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SOCIAL PRESENCE AND SELF-EFFICACY IN RELATION TO STUDENT SATISFACTION IN ONLINE LEARNING SETTING: A PREDICTIVE STUDY

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ABSTRACT

This study investigated the levels of social presence, online learning self-efficacy, and student satisfaction among undergraduate students taking online courses from the School of Educational Sciences at the University of Jordan during the COVID-19 pandemic. It was hypothesized that the relationships between these variables and the degrees of social presence and online learning self-efficacy could predict student satisfaction in these online learning settings. To this end, we used a stepwise multiple regression model for student satisfaction involving social presence and online learning self-efficacy. Data were collected from a sample of 435 participants, all of whom were undergraduate students enrolled in the summer semester at the University of Jordan in 2020 Academic Year. The results demonstrated that the undergraduate students had high levels of online learning self-efficacy and moderate levels of social presence and student satisfaction. The study also revealed a significant positive relationship between social presence, online learning self-efficacy, and student satisfaction. The findings revealed that social presence and online learning self-efficacy impact and significantly predict student satisfaction in higher education institutions in Jordan in online learning settings. Based on these results, the authors recommend that instructors at these institutions foster social presence to enhance student satisfaction.

Contribution/Originality: This study focuses on the importance of social presence and online learning self-efficacy and predicts a number of factors that significantly influence student satisfaction in online learning settings and affect the quality of online learning. These findings would encourage online instructors in the School of Educational Sciences to foster social presence between their students and enhance student satisfaction.

1. INTRODUCTION

In recent years, technological revolution has influenced many aspects of human life and human approach to information domains and to education in general. In particular, blended learning and distance learning approaches have transformed the domain of higher education. The online learning options offer many advantages for students, as they can make learning more flexible and support lifelong learning. Thus, over the past one decade, universities have replaced face-to-face delivery methods by progressively shifting their programs online.

In the 2019–2020 scholastic semesters, the coronavirus pandemic significantly affected educational institutions. Schools, universities, and colleges were temporarily closed, and face-to-face learning was widely replaced with online learning in an attempt to prevent the spread of COVID-19. Jordan is one of the 188 countries worldwide that have suspended the educational process. Numerous other countries have employed localized closures, impacting

millions of learners (Al-Tammemi, 2020; Basilaia & Kvavadze, 2020; UNESCO, 2020). However, several countries have adopted different solutions to continue the educational process through the COVID-19 pandemic, using tools such as TV broadcasts, video lectures, online libraries, and streaming channels (Basilaia & Kvavadze, 2020). In addition, the United Nations Educational, Scientific and Cultural Organization (UNESCO) has aided countries, as well as vulnerable and poor communities, to reduce the effects of school closures and facilitate continuing educational opportunities for students via remote learning (UNESCO, 2020).

The COVID-19 pandemic has highlighted the importance of enhancing the quality of distance learning in higher education. A report by Educationdata (2020) showed that 98% of the educational institutions in the US in 2020 shifted the majority of their face-to-face classes online in response to the COVID-19 pandemic. The report also showed that 15% of learners in 2018 believed that their online courses were not effective, with the completion rates for some online learners as much as 22% lower than the completion rate for learners in face-to-face courses. This dropout rate is associated with student satisfaction (Gortan & Jereb, 2007; Sneyers & De Witte, 2017) suggesting that researchers should investigate the reasons for these negative experiences with online learning to improve the retention rate of prospective students and better understand the factors and predictors affecting student satisfaction.

The Online Learning Consortium considers student satisfaction to be key criteria in evaluations of the quality of online education, as it can indicate areas needing improvement and preservation (Kuo, Walker, Schroder, & Belland, 2014; Moore, 2005). Online learning self-efficacy, which represents the students' belief in their ability to be successful in an online learning setting (Hong, Hwang, Tai, & Lin, 2017) is another key factor that influences the quality of online learning (Taipjutorus, 2014). In addition, social presence is considered one of the key factors in the quality of online and distance learning (Taipjutorus, 2014) and is defined by Rourke, Anderson, Garrison, and Archer (1999) as "the ability of learners to project themselves socially and effectively into a community of inquiry." Fostering socio-emotional development in online learning settings also enhances the quality of the learning experience (Weidlich & Bastiaens, 2017).

