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Readiness, Preparation, and Effectiveness of Online Teaching and Learning in Vietnam Tertiary Education

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ABSTRACT

This study aims at examining whether university students are ready to transform and adapt to the emergence of online teaching and learning, which serves as a response to the Covid-19 pandemic. The factors that usually influence students' ability to change their learning habits and adapt to these changes readily have usually been proposed from theoretical foundations. In this study, a quantitative method was conducted, with around 188 participants who were requested to complete an online survey with a seven-part questionnaire. Each part of the questionnaire was considered a factor affecting an ideally effective online teaching and learning model. The authors employed the Partial Least Squares (PLS) to analyze the data collected from the survey. The results indicated that Resources Readiness and Strategy Readiness played an important role in managing anxiety and were the main factors that affected online teaching and learning readiness. The pedagogical model was drawn from students' readiness and effectiveness during their online learning in comparison with their efforts. The results also showed that students enrolled in social and humanity courses like English language and linguistics were more resistant to online learning than those in engineering courses. The model with precise details of factors hopes to introduce universities and educational institutions when conducting their emergency online teaching and learning during the COVID-19 pandemic.

Keywords: *COVID-19 Pandemic, students' readiness, online learning and teaching, Resources Readiness, Strategies Readiness*

1. INTRODUCTION

COVID-19 is an irresistible sickness brought about by another Coronavirus which started in December 2019 [1]. This abrupt episode of COVID-19 was announced to be an overall wellbeing crisis of global worry by the World Health Organization (WHO) because of the consistently increasing quantities of affirmed worldwide cases. Indeed, in early March 2021, the all-out affirmed cases surpassed 1.2 million worldwide. Opposite to the remainder of the world's nations, from the outbreak in late 2019 to early 2021, Vietnam was not seriously influenced by flare-ups of COVID-19 despite four times recording community outbreaks. Its affirmed number of contaminations was just 2733 on the fifteenth of March 2021. Expectant precautionary and careful steps had effectively stood engaged by most governments a little time sooner to expand populace security by managing COVID-19. Along these lines, the local lockdown was required, social isolation was drilled, occasions besides get-togethers stood dropped, and most public spots were forced to shut down. Following these preventive measures, a crisis strategy was received by the Ministry of Education and Training's prompt response conveying

from schooling to online learning at all levels of the educational system. According to MOET's circular, online teaching supports and substitutes traditional teaching and improves teaching quality [2].

Vietnamese universities have actively shifted the mode from offline to online when receiving the notice preventing COVID's pandemic from the Vietnamese government. Many modern virtual conferencing platforms, such as Microsoft Teams, Zoom, BBB, Google Meet, or direct livestreams from the lectures, have been employed to conduct the lessons to students who have stayed at home for a while. The online teaching and learning at that time was smooth, thanks to the crisis-distant instructing during the forced lockdown because of the COVID-19 pandemic in the period of 2019 – 2020. Specifically, most of the campuses put forth a critical attempt regarding crisis far off education, with a smooth move to e-getting the hang of utilizing diverse previous learning stages. This smooth move may be credited to the e-learning framework found in the Vietnamese advanced schooling framework, over which e-learning has been coordinated into Vietnamese colleges since the year 2002.

However, in order to get this form of teaching and learning to work effectively, we need a great deal of support and good preparation, including participants' readiness, infrastructure platform, such as internet broadband, computer literacy, etc. The paper is to explore the readiness and preparedness for the task of online teaching and learning online as well as its effectiveness.

2. LITERATURE REVIEW

Many researchers broadly define the term 'online teaching and learning due to its multiple aspects of using IT in educational contexts [3], [4] [5]. The forms of online teaching and learning vary from country to country, depending on their different applicable levels. Online teaching and learning in the Vietnamese context were explored after the COVID pandemic [6] [7]. Online teaching and learning are basically creating a virtual space to access virtual communication, curriculum, online resources with assistance and assessment [8].

