Motivation, Barriers, and Self-Efficacy in Digital Technology among Nurse Educators in Selected Higher Education Institutions in Calabarzon, Philippines

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ABSTRACT

This study determined the motivation, barriers, and self-efficacy on digital technology of the nurse educators in the selected HEIs in CALABARZON, Philippines. Varied aspects of socio-cultural, training and professional development, attitude, leadership and administration, and pedagogy influenced the motivation in digital technology among nurse educators. On the other hand, lack of internet service, requiring more time to fully integrate technology in teaching, lack of adequate and necessary training, unclear implication of technology in professional practice, and lack of competence in adopting technology hindered their digital technology integration. Self-efficacy is facilitated by easy access to resources from the online library, the capability to meet deadlines, the capacity to efficiently learn to use a new type of digital technology, and being able to carry out their ethico-legal responsibilities regarding their role as teachers. Motivation and barriers are interrelated variables that influence digital technology use and integration among nurse educators. Barriers and self-efficacy have a high positive relationship that when self-efficacy is low, a reduction of barriers is also noted. Thus, nurse educators must be provided with continued support and training as they adapt to the education landscape and as they embrace the instructional challenges brought about by digital technology in the 21st century classroom.

Keywords: Barriers**,** Digital technology, Motivation, Nurse Educators, Self- efficacy

INTRODUCTION

The world health crisis in January 2020 (Department of Health Memorandum Order No. 2020-0055) brought unprecedented disruptions to the education sector, resulting in an urgent paradigm shift in teaching modalities that forced the immediate and unexpected suspension of face-to-face classes due to lockdown and quarantine protocols. In response to this, the Philippines made an innovative shift in the teaching-learning process, responsive to the needs of students to access quality education through a flexible learning modality that allows flexibility in time, place, and audience, including the use of technology as a tool. However, the faculty members lack acceptance and participation in technology integration, and they fail to integrate technology into instruction in ways that make a difference in student learning, resulting in gaps in how faculty members embrace technology. Hence, this research assessed the motivation, barriers, and self-efficacy among nurse educators.

Research Population and Sample

The study involved 108 nurse educators from public and private HEIs in CALABARZON. This study did not include support staff or adjunct instructors during clinical rotation in the hospital. A descriptive-correlational design was used in this study. A purposive sampling technique was used in selecting nurse educator respondents who satisfied the set criteria: (1) full-time or part-time faculty in the college of nursing; (2) utilized digital technology in teaching; (3) with at least one year of teaching experience, and (4) who consented to be respondents of this study. A researcher-devised, pilot-tested structured questionnaire was used with an internal consistency of 0.91, Cronbach's alpha.

RESULTS AND DISCUSSION

Table 1 Summary of Values Showing the Frequency and Percentage Distribution of the Nurse Educator Respondents According to Demographic Profile

Age	**Frequency**	**Percentage (%)**
36-46 years old	39	36
Sex		
Female	83	77
Educational Level		
Master's Degree	64	56
Length of Teaching Experience		
11-15 years	35	32
Electronic Device Used		
Laptop	59	55
Type of Internet Service		
Wireless (through Wi-Fi)	65	60

There were 108 nurse educators who participated in the study. Most of the respondents (f= 39; 36%) were between ages 36 to 46 years old, female (f= 83; 77%), have Master's Degree (f=64; 56%), with 11-15 years of teaching experience, use laptop (f=59;55%) as their primary device in teaching, and have wireless internet service (f = 65; 60%).

Table 2 Summary of Values and Verbal Interpretation in the Assessment of the Nurse Educator Respondents on the Motivation in Digital Technology in Selected Public and Private Higher Education Institutions in CALABARZON, Philippines

Variables	**Mean**	**Verbal Interpretation**
Leadership and Administrative Support	2.86	Agree
Training and Professional Development	3.04	Agree
Accessibility and Availability of Resources	2.24	Disagree
Attitude	3.03	Agree
Pedagogy	2.68	Agree
Socio-cultural	3.05	Agree
Overall Mean	**2.81**	**Agree**

The overall mean (M=2.81) reveals that the respondents generally 'agree' that socio-cultural (M=3.05), training and professional development (M=3.04), attitude (M=3.03), leadership and administration(M=2.86), and pedagogy (M=2.68) influenced their motivation in digital technology. However, they 'disagree' that the accessibility and availability of resources (M=2.24) impacted their motivation for using digital technology.

