

Interaction as a Predictor for EFL Undergraduate University Students' Satisfaction With Online English Language Courses

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Abstract—As online learning becomes widespread in education field especially higher education, researchers showed great interest in identifying factors that affect students' satisfaction with online courses. This study aimed at examining EFL undergraduate students' satisfaction with online English courses in Jordanian universities. More specifically, it aims at investigating the role of interaction as a predictor for EFL students' satisfaction with online English language courses. It is a quantitative approach. The researchers collected data by administering an online Microsoft Teams form to 189 undergraduate EFL students. One hundred and twelve responded to the five-Likert scale questionnaire. The accepted forms are 105. By applying the statistical method of SPSS, regression findings showed that the four-predictor variables (student-content interaction, student-instructor interaction, student-student interaction and student-technology interaction) affect positively students' satisfaction with online English language courses. The study found that student-technology interaction and student-instructor interaction were the strongest and most significant predictors of student satisfaction with online English language courses. Moreover, findings showed statistically significant differences for the effect of students' interaction on students' satisfaction due to the students' past online learning experience. This study helps the university instructors to understand the factors that contribute to the students' satisfaction, which ultimately lead to an effective online learning. It also builds on the findings of previous studies that necessitate the need for much attention to two types of interaction: student-student and student-content.

Index Terms—satisfaction, interaction, EFL learners, online learning, online English courses

I. INTRODUCTION

Students' satisfaction in online learning has been a target for researchers to examine its possible influence in the online learning process (Kumar et al., 2021). Plenty of research articles provided many definitions of students' satisfaction and its significance. According to Elliot and Healy (2001), satisfaction is the attitude that students have towards learning process based on their learning experience. Weerasinghe et al. (2017) pointed that satisfaction in online learning is resulted from the students' own evaluation of the educational system and its services. Considering these definitions, one may conclude that students' satisfaction relies heavily on the students' evaluation of their educational experience. Elshami et al. (2021) believe that students' satisfaction is crucial for having successful learning process. Puzziferro and Shelton (2008) state that students who are more satisfied with online learning would be more successful in their studies. Moreover, Meyer (2014) added that students' satisfaction is linked with the students' academic performance. Other researchers confirm that students' satisfaction has a relation with the students' motivation towards online learning process and its components (Jitsupa et al., 2022).

Researchers exerted great effort to explore the factors that may influence the students' satisfaction in online learning environment. Interactivity, according to plenty of studies, is one of these factors that affects students' satisfaction in online learning setting (Moore, 1989, 1993; Moore & Kearsley, 1996; Strachota, 2003; Sun et al., 2008; Bray et al., 2010; Hillman et al., 1994 ; Junq et al., 2002; Muzammil et al., 2020; Dharmadjaja & Tiatri, 2021; Pham et al., 2021; Kumar et al., 2021; Alqurashi, 2019; Kuo et al., 2013; Wu et al., 2010). Accordingly, this study aims at examining EFL undergraduate students' satisfaction with online English courses in Jordanian universities. More specifically, it seeks to investigate the relation between online learning interaction types and students satisfaction, in addition to the impact of the online interaction types on the students satisfaction with online English language courses.

II. LITERATURE REVIEW

Pedagogical literature assured that interaction is a significant factor that has a distinguished impact on the students' satisfaction (Moore, 1989). In online learning environment, Bray et al. (2008) proposed that students' interaction is a very complicated process that has variety of aspects, patterns, or types that affect, with varying degrees, the students'

satisfaction in online learning courses. There are three types of interaction that take place in online learning setting: learner-content; learner-instructor, learner-student (Moore, 1989, 1993; Moore & Kearsley, 1996) and the fourth type is the learner- technology interaction that was proposed by Hillman et al. (1994).

Learner –content interaction refers to the learner who participates actively and intellectually with the course content. The learner matches the new information with the previous one to build his/her own knowledge. Interacting with the course content activates the students' problem-solving and critical thinking skills, which are the target behind the process of learning in general (Jung et al., 2002). According to Moore (1989, 1993), in this type of interaction, the learner becomes a knowledge creator since s/he thinks by himself/herself and talks to himself/herself about the information and knowledge s/he has in the course content. Reading variety of materials, listening to audios, watching videos, and doing assignments represent possible ways by which the students can interact with the content (Moore & Kearsley, 2011). A number of studies have found that interaction with the online content has an obvious impact on the students' satisfaction (Dharmadjaja & Tiatri, 2021; Strachota, 2003; Moore, 1989; Moore & Kearsley, 2011). Other researchers pointed that learner-content interaction was significantly predictive of satisfaction (Pham et al., 2021; Alqurashi, 2019; Kuo et al., 2013) while Sun et al. (2008) believed that such impact was vague.

