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Author: P.O. De Silva, R.M.C.S. Ratnayake, H.M.J.P. Herath

Uva Wellassa University, Sri Lanka

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IMPACT OF SELF EFFICACY ON TEACHING TRANSITION IN THE AGE OF COVID-19 FROM THE PERSPECTIVE OF ACADEMICS

[1]P.O. De Silva, [2]R.M.C.S. Ratnayake, [3]H.M.J.P. Herath

[1,2]Department of Management Sciences, [3]Department of Tourism Studies, Uva Wellassa University, Sri Lanka

ABSTRACT

The repercussion of the COVID-19 has influenced every aspect of human life while leading individuals towards more remote interactions. Accordingly, the teaching-learning platform has also invested in novel technologies to move forward with this uncertain environment. The systematic models including e-learning, mobile learning, Class blogs, Discussion groups has gained increased attention recently. However, transferring from the conventional model to techno-centric model has resulted in a range of positive and adverse consequences. Therefore, this study concentrates on teachers' perceptions of convenience, accessibility, efficiency and effectiveness and enjoyment of these techno-centric techniques and the barriers teachers encounter with the transition. Furthermore, the study emphasized the differences associate with the gender, teaching disciplines and professional/academic qualifications. The perspectives of two hundred eighty-six academics reference to self-efficacy, and transitive teaching techniques were measured through a quantitative philosophy. The study incorporated random sampling techniques and followed the ordinary least square regression and T-Test analysis. Thereby, the analysis established a relationship between self-efficacy and transitive teaching techniques. Profoundly, the study revealed that there's a significant difference in perceptions relating to the teaching disciplines. Finally, the study concluded that concentration on diversity in self-efficacy is crucial in assessing the worth of transitive teaching technique.

Key words: COVID 19, Self-efficacy, Teaching transition, Academics Perception, E-learning

INTRODUCTION

The exigent imperative to move remote instructions caused by Covid-19 pandemic has forced to view the teaching and learning process from a new lens (Rapanta, Botturi, Goodyear, & Koole, 2020). The authorities have also imposed security and safety measures on continuing teaching and learning process (Khalil, et al., 2020). Thereby, the higher educational institutes have forced to adopt a digital platform where the traditional learning platform has drastically transformed to a digital teaching and learning platform (Armstrong-Mensah, Ramsey-White, Yankey, & Self-Brown, 2020). Therefore, the studies have been focused on the online teaching techniques namely; virtual learning, mobile learning, digital learning to facilitate distance regulations.

Accordingly, often with fewer instructions and training; teaching and learning process has changed completely to a distance mode (Gillis & Krull, 2020). Thereby, the teaching panel of all disciplines has to prepare for virtual delivery of the course content. Profoundly,

the university teachers' encounter challenges due to lack of content knowledge which includes technical and administrative knowledge on online teaching (Ching, Hsu, & Baldwin, 2018). Rapanta, Botturi, Goodyear, & Koole (2020) pinpointed that lack of content knowledge significantly influence on meaningful delivery of the online experience.

To cope with the COVID 19 pandemic teachers have to facilitate constructive teaching-learning process along with a disruptive experience to safeguard the value of the teaching-learning process. Kebritchi, Lipschuetz, & Santiague (2017) identified changed teacher roles, a transition from live delivery to online delivery, teaching styles and time management as the set of challenges faced by a teacher in an online platform. Hence, the self-efficacy of a teacher has been stressed by the many studies which present the teachers' knowledge, believes, skills and abilities to organize and perform the activities requires to carry out a particular task (Tschannen-Moran & Hoy, 2002). (Bandura, 1997) elucidated that higher the level of self-efficacy encourages to embrace more challenges and difficulties. Hence, the level of self-efficacy of a teacher would influence on the acceptance of the newer teaching model. Therefore, this study overviews the role of self-efficacy in the process of teaching transition from the conventional way of teaching to virtual based teaching during the age of COVID 19.

LITERATURE REVIEW

Teaching in a classroom context, answering the students' questions, tempting students to take notes considered as the backbone of the conventional teaching-learning process (O'Malley & McCraw, 1999). However, the technological development has taken over the traditional way of teaching with a range of techniques including; online teaching, distance learning, e-learning, digital education, mobile learning. Even though the umbrella term "online-teaching" has widely used there's no universally accepted definition (Rapanta, Botturi, Goodyear, & Koole, 2020). Simply, online teaching can be described as teaching that is facilitated or mediated by online (De Laat, Lally, Lipponen, & Simons, 2007). According to Anderson, Rourke, Garrison, & Archer (2001), online teaching structure is designed to entertain the cognitive and social purpose of learning while achieving the intended learning outcomes. Thereby, it effectively utilizes the number of technological tools to enrich the teaching-learning experience (De Laat, Lally, Lipponen, & Simons, 2007).