The University of Jordan has offered an increasing number of online courses and blended learning courses in response to the COVID-19 pandemic. Specifically, in April 2020, the University of Jordan launched a total of 5017 undergraduate online courses. In addition, the Jordanian Ministry of Higher Education and Scientific Research strategically shifted the mode of delivery for all elective undergraduate courses in all Jordanian universities from face-to-face to online on a permanent basis. Studies have found that Jordanian students have experienced barriers to their education during the pandemic, including a lack of effective training in online technologies (Rababah, 2020). The e-learning system used by universities in Jordan and Saudi Arabia during the COVID-19 pandemic has also encountered some critical challenges such as management, technical issues. Studies have highlighted critical factors that affect the usage of e-learning system such as self-efficacy (Almaiah, Al-Khasawneh, & Althunibat, 2020).

These issues highlight the importance of this study in the context of Jordanian online education, particularly with regard to its assessment of the levels of student satisfaction in online learning environments. This study investigated the relationships between social presence, online learning self-efficacy, and student satisfaction in order to evaluate the predictive factors for student satisfaction that can enhance the quality of online learning and overcome challenges such as dropout rate. These variables have not yet been assessed in an online learning setting in Jordanian universities, particularly at the University of Jordan.

1.1. Aim of the Study

This study aims to determine the levels of online learning self-efficacy, social presence, and student satisfaction in the online learning environments for the School of Educational Sciences at the University of Jordan during the COVID-19 pandemic. This study also provides an explanatory overview of the relationships between social presence, online learning, and self-efficacy, as well as the predictive factors for student satisfaction.

1.2. Research Questions

The study attempts to answer the following research questions:

1. What are the levels of social presence, online learning self-efficacy, and student satisfaction among the undergraduate students in the School of Educational Sciences?
2. Is there a statistically significant correlation between social presence, online learning self-efficacy, and student satisfaction?
3. To what extent do social presence and online learning self-efficacy predict student satisfaction?

2. LITERATURE REVIEW

Online learning has become a major mode of instructional delivery as educational institutions have responded to the COVID-19 pandemic in the form of school closures and offering to student distance learning and blended learning options. These factors have caused online learning to become an emerging research topic, particularly motivating researchers to assess its quality, to determine how it impacts student satisfaction, and to consider how to improve it.

Previous research on this subject has shown that student satisfaction is an essential factor in evaluating online courses and is associated with the quality of an online program and student performance (Alqurashi, 2019; Kuo et al., 2014). Therefore, student satisfaction must be investigated to enhance the quality of online courses and student performance.

The literature also shows that student satisfaction is related to students' dropout rates, commitment to completing an online course, success in learning, and loyalty; in addition, it is an indicator of the quality of a distance education course and a predictor of learning outcomes (Alqurash, 2019; Hew, Hu, Qiao, & Tang, 2020; Muzammil, Sutawijaya, & Harsasi, 2020; Pham, Limbu, Bui, Nguyen, & Pham, 2019). For these reasons, student satisfaction must be considered a vital factor for gathering valuable data, designing collaborative online learning experiences, and defining the quality of higher education programs (Elia, Solazzo, Lorenzo, & Passiante, 2019; Parahoo, Santally, Rajabalee, & Harvey, 2016).

Researchers have defined the concept of student satisfaction in multiple ways. For example, Elia et al. (2019) use the concept to mean how positively learners perceive their learning experiences to be. Alqurashi (2019) define it as how students view their learning experience. In this study, the concept refers to whether or not learners are satisfied with their online learning experience. In a comprehensive review of the student satisfaction literature in online learning settings, researchers identified several issues and factors affecting student satisfaction using several research methodologies. For example, a study conducted by Parahoo et al. (2016) that used focus groups revealed four significant factors for student satisfaction: the marketing construct of the university's reputation, physical facilities, faculty empathy, and student-student interactions.

In another study, using quantitative research, Muzammil et al. (2020) found that student-student, student-teacher, and student-content interactions had positive impacts on student engagement, which had positive impacts on student satisfaction. Wei and Chou (2020) revealed that computer-Internet self-efficacy also had positive effects on online course satisfaction. Moreover, Hew et al. (2020) concluded that instructors, content, assessments, and schedules had significant effects on student satisfaction, while course structure, perceived course workload, and perceived difficulty had no significant effects on student course satisfaction.

