well-being into the design of principal software on an online learning platform that specifically supports and enhances personal growth among students (Wiederhold & Riva, 2012). However, there is no evidence that extraversion, which is the state of primarily obtaining gratification from outside oneself, may be influential in online learning, academic performance, or new technology adoption (Tabak & Nguyen, 2013). In contrast, the personal growth conscientiousness of students on online learning goal orientation was positively related to this study.

The sudden shift to online learning has raised concerns about the preparedness of learners and the effectiveness of online learning. Research has shown that there is a significant positive relationship between the lack of social interaction and barriers to the effectiveness of online learning (Baber, 2020). In an online learning environment, the interaction between educators and students is essential because students may feel isolated and far from the social existence of the classroom. Therefore, social interaction is critical to the effective delivery of online learning, as it provides an opportunity for students to socialize with their peers, students, and instructors, which is an important part of learning (Lasfeto, 2020). Additionally, creating proper structure and developing meaningful interaction are the basic elements in generating a strong sense of learning community in the online learning environment (Choy & Quek, 2016). The ability to indicate a positive attitude and enthusiasm online fosters relatedness, which could help foster positive teacher-student relationships and better emotionally engage students in learning, such as the use of emojis in replies to messages in forums and giving warm feedback and friendly audio messages (Chiu, 2021).

Low-income students are negatively related to autonomy, but it is also associated with a greater purpose in life, whereas low-income students would have lower environmental mastery, positive relations with others, purpose in life, self-acceptance, and overall PWB (Punia & Malaviya, 2015). This can cause students from lower-income families to feel less capable of engaging in online learning. Additionally, the pandemic has caused economic, social, and psychological repercussions on the purpose of students' lives, as students become more vulnerable to online exploitation due to increased and unstructured time spent on online learning, which might expose them to potentially harmful and violent content as well as greater risk of cyberbullying (Pokhrel & Chhetri, 2021). Some students who conducted online learning in Bhutan

have even requested to postpone exam time because they had to work on the fields during the morning, which makes it difficult to keep up with the lessons. The vulnerability of online learning has impacted students' PWB and academic achievement during this pandemic.

Overall, the effectiveness of online learning depends on proper structure and meaningful interaction between educators and students. While low-income students may face greater barriers to engaging in online learning, there is a need to address the potential risks and vulnerabilities of online learning to ensure the purpose of students' lives is not compromised. Self-efficacy is understood as the user's belief to be able to perform a certain task using a computer (Downey & Kher, 2015). Self-efficacy refers to a user's belief in their ability to perform a task using a computer (Downey & Kher, 2015). Self-efficacy was found to be the second strongest predictor of whether students were confident in their ability to complete tasks using computer software during online learning, with guidance from their educators (Cicha et al., 2021). However, students' self-acceptance of the rapid transformation to online learning platforms was not initially planned for, resulting in limited available platforms for full engagement in online learning (Chen et al., 2020). Students' experience with computer software utilization influenced their self-acceptance and perceived usability of these tools, as their involvement and willingness to use them impacted their usage (Cicha et al., 2021). Anxiety indirectly affected performance through self-efficacy and self-acceptance, as individuals judged their abilities based on how positively or negatively aroused, they felt during online learning classes in the pandemic (Downey & Kher, 2015). Therefore, highly anxious individuals may lack confidence in their ability to perform in online learning classes. There is a consensus that high self-efficacy is associated with low anxiety and vice versa (Callum et al., 2014).

2. Methodology

The research methodology is a research strategy that translates the ontological and epistemological principles into guidelines on how the research will be conducted and the principles, procedures, and practices that govern the research (Nayak & Singh, 2021). Hence, the research methodology expedites the researcher on the comprehension of the methods that will be used besides providing any designation related to the selected research process.

2.1 Research Design

This study is a survey study using a quantitative method approach of descriptive research and inferential research. Survey questionnaires were used by researchers in this study through a quantitative method approach by preparing and disseminating questionnaires among Year 1 students of TVET courses at the Faculty of Technical and Vocational Education, UTHM.

2.2 Research Procedure

The panel of experts validates the selected instrument. A pilot study was conducted by the researcher to test the research instrument using 30 selected respondents consisting of Year 2 TVET course students in FPTV. The researcher started the actual study by distributing questionnaires to the study sample through Google Forms because the study was conducted online. The data obtained were analyzed using descriptive analysis, Spearman's Rank-Order Correlation analysis and Mann-Whitney U analysis.

