



## Social Presence and Interaction Satisfaction: A Comparison Between Face-To-Face and Online Learning Modalities in Maritime Education

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### ABSTRACT

This quantitative study aimed to assess and compare the level of satisfaction of 2nd year SMET cadets of online and face-to-face learning modalities. The researchers also sought to identify satisfaction levels in terms of social presence and social interaction and to compare satisfaction levels between the two platforms. A total of 121 2nd year SMET cadet students were chosen using purposive sampling and surveyed through Google Form questionnaires, validated by experts. The data gathered from the survey were analyzed mean and Wilcoxon signed-rank test. The findings revealed that students were "totally satisfied" with online learning, while they were "very satisfied" with face-to-face learning. However, both learning modalities scored "very good" in terms of academic performance. There was a significant difference found between online or face-to-face learning and social presence or social interaction. Furthermore, face-to-face learning had a significantly higher mean compared to online learning in terms of social interaction, social presence, and overall satisfaction. The Wilcoxon signed-rank test confirmed these differences between the two learning modalities. In conclusion, this study indicates that 2nd year SMET cadet students expressed high satisfaction levels with both online and face-to-face learning, with face-to-face learning receiving slightly higher scores in social interaction, social presence, and overall satisfaction. The study highlights the importance of considering different teaching modalities and their impact on student satisfaction and academic performance.

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### 1. Introduction.

The COVID-19 pandemic has significantly impacted maritime education globally, particularly in the Philippines, necessitating swift adaptation of educational technologies to ensure uninterrupted learning (Ochavillo, 2020). Despite its challenges, the pandemic has accelerated the development and enhancement of online education, aiming to create more interactive and engaging learning environments. The implementation of "new normal educational policies" and the Republic Act 10650, known as the "Open Distance Learning Act," underscores the importance of expanding access to quality tertiary education through open learning services (Tria, 2020).

Online education, including blended learning, has emerged as a vital tool in maintaining productive and efficient learning experiences for maritime students. It addresses gaps in instructor-student communication, content accessibility, and technological advancement. Amidst the pandemic, traditional cadet training has shifted towards blended learning, minimizing practical demonstrations in favor of online discussions and demonstrations.

Research has highlighted differences in satisfaction levels between online and face-to-face teaching practices, with traditional methods often receiving higher satisfaction ratings (Deepti G, 2021). However, little research has explored how these differences impact student engagement, particularly among maritime cadets.

To address this gap, researchers at the Saint Joseph Institute of Technology Maritime Education and Training (SMET) are conducting a study to measure the satisfaction levels of 2nd-

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year cadets in terms of social presence and interaction in both online and face-to-face learning modalities. The study aims to determine how these satisfaction levels correlate providing valuable insights for improving maritime education modalities.

## 2. Review of Literature and Studies.

### 2.1. Online Learning Modalities.

Online learning modalities have emerged as a crucial solution to facilitate student-centered learning, particularly during lockdown situations (Mukhtar et al., 2020). However, students encounter various challenges with this new mode of learning, including personal issues related to health, stress, and learning styles (Agaton & Cueto, 2021). To address these challenges, educational institutions have adopted online tools to create virtual spaces for learning and communication (Guzzo et al., 2023). The shift to online learning during the COVID-19 pandemic has raised concerns about its impact on students' mental health, particularly in the Philippines (Malolos et al., 2021). Nevertheless, integrating technology into online courses can be an effective practice to enhance student education (Price Banks & Vergez, 2022). Distance education, facilitated by technology, allows students to attend classes remotely, overcoming geographical barriers (Hodges et al., 2020). While online learning offers flexibility, students may struggle with the absence of nonverbal communication, impacting their learning experience (Khalil et al., 2020). The pandemic has accelerated the reliance on online learning, with higher education institutions witnessing a significant increase in its adoption (Baloran et al., 2021). However, challenges such as lack of preparation and limited resources have been noted in the transition to virtual learning (Casimir et al., 2023).

### 2.2. Face-To-Face Learning Modalities.

Traditional face-to-face learning, conducted in physical classrooms, has long been the primary mode of instruction (Singh et al., 2021). It enhances students' attitudes towards learning and improves metacognition and study skills (Pirrone et al., 2021). Despite the benefits of face-to-face instruction, the COVID-19 lockdown prompted students to express a preference for returning to in-person classes (Roy et al., 2020). Concerns have been raised about the quality of video conferencing compared to face-to-face instruction (Serhan, 2020). While traditional lectures are favored, active student engagement is considered more effective for learning (Alaagib et al., 2019). However, traditional learning approaches often lack student feedback sessions (Almanasef et al., 2020). Students generally express higher satisfaction levels with face-to-face courses compared to online courses (Ebner & Gegenfurtner, 2019). The absence of social presence is a key concern in online education, impacting students' academic performance and engagement (Makarova, 2021). Limited research has explored students' perceptions of online learning compared to traditional face-to-face instruction (Paul & Jefferson, 2019).