2.1. Student Satisfaction and Social Presence

Unlike traditional face-to-face learning settings, which are rich social learning environments and provide many opportunities for interaction, distance and online learning environments depend on social interactions through technology. Thus, social presence is an important concern in online learning satisfaction and success according to researchers who have studied this subject and the effect of social presence in an online learning context (Swan &

Shih, 2005; Weidlich & Bastiaens, 2017). Social presence has several different and sometimes convoluted definitions in the literature (Weidlich & Bastiaens, 2017). For example, Picciano (2002) referred to it as a sense among learners of being in and belonging to an online course beyond simply being capable of interacting with an instructor and other learners. Swan and Shih (2005) defined it as "the degree to which participants in computer-mediated communication feel affectively connected one to another." This study uses the term to mean the "perceived depth of relationships with other learners and the community during e-learning," as defined by Kang, Choi, and Park (2007).

Social presence can be measured through self-reporting and behavioral indicators (Lim & Richardson, 2016). In spite of the significance of social presence in an online learning context, there is no commonly accepted method for measuring it Kang et al. (2007). Instead, researchers have developed several instruments to measure it Kang et al. (2007); Gunawardena and Zittle (1997); Richardson and Swan (2003); Kim (2011). Several studies have examined it in the online learning environment and specifically how it impacts the learning process and the quality of online learning. The work done by Alsadoon (2018) and Horzum (2017) shows that social presence is a significant predictor of student satisfaction. Studies have also found that online learners are most satisfied when their social presence is high (Horzum, 2017). In addition, Richardson and Swan (2003) revealed that learners with a high social presence have high perceived learning and satisfaction with their instructors. Furthermore, Richardson., Maeda, Lv, and Caskurlu (2017) conducted a meta-analysis of 25 studies and showed that there is a positive correlation between social presence and student satisfaction, as well as social presence and perceived learning. However, Hew et al. (2020) found that interaction had no significant role in student satisfaction. Likewise, Gray and DiLoreto (2016) found that instructor presence had no impact on student satisfaction and that student interactions did not have a statistically significant influence on student satisfaction. Nevertheless, based on the literature, social presence is an important concern in online learning settings, even if there is no standard way to measure it, there is no universal definition, and some studies found no significant relationship between social presence and student satisfaction (Weidlich & Bastiaens, 2017). These complications demonstrate that social presence requires further research.

2.2. Student Satisfaction and Online Learning Self-Efficacy

Perceived self-efficacy relates to individuals' belief in their ability to impact events and actions that affect their lives (Bandura, 2010). Perceived self-efficacy affects how people think and act. Strong self-efficacy beliefs improve cognitive processes and performance in a range of settings, including academic environments (Zulkosky, 2009). Students with high self-efficacy levels are dedicated to completing hard assignments and exert more effort when they encounter difficulties (Hong et al., 2017). Perceived self-efficacy also affects individuals' strategies and motivation and can improve their performance (Bandura, 1988).

Of note, self-efficacy beliefs are context-specific (Hodges, 2008). Therefore, students' self-efficacy in online learning settings is different from their self-efficacy in face-to-face learning environments and is considered a vital component for successful online learning (Shen, Cho, Tsai, & Marra, 2013). To this point, Zimmerman and Kulikowich (2016) define online learning self-efficacy as the learners' belief in their ability to successfully complete the learning requirements for an online course. Cheng and Tsai (2011) also refer to functional online learning self-efficacy as a student's confidence in utilizing the Internet or a computer to enroll and complete an online course. In this study, the concept of online learning self-efficacy refers to students' belief in their ability to succeed in an online learning environment.

To increase online student success, we need to enhance online learning self-efficacy. Researchers have developed several scales to measure students' online learning self-efficacy (Shen et al., 2013; Taipjutorus, 2014; Tezer, Yildiz, & Uzunboylu, 2018; Zimmerman & Kulikowich, 2016). In particular, some have studied Internet self-efficacy, technology self-efficacy, and computer self-efficacy (Cherry & Flora, 2017; Robles, 2006; Wei & Chou, 2020). Among this work, Robles (2006) demonstrated that Internet self-efficacy is not significantly correlated with student satisfaction or a predictive factor of it.