2.3 Research Instrument

The research instrument in this study uses the Psychological Well-Being (PWB) scale instrument which has been adapted through the study of Hasan & Bao (2020). The researcher used the PWB scale instrument of five in the study to measure the six aspects of well-being and happiness of students on online learning during the pandemic Covid-19 developed by Ryff (2012) after being adopted from the study by Hasan & Bao (2020), which are autonomy, environmental mastery, personal growth, positive relations with others, purpose in life and self-acceptance. The questionnaire for this study was divided into two parts. The question from section (A) is about the respondents' demographic data, which is the respondents only had to answer four questions regarding their background, which includes their gender, age, a program of study, and experience in online learning. While section (B) is about the questionnaire on the respondents' PWB on online learning which includes 30 questions focused on questions that could be measured the level of PWB of students on online learning due to the pandemic Covid-19.

Hence, the PWB questionnaire instrument for this study contains 34 items that were adapted according to the research questions to measure the well-being and happiness of students in online learning during the pandemic Covid-19. The researcher used questionnaires that have been processed into English to facilitate the respondents to understand and answer the questions contained in the questionnaire. Moreover, the questionnaire instrument is in the form of close-ended questions in which the respondents have to choose between the answers provided by the researcher. The 5-point scale will be used in this instrument with (1) strongly agree to (5) strongly disagree. The rating sources used in the questionnaire were to assess and measure the level of PWB among technology courses of the Faculty of Technical and Vocational Education (FPTV) regarding online learning during the pandemic Covid-19.

3. Results and Discussion

The results of the analysis of the descriptive elements of PWB towards students' perception of online learning are reported as high in Table 1. According to the descriptive analysis, the element of self-acceptance had the highest mean score of 3.80, followed by autonomy with a mean score of 3.65 and positive relations with others with a mean score of 3.60. The elements of environmental mastery and purpose in life shared the same mean score of 3.58, while the element of personal growth had a mean score of 3.52. These results suggest that all six elements of PWB have a high mean value above 3.5, indicating that they have an impact on students' perception of online learning.

The autonomy element of PWB is particularly important in determining students' goals, learning procedures, resources, and evaluation decisions during online learning (Abdul Aziz et al., 2020). However, the third question of the autonomy item in the survey revealed a contradiction in the student's responses, as they did not have a strong opinion or deep belief in their own decisions during online learning discussions and instead relied on their classmates' opinions. Previous research has shown that students may experience increased pressures to learn independently during online learning, which can lead to heightened stress levels (Holzweiss et al., 2020). It is important to consider the basic human needs of students, especially in the context of pre-existing stress levels and feelings of unpreparedness for online learning (Day, 2015). The sudden shift to fully online learning during the pandemic may have contributed to students feeling unprepared due to factors such as a lack of proper technology tools and poor internet connection.

Furthermore, research conducted among TVET students from UTHM has shown that conflicts at home can have a negative impact on academic achievement (Wong & Atan, 2021). This suggests that pre-existing stress, such as conflicts at home, may have contributed to students' lack of autonomy and well-being in their perception of online learning during the pandemic. In conclusion, the high mean values of all six elements of PWB suggest that they have an impact on students' perception of online learning. The autonomy element is particularly important in determining students' ability to learn independently, and the challenges posed by the pandemic may have contributed to students' feelings of unpreparedness and lack of autonomy in their online learning experiences.

Table 1 - Descriptive analysis of psychological well-being towards students' perception of online learning

Element	Mean	SD	Interpretation
Autonomy	3.65	2.56	High
Environmental Mastery	3.58	2.75	High
Personal Growth	3.52	2.88	High
Positive Relations with Others	3.60	0.72	High
Purpose in Life	3.58	0.76	High
Self-Acceptance	3.80	0.69	High