The second type of interaction that affects students' satisfaction in online learning is the student interaction with another student (Moore, 1989, 1993). According to Moore (1989), this type of interaction occurs between a student and another, or among a group of students discussing an issue, doing an activity, or working on a project. Some studies highlighted the relation between the student-student interaction and satisfaction in online learning environment. For example, Fredericksen et al. (2000) and Moore (2014) found that learner-learner interaction is one of the strongest patterns of interaction that predicts students' satisfaction in online courses. In the same vein, Chen and Chen (2007) revealed a strong connection between the students' interaction with their peers and the degree of satisfaction. Muzammil et al. (2020) found a relationship between students' interaction with their peers and the degree of their satisfaction. Similarly, Ngo and Ngadiman (2021), Pham et al. (2021), and Dharmadjaja and Tiatri (2021) also found positive relation. On the other hand, some studies as Jung et al. (2002), Bernard et al. (2009), Kuo et al. (2013), Kuo (2014), and Kurucay and Inan (2017) did not show significant influence of student-student interaction on the students' satisfaction.

Another type of interaction that has a possible effect on students' online satisfaction is the learners' interaction with their instructors. Learner-instructor interaction is a communication via platform between the learner and the instructor of the course (Moore & Kearsley, 1996). And such communication in online learning environment can take place through many channels as online chat, discussion boards, instructors' guidance, and emails (Sher, 2009; Bernard et al., 2009; Hawkins et al., 2011; Moore, 1989; Swan, 2001). Moore (1989) believes that online learning becomes more effective if the learner- instructor interaction's quality is high. Moreover, Chang and Fisher pointed that the instructor – learner interaction's quality has an influence on the students' satisfaction. Consequently, the students' satisfaction is linked with the instructor's performance (Deloach & GreenLaw, 2007). Moore (1989) assured that any obstacles facing the learner-instructor interaction process makes the learner unmotivated and less satisfied. Vesely et al. (2007) found that increased interaction between the instructor and the learner enhances the students' satisfaction level. Additionally, researchers as Turkiewicz et al. (2022), Ayanbode (2022), Pham et al. (2021), Dharmadjaja and Tiatri (2021), and Lin et al. (2016) confirmed the positive relation between learner-instructor interaction and the learner's satisfaction. As different from these previous studies, Kuo (2014) found that the students' interaction with the instructor did not significantly predict the students' satisfaction.

The last type of interaction is the learner-technology interaction. It is a concept that was introduced by Hillman et al. (1994) who believe that this interaction is achieved by a variety of high-technology devices that serve as the interface between the learner, the content, and the instructor. Because of the high demand of technology in the field of education, this type of interaction becomes more valid than ever. Many studies assured the positive and significant impact of learner-technology interaction on the students' satisfaction in online learning contradicting the studies of Clark (1994), Sun et al. (2008), and Wu et al., (2010) that did not come up with the same result.

Regardless of the great amount of research effort that examined interaction role in the students' satisfaction in online learning, there is limited research on the role of interaction and its types in predicating EFL students' satisfaction with the context of online English language courses in higher education institutes in the Arab region in general and in Jordan in particular. Therefore, this study aims at examining the role of interaction in predicating the EFL students' satisfaction with online English language courses in the Jordanian universities. Based on literature and previous studies, we will test the following hypotheses:

- H1:** Students' interaction with their instructor affects positively the students' satisfaction.
- H2:** Students' interaction with the content affects positively the students' satisfaction
- H3:** Students' interaction with their peers affects positively the students' satisfaction
- H4:** students' interaction with technology affects positively the students' satisfaction
- H5:** There are no statistically significant differences for the effect of students' interaction on the students' satisfaction due to the students' past online learning experience.

III. METHODOLOGY

Sample and Data Collection

To examine the effect of the four types of interaction on EFL undergraduate university students' satisfaction with online English language courses, the researchers have adopted a quantitative approach by administering an online survey to the EFL learners. The survey consists of demographic information and four variables from previous studies as shown in Table 1. The variables are Student-Content Interaction, Student- Instructor Interaction, Student-Student Interaction and Student-Technology Interaction. A set of arbitrators who are specialized in teaching English as a foreign language reviewed the items of the questionnaire to check its validity. Their notes and suggestions were taken into account. Consequently, 23 items were determined for the survey. A five-point Likert scale was prepared for the survey in which "strongly disagree" is one and "strongly agree" is five. Based on their own online learning experience of interacting with their peers and instructors, content, and technology, students were asked to choose the item that is related to them. Online survey was distributed via Microsoft forms to 189 EFL students at Al-Balqa Applied University (Jordan). Only 112 students responded and 105 forms were accepted for the statistical analysis.