Multiple studies have investigated the relationship between online learning self-efficacy and student satisfaction. For example, Alqurashi (2019) conducted a study of 167 students to explore how online learning self-efficacy can predict student satisfaction and revealed that online learning self-efficacy was significantly predictive of student satisfaction. Zimmerman and Kulikowich (2016) also conducted a study of 338 students from 18 different campuses of a large multi-campus university and found that participants with higher online learning self-efficacy had more positive opinions of online learning and were more likely to enroll in upcoming online courses. Similarly, Shen et al. (2013) conducted a study of 406 university students who were enrolled in online courses and revealed that online learning self-efficacy predicted these students' online learning satisfaction.

However, a study by Kuo et al. (2014) found that Internet self-efficacy was not a significant predictor for student satisfaction. Alqurashi (2016) also conducted a meta-review of 31 online learning self-efficacy studies published between 1997 and 2015 and concluded that the impact of self-efficacy in online learning settings still needed more investigation, as some studies found that computer self-efficacy had a significant influence on student satisfaction in online learning while other studies did not. However, studies thus far have only looked at social presence and student satisfaction or online learning self-efficacy and student satisfaction. Our study aims to combine all three-social presence, online learning self-efficacy, and student satisfaction in one study and investigate the relationship between them.

3. METHODOLOGY

A stepwise multiple regression model was used to assess the impact of all potential predictor variables on student satisfaction. A self-administered questionnaire was employed to measure the learners' social presence, online self-efficacy, and satisfaction, as well as to gather the participants' demographic information, including their gender, grade point average (GPA) on a 4.0 scale, and year of study. The questionnaire was anonymous and contained four sections: demographic data, social presence, online self-efficacy, and student satisfaction. The participants were asked to complete the online questionnaire in the last week of the summer semester in 2020 during the COVID-19 pandemic. The learning was online. Teaching and learning activities took place through a combination of Moodle, the university's system for the management of online course content, and Zoom or Microsoft Teams for holding synchronous course meetings. The use of either Zoom or Microsoft Teams depended only on the instructors' preference.

3.1. Participants, Data Collection, and Procedure

The study population was the 1,458 undergraduate students who enrolled in online courses during the 2020 summer semester (6.38 % male and 93.6 % female) at the School of Educational Sciences at the University of Jordan. The necessary sample size determined by the Raosoft sample size calculator (with a 95% confidence interval and a 5% margin of error) was 305 participants. The study sample comprised 435 participants from the study population which was sufficient for multiple regression analysis (Austin & Steyerberg, 2015) while the pilot sample consisted of 40 participants from the study population and outside the study sample.

Before the study was conducted, the required consent was obtained from the institutional board and from the student participants. The researchers asked online course instructors to encourage their online students to participate in this questionnaire. The instructors distributed the online questionnaire link to their students using several methods (e.g., Moodle, Microsoft Teams, email, WhatsApp). Then, the data were collected during the last week of the semester. All participants were enrolled in an online course during the COVID-19 pandemic.

In total, 435 students responded to the questionnaire, of whom 94.9% were female and 5.1% were male, consistent with the ratio of all students that enrolled in online courses at the School of Educational Sciences during the 2020 summer semester (6.38 % male and 93.6 % female). The cumulative average of the respondents ranged

from poor to excellent. Among the respondents, 36.3% were in their fourth year, 23.9% in their second year, 20% in their first year, and 19.8% in their third year. Table 1 presents the demographic characteristics of the respondents.

Table-1. Demographic characteristics of the respondents (N= 435).

Characteristic		F	P
Gender	Male	22	5.1
	Female	413	94.9
GPA	Poor	26	6.0
	Good	107	24.6
	Very good	224	51.5
	Excellent	78	17.9
Year of study	First year	87	20.0
	Second Year	104	23.9
	Third Year	86	19.8
	Fourth Year	158	36.3

Note. F: Frequencies, P: Percentage.

3.2. Measurement Instruments

To gather data for this study, several existing instruments were used after getting them translated into the Arabic language and reviewed by a panel of experts in educational technology, evaluations and measurements from the University of Jordan. These instruments were originally in English and translation to Arabic was required considering Arabic is the national and most widely spoken language in Jordan.

3.2.1. Social Presence

The social presence scale (SPS) developed by Kang et al. (2007) was used to measure the students' involvement in online learning. This scale consisted of 19 items with a five-point Likert scale. The scale had three sub-dimensions: co-presence, influence, and cohesiveness. The SPS was translated to the Arabic language by the researchers. The SPS Arabic forms were reviewed and verified by a panel of five experts from the Department of Curriculum and Instruction and the Department of Educational Psychology within the School of Educational Sciences at the University of Jordan. The SPS Arabic forms were administered to the pilot sample (N=40) to ensure their validity and reliability. The internal validity correlations ranged from 0.619 to 0. 861 and were all significant at p < 0.05. The Cronbach's alpha was 0.958. The Guttman split-half coefficient was 0.895. These values showed that the SPS Arabic forms were valid and reliable.