The COVID-19 pandemic has highlighted the importance of virtual connectivity at the various levels, for instance, the closure of schools, imposed laws have driven towards the distance learning platform (Viner, et al., 2020). So, the suspension of conventional classes and face to face teaching appeared to be a means of mitigating the spread of disastrous disease (Kawano & Kakehashi, 2015). An abrupt, switching to online teaching environment has incurred due to this pandemic. However, the little amount of research on online teaching in the age of COVID-19, pinpointed that resilience is necessary to cope with anxiety, stress and depression (Dohaney, de Róiste, Salmon, & Sutherland, 2020). Stephenson (2001) located the difficulties of converting traditional face to face teaching process to a virtual environment, as the complexity of the teaching process, required technical infrastructure, techno-centric strategies to be built on and necessary skills and competencies. The number of online teaching roles namely; designer, administrator, assessor, facilitator, counsellor, technologist, and researcher

demand the abilities and skills in specifying accurate online activities fit for the purpose and knowledge on effective pedagogies that support in online learning (Hativa & Goodyear, 2002). Similarly, Mason (2001) stated that online course structures should be well designed, should avoid the workload, should be user friendly, should facilitate prompt navigation, and should provide extended access to online resources. Consequently, it has increased the burden of a conventional teacher.

The development of teacher's knowledge, attitudes and skills has become the rule of thumb to prevail in this pandemic context. Therefore, the concept of self-efficacy has been highlighted by many scholars. Teacher's self-efficacy can be defined as the extent to which teacher is confident on his/her capacity to influence on students' (Berman, McLaughlin, Bass, Pauly, & Zellman, 1977, p. 137). Bandura (1977) put forefront self-efficacy as a cognitive process where individuals construct their attitudes and beliefs and develop their capacities to function at a particular level of attainment. It endorses how much effort each individual has put forth, how long each individual would persist the obstacles, how resilient they are when experiencing failures and how much stress they encounter. Significantly, the level of self-efficacy influence on the acceptance of changes (Tschannen-Moran, Hoy, & Hoy, 1998). Self-efficacy can be operationally defined as adjusting for different situations (Amri & Alasmari, 2021). Therefore, the degree of self-efficacy can influence on the acceptance of teaching transmission from the conventional model to an online model.

Self-efficacy and academic achievement and adoption have an attachment. For instance, study ascertained positive relationship between self-efficacy and academic performance (Mousoulides & Philippou, 2005). Correspondently, highly self-efficacious individuals compared to their counterparts present a high level of engagement and more willingly involved in difficult tasks, and challenges (Pajares & Miller, 1994). Given that self-efficacy plays a substantial role in accepting and adopting for changing environment. Movingly, Kim & Park (2017) statistically confirmed that in an online environment prior experience on such a learning environment significantly influence on self-efficacy and thereafter accepting and adopting online environment. Moreover, the efficiency in technology utilization, convenient application, level of enjoyment influence on the degree of the efficacy and then technology transmission (Peechapol, Na-Sonkhla, Sujiva, & Luangsodsai, 2018; Amri & Alasmari, 2021).

METHODOLOGY

Participants and Sampling

A total of 300 questionnaires were distributed to all Sri Lankan government universities via google forms to obtain information about their perceptions of convenience, accessibility, efficiency and effectiveness and enjoyment of techno-centric techniques and the barriers academics encounter with the transition. 286 university lectures from different universities in Sri Lanka were responded to the questionnaire confirming a response rate of 95%. Sample contains female and male lectures proportionately. The sample consist of lecturers from temporary to senior grades. The participants were recruited using convenience sampling technique which is a type of non-probability sampling technique. Participants were informed about the aim of the study and where these data were to be used. They were assured about the anonymity and confidentiality of the data.

Measurement Tool

This study used a quantitative research design via survey methodology. For the purpose of this analysis, the questionnaire used consisted of two sections. The first part consisted of questions about demographic information. The second part included a set of questions used to measure academics their perceptions of convenience, accessibility, efficiency and effectiveness and enjoyment of techno-centric techniques and the barriers encounter with the transition. Furthermore, in this study measure the differences associate with the gender, teaching disciplines and professional/academic qualifications The elements of the exploratory survey were used to test the major variables of this analysis on a Likert-type scale (from 1 = "Strongly Disagree" to 5 = "Strongly Agree").

