Factors Related to Online Teaching Self-efficacy of Lecturers in Vietnam

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Abstract— *Online teaching is widely used at universities amid the COVID-19 pandemic. Online teaching self-efficacy of lecturers needs serious concern to improve the effectiveness of online teaching. A cross-sectional descriptive study was carried out with a sample size of 104 lecturers in Da Nang University of Medical Technology and Pharmacy with The Michigan Nurse Educators Sense of Efficacy for Online Teaching instrument with the aim of describe online teaching self-efficacy and identify some factors related to online teaching self-efficacy of lecturers. The results showed that online teaching self-efficacy was low (Mean ± SD =3.48± 0.5). Factors related to online teaching self-efficacy include time to start online teaching, feedback for online teaching (p<0.05), proficiency in technology, feeling of lecturers, satisfaction of lecturers, and support of instructional activities (p<0.001). Therefore, interventions are needed to improve self-efficacy in online teaching.*

Keywords— *Self-efficacy, efficacy, online teaching, lecturers.*

I. INTRODUCTION

Online teaching self-efficacy is teacher's confidence in their ability to teach online to achieve the expected outcomes of student engagement and learning, even when students struggle (1). Teaching self-efficacy is an essential concept for schools because it not only affects the attitude of teachers when teaching but also affects student learning and teaching effectiveness of the collective (2).

In the context of the COVID-19 pandemic, online teaching self-efficacy becomes more important, when online teaching is used as an inevitable transformation for face-to-face teaching in most countries of the world with many challenges for material and humans. (3),(4),(5). As a result, the rise of online teaching during COVID-19 has highlighted the need for more research on teaching efficacy and classroom management of teachers (6),(7).

Currently, the research on online teaching self-efficacy is mainly done in pre-prepared online courses. Some factors related to online teaching self-efficacy of lecturers found from other studies such as age, gender, year of teaching (5),(8),(9),(10); satisfaction of lecturers (1),(9),(11); lecturers' psycho-emotional (9),(12),(14); support of instructional activities (13),(15).

In Vietnam, when the Covid-19 epidemic broke out, online teaching was also the method of choice for universities. Research on online teaching self-efficacy helps the school have an overall view, to have the necessary support for teachers to achieve good results in online teaching, thereby improving the reputation and quality of teaching of the school. Therefore, we conducted to this study describe online teaching self-efficacy and identify some factors related to online teaching self-efficacy of lecturers at the Da Nang University of Medical Technology and Pharmacy.

II. METHOD

2.1. Study subjects

Lecturers of the Da Nang University of Medical Technology and Pharmacy

2.1.1. Inclusion criteria:

Lecturers have taught theory and practice online since the 2019-2020 school year and consent to participate in the study.

2.1.2. Exclusion criteria:

Lecturers during their probationary.

2.2. Research methodology

2.2.1. Study design: Cross-sectional study

2.2.2. Sample size:

All lecturers of the Da Nang University of Medical Technology and Pharmacy who met inclusion criteria is participant in this study.

At the time of the study, there were 170 lecturers. After inviting to participate in the survey, we received 104 responses from lecturers (61.18%).

2.2.3. Research instrument:

The tools used in the research were questionnaires in three parts, including general characteristics, lecturers' psycho-emotional, and The Michigan Nurse Educators Sense of Efficacy for Online Teaching (MNESEOT).

The questions on the general characteristics of participants, such as age, gender, years of teaching education level, time to start online teaching, proficiency in technology, support of instructional activities, and feedback about online teaching. Lecturers' psycho-emotional including Feeling and Satisfaction of lecturer when teaching online.

MNESEOT was developed by Robinia và Anderson (1) based on Teachers' Sense of Efficacy Scale (16). The questionnaire had 32 items in four dimensions: instructional strategies, computer skill, classroom management, and student engagement. Each question was scored by a 5-point Likert-type rating scale (Nothing = 1 to A Great Deal = 5). Cronbach's alpha for the entire instrument was established as 0.93, with subscale reliabilities of self-efficacy in instructional strategies at 0.93, efficacy in classroom management at 0.93; efficacy in student engagement at 0.95, and efficacy in computer skills at 0.86.