3.2.2. Student Satisfaction

The student satisfaction scale (SSS) adopted by Kuo et al. (2014) was used to measure the online students' satisfaction. This scale consisted of 5 items with a five-point Likert scale. The SSS was translated to the Arabic language by the researchers. The SSS Arabic forms were reviewed and verified by a panel of five experts from the Department of Curriculum and Instruction and the Department of Educational Psychology within the School of Educational Sciences at the University of Jordan. The SSS Arabic forms were administered to the pilot sample (N=40) to ensure their validity and reliability. The internal validity correlations ranged from 0.50 to 0.88 and were all significant at p < 0.05. The Cronbach's alpha was 0.80. The Guttman split-half coefficient was 0.81. These values showed that the SSS Arabic forms were valid and reliable.

3.2.3. Online Self-Efficacy

The online learning self-efficacy scale (OLSES) developed by Zimmerman and Kulikowich (2016) was used to measure the students' online learning self-efficacy. This scale comprised 22 items with ratings on a six-point Likert scale, ranging from 1 (implying that the students believed they would perform the task poorly) to 6 (implying that the students believed they would perform the task at an expert level). The OLSES had three sub-dimensions:

learning in the online environment, time management, and technology use. The OLSES was translated to the Arabic language by the researchers, then reviewed and verified by a panel of five experts from the Department of Curriculum and Instruction and the Department of Educational Psychology within the School of Educational Sciences at the University of Jordan. The OLSES forms were administered to the pilot sample (N=40) to ensure their content validity. The internal validity correlations ranged from 0.36 to 0.80 and were all significant at $p < 0.05$. The Cronbach's alpha was 0.93. The Guttman split-half coefficient was 0.72. These values indicated that the OLSES Arabic forms were valid and reliable.

3.3. Data Analysis

The researchers extracted the means and standard deviations of social presence, online learning self-efficacy, and student satisfaction to answer the first research question and performed a correlational analysis to answer the second research question. This analysis also allowed the researchers to analyze the correlations between social presence, online learning self-efficacy, and student satisfaction. Then, a stepwise multiple regression analysis was employed to answer the third research question and to verify if the students' social presence and online learning self-efficacy were significant predictors of student satisfaction. These analyses were performed using the Statistical Package for the Social Sciences (SPSS) program.

4. RESULTS AND DISCUSSION

4.1. Respondent's Social Presence, Online Learning Self-Efficacy, and Student Satisfaction Levels

The first question: What are the levels of social presence, online learning self-efficacy, and student satisfaction among the undergraduate students in the School of Educational Sciences?

To answer this question, the researchers calculated the means and standard deviations of social presence, online learning self-efficacy, and student satisfaction. The findings related to the students' level of social presence, as indicated on a five-point Likert scale with equal 1.33 intervals in between each point. The ranges for these mean values were as follows: 1.0–2.33 indicating a low level of social presence, 2.34–3.66 indicating a moderate level of social presence, and 3.67–5.0 indicating a high level of social presence. The same ranges also related to the students' level of online self-efficacy, as indicated on a five-point Likert scale. However, the student satisfaction levels were collected on a six-point Likert scale with equal 1.66 intervals in between each point. The ranges for these mean values were as follows: 1.0–2.66 indicating a low level of student satisfaction, 2.67–4.32 indicating a moderate level of student satisfaction, and 4.33–6.0 indicating a high level of student satisfaction.

Table 2 shows the means and standard deviations of the undergraduates' social presence. The highest score was for Item 12: "We help each other," indicating that the students help each other and maintain a good social presence. The lowest score was for Item 9: "We accept each other's ideas well," indicating that the students do not have a deep social presence, requiring instructors to encourage them to accept other's ideas. The mean social presence value was 3.6, indicating a moderate overall level of social presence. This finding suggests that instructors must foster and enhance the social presence between their students to make their online courses successful, such as by making wall discussions, forums, and work groups. The standard deviations shown in Table-2 indicate a normal distribution of the means.