TABLE 1
SOURCES OF ITEMS USED IN THE SURVEY

Student-Content Interaction	Source
Q1 : The course materials used in this class have facilitated my learning	Ngo & Ngadiman (2021)
Q2: The learning content Provided(online) for this course has facilitated my learning	Ngo & Ngadiman (2021)
Q3: The tasks in this course have facilitated my learning	Elaine M. Strachota (2003)
Q4: The learning activities in this course have required critical thinking skills which facilitated my learning.	Elaine M. Strachota (2003)
Q5: The learning activities in this course have required problem solving skills which facilitated my learning	Elaine M. Strachota (2003)
Student-instructor Interaction	Source
Q1 : I felt free to ask questions throughout this course	Pelteir et al. (2003)
Q2: The instructor responded to my questions in a timely manner.	Pelteir et al. (2003)
Q3: The instructor was easily accessible to me.	Pelteir et al. (2003)
Q4: I felt free to express and explain my own views throughout this course.	Pelteir et al. (2003)
Q5: the instructor cared about my progress in this course	Gray & Diloreto (2016)
Student-Student Interaction	Source
Q1 : I was able to share learning experiences with other students	Johnson et al. (2000)
Q2: I was able to communicate with other students in this course	Johnson et al. (2000)
Q3: Increased contact with fellow students helped me more out of this course.	Johnson et al. (2000)
Q4: A sense of community existed with fellow students taking this course	Johnson et al. (2000)
Q5: This course encouraged me to work in small groups/teams	Johnson et al. (2000)
Student – Technology Interaction	Source
Q1 : Most difficulties I encounter when using computers, I can usually deal with	Cassidy & Eachus (2002)
Q2: I find working with computers very easy	Cassidy & Eachus (2002)
Q3: I am very sure of my abilities to use computers	Cassidy & Eachus (2002)
Q4: I enjoy working with computers	Cassidy & Eachus (2002)
Q5: I find that computers are good aids to learning.	Cassidy & Eachus (2002)
Satisfaction	Source
Q1: online language courses met my needs as a learner.	Artino (2007)
Q2: My satisfaction level encourages me to register in other online courses	Elshami et al. (2021)
Q3:overall, I am satisfied with my online language courses experience	Elshami et al. (2021)

IV. ANALYSIS AND FINDINGS

A. Analytical Methods and Tools

This study seeks to test interaction as a predictor for EFL undergraduate university students' satisfaction with online English courses. We adopted a quantitative approach, collected the data using online-survey, and used the statistical package for social sciences (SPSS) v.26 to complete the analysis and gather results. Data screening was conducted and Cronbach alpha was used to test instrument reliability. Furthermore, Pearson correlations provided internal consistency for instrument scales. Based on mean and standard deviation (std.) values, descriptive analysis was provided. Finally, multiple and simple linear regression models examined the influence of interaction on students' satisfaction and hierarchal multiple linear regression examined the influence of prior experience on the influence of interaction on students' satisfaction.

(a). Data Screening

Data collection started on 1/7/ 2022 and completed on 10/7/ 2022. A total of 112 responses were collected and Excel sheet was coded into SPSS. Regular patterns in responses were detected through examining std. values for Likert based statements of each questionnaire. Five questionnaires were found having regular pattern. Accordingly, they were excluded from the sample. Sample after drop pattern responses comprised of 107 responses. Further, two observations

were dropped due to outliers, as scored Cook's distance values above (0.1) cutoff proposed by (Weinberg & Abramowitz, 2008). Finally, clear sample comprised of 105 valid responses.

(b). *Students' Characteristics*

Table 2 gathers students' characteristics using counts and percentages. Majority of surveyed EFL undergraduate university students' were females $n = 76$ [72.4%] compared to $n = 29$ [27.6%] were males. Further, most of surveyed students have adequate prior experience with online courses. Those who have less than one year scored the least count $n = 21$ [20%], meanwhile those who have one year counted $n = 43$ [41%], and those who have two years counted $n = 41$ [39%].

TABLE 2
STUDENTS' CHARACTERISTICS (N= 105)

Characteristic	Subset	Count	%
Gender	Male	29	27.6%
	Female	76	72.4%
	Total	105	100%
Students' prior experience with online courses	Less than one year	21	20%
	One year	43	41%
	Two years	41	39%
	Total	105	100%

(c). *Instrument Reliability (Cronbach Alpha)*

To test the statistical reliability of instrument scales, Cronbach alpha coefficient was gathered. A scale is reliable whenever coefficient exceeds minimum cutoff [0.7] for Cronbach alpha (Sekaran & Bougie, 2019). Referring to results at Table 3, all scales were found having adequate reliability as Cronbach alpha coefficients were above 0.7 cutoff showing that all scales were statistically reliable. Cronbach alpha coefficients scored as follows: Interaction with instructor [0.905], Interaction with content [0.890], Interaction with peers [0.857], Interaction with technology [0.915], Interaction [0.922] and Students' satisfaction [0.859].