Concerning lecturers' uneasiness, it might emerge from the insight that online teaching and learning is more demanding, contrasting to a conventional presenting method [9]. Besides, online teaching and learning require a total utilization of innovation. Johnson et al. [10] delineate that innovational challenges are usually the most moving hindrance to defeat online courses. Lecturers may also confront extra nervousness coming from uncommon lockdown circumstances of the COVID-19 pandemic [11], [12] [13]. Indeed, a few studies have demonstrated high tension levels among lecturers and students during the pandemic throughout the world [12] [14] [15] [16] [17]. Kim and Asbury [18] uncover that lecturer responsibilities were a principal stressor during the COVID pandemic. Muilenberg and Berge [19] find out that administrative management, communicative interaction, academic and technical skills learning equipment, and internet facilities might affect online teaching and learning. The authors adapted Muilenburg and Berge's [20] model in this research paper and suggested a conceptual framework showing the factors affecting online teaching and learning.

Figure 1. The model of factors affecting emergency online teaching and learning

Based on this model, the authors developed a conceptual framework for students' perceived emergency online learning readiness model.

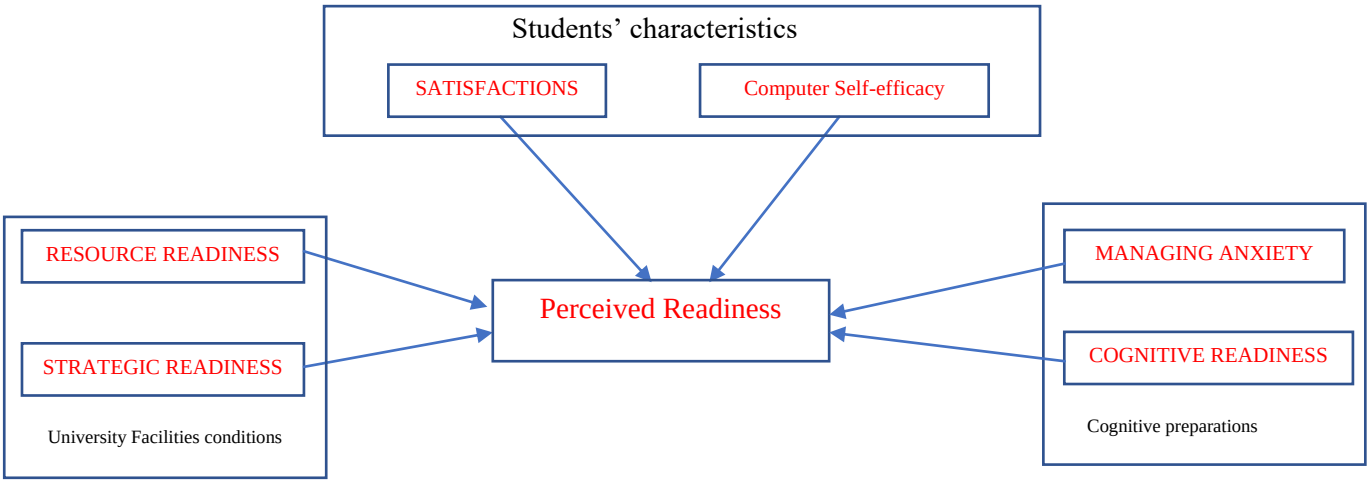

Figure 2. A conceptual framework for student's perceived readiness

3. METHODOLOGY

This study was conducted on different students from three different universities in Vietnam: Da Lat University, Da Nang University, and the Ho Chi Minh City University of Food Industry. A non-probability sampling technique was conducted among different university students. A Questionnaire was shared online via the Google Form tool at the address https://forms.gle/PSytihp9VWUY4Wdc9 and distributed in the official mails of different students in various faculties on these three universities. The respondents who took part in the study were 188 voluntarily random students and lecturers from different faculties in the three universities.

The questions used in the questionnaires usually were adopted from the emergency online teaching and learning model (*Figure* 1.). The analytical method used in this study was Covariable Structural Analysis using Latent Variable (factors). This method integrated multivariate techniques involving measurement theory, factor analysis, path analysis, regression, and simultaneous equations. All the collected data were analyzed using the Smart PLS software, and all the results were presented in terms of percentages.