The means for the undergraduates' online learning self-efficacy ranged from 4.4 to 5.26 and were all high. The highest score was for Item 7: "Navigate the online grade book," indicating that the students are confident in their ability to navigate the online grade book, which is a vital skill in online learning. Students must know how to navigate to the online grade to check their achievements. Item 5: "Submit assignments to an online drop box" produced the second highest score, indicating that the students are confident in their ability to submit their assignments online, which is also an important skill in online learning. Instructors are not physically present, and

students need to submit their work online. The mean for online learning self-efficacy was 4.81, indicating a high overall level of online learning self-efficacy.

Table-2. Means and standard deviations of the undergraduates' SPS scores.

Item	Mean	SD	Level
1	3.63	0.97	Moderate
2	3.54	1.02	Moderate
3	3.37	0.99	Moderate
4	3.40	1.01	Moderate
5	3.34	1.04	Moderate
6	3.68	0.98	High
7	3.57	0.98	Moderate
8	3.69	0.94	High
9	3.24	1.03	Moderate
10	3.72	0.87	High
11	3.78	0.94	High
12	3.84	0.92	High
13	3.82	0.95	High
14	3.53	1.01	Moderate
15	3.70	0.95	High
16	3.80	0.87	High
17	3.65	0.99	Moderate
18	3.41	1.05	Moderate
19	3.69	0.99	High
Total	3.60	0.73	Moderate

Note. SD: Standard deviations.

Therefore, the undergraduate students in the School of Educational Sciences at the University of Jordan have a high level of confidence in their ability to complete and succeed in online courses. Table 3 shows the descriptive statistics for the undergraduates' OLSES scores, where the standard deviations reveal a normal distribution of the means.

Table-3. Means and standard deviations of the undergraduates' OLSES scores.

Item	Mean	SD	Level
1	4.63	1.26	High
2	4.58	1.26	High
3	4.57	1.21	High
4	4.40	1.33	High
5	5.24	1.04	High
6	4.84	1.18	High
7	5.26	0.96	High
8	4.62	1.21	High
9	5.05	1.14	High
10	4.96	1.10	High
11	4.74	1.20	High
12	4.79	1.13	High
13	4.85	1.12	High
14	4.96	1.02	High
15	4.83	1.08	High
16	4.87	1.09	High
17	4.94	1.00	High
18	4.95	1.13	High
19	4.69	1.27	High
20	4.76	1.19	High
21	4.57	1.21	High
22	4.71	1.16	High
Total	4.81	0.88	High

Note. SD: Standard deviations.

The means of the student satisfaction values ranged from 3.11 to 3.27 and were all moderate. The highest score was for Item 3: "This course contributed to my professional development," indicating that the students find their online courses to be useful and are satisfied with their professional development. The lowest score was for Item 5: "In the future, I would be willing to take a fully online course again," indicating that the students were not willing to learn online again and preferred face-to-face courses. This finding suggests they are not fully satisfied with the online experience. The mean for student satisfaction was 3.21, indicating a moderate overall level of student satisfaction. Table 4 shows the descriptive statistics for the undergraduates' SSS scores, where the standard deviations reveal a normal distribution of the means. This moderate level of student satisfaction could be attributed to the moderate level of social presence in their courses. Moreover, these results underscore the need to investigate and study the factors behind student satisfaction so that a solution can be found.

Table-4. Means and standard deviations of the undergraduates' SSS scores.

Item	Mean	SD	Level
1	3.22	1.27	Moderate
2	3.24	1.22	Moderate
3	3.27	1.23	Moderate
4	3.22	1.23	Moderate
5	3.11	1.39	Moderate
Total	3.21	1.16	Moderate

Note. SD: Standard deviations.

4.2. Relationships between Social Presence, Online Learning Self-Efficacy, and Student Satisfaction

The second research question: Is there a statistically significant correlation between social presence, online learning self-efficacy, and student satisfaction? To answer this question, a correlational analysis was performed. The results are shown in Table 5.

Table-5. Correlations between the independent variables and student satisfaction.

Variable	Student Satisfaction	Social presence	Online learning self-efficac
Student satisfaction	1	0.587	0.610
Social presence	0.587	1	0.649
Online learning self-efficacy	0.610	0.649	1

Note: P < 0.5, Sig. (1-tailed).