2.2.4. Data collection:

The data were collected between January 2022 to April 2022. The research team designed a self-completed questionnaire via Google form and sent it to the lecturer via email. The list of teachers is taken from the archives of the University Training Department, the Personnel and Organization Department to identify lecturers who participate in online teaching, email addresses and exclude internship lecturers. The researcher contacted via Email to invite lecturers to participate in the study and attached the survey link. On the Google Form page participants will be anonymous. If lecturers agree to participate, they would complete the survey and click submit. The participants take about 10-15 minutes to answer and after 3 months, the research team will synthesize the data.

2.2.5. Data analysis:

Data were analysed by using Statistical Package for the Social Sciences (SPSS) version 20. Descriptive statistics, including frequency, percentage, mean, standard deviation were used to describe the data. T-Test, ANOVA, post-hoc deep analysis, Peason correlation were used to examine the relationships between independent variables and online teaching self-efficacy. Statistically significant association in any of the explanatory variables were identified at the level of p-value of less than 0.05

2.2.6. Ethical Consideration:

The study was approved by the Biomedical Ethics Committee of the University of Medicine and Pharmacy at Da Nang University on December 20, 2021, No 646. All data collected was anonymous and was used only for research purposes.

III. RESULTS

3.1. *Characteristics of participants*

TABLE 1 . General characteristics of the study participants (n=104)

Characteristic		n	%
Age	$\overline{X}$ ±SD = 37.9±6.56 (years)		
Years of teaching	$\overline{X}$ ±SD = 13.06±5.96 (years)		
Gender	Male	24	23.1
	Female	80	76.9
Degree	Bachelor/Doctor/Pharmacist	12	11.5
	Master	85	81.7
	Doctorate	7	6.7
Time to start online teaching (School year)	Previous 2019-2020	13	12.5
	2019-2020	48	46.2
	2020-2021	35	33.7
	2021-2022	8	7.7
Proficient in technology	Very unconfident	2	1.9
	Not confident	0	0
	Normal	46	44.2
	Confident	45	43.3
	Very confident	11	10.6

The average age of lecturers is 37.9±6.56. The majority of lecturers participating in the study are female, accounting for 76.9%. In terms of qualifications, 81.7% of the lecturers in this study have a master's degree, and only 6.7% have doctorate (table 1).

There are 12.5% of lecturers who used to teach online before the 2019-2020 school year. Lecturers who started teaching online from the 2019-2020 school year accounted for

the highest rate of 48%. The majority of participants can use technology at normal level (44.2%). Only 1.9% of lecturers got unconfident when using technology to teach online (table 1).

TABLE 2. Characteristics of lecturers' psycho-emotional state when teaching online

Characteristic		n	%
Feeling	Great pressure	3	2.9
	A little pressure	46	44.2
	No pressure	49	47.1
	Excited	6	5.8
Satisfaction	Unsatisfied	5	4.8
	Partially satisfied	78	75.0
	Very satisfied	21	20.2

Table 2 shows that 44.2% of lecturers feel a little pressure when participating in online teaching, and only 5.8% of lecturers feel excited. In general, the majority of lecturers feel partially satisfied with their teaching sessions, accounting for 75%, 20.2% feel very satisfied and only 4.8% are not satisfied.

TABLE 3. The support of instructional activities for online teaching skills

Characteristic	Mean	SD	Min	Max
Level of support from coaching	3.51	0.9	1	5
Level of support from training	3.63	0.89	1	5
Level of support from internet	3.63	0.86	1	5
Level of support from sharing experience	3.60	0.94	1	5

Regarding the level of support for online teaching-guided activities, this study shows that all activities are evaluated equally at a low level of support, ranging from 3.51 to 3.6 points (table 3).

TABLE 4. Characteristics of feedback about online teaching of lecturers

Characteristic	Not once		1-2 times/ school year		> 2 times/ school year		All sessions	
	n	%	n	%	n	%	n	%
Feedback from other lecturers	45	43.3	29	27.9	26	25.0	3	4
Feedback from management	60	57.7	22	21.2	18	17.3	4	3.8
Feedback from students	22	21.2	16	15.4	52	50.0	14	13.5

Lecturers often receive feedback during the teaching process, especially from students. There are 79.8% of lecturers received feedback from students. The percentage of lecturers who received feedback from other lecturers was 56.7%, this rate is equivalent to the response rate from management.