4. FINDINGS AND DISCUSSION

The demographic of the participants was reported as a background and context used for discussion in this study. Measurement model evaluation and structural model evaluation were shown as evidence for our suggestions and conclusions for issues stated in the study. These undergraduate students have taken part in online teaching and learning during the COVID-19 Pandemic periods. Table 1 shows the details of their demographics.

Table 1. The summary of demography data of participants in the study

PARTICIPANTS	OBSERVATIONS	PERCENTAGES
Institutions		
Ho Chi Minh City University of Food Industry	112	59.57
Da Lat University	34	18.08
Da Nang University	20	10.63
Others	22	11.70

Majors		
Social Science	80	42.55
Natural Science	26	13.82
Technology Science	60	31.91
Others	22	11.70

The participants in the study covered all ranges of majors; therefore, they could represent an overview of the context of online teaching and learning in Vietnam. The participants' opinions were recorded and reported on the wide range of factors presented in Table 2.

Table 2. A summary of factors statistics

	Missing	Mean	Median	Min	Max	Standard Deviation	Excess Kurtosis	Skewness
SAT1	0	2.452	2	1	4	1.285	-1.705	0.046
SAT2	0	3.08	3	1	5	0.962	-0.482	0.129
SAT3.1	0	2.681	3	1	5	0.788	0.516	-0.022
SAT3.2	0	3.431	4	1	5	0.934	0.459	-0.685
SAT3.3	0	3.5	4	1	5	0.954	0.978	-0.927
CSE1	0	3.58	4	1	5	0.928	1.472	-1.122
SCE2	0	3.537	4	1	5	0.93	1.228	-0.988
SCE3	0	3.41	4	1	5	0.949	0.571	-0.678
RR1	0	3.543	3	1	5	0.986	-0.297	-0.187
RR2	0	3.649	4	1	5	0.953	-0.601	-0.136
RR3	0	3.755	4	1	5	0.919	-0.332	-0.323
SR1	0	3.745	4	1	5	0.922	-0.331	-0.332
SR2	0	3.755	4	1	5	0.925	-0.153	-0.348
SR3	0	3.713	4	1	5	1.058	-0.472	-0.462
MA1	0	3.138	3	1	5	1.083	-0.46	0.026
MA2	0	3.601	4	1	5	1.113	-0.174	-0.513
MA3	0	3.181	3	1	5	1.134	-0.581	-0.097
CR1	0	3.787	4	1	5	0.938	0.107	-0.497
CR2	0	3.617	4	1	5	0.883	-0.267	-0.103

In this research paper, the authors have formed the Path Diagram with a PLS Algorithm of a total of 188 observations (s*ee* Table 2). The line used in the model had highlighted the value of factors (*see* Figure 3).