This analysis revealed that both independent variables, social presence and online learning self-efficacy, were positively related to student satisfaction. The Pearson correlation value between social presence and student satisfaction was statistically significant: r =0.587, p < .5 (1-tailed). It seems that when the level of perceived social presence increased, the level of student satisfaction rose. These results are consistent with the results of previous studies (Horzum, 2017; Richardson & Swan, 2003; Richardson. et al., 2017). Furthermore, the Pearson correlation value between online learning self-efficacy and student satisfaction was statistically significant: r =0.610, p < .5 (1-tailed). These results indicate that the students who had higher online learning self-efficacy tended to be more satisfied with the online course. This finding is consistent with the finding by Zimmerman and Kulikowich (2016), which revealed a correlation between student satisfaction and online learning self-efficacy and found that students with higher online learning self-efficacy were more likely to have positive opinions about online learning and were more likely to enroll in future online courses. This finding is also consistent with the findings of other previous studies (Alqurashi, 2017; Alqurashi, 2019; Kuo, Walker, Belland, & Schroder, 2013; Kuo et al., 2014; Shen et al., 2013).

4.3. Predictive Factors for Student Satisfaction

The third research question: To what extent do social presence and online learning self-efficacy predict student satisfaction? To answer this question, a stepwise multiple regression analysis was conducted to measure the influence of all potential predictor variables on student satisfaction. Table 6 presents the model summary.

The overall regression to predict student satisfaction from social presence and online learning self-efficacy was R= 66, R^2 = 43, and adjusted R^2= 43. Thus, 43% of the variance in the dependent variable (student satisfaction) can be explained by the independent variables (online learning self-efficacy and social presence).

Table-6. Model summary.

Model	R	R Square	Adjusted R Square	Std Error of Estimate
1	0.660	0.436	0.433	0.87277

Note. a. Predictors: (Constant), social presence, online learning self-efficacy.

According to the ANOVA results presented in Table 7, social presence and online learning self-efficacy were both significant predictors of student satisfaction at $p < 0.05$.

Table-7. ANOVA.

Model	Sum of Square	Df	Mean Square	F	Sig.
Regression	253.953	2	126.977	166.694	0.000
Residual	329.069	432	0.762		
Total	583.023	434			

Note. a. Predictors: (Constant) social presence, online learning self-efficacy. b. Dependent **Variable:** Student satisfaction.

Table 8 reveals that both independent variables, online learning self-efficacy and social presence, were significant predictors for student satisfaction. The unstandardized coefficients for online learning self-efficacy (B = 0.525, $p < 0.05$) and social presence (B = 0.521, $p < 0.05$) also contributed to student satisfaction. Based on these unstandardized coefficients and the constant, we can predict student satisfaction with Formula 1:

$y = -1.190 + 0.521 * x_1 + 0.525 * x_2$,

where y is predicted student satisfaction, x_1 is social presence, and x_2 is online learning self-efficacy.

Table-8. Coefficients.

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig
	B	Std. Error	Beta (β)		
Constant	-1.190	0.245		-4.851	0.000
Social presence	0.521	0.075	0.329	6.938	0.000
Online learning self-efficacy	0.525	0.063	0.397	8.354	0.000

Note: a. Dependent Variable: Student satisfaction.

The results of this study demonstrate that online learning self-efficacy and social presence are critical influences on student satisfaction. When the social presence score increased by 1 point, the student satisfaction score was also estimated to increase by about 0.521 points. This confirms that social presence is a predictor of student satisfaction, which is consistent with the findings of Alsadoon (2018) and Horzum (2017) who concluded that online learning satisfaction was predicted positively by social presence, with online learners most satisfied when their social presence was high. Thus, instructors for online courses may have to emphasize online learning self-efficacy and social presence to ensure student satisfaction. Richardson. et al. (2017) highlighted the importance of social presence and found a positive correlation between social presence and satisfaction, as well as between social presence and perceived learning.

These results suggest that fostering social presence will enhance students' perceived learning and satisfaction with their online courses. Thus, instructors for online courses should foster social presence between their students through enhanced emotional expression, open communication, and group cohesion (DuBois, Krasny, & Russ, 2019).

Instructional designers also have to create sociable learning environments to foster social interaction and social presence, in turn improving the quality of the learning experience, as shown by Weidlich and Bastiaens (2017).

