Research Article

Influence of Self-Efficacy on Teaching Digital Technology as Perceived by Maritime Education Faculty in the Philippines

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ABSTRACT

Teacher efficacy has been positively connected with student outcomes, including achievement, motivation, self-efficacy beliefs, and instructors' tenacity, passion, commitment, and instructional conduct. The researcher conducted the study to determine the maritime education faculty's self-efficacy in teaching digital technology. The researcher used descriptive research to determine the self-efficacy of maritime education faculty in teaching digital technology. The purposive sampling method was utilized considering that the respondents were the maritime education faculty from three (3) Maritime Higher Education Institutions that participated in the study. The statistical tools used in the study were frequency, percentage, standard deviation, mean, and ANOVA. The Maritime education faculty perceived themselves as having self-efficacy that can be experts in teaching digital technology, such as student engagement, instructional techniques, and classroom management. Even though they teach different courses, self-efficacy has no significant difference when classified according to the courses taught. It is highly recommended that the respective schools of the Maritime education faculty that participated in this study should be given more training on classroom management so that their self-efficacy in teaching the subject will remain high. There is also the need for the teachers to have some dialogues and consultations with the parents of their students to encourage them to collaborate with the teachers to see that their children learn their lessons well.

Keywords: Digital technology, Maritime education teacher, Self-efficacy, Philippines

Introduction

Teachers' ICT self-efficacy has become more important since it greatly impacts their behavior and results. It affects if, how, and to what degree teachers will use ICT for instructional purposes and how effective they will be (Abi et al., 2021).

Teacher efficacy has been positively related to persistence, zeal, commitment, instructional techniques, and student results, including motivation, achievement, and self-efficacy beliefs. However, the research on teacher efficacy has proven challenging due to continuous measurement issues (Tschannen-Moran & Hoy, 2001).

Teacher self-efficacy supports educators' beliefs in ensuring student achievement and inspires them to work more on their lesson plans. In such cases, enhancing student performance and achievement supports instructors' beliefs that students can succeed in school if they put in enough effort (Bandura, 2006; Cansoy & Parlar, 2018).

Teacher self-efficacy also has to do with how much teachers believe in their abilities and skills as teachers. Teacher self-efficacy is an essential characteristic associated with teaching effectiveness (Gavora, 2010). Yoon Yoon et al. (2014) discovered that teacher self-efficacy is a situation-specific construct since instructors' efficacy beliefs differ based on the subject matter and teaching environment.

Thus, differences in teachers' digital competence and ICT use in the classroom may be explained by their level of self-efficacy. This emphasizes how important it is for educators to incorporate ICT while having faith in their skills. In order to ascertain the faculty members' efficiency in imparting digital technology, the researcher performed the investigation.

Review of Related Literature
According to Hatlevik (2017), implementing great teaching approaches requires high self-efficacy in the classroom. Additionally, he used three (3) components to evaluate the self-efficacy of instructors in his study: (1) self-efficacy in basic ICT, (2) self-efficacy in online collaboration, and (3) information assessment approaches.

The researcher anchored the Tschannen-Moran and Hoy (2001) notion in this investigation. The three components of effectiveness—student engagement, classroom management, and instructional strategies—show the range of tasks that instructors must do and the requirements of outstanding education. Sangkawetai et al. (2018) found that their teaching self-efficacy was the most effective predictor of instructors' use of information communication technologies in their lessons.

According to Martin et al. (2012), effective student engagement and instructional management appear to be key predictors of classroom interactions that impact instructors' stress from student behaviors, sense of personal accomplishment, job satisfaction, and, ultimately, the desire to leave the profession. Additionally, according to Warwick (2008), boosting self-efficacy beliefs will aid in improving student engagement, but program development can benefit from applying some important principles.

An essential aspect of a teacher's identity and one that impacts the caliber of their instruction is their self-efficacy for classroom management. According to Lazarides et al. (2020), contextual factors have a significant role in developing self-efficacy and its effects.

According to Brouwers and Tomic (2000), the sense of self-efficacy in classroom management must be considered while developing interventions to prevent and treat burnout among secondary school teachers. Dicke et al. (2014) discovered that emotional tiredness could only be reliably predicted when self-efficacy was low.

Methods
The researcher used descriptive research to determine the self-efficacy of maritime education faculty in teaching digital technology. The purposive sampling method is utilized (Cabaron, 2023), considering that the respondents were the maritime education faculty from three (3) Maritime Higher Education Institutions that participated in the study. There were seventy-three (73) maritime education faculty who purposively answered the survey questionnaire on self-efficacy.

The researcher selected and determined the number of samples based on the maritime education faculty population in the three institutions. The sample size was calculated using a Raosoft calculator.

Table 1. Profile of the Respondents in terms of Course Taught

Course Taught	n=73	Percentage
Professional Courses	36	49
Allied Courses	28	29
General Education	16	22
Total	73	100

The researcher adopted the standardized questionnaire, the Ohio State Teacher Efficacy Scale (OSTES), designed by Tschannen et al. (2001). They examined the new measure's factor structure, reliability, validity, and suitability of the new scale. The factor analysis identified three factors: (1) efficacy for instructional strategies, (2) efficacy for classroom management, and (3) efficacy for student engagement. The analytical results show that the OSTES is relatively valid and dependable. The 24 or 12 items are a valuable tool for academics interested in assessing teacher efficacy. The reliability result was $\alpha=.90$. Each item is answerable by a great deal (5), quite a bit (4), some influence (3), very little (2), and nothing (1).

Results and Discussions

Table 2 presents the self-efficacy of maritime education faculty in terms of student engagement. It can be noted that the Average Weighted Mean is 4.35, which is interpreted as having some influence on teacher self-efficacy in terms of student engagement. This implies that the Maritime education faculty have self-efficacy in enabling students to be engaged in their lessons.