The willingness to accept the technology is crucial in adapting to innovation since learning and integrating digital technologies in pedagogy take a lot of time and energy and is not an easy task (Fawaz et al., 2018), which may lead to limited use, less engagement and infusion, and concerns of lack of skills and limited time for training among the faculty (Coultman, 2015). Hence, nurse educators must be supported in the incorporation of technology in their teachings, be provided with a constructive work environment, as well as to be assisted by information and technology staff to improve their acceptance and support ongoing technology use (Huddle, 2019; Gonen & Lev-Ari, 2016), making them more motivated to teach and to learn new technology resulting to effective use of technology in the classroom (Chua et al., 2020).

Table 3 Summary of Values Showing the Mean and Verbal Interpretation in the Assessment of the Nurse Educator Respondents on the Barriers in Digital Technology in Selected Public and Private Higher Education Institutions in CALABARZON, Philippines

Variables	**Mean**	**Verbal Interpretation**
Institutional	2.77	Agree
Individual	2.66	Agree
Proficiency	2.65	Agree
Technological	3.03	Agree
Domestic and Community	2.41	Disagree
Overall Mean	**2.70**	**Agree**

The overall mean (M=2.70) suggests that the respondents generally 'agree' that technological (M=3.03), institutional (M=2.77), individual (M=2.66), and proficiency (M=2.65) are hindrances to digital technology use and integration. However, domestic and community (M=2.41) is not considered a barrier.

The lack of vision, leadership among administrators, money, curriculum, infrastructure, lack of professional development training, and the lack of assessment tool, as well as the experience of organizational fatigue and unrealistic expectations and timelines from the school administrators create a culture of apathy among educators, as well as the unexpected, condition of integrating technology in the classroom (Blackburn, 2019; Brown, 2019). Furthermore, the lack of time, lack of knowledge, lack of self-confidence, logistical issues, and lack of preparation among faculty members were identified as hindrances to technology integration (Ramnarine-Singh, 2014).

Table 4 Summary of Values Showing the Mean and Verbal Interpretation in the Assessment of the Nurse Educator Respondents on the Self-Efficacy in Digital Technology in Selected Public and Private Higher Education Institutions in CALABARZON, Philippines

Variables	**Mean**	**Verbal Interpretation**
Institutional	2.54	Agree
Individual	2.93	Agree
Proficiency	2.56	Agree

Technological	2.77	Agree
Domestic and Community	2.39	Disagree
Overall Mean	**2.64**	**Agree**

The overall mean (M=2.64) suggests that the respondents agree that individual (M=2.93), technological (M=2.77), proficiency (M=2.56), and institutional (M=2.54) influence the nurse educators' self-efficacy in digital technology. However, they disagree that domestic and community aspects (M=2.39) are not influencers of self-efficacy.

Another important dimension in technology use is the nurse educator's beliefs about their own capability. Accordingly, being guided by peer teachers has the most impact in technology integration in the classroom, as well as the support of the school and administrators, and provision of professional learning opportunities; hence, training and development should be consistently implemented and should embody the shared vision of the school, with the nurse educators having the choice in professional learning opportunities. This improves the faculty's professional productivity as well as promotes the students' learning and engagement (Coultman, 2015).

Table 5 Correlational Analysis on the Significant Relationship between Motivation and Barriers in Digital Technology as Assessed by the Nurse Educator Respondents in Selected Public and Private Higher Education Institutions in CALABARZON, Philippines

Variables	**Computed r**	**Degree of Relationship**	**p-value**	**Interpretation**
Motivation To Barriers in Digital Technology	-.279**	Negligible negative correlation	.003	with significant correlation

Pearson- r correlational with a computed r = -.279, p-value of .003 <0.05 denotes that there is a statistically significant correlation between motivation and barriers in digital technology, which resulted in the interpretation of a negative, negligible correlation, indicating a definite but small relationship between motivation and barriers in digital technology use among the nurse educators. Despite the small relationship between these two variables, it can be inferred that the level of motivation somehow impacts the barriers to technology integration.

Hence, it is important for school leaders and administrators to increase the nurse educators' enabling capacity, resource capitalization, installation and provision of access to technological equipment, and feedback mechanisms on the impact of technology in education (Penaflor-Espinosa, 2016). Likewise, faculty members who have a positive view of the use of technology are those who are motivated to teach and to learn the new technology. In like manner, having a supportive working environment may improve faculty members' effectiveness in the use of technology in the classroom (Chua et al., 2020). These barriers of technology can only be eliminated when there is a common understanding and agreement by the school administrators, faculty, students, and all the other individuals involved in the teaching-learning process (Joseph, 2012).