Of note, this finding contradicts the finding of Hew et al. (2020) who observed no significant relationship between interaction and student satisfaction. This finding also contradicts the work of Gray and DiLoreto (2016) who found no statistical impact on student satisfaction from instructor presence or student interaction, indicating a need for more studies to verify the influence of social presence on student satisfaction.

The present study also showed that as online learning self-efficacy increased by 1 point, student satisfaction was estimated to increase by about 0.525 points. This finding suggests that it is more likely to have highly satisfied students if they enroll in online courses with high confidence in their ability to succeed; to face challenges; and to complete online assignments, activities, and course requirements. This finding is consistent with the few previous studies that have investigated online learning self-efficacy as a predictor of student satisfaction (Alqurashi, 2017; Alqurashi, 2019; Shen et al., 2013).

Zimmerman and Kulikowich (2016) also found that students with higher online learning self-efficacy had more positive opinion about online learning and were more likely to enroll in upcoming online courses. Moreover, Alqurashi (2017) concluded that self-efficacy was the strongest and most significant predictor of perceived learning in online courses and encouraged online instructors to foster online learning self-efficacy to give their students higher levels of perceived learning and greater satisfaction with the online course. Taipjutorus, Hansen, and Brown (2012) stated that first-time online students may experience less confidence if they do not have the necessary learning and technology skills for online learning and recommended that online courses should be designed to enhance learner efficacy, which can be fostered with embedded learner control.

This finding is inconsistent with the findings of Kuo et al. (2014) and Robles (2006) who showed that Internet self-efficacy is not significantly correlated with or predictive of student satisfaction. Furthermore, Alqurashi (2016) concluded that further studies on self-efficacy in online learning settings are needed, since the current findings are contradictory.

Student satisfaction has many potential benefits for online learning, including increases in the recruitment and retention of prospective students and the enrollment rates for online courses, as it allows educational institutions to specify and address areas needing improvement (Kuo et al., 2014). Therefore, student satisfaction and the variables that influence it or predict it, such as social presence and online learning self-efficacy, should be studied and enhanced.

5. CONCLUSION

This study is particularly important because it is the first to assess the levels of social presence, online learning self-efficacy, and student satisfaction in online learning settings; to investigate their relationships; and to predict student satisfaction in online learning among undergraduate students in the School of Educational Sciences at the University of Jordan. Research studies thus far have examined student satisfaction and social presence, or student satisfaction and online learning self-efficacy in online learning settings, but none have investigated the relationships all three variables (social presence, online learning self-efficacy, and student satisfaction in a single study. In addition, no study has assessed student satisfaction in the online learning experience at the University of Jordan since its transition to complete online instruction for its courses during the COVID-19 pandemic.

The social presence scale (SPS), online learning self-efficacy scale (OLSES), and student satisfaction scale (SSS) were used to measure levels of social presence, online learning self-efficacy, and student satisfaction. High levels of online learning self-efficacy and moderate levels of social presence and student satisfaction were observed among the undergraduate students in the School of Educational Sciences, indicating a need to enhance social presence and student satisfaction in the online courses offered at the University of Jordan. Furthermore, social presence and online learning self-efficacy were positively correlated with student satisfaction.

Student satisfaction is affected by several variables, including social presence and online learning self-efficacy. On this basis, efforts to develop student satisfaction should consider both of these variables. The results show that both social presence and online learning self-efficacy contribute to student satisfaction and are predictors of it. The focus of this study has shown that online learning with an emphasis on student social presence and online learning self-efficacy will result in higher student satisfaction. These results should encourage instructional designers and instructors in online learning to foster social presence and enhance online learning self-efficacy. In addition, they should encourage decision makers at the university to create a plan to enhance these variables, improving the quality of online learning and increasing student satisfaction. The results of this study highlight the need to further study these issues in the context of higher learning in Jordan and to foster greater social presence between the undergraduates in the School of Educational Sciences at the University of Jordan. Students with low ratings may need to be targeted for training and additional support by their instructors.

This study had some limitations that should be noted. One limitation was that the study participants came from the same college of one university. In addition, the number of participating male students was low (5.1%), which can be attributed to the low percentage of male undergraduates enrolled in the School of Educational Sciences (6.38 %). Nearly all of the students in the school's programs, such as early childhood education and classroom teaching, were female. This phenomenon can be attributed to the vacancy requirements in Jordan for these academic fields, which affect students' choice of majors. In future research, a bigger sample size and a more diverse population in terms of previous online learning experience, majors, and gender should be considered.

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