TABLE 5. Online teaching self-efficacy of lecturers (MNESEOT)

Characteristic	Mean	SD	Min	Max
Total MNESEOT score	**3.48**	**0.53**	**1.13**	**4.91**
Instructional strategies	3.55	0.57	1.38	5
Computer skill	3.55	0.61	1	5
Classroom management	3.43	0.63	1.13	5
Student engagement	3.38	0.58	1	4.75

Self-efficacy for online teaching has an average score of 3.48±0.53, the smallest value is 1.13, and the maximum value is 4.91. In which, the ability to set up teaching strategies and

computer skill has the highest score, followed by classroom management. The average score of student engagement competence trust in the online classroom is the lowest.

TABLE 6. The relationship between characteristics of the study participants and online teaching self-efficacy of lecturers

Characteristic		MNESEOT ($\overline{X}$ ±SD)	r	p
Age			0.01	0.39
Years of teaching			0.15	0.1
Gender	Male	0.91		0.91
	Female	3.47 ±0.45		
Degree	University/ Doctor/ Pharmacist	0.376		0.3
	Master	3.5 ±0.54		
	Doctorate	3.56 ±0.37		
Time to start online teaching	Previous the 2019-2020 school year [a]	3.59 ±0.52 [ad*]		**0.04**
	2019-2020 [b]	3.46 ±0.57 [bd*]		
	2020-2021 [c]	3.56 ±0.42 [cd*]		
	2021-2022 [d]	2.98 ±0.53		
Proficient in technology	Very unconfident[a]	2.66 ±0.84 [ad*]		**<0.001**
	Normally [b]	3.23 ±0.35 [bc**]		
	Confident [c]	3.66 ±0.51 [ac*]		
	Very confident[d]	3.90 ±0.62 [bd**]		

*Significant with p<0.05, **Significant with p<0.01

There is no relationship between age, years of teaching, gender, degree, and online teaching self-efficacy of lecturers (p>0.05)

There is a statistically significant difference between time to start teaching online, proficiency in technology, and online teaching self-efficacy of lecturers (p<0.05). In which, teachers who start teaching online in the 2021-2022 school year have lower confidence scores than those who started teaching online earlier. The group of lecturers who are confident and very confident in using technology has a higher mean score of confidence in competence than the group of teachers who are not confident in using technology with a significance level of p<0.05. In addition, the group of lecturers who can use technology at a confident and very confident level has a higher score of online teaching competence than the group that uses technology at a normal level with statistical significance p<0. 001 (table 6).

TABLE 7. The relationship between lecturers' psycho-emotional state and online teaching self-efficacy

Characteristic		MNESEOT ($\overline{X}$ ±SD)	p
Feeling	Great pressure[a]	2.92±0.75[ad**]	<0.001
	A little of pressure[b]	3.2±0.51[bc**]	
	Not presure[c]	3.67±0.34[cd*, ac*]	
	Excited[d]	4.21±0.5[bd**]	
Satisfaction	Unsatisfied[a]	3.38±0.57[ab**]	<0.001
	Partially satisfied[b]	3.86±0.41[bc**]	
	Very satisfied [c]	3.56±0.45[ac*]	

*Significant with p<0.05, **Significant with p<0.01

As the table 7 shows that when teachers have a feeling excited when participating in online teaching, they have higher

confidence scores than groups of teachers with great pressure and a little pressure. There was a significant relationship between satisfaction of lectures and online teaching self-efficacy (p<0.01).

TABLE 8. The relationship between the support of instructional activities and online teaching self-efficacy of lecturer

Characteristic	MNESEOT	
	r	p
Level of support from coaching	0.32	0.01
Level of support from training	0.41	0.01
Level of support from internet	0.42	<0.001
Level of support from experience sharing	0.47	<0.001

The results of table 8 show that there is a statistically significant correlation between The support of instructional activities for online teaching skills and with online teaching self-efficacy of lecturer. The relationship with level of support from coaching (r=0.32), level of support from training (r=0.41), level of support from internet (r=0.42), level of support from experience sharing (r=0.47) were moderately positive (p<0.001)

TABLE 9. The relationship between feedback for online teaching and online teaching self-efficacy of lecturers