### 2.3. Social Presence.

Social presence in online courses has been linked to higher course satisfaction, peer connections, and increased psychological connection and community (Patwardhan et al., 2021). It enhances the learning experience by providing opportunities for interpersonal relationships (Weidlich & Bastiaens, 2019). Tools that encourage social interaction can lead to greater satisfaction and course retention rates (Park et al., 2020). Students perceive social presence through impression formation and interpersonal relationships (Oyarzun et al., 2018). Creating integrated social and learning communities is recommended to improve social presence and learning outcomes (M. Zhu et al., 2019). Social presence plays a significant role in predicting course retention and performance, emphasizing its importance in online education (M. Zhu et al., 2019).

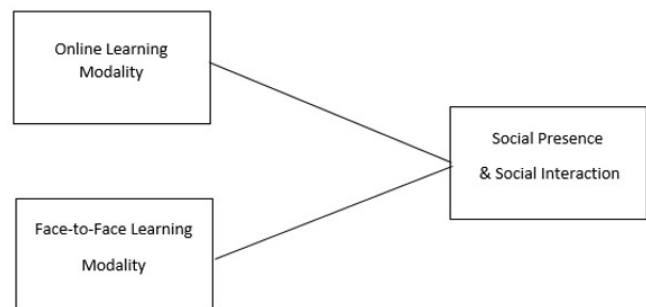
### 2.4. Social Interaction.

Social interaction is essential for student engagement and learning (Ho-Yuan Chen et al., 2021). Collaborative activities, such as team reflection, enhance cognitive and socioemotional aspects of social interaction (Ela Sjølie et al., 2022). Social constructivist learning models recognize the importance of language and social interaction in learning (X. Zhu et al., 2020).

Peer interaction and social influence facilitate learning in gamified activities, enhancing motivation and fun (Chung & Pan, 2023). Encouraging social interaction improves language proficiency and fosters high-quality face-to-face interactions during in-person lectures (Nurulhuda Umar et al., 2023; Buhl-Wiggers et al., 2023). Social interactions fulfill the innate human need for belongingness and support (Hall et al., 2023).

## 3. Framework.

Figure 1: Research Paradigm.



Source: Authors.

## 4. Objectives of the Study.

The study aimed to determine the relationship of satisfaction levels of the cadets in two learning modalities. Specifically, it endeavored to answer the following:

1. Determine the level of satisfaction of 2nd year SMET cadets in terms of social presence and social interaction towards Online learning modality and Face-to-face learning modality.

- investigate the existence of a significant difference in the level of satisfaction regarding social presence and social interaction between online learning modality and face-to-face learning modality.

## 5. Methodology.

The study adopts a quantitative research design aimed at determining the level of satisfaction regarding social presence and social interaction among 2nd-year SMET cadets in both online and face-to-face modalities. Purposive sampling was utilized, selecting second-year cadets who have experienced the transition from online to face-to-face classes. The research was conducted at Saint Joseph Institute of Technology, Maritime Education, and Training, known for its modern facilities and quality education in the Caraga region. A questionnaire adapted from a previous study was employed to gather data, with questions tailored to assess the level of satisfaction in terms of social presence and social interaction. Google Forms facilitated the distribution of the survey, which underwent validity and reliability testing. Statistical analyses, including mean and the Wilcoxon signed-rank test, were conducted to determine significant differences in satisfaction levels between online and face-to-face learning modalities. This quantitative approach allowed for a comprehensive understanding of the perceived satisfaction among cadets in different educational settings.

## 6. Results and Discussion.

Table 1: Mean Distribution of Social Presence and Social Interaction in Online Learning Modality.

	Mean	Std. Deviation	Verbal Interpretation
Social Presence	3.31	.56	Satisfied
Social Interaction	3.31	.62	Satisfied

N=121

Source: Authors.

Table 1 presents findings from 121 respondents, indicating that the means of social presence and social interaction in online learning were identical, both at  $M = 3.31$ . However, social interaction exhibited a higher standard deviation compared to social presence, with values of .62 and .56, respectively. These results suggest that participants reported being completely satisfied with their online learning experience. This aligns with previous research by Khalil et al. (2020), which notes that students may struggle with online learning due to the absence of nonverbal communication. Furthermore, studies by Ho-Yuan Chen et al. (2021) and Dissing et al. (2019) emphasize the significance of social interaction for student engagement and transition to independence. Nasir's (2020) research highlights a positive relationship between social presence and course satisfaction in online learning, indicating that students with higher

levels of social presence are more likely to achieve greater satisfaction. The absence of face-to-face interaction in computer-based environments underscores the importance of social presence in enhancing the learning experience, as noted by Weidlich & Bastiaens (2019). Overall, these findings emphasize the crucial role of social interaction and presence in shaping students' satisfaction and engagement in online learning environments.

Table 2: Mean Distribution of Social Presence and Social Interaction in Face-to-Face Learning Modality.