Table 2. Perceived Maritime Education Faculty Self-Efficacy in terms of Student Engagement

Item No.	Efficacy in Student Engagement	Sd	Mean
1.	How much can you do to motivate students who show low interest in school work?	0.90	4.32
2.	How much can you do to get students to believe they can do well in school work?	0.93	4.41
3.	How much can you do to help your student's value learning?	0.86	4.58
4.	How much can you assist families in helping their children do well in school?	0.95	4.08
	Average Weighted Value	**0.91**	**4.35**

Teacher self-efficacy is considered an important factor in motivating students to value learning. More importantly, with the aid of digital technology, teacher efficacy is enhanced. According to Martin et al. (2012), efficacy in student engagement and instructional management appear to be significant indicators of classroom interactions, which impact instructors' stress from student behaviors, feeling of personal success, work satisfaction, and, ultimately, the desire to quit. It can also be observed from Table 1 that teachers' self-efficacy needs improvement in assisting families of their students in helping these students do well in school.

Table 3 presents the self-efficacy of maritime education faculty in terms of instructional strategies. The Average Weighted Mean is 4.47, which is interpreted as having some influence. This implies that the Maritime education faculty possesses self-efficacy regarding instructional strategies in teaching digital technology. These teachers have some influence on their use of instructional strategies in their classroom teaching. They got high ratings on their ability to apply various strategies to make their students understand their lessons. Furthermore, the teacher's self-efficacy in choosing alternative instructional strategies when their students are confused about their lessons.

According to Sangkawetai et al. (2018), ICT teaching self-efficacy was the most powerful predictor of instructors' instructional techniques with Information Communication Technologies. The results in Table 3 is in agreement with the study of Sangkawetai et al. (2018) since the teacher's self-efficacy enables them to apply appropriate instructional strategies to make their students understand their lessons well.

Table 3. Perceived Maritime Education Faculty Self-Efficacy in terms of Instructional Strategies

Item No.	Efficacy in Instructional Strategies	Sd	Mean
1	To what extent can you craft good questions for your students?	0.87	4.44
2	How much can you use a variety of assessment strategies?	0.88	4.51
3	To what extent can you provide an alternative explanation or example when students are confused?	0.88	4.42
4	How well can you implement alternative strategies in your classroom?	0.88	4.51
	Average Weighted Value	**0.88**	**4.47**

Table 4. Perceived Maritime Education Faculty Self-Efficacy in terms of Classroom Management

Item No.	Efficacy in Classroom Management	Sd	Mean
1	How much can you do to control disruptive behavior in the classroom?	0.89	4.36
2	How much can you do to get children to follow classroom rules?	0.86	4.60
3	How much can you do to calm a student who is disruptive or noisy?	0.86	4.58
4	How well can you establish a classroom management system with each group of students?	0.87	4.52
	Average Weighted Value	**0.87**	**4.51**

Table 4 below presents the maritime education faculty's self-efficacy in classroom management. It can be noted from Table 4 that the Average Weighted Mean is 4.51, which is interpreted as having some influence on classroom management. The Maritime education faculty perceived themselves as having self-efficacy in handling classroom management. This is expected since, as teachers, they were trained in classroom management, particularly in handling students with disruptive behaviours.

Dicke et al. (2014) discovered that self-efficacy in classroom management predicted emotional tiredness only when self-efficacy in classroom management was low. Thus, teachers' self–efficacy must be high to enable them to have the energy to deal with various challenges in classroom management. It takes self-efficacy to implement classroom rules as part of a teacher's classroom management. It is important to offer teachers some form of training on classroom management so as not to deplete their energy and enthusiasm for teaching.

When categorized according to the course taught, Table 5 showed that there was not a significant difference in the indicators of self-efficacy of the maritime education faculty.

The student's engagement efficacy has an (F (2.70) = 1.104, p = .318), Instructional Strategies (F (2.70) = .760, p = .472), and Efficacy in Classroom Management (F (2.70) = 1.611, p = .207).

Table 5 shows that, while taking into account the courses taught by the Maritime education faculty, there are no significant differences in the self-efficacy indicators. This means that their talents and capabilities are the same regardless of the course they handle; therefore, their self-efficacy is unaffected. This finding is supported by previous research, which notes that instructors' self-efficacy reflects their excitement for teaching their topics, their self-efficacy in whatever course they handle, and that their talents and skills are the same.

Table 5. Significant Difference in the Indicators of Self-Efficacy of the Maritime Teacher when classified as to Course Taught

	Sum of Square	F	Sig.
A. Efficacy in Student Engagement			
Between Groups	1.54	1.104	.318
Within Groups	46.289		
Total	47.829		
B. Efficacy in Instructional Strategies			
Between Groups	.996	.760	.472
Within Groups	45.873		
Total	46.869		
C. Efficacy in Classroom Management			
Between Groups	2.051	1.611	.207
Within Groups	44.561		
Total	46.611		

Conclusion

It can be concluded that the Maritime education faculty perceived themselves as having self-efficacy that can be experts in teaching digital technology, such as student engagement, instructional techniques, and classroom management. Even though they teach different courses, there is no significant difference in the self-efficacy indicators when considering the courses taught by the Maritime education faculty. It can likewise be concluded that there is a need for more training on handling classroom management so as not to deplete the energy and enthusiasm of teachers in teaching digital technology as a subject.

Recommendations

Based on the findings and conclusions of the study, it is highly recommended that the respective schools of the Maritime education faculty that participated in this study should be given more training on classroom management so that their self-efficacy in teaching the subject will remain high. There is also the need for the teachers to have some dialogues and consultations with the parents of their students to encourage them to collaborate with the teachers in seeing that their children learn their lessons well.

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