Data Analysis

The data were analyzed by using the Statistical Program for Social Sciences (SPSS). The reliability statistics is used by using Cronbach's alpha as a metric of reliability to test the internal accuracy reliability of all the elements of and scale of the research variables. Then, exploratory factor analysis was conducted to indicate construct validity of the questionnaire used for the aim of this study. Next, frequency distributions and descriptive analysis were used to analyze The reliability statistics is used by using Cronbach's alpha as a metric of reliability to test the internal accuracy reliability of all the elements of and scale of the research variables academics perceptions of convenience, accessibility, efficiency and effectiveness and enjoyment of techno-centric techniques and the barriers academics encounter with the transition Then, an independent samples t-test analysis was conducted to investigate whether there are gender, teaching disciplines and professional/academic qualifications differences in academics experiences with the transition to virtual learning and teaching system. As independent variable, self-efficacy measured by using four other variables such as perception of convenience, perception of accessibility, perception of efficiency and effectiveness, perception of enjoyment to gain a valuable output from this research by using academics as the participants. As for the dependent variable, effective and efficient transmission taken as a one variable which is varies with the above mentioned four independent variables of self-efficacy. Finally, Multiple Regression analysis used to measure the impact of variables in this study.

Results Analysis

The demographic analysis of the study implies variations between gender, Academic discipline and academic level qualifications. In approaching that, the total respondents scatter as 47% from males and 50% from females among total of 286 respondents. In demonstrating the academic disciplines among the respondents, 28% from Management stream, 30% from Art stream, 25% from Science Stream and 17% from math stream. The level of qualification among the collected data implied a division between current academic profile of the respondents as Permeant Staff (70%), Probationary Staff (21%) and Temporary Staff (9%) in their level of achievement in their university academic ladder.

Table 01 - Reliability Statistics

Cronbach's Alpha	N of Items
.743	15

Source: Analytical results from SPSS

The alpha coefficient for the 15 items is .743, suggesting that the items have relatively high internal consistency which is considered "acceptable" to run the model in further analysis.

Table 02- Transferring from the conventional model to techno-centric model -perceptions of Academics N = 286

Variable	M (sd)	Range	Skewness	Kurtosis	Frequency	Percentage
perceptions of convenience,	3.65 (0.72)	1-5	-0.25	0.24		
perceptions of accessibility,	3.67(0.59)	1-5	-0.44	0.25		
perceptions of, efficiency and effectiveness	3.70(0.64)	1-5	-0.65	0.12		
perceptions of enjoyment	3.71(0.65)	1-5	-0.66	0.11		
Gender Male					135	47.20
Female					151	50.69

Source: Analytical results from SPSS

Note- M = mean, sd= Standard Deviation

The table 02 above describes the descriptive statistics of mean, standard deviation, range, skewness and kurtosis for all the variable of interest within this study. The frequency distribution analysis depicts that the main variables are normally distributed with the analysis explained by the values of skewness and kurtosis. The above description illustrates that each variable show, the perception depicted by the academics shows an average experience with the decided variables in measuring the self-efficacy to determine the technical transition they undergo during the COVID-19 period.

Table 03 - Comparison of male and female academics perception on the transition from the conventional model to techno-centric model (n=135 males and 151 females)

Variable	M	t	p
Perceptions of convenience,		0.29	0.78
Male	3.64		
Female	3.59		
perceptions of accessibility,		-0.75	0.46
Male	3.61		
Female	3.71		
perceptions of, efficiency and effectiveness		-0.24	0.81
	3.68		
Male	3.72		
Female			
perceptions of enjoyment		-0.23	0.79
Male	3.67		
Female	3.71		

Source: Analytical results from SPSS

Essentially, a t-test is conducted in examining and comparing the average values of a particular data sets that determine their original population similarity. According to the data indicated in Table 03, the t – test analysis results prove the males and female's involvement in the perception effects are in similar ranges and it does not show much difference between two parties, in which males' dose not significantly shows different attire from females' category in describing their self-efficacy in the form of perception of convenience, ($p = 0.78$), accessibility ($p = 0.46$), effectiveness and efficiency ($p = 0.81$) and enjoyment ($p = 0.79$) within their transition from conventional traditional teaching models to techno- centric novel teaching techniques in the period of COVID 19. Therefore, it can be predicted that, an influential effect on these changes is not that much significant for gender differentiation in describing academics perception in this regard.

In determining the most influential variable that would affect the changing patterns of academics towards techno - centric mechanisms were analyzed with a multiple regression.