Characteristic		MNESEOT ($\overline{X}$ ±SD)	p
Feedback from other lecturers	No response received	2.35±0.56	0.14
	1-2 times	3.58±0.5	
	More than 2 times	3.51±0.5	
	All sessions	3.84±0.13	
Feedback from the manager	No response received	3.4±0.48	0.31
	1-2 times	3.5±0.68	
	More than 2 times	3.6±0.5	
	All sessions	3.8±0.23	
Feedback from students	No response received[a]	3.2±0.66 [ac*]	**0.01**
	1-2 times[b]	3.39±0.45	
	More than 2 times[c]	3.57±0.48	
	All sessions[d]	3.67±0.37 [ad*]	

*Significant with p<0.05, **Significant with p<0.01

Table 9 shows that although confidence scores increased as the frequency of feedback received increased, there was no statistically significant difference between the number of times receiving feedback from other lectures and managers; The group of lecturers who received feedback from students more than 2 times and all sessions had more confidence scores than the group that received no feedback at all and this difference was statistically significant with p<0.05.

IV. DISCUSSION

Our research was conducted on 104 lecturers, who suddenly switched to online mode to cope with the COVID-19 pandemic. The results show that the average score of self-efficacy with online teaching of lecturers participating in this study is 3.48±0.53, in which the ability to set up instructional strategies and computer skill has the highest score, followed by the ability to manage the class. The average score of self-efficacy with student engagement in the online class is the lowest with 3.38±0.58 points. Compared with the results of

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the average score of teachers' confidence in the online teaching competence of previous studies, the results in our study are lower. Horvitz et al.'s research on lecturers majoring in arts, humanities, science and technology, engineering, and mathematics shows that the average score of MNSEOT on a 5-point Likert scale is 3.89 ±0.61 (10). Another study by author Hampton on lecturers of the American College of Nursing also had similar results to that of author Horvitz with an average score of MNESEOT of 3.88±0.70 (9).

Regarding the results of the domains of self-efficacy of online teaching of lecturers in our study, our study showed that self-efficacy with online teaching was lower in all aspects compared to the study of Hampton, Hovizt (9),(10). In the study of author Hampton, the average score of self-efficacy in online teaching about using computers is 4.18±0.54, followed by classroom management at 4.04±0.56, strategy teaching at 4.02±0.6, the lowest is engagement with students at 3.72±0.58 (9). Research results of Hovitz et al. mean score using computer are 3.85±0.93, classroom management is 4.04±0.68, teaching strategy is 4.05±0.64, engagement with students is 4.04±0.75 (10). This difference may be because our study subjects are different from these studies. Besides, the percentage of lecturers who have taught online before in our study may be much lower, leading to a lower mean score of confidence in online teaching in all aspects.

The results showed that factors on personal characteristics such as age, gender, and academic qualifications of lecturers participating in the study were not associated with competence trust in online teaching. This is similar to the results of the studies of the authors Baroudi, Hampton, Xiong (9),(13),(15). Although teaching seniority is not related to the self-efficacy of the lecturers, there is a statistically significant difference in the confidence in the online teaching ability of the lecturers who had different time to start teaching online. Although teaching seniority is not related to the self-efficacy of the lecturers, there is a statistically significant difference in the confidence in the online teaching ability of the lecturers with the starting time. different online teaching. In which, teachers who started online teaching from 2021-2022 had lower confidence scores than those who started teaching online earlier. This is similar to the study by Hampton and Robina on the self-efficacy of online teaching of a group of lecturers participating in teaching prepared online courses. The research results of Hampton have a difference in the number of years of online teaching experience with self-efficacy beliefs, while Robinia shows a difference between the group of online instructors who teach 3 or more courses compared to the group that only taught 1 or 2 courses (1). Furthermore, other studies on the transition to online teaching during the COVID-19 era also differed between the group with previous online experience and the group with no experience. (11),(13). However, Xiong's study on self-efficacy of online instructors during the COVID-19 period in group counseling training, a core psychotherapy for professional counselors, shows that whether or not the lecturer has taught an online course before, there is no correlation. Since most of the literature on group counseling is based on a face-to-face instruction approach, group counseling training is mainly focused on the learner's experience, with less focus on the instructor (15). In addition, previous research also reported that there was an initial decrease in self-efficacy with new forms of teaching, followed by a significant increase in self-efficacy after three sessions of teaching (16),(17). This is completely true with our research, however, the new online teaching method has been applied simultaneously during the epidemic period from 2020 to now it is not possible to full review for previous online activities.