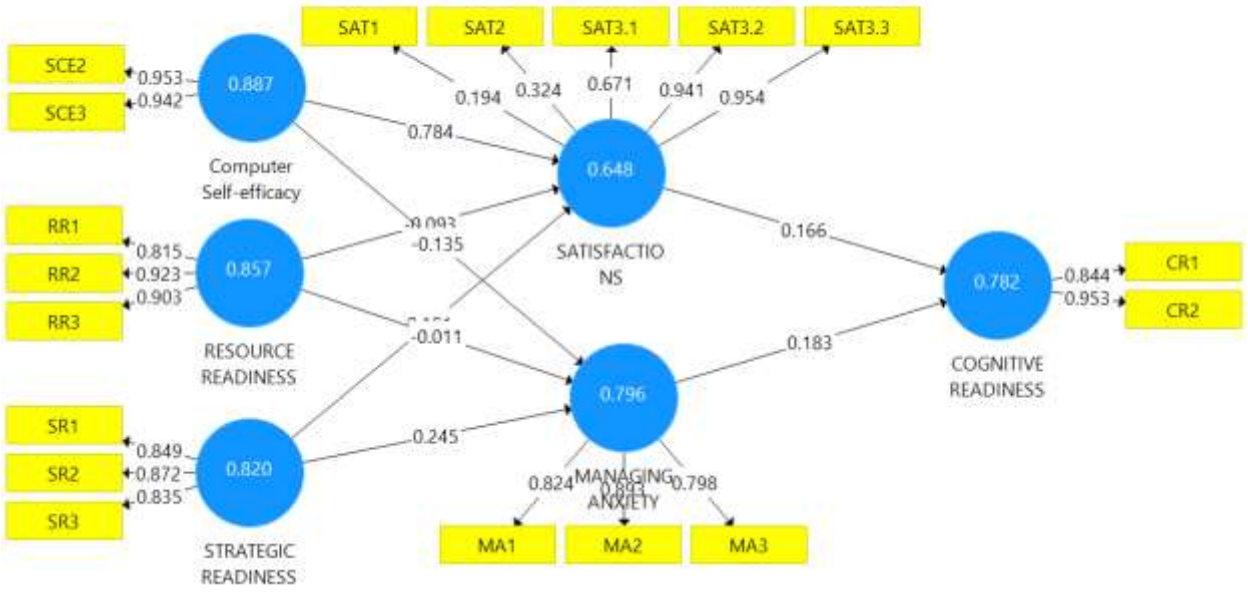

Figure 3. The interaction model of online learning and teaching factors

Figure 3 shows the relationship between *Students' characteristics*, *University facility conditions*, and *Cognitive Preparations* for online teaching and learning. These group factors were considered to influence the perceived readiness of lecturers and students for teaching and learning in emergency situations. The variables involved *Satisfactions* (SA), *Computer Self-Efficacy* (CE), *Resources Readiness* (RR), *Strategic Readiness* (SR), *Managing Anxiety* (MA), and *Cognitive Readiness* (CR). Figure 3 also demonstrates the analytical method algorithm, which was used as a structural weighting method. Three sub-typed of Computer Self-Efficacy SCE1, SCE2, and SCE3, had a strong influence on Satisfaction with the value of 0.894, 0943, and 0.915, respectively. Resources Readiness strongly contributed its influence on the two other factors, Management of anxiety and Satisfaction with nearly the same value (around 0.134-0.154).

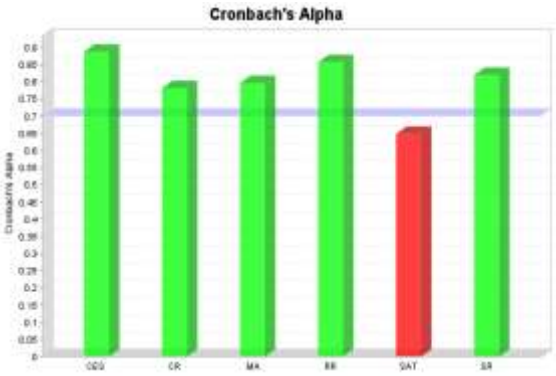

Figure 4a. A summary of Cronbach's Alpha reliability

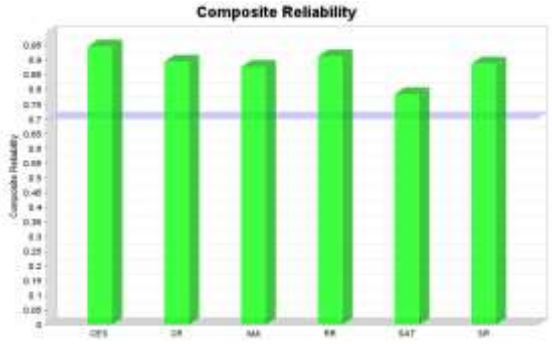

Figure 4b. A summary of Composite reliability

All of the variables or constructs have fulfilled the validity requirements because their Cronbach's Alpha is higher than 0.6, and Composite Reliability measured by AVE was greater than 0.5. Therefore, all of the constructs or variables in this research paper were declared reliable [21]. Our figures ranked from 0.6482 to 0.8874, which is higher than a minimum value of 0.6.