Table 04 - ANOVA table

Model	DF	Mean Square	F value	P value
Regression	7	2.455	11.128	0.000
Residual	279	0.221		
Total	286			

Source: Analytical results from SPSS

The findings derive the multiple regression equation as,

$$Y = 1.783 + 0.594\ X_1 + 0.528\ X_2 + 0.519\ X_3 + 0.468\ X_4 + \varepsilon$$

Y = Effective and Efficient Transmission

a = Constant level of Effective and Efficient Transmission

X_1 = perception of convenience

X_2 = perceptions of accessibility,

X_3 = perceptions of efficiency and effectiveness

X_4 = perceptions of enjoyment

ε = Error term

The table 04, illustrate the overall significant levels between the variables in this analysis. These results outlook the point that, all independent variables shown here are significantly correlated with the depicted dependent variable since p- value is less than 0.05 and it demonstrate the model is statically significant.

Table 05- Model summary of multiple regression analysis

R	R square	Adjusted A Square	Standard error of estimates
0.728	0.529	0.569	0.4697

Source: Analytical results from SPSS

Here, as demonstrated in Table 05, multiple correlation (R) is 0.728 which indicates that independent variables are correlated with effective and efficient transmission dependent variable, which are the forms of self-efficiency that generate a moderate linear relationship within the model between the two main variables. The coefficient of determination (R square) is 0.579. That denoted 57.90% of the dependent variable (effective and efficient transmission) is covered by the regression model. The adjusted R square is 0.569 and it was lower than the R square v alue which states that, the shown regression model is well fitted.

It can be depicted that, when all independent variables were held constant the dependent variable; Effective and Efficient Transmission would at 1.783. The model implies that the four main independent variables that denote the aspects of self-efficacy, generate a positive impact on the effective and efficient transmission from traditional teaching platforms to techno- centric platforms. Accordingly, the results of the study revealed that with referred to all the factors the perception of convenience exert a strong influence on the dependent variable of Effective and Efficient Transmission which strictly implies the facts that most of all academics are favorable to the techno centric movement in the COVID pandemic situation at the current scenario and they are willing to utilize and accept that this transmission generate the positive influence for their academic routines at their assigned roles as university academics.

DISCUSSION AND CONCLUSION

This work explored the recent literature regarding academics perceptions of techno-centric techniques and researcher identified barriers academics encounter with the transition and the role of self-efficacy in the process of transition. Paper evaluated how this has influenced to their teaching and learning behaviours. According to the literature, this covid-19 pandemic influence to the field of teaching

and learning will highly impact to the developing and undeveloped countries because of their undeveloped technological adaptation (Viner, et al., 2020 ; Kawano & Kakehashi, 2015). Most of the countries are lack of enough distance learning training and technical equipment

Within the developing countries, Sri Lanka is in the much better state with regards to technology adaptation and computer literacy. Therefore, Sri Lankan academics are far beyond with the use of new technological methods for teaching and learning mechanism. Transferring from the conventional model to techno-centric model has resulted in a range of positive and adverse consequences according to the participants.

Results indicates gender do not make any difference for the perception of the academics towards the techno-centric transition and professional and academic qualifications also do not indicate any significance difference to the perception of academics. However, teaching disciplines make sense for the difference of the perception of academics because of the practical and mathematical disciplines are not very convenience to teach by this techno-centric models. Most of the academics in the disciplines of statistics and scientific related areas do not have positive perception towards the convenience and effectiveness and efficiency in techno-centric teaching.

Based on the regression analysis all the independent variables related to self-efficacy have the impact towards the dependent variable of efficient and effective transition. (Amri & Alasmari, 2021; Peechapol, Na- Sonkhla, Sujiva, & Luangsodsai, 2018). Moreover, in this techno-centric efficient and effective transition highest impact from the perception of convenience and least impact form the perception of enjoyment.

Mainly the as for the results there are significant difference in perceptions relating to the teaching disciplines and concentration on diversity in self-efficacy is crucial in assessing the worth of transitive teaching technique. Finally researcher identified unequal access to technology, lower rates of digital literacy, and issues with Internet connectivity, unanticipated loss of Internet as some barriers to the academics when they are teaching after transition.

LIMITATIONS AND RECOMMENDATIONS

A few limitations and some implications for future research should be noted. This study is focused on two important constructs, which are greatly influenced by academic experiences with the transition. It should be noted that other measures, such as self-efficacy beliefs, can be included in order to determine the efficient and effective transition of academics teaching enhancement. Due to the intensive period of the COVID-19 pandemic and the lockdown of the country, we were limited to collecting the data online and reaching a limited number of respondents through a random sampling procedure. Future studies may consider a more diverse sample. A final limitation of this study is the reliance only on academics self-reported information about their experiences with the transition and other variables of interest.

Future research can further examine this area by data collection from other sources (E.g.: students and parents) and other forms of assessment, including observations and structured interviews with focus groups. Moreover, researchers can conduct research in this filed with a wide sample by getting data from different countries as well.

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