According to the research results, the group of teachers who are confident and very confident in using computers has a higher mean score of self-efficacy than the group of unconfident lecturers (p<0.05). Besides, the group of lecturers who can use computers at a confident and very confident level have a higher self-efficacy score for online teaching than the group using technology at a normal level with statistical significance p. < 0.01. The results are similar to the results of Hampton's research, proficiency in computer skills will increase the effectiveness of online teaching. (9). This is also confirmed by the effectiveness after the intervention of a training course on using technology for a group of lecturers before teaching online, showing that there is a statistically significant difference in self-efficacy in teaching. between before and after the intervention: Teachers are confident that their abilities can promote students' creativity; have more confidence in setting up an online course; be able to give a better level of explanation or example; give better feedback in an online teaching environment (18).

When lecturers have a feeling of enjoyment when teaching online, they have higher confidence scores about their ability to teach online than groups of lecturers with great pressure and a little pressure; at the same time, the lecturer who felt no pressure also had a slightly higher self-esteem score than the group that was under pressure; This difference is statistically significant with p<0.01. Yang's research also shows that there is an inverse correlation between teachers' self-efficacy and stress, fatigue, and trauma in the teaching process (14).

The satisfaction of online teaching of different lecturers participating in this study also had different self-efficacy scores. In which the very satisfied group of lecturers has a higher score than the partially satisfied or dissatisfied group of lecturers, this difference is statistically significant. The study of the author Hampton and Hardy also gave similar results to our study with the higher the satisfaction level, the higher the MNESOT score. (9),(12).

The results show that there is a statistically significant correlation between the variables: the level of support from the form of training, ever studied in undergraduate and graduate training programs, Self-study materials on the internet, sharing the experiences of colleagues and faculty with the medium level of self-efficacy. This is similar to Robinia's study, higher satisfaction with support from courses and guidance from instructors or experts is significantly and positively correlated with MNESOT scores (1). Inel Ekici has shown the positive impact of online instructors joining a network practice community to share information and experiences with each other. In which, there is a statistically significant difference in self-efficacy in online teaching before and after joining this community in all 3 survey aspects: Instructional strategy,

classroom management, and engagement of student family Instructors said that this community was created to share experiences among instructors about problems they encountered in their courses, and to discuss and consult solutions for career development (19). Author Chung also points out that faculty members who participate in online communities together, have the ability to exchange social support, tend to be more vibrant, and create more opportunities for professional learning, both direct and indirect. As a result, teachers who make the most of online group discussions about social support tend to deal with work problems confidently, and effectively and have gradually improved their effectiveness (20). In Baroudi's study, teachers who received guidance to support online teaching design had higher, statistically significant scores on self-efficacy (13). Xiong's research shows that satisfaction with courses and seminars is positively related to self-efficacy scores (15).

Although the self-efficacy score in online teaching increased as the frequency of receiving feedback increased, there was no statistically significant difference between the number of times receiving feedback from other lecturers and management. The group of lecturers who received feedback from students more than 2 times and all sessions had more confidence scores than the group that received no feedback at all and this difference was statistically significant ($p<0.05$). According to Bandura's theory, feedback is a key factor in the aspect of social persuasion, affecting the capacity beliefs of lecturers (21),(22). Feedback from supervisors or peers, or possibly from conversations in faculty living rooms or through the media, about the faculty's ability to influence students. Since the persuasiveness of feedback may be limited in its ability to produce lasting increases in self-efficacy (22), So if it is repeated many times, it will give better, longer-lasting results. And feedback can prompt a person to start a task, try new strategies, or try hard enough to succeed (20). However, the ability to persuade depends on the credibility, reliability, and expertise of the persuader (22). Therefore, with the context of the rapid transition to online teaching methods in a short time, perhaps the experience in this new environment is still not enough to create convincing from other lecturers and their managers. The feedback from the learners is the factor that is better recognized.

IV. CONCLUSION

Online teaching self-efficacy of lecturers was low. The results of the study indicate that identifying that affect of online teaching self-efficacy is truly necessary to improve the prestige and quality of teaching of lecturers, thereby improving the effectiveness of education.

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