Table 3. Construct Reliability and Validity

	Cronbach's Alpha	Composite Reliability	Average Variance Extracted (AVE)
CSE	0.8874	0.9465	0.8985
CR	0.7817	0.8948	0.8102
MA	0.7963	0.8771	0.7045
RR	0.8570	0.9128	0.7777
SAT	0.6482	0.7845	0.4777
SR	0.8200	0.8883	0.7262

Table 3 shows that Computer Self-Efficacy (0.8985) and Cognitive Readiness (0.8102) are more reliable than other factors like Management of Anxiety (0.7045), Resources Readiness (0.7777), and Strategy Readiness (0.7262). Based on the data, the authors applied Smart PLS to draw the summary of the model with complete data and total effects in Figure 5.

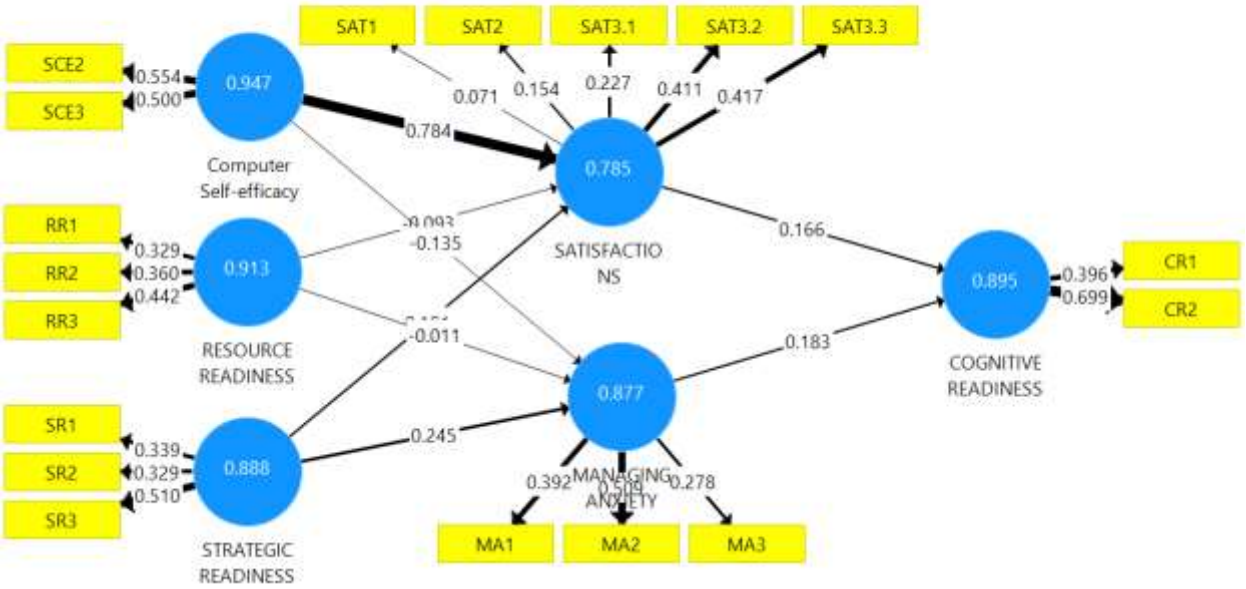

Figure 5. A summary of the model with complete data and total effects for perceptive readiness.

Readiness is usually perceived as the cognitive precursor to a certain behavior. It is clear that to support the learners' preparedness for unlearning. It is good to prepare them for a long time to help them when the process of online teaching and learning comes. The student's readiness for online learning is greatly linked to Computer Self-Efficacy. Computer Self-Efficacy is a key factor; however, it depends on many other factors as well, including organizational supports and organizational strategies.

5. CONCLUSION

With the spread of the COVID-19 pandemic, online teaching and learning is becoming more important in our educational management to prevent us from the widespread pandemic. This study investigated factors affecting the quality of teaching and learning at the tertiary level. The results revealed that teachers and students' readiness played a significant role in the success of the course and curriculum and students' satisfaction.