	Mean	Std. Deviation	Verbal Interpretation
Social Presence	3.53	.50	Very Satisfied
Social Interaction	3.55	.50	Very Satisfied

N=121

Source: Authors.

Table 2 presents the results from 121 respondents, indicating that the mean score for social interaction was higher ( $M = 3.55$ ) compared to social presence ( $M = 3.53$ ), while both variables exhibited the same standard deviation of .50. This suggests a high level of satisfaction with the face-to-face learning modality. This finding is consistent with prior research by Hall et al. (2023), which emphasizes the importance of social interactions in fulfilling the innate need for belongingness. Additionally, Oyarzun et al. (2018) suggest that students perceive social presence through impression formation, while Yoon & Leem (2021) highlight the role of interaction and interpersonal relationships in determining social presence.

Table 3: Satisfaction level of social interaction in online and face-to-face learning modalities.

	Mean	50 <sup>th</sup> (Median)	N	Mean Rank	Test Statistics <sup>a</sup>	
OLM Social Interaction Score	3.31	3.00	4 <sup>a</sup>	16.00	Z	-4.41 <sup>b</sup>
FTF Social Interaction Score	3.55	4.00	30 <sup>b</sup>	17.70	Asymp. Sig. (2-tailed)	.00

N= 121

OLM- Online Learning Modality

FTF- Face-to-Face

Source: Authors.

Table 3 presents the results of the Wilcoxon signed-rank test, indicating a significant difference between two variables: Online Learning Modality Social Interaction ( $M = 3.31$ ) and Face-to-Face Social Interaction ( $M = 3.55$ ). It concludes that the mean of Face-to-Face Social Interaction is higher than that of Online Learning Modality Social Interaction. Additionally, the median ranks for face-to-face social presence ( $Mdn = 4.00$ ) were statistically significantly higher than those for online learning social presence ( $Mdn = 3.00$ ), with a Z-value of -4.491 and a p-value of .00. This finding is supported by the study of M. Zhu et al. (2019), which highlights the significant role of so-

cial presence in predicting course retention and performance ratings. The study suggests creating integrated social and learning communities to enhance social presence in online environments.

Table 4: Satisfaction level of Social Presence in online and face-to-face learning modalities.

	Mean	50th (Median)	N	Mean Rank	Test Statistics <sup>a</sup>	
OLM Social Presence Score	3.34	3.00	1 <sup>a</sup>	12.5	Z	-4.49 <sup>b</sup>
FTF Social Presence Score	3.52	4.00	23 <sup>b</sup>	12.5	Asymp. Sig. (2- tailed)	.00

N= 121  
OLM- Online Learning Modality  
FTF- Face-to-Face

Source: Authors.

Table 4 presents the results of the Wilcoxon signed-rank test, indicating a significant difference between two variables: Online Learning Modality Social Presence ( $M = 3.34$ ) and Face-to-Face Social Presence ( $M = 3.52$ ). It concludes that the mean of Face-to-Face Social Presence is higher than that of Online Learning Modality Social Presence. Additionally, the median ranks for face-to-face social interaction ( $Mdn = 4.00$ ) were statistically significantly higher than those for online learning social interaction ( $Mdn = 3.00$ ), with a Z-value of  $-4.412$  and a p-value of  $.00$ . This finding is supported by the study of Buhl-Wiggers et al. (2023), which suggests that using online lectures frees up class time for engaging in high-quality face-to-face interaction with students. Moreover, encouraging social interaction can lead to improvements in students' language proficiency (Nurulhuda Umar et al., 2023) and enhance motivation and fun in gamified activities (Chung & Pan, 2023).

## Conclusions.

The following conclusions were drawn from the study:

1. Participants reported being totally satisfied with the online learning modality, while their satisfaction with the face-to-face learning modality was very high. This suggests that the social presence and social interaction experienced in face-to-face learning are significantly more satisfying than those in online learning.
2. A significant difference was observed between the two variables: face-to-face social interaction exhibited a higher mean result than online social interaction. Similarly, face-to-face social presence demonstrated a higher mean compared to online social presence. Additionally, face-to-face satisfaction surpassed online learning satisfaction in terms of mean scores. These differences were confirmed through the Wilcoxon signed-rank test, highlighting that across all variables—face-to-face social interaction, social presence, and satisfaction—higher mean results were consistently observed compared to online learning.

## Recommendations.

Based on the study's findings, several recommendations are proposed:

Saint Joseph Institute of Technology Administration should prioritize engaging teaching methods across both online and face-to-face learning modes. This can be achieved by organizing seminars and training sessions for educators, aiming to develop effective teaching strategies tailored to each modality.

Lastly, future researchers are advised to delve deeper into areas such as evaluating scores given to homework assignments and examinations in each class, and exploring potential differences in assessments between online and face-to-face settings. These recommendations aim to further improve the quality and effectiveness of maritime education at Saint Joseph Institute of Technology.

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