Table 6 Correlational Analysis on the Significant Relationship between Motivation and Self-efficacy in Digital Technology as Assessed by the Nurse Educator Respondents in Selected Public and Private Higher Education Institutions in CALABARZON, Philippines

Variables	**Computed r**	**Degree of Relationship**	**p- value**	**Interpretation**
Motivation To Self-efficacy in Digital Technology	-.013**	Negligible negative correlation	.896	with no significant correlation

Pearson- r correlational analysis with a computed r = -.013, p-value = .896>.05 denotes that there is a negligible negative but statistically no significant correlation between motivation and self-efficacy among the nurse educators. This result may be attributed to the small sample size, and further, there is not sufficient evidence to support the existence of a linear relationship between the two variables.

Studies show that the use of digital technology is mediated by personality characteristics such as attitude, knowledge, competence, and self-efficacy beliefs towards learning. Educators who have high levels of self-efficacy are more confident in using new teaching approaches, and they view technology as an effective way to enable student learning and perceive technology as a useful means to support their teaching (Ayala & Lev-Ari, 2016; John, 2013). Likewise, the mere existence of technological resources is not an assurance that nurse educators will be motivated to adapt their practices to utilize technology in their teachings. In fact, according to Suana et al. (2019), self-efficacy and attitude toward digital technology have an important effect on their motivation and interest in teaching using technology as a tool.

Table 7 Correlational Analysis on the Significant Relationship between Barriers and Self-efficacy in Digital Technology as Assessed by the Nurse Educator Respondents in Selected Public and Private Higher Education Institutions in CALABARZON, Philippines

Variables	**Computed r**	**Degree of Relationship**	**P value**	**Interpretation**
Barriers To Self-efficacy in Digital Technology	.887**	High positive correlation	.000	with significant correlation

Pearson- r correlational analysis with a computed r = .887, p-value of .000<.05, denotes that there is a significantly high positive correlation between barriers and self-efficacy among nurse educators. In general, the results suggest that self-efficacy is positively related to the barriers to technology use of the nurse educators in the classroom. This result showing a strong positive link between barriers and self-efficacy in nurse educators is explained in Bandura's Self- efficacy theory as cited by Lopez-Garrido (2025), postulating that self-efficacy (belief in one's ability) influences how individuals approach challenges, with high self-efficacy that fosters determination against barriers, while low self-efficacy leads to avoidance. The Self-efficacy framework justifies how perceived obstacles like barriers, such as lack of technological proficiency, can decrease self-efficacy, but strong self-efficacy helps mitigate these effects, enhancing the nurse educators' performance on the use of technology as a tool in teaching, as supported by the result showing positive correlations between self-efficacy and effective teaching behaviors despite challenges.

Self-efficacy varies from one individual to another and from one situation to another. Furthermore, these findings of a high positive relationship between barriers and self-efficacy can be explained by the sudden shift of most of the HEIs to flexible learning, to adapt to the unexpected and emerging need to use technology as a primary tool in teaching. The nurse educators were forced to adapt to this sudden paradigm shift, so despite the presence of a multitude of barriers, they find ways to immediately adjust so that they can deliver the required learning to their students, acquiring the belief in their capability to use technology in their classroom, leading to an increased technological self-efficacy. Therefore, instead of seeing it as a problem, it became an opportunity for growth and new learning for the nurse educators. Hence, it is safe to say that the higher the self-efficacy, the more nurse educators believe that they can achieve their task of digital technology integration despite the encountered barriers. Furthermore, an individual's belief in their own ability to succeed in specific situations (self-efficacy) is a key predictor of their motivation, behavior, and technological resilience.

CONCLUSION AND RECOMMENDATIONS

Motivation and barriers among nurse educators are interrelated variables that influence digital technology use and integration among nurse educators. Hence, the HEIs should consider digital technology as an integral element in the outcome-based teaching-learning process in nursing education, not only in improving the competencies but also to strengthen the positive attitudes and confidence of the nurse educators to embrace technology in their teaching, which is paramount to a successful implementation and integration of digital technology as a tool. Furthermore, the HEIs should consider allocation of sufficient budget and investment to support capacity-building programs through procurement of more digital technologies relative to nursing education, excellent access to internet service, training programs, and include domestic and community such as availability of digital gadgets and internet connectivity that may hinder the adoption and integration of digital technology among the nurse educators especially those who are working from home. It is also vital that school

administrators consider these major constructs in assessing, monitoring, and evaluating the nurse educators' attitude, proficiency, and capacity to use technology in the classroom. Hence, the results of the study can give some insights into how these three major variables are constructed and what can be done by HEIs to facilitate the use, adoption, and integration of digital technology in the teaching-learning process. In addition, future researchers may delve into the experiences of nurse educators in adapting and integrating technology in the teaching-learning process and what strategies they employ to address the encountered barriers in technology, utilizing a qualitative approach.

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