The study also examined organizational and technological factors in terms of Resources readiness, Strategy Readiness, and Computer Self-efficiency in the context of Higher Education in Vietnam, a developing country. The results indicated that Resources readiness, Strategy Readiness, and Computer Self-efficiency all affected students' and lecturers' anxiety and satisfaction.

Hopefully, this study contributed to directing online teaching and learning readiness for an emergency situation. Therefore, online teaching and learning readiness would be put into consideration by university administers when decisions are made. All academic institutions should pay attention to the factors that threaten students' and teachers' anxiety and those that promote teachers' and students' satisfaction in virtual educational environments.

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APPENDIX

SURVEY QUESTIONNAIRE

GENERAL INFORMATION

Email address:

Full name:

Your telephone number:

Your institution/ University:

Ho Chi Minh City University of Food Industry

☐ University of Foreign Language Studies - The University of Danang

☐ Da Lat University

☐ Other

SATISFACTIONS (SAT)

1. Choose the field of an online course that you have ever taken

☐ Social Science

☐ Natural Science

☐ Technology Science

☐ Others

2. Your expectations & effects of online learning:

	Poor	Fair	Satisfactory	Very good	Excellent
1. Level of skill/knowledge at start of your course	☐	☐	☐	☐	☐
2. Level of skill/knowledge at end of your course	☐	☐	☐	☐	☐
3. Contribution of your course to your skill/knowledge	☐	☐	☐	☐	☐

3. Level of your effort:

	Poor	Fair	Satisfactory	Very good	Excellent
Level of effort you put into the online course during the social distance of COVID-19	☐	☐	☐	☐	☐

4. Skill and responsiveness of the instructor

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
1. My instructor was an effective lecturer/demonstrator.	☐	☐	☐	☐	☐
2. His/her presentations were clear and organized.	☐	☐	☐	☐	☐
3. My instructor stimulated students' interest.	☐	☐	☐	☐	☐
4. My instructor effectively used time during class.	☐	☐	☐	☐	☐
5. My instructor was available and helpful.	☐	☐	☐	☐	☐

COMPUTER SELF-EFFICACY (CSE)

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
1. I could complete online assignments or tasks if someone else demonstrated it for me.	☐	☐	☐	☐	☐
2. I could complete the online assignments or tasks if I was trained to use the online learning software.	☐	☐	☐	☐	☐
3. I could complete online assignments or tasks if I had a clear online guidance.	☐	☐	☐	☐	☐

RESOURCE READINESS (RR)

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
1. My university has extensive online teaching and/ or learning technical knowledge before.	☐	☐	☐	☐	☐
2. My university is ready for allocating adequate IT infrastructure resources necessary to apply online teaching and/ or learning for an emergency situation.	☐	☐	☐	☐	☐
3. My university is ready for allocating adequate human resources necessary to apply online teaching and/ or learning for an emergency situation.	☐	☐	☐	☐	☐

STRATEGIC READINESS (SR)

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
1. Using online teaching and learning is compatible with the university's visions and mission.	☐	☐	☐	☐	☐
2. Online teaching and learning is compatible with the university's existing culture and values.	☐	☐	☐	☐	☐
3. My university curriculum has at least 10% of courses which were taught via virtual environments such as Google Meet, Microsoft Team, BigBlueButton, Zoom, Zalo,...	☐	☐	☐	☐	☐

MANAGEMENT ATTITUDES (MA)

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
1. The skills needed to use online teaching and/ or learning are very hard to understand and to apply.	☐	☐	☐	☐	☐
2. Integrating online teaching and learning in the current practices is a really big challenge.	☐	☐	☐	☐	☐
3. Integrating online learning in the current practices reduces the quality of teaching and learning.	☐	☐	☐	☐	☐

COGNITIVE READINESS (CR)

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
1. I have my own appropriate skills to manage online teaching and/or learning for an emergency situation.	☐	☐	☐	☐	☐
2. I have positive attitude towards the efficiency of online teaching and/ or learning.	☐	☐	☐	☐	☐