Further, to identify whether there are any differences between male and female students' perceptions of online learning that could be affected by their PWB during the pandemic COVID-19, the researcher analyzed the data using the non-parametric analysis of Mann-Whitney U. The selection of this data analysis method is due to the dependent variables being ordinal and the variances being unequal. Mann-Whitney U tests were performed to compare the differences between genders' perceptions of online learning affected by PWB during the pandemic COVID-19. Based on the findings of the study obtained in Table 2 through Mann-Whitney U analysis, it was found that there is no significant difference between male and female students' perceptions of online learning that affected their PWB during the pandemic COVID-19. The 45 female students have a higher rank (69.54) than 82 male students (60.96) for the element of self-acceptance of PWB, $U = 1595$, $p = 0.20$, $r = -0.11$, which was not a statistically significant difference, and according to Cohen (1988), is a small-medium size effect. Further, the rest were also no statistically significant differences, in the mean ranks of females (68.99) and males (61.26) for the element of environmental mastery of PWB, $U = 1620$, $p = 0.26$, $r = -0.10$, which is also considered a small-medium size effect. Followed by a higher rank (68.37) than male students (61.60) for the purpose-in-life element of self-acceptance of PWB, $U = 1648$, $p = 0.32$, which is also considered a small-medium size effect. Next, the mean ranks of females (67.16) and males (62.27) for the element of personal growth of PWB, $U = 1703$, $p = 0.47$, $r = -0.06$, which was a small-medium size effect. Moreover, a higher rank (66.41) than male students (62.68) for the positive relations with others element of PWB, $U = 1736$, $p = 0.58$, $r = -0.05$, which is also considered a small-medium size effect. Lastly, the mean ranks of females (64.28) and males (63.85) for the element of autonomy of PWB, $U = 1832$, $p = 0.95$, $r = -0.00$, which was a small-medium size effect.

Thus, based on this result, agrees with the research that had been conducted, that the outcome is equal when comparing genders' perceptions of online learning that affected their PWB during the pandemic COVID-19 (Adams et al., 2015). Further, the researcher also agrees with the same studies that it is difficult to determine which factors lead to PWB being affected by the students' perception of online learning being implemented during the pandemic COVID-19. Moreover, the research result also shows that male and female students of UTHM have readiness for online learning, which leads to the development of self-efficacy and self-directed learning. This is because both

genders have shown good communication in online learning with their classmates, as seen from the online learning classes. Thus, this research directly disagrees with a study that states female students have better communication in online learning due to the enthusiasm for using communication and technological tools for learning that had been well explained through written communication (Unal et al., 2014). Besides that, this research also disagrees with female students having higher degrees of readiness for online learning which suggested pushing male students to participate in live online learning more actively (Ming Tang et al., 2020). This is because both genders have shown the same result in being used to continuous online learning in the future.

Table 2 - Mann-Whitney analysis of differences between men and female student’s perception on online learning affected psychological well-being during pandemic covid-19

Elements	Group	N	Mean Rank	U	Z	p
Autonomy	Male	82	63.85	1832.50	-0.06	0.95
	Female	45	64.28			
Environmental Mastery	Male	82	61.26	1620.50	-1.14	0.26
	Female	45	68.99			
Personal Growth	Male	82	62.27	1703.00	-0.72	0.47
	Female	45	67.16			
Positive Relations with Others	Male	82	62.68	1736.50	-0.55	0.58
	Female	45	66.41			
Purpose in Life	Male	82	61.60	1648.50	-1.00	0.32
	Female	45	68.37			
Self-Acceptance	Male	82	60.96	1595.50	-1.27	0.21
	Female	45	69.54			

4. Conclusion

In conclusion, this research aimed to identify the impact of online learning on the psychological well-being of Technical and Vocational (TVET) students during the Covid-19 pandemic. The study analyzed various elements of psychological well-being, including autonomy, environmental mastery, personal growth, positive relationships, purpose in life, and self-acceptance. The results showed that some of these elements were affected by students' perception of online learning during the pandemic. However, there was a strong positive relationship between psychological well-being and perception of online learning. The findings are crucial for managing the emotional challenges associated with online learning and developing the affected psychological well-being of TVET students during the pandemic. The research also revealed that there was no significant difference in psychological well-being between genders. This provides insight into the psychological well-being of both genders towards online learning during the pandemic. Despite the challenges of transitioning to online learning, TVET students are ready to migrate to this mode of learning, even though it requires practical skills and work-based learning. Overall, the study aims to contribute to the development of mental strength in TVET students and assist stakeholders in implementing online learning in Malaysia.

Acknowledgement

This research was supported by Universiti Tun Hussein Onn Malaysia (UTHM) through Registrar Office.

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