TABLE 3
CRONBACH ALPHA COEFFICIENTS (N= 105)

Factor	No.	Cronbach alpha
Interaction with instructor	5	0.905
Interaction with content	5	0.890
Interaction with peers	5	0.857
Interaction with technology	5	0.915
Interaction	25	0.922
Students' satisfaction	3	0.859

(d). *Internal Consistency (Pearson Correlation)*

The internal consistency of the instrument scales was tested through Pearson correlation that tests the association between each statement and it proposed factor. Each statement should positively and significantly correlate to its factor to support factor internal consistency. Minimum acceptable cutoff for Pearson correlation is ($r = 0.20$). Results at Table 4 showed that all statements were positively and significantly correlated to its proposed factor. All correlations were greater than ($r = 0.20$) cutoff and significant at (0.01) level entailing adequate internal consistency.

TABLE 4
INTERNAL CONSISTENCY THROUGH PEARSON CORRELATION COEFFICIENTS (N= 105)

Factor	Q	r	Factor	Q	R		
Interaction instructor	with	Q1	0.779**	Interaction technology	with	Q1	0.803**
		Q2	0.827**			Q2	0.851**
		Q3	0.878**			Q3	0.878**
		Q4	0.889**			Q4	0.885**
		Q5	0.883**			Q5	0.900**
Interaction content	with	Q1	0.745**	Students' satisfaction	Q1	0.852**	
		Q2	0.808**			Q2	0.903**
		Q3	0.857**			Q3	0.895**
		Q4	0.907**				
		Q5	0.877**				
Interaction with peers		Q1	0.760**	//			
		Q2	0.773**				
		Q3	0.778**				
		Q4	0.859**				
		Q5	0.827**				

** Correlation is significant at the 0.01 level (2-tailed)

B. Statistical Assumptions

Prior to the proceeding with the analysis, normality and multi-collinearity assumptions were tested for the dataset. Parametric analysis was valid to use for the current dataset considering that normality issues were not seen. Values of skewness and kurtosis supported data normality. Sposito et al. (1983) proposed the range ± 2.2 for a normal distribution free of skewness and kurtosis issues. Referring to the findings at Table 5, both skewness and kurtosis values were found around zero within proposed range ± 2.2 showing that normality issues were not found for current dataset.

TABLE 5
NORMALITY RESULTS (N= 105)

Factor	Skewness	Kurtosis
Interaction with instructor	-.765	.244
Interaction with content	-.286	-.546
Interaction with peers	-.101	-.242
Interaction with technology	-1.147	1.520
Interaction	-.259	.115
Students' satisfaction	-.977	.438

Regarding multi-collinearity issue among interaction factors, findings of examined tests showed that interaction factors were free from multi-collinearity issues. Variance Inflation Factor [VIF] coefficients were below (10) cutoff and Tolerance values were above (0.10) cutoff. Further, interaction factors were found in positive significant correlations. The correlation was ($r= 0.$) below ($r= 0.90$) cutoff. Finally, findings support suggestions of Pallant (2020), hence multi-collinearity is not issued in the current dataset.

TABLE 6
MULTI-COLLINEARITY CHECK FOR (N= 105)

Factor	Tolerance	VIF	Pearson correlation			
			1	2	3	4
Interaction with instructor	0.641	1.559	1			
Interaction with content	0.571	1.751	0.533**	1		
Interaction with peers	0.564	1.773	0.541**	0.608**	1	
Interaction with technology	0.839	1.192	0.375**	0.319**	0.247*	1

** Correlation is significant at (0.01) level

* Correlation is significant at (0.05) level

C. Descriptive Analysis Results

Table 7 shows the descriptive analysis of the study. Mean values reported that the students' overall interaction level was moderate scoring a mean value ($M= 3.64$) where the highest interaction levels were with the technology ($M= 4.03$) and the instructor ($M= 3.97$). Meanwhile, the students' interaction with the content and their peers were moderate scoring mean values ($M= 3.36$) and ($M= 3.22$) respectively. On the other hand, EFL undergraduate university students' satisfaction with online English courses was high scoring overall mean value ($M= 4.17$). Homogeneity in assessments was seen as neither of std. values exceeded (1), entailing that responses were spanning around its mean values. Finally, Pearson correlations provided insights for the association between interaction factors and students' satisfaction. The strongest correlation was seen between interaction with technology and Students' satisfaction ($r= 0.766$ **). The least correlation was seen between interaction with peers and students' satisfaction ($r= 0.358$ **).

TABLE 7
DESCRIPTIVE ANALYSIS RESULTS (N= 105)

Factor	Mean	Std.	Level	Min	Max	Pearson correlation					
						1	2	3	4	5	6
Interaction with instructor	3.97	0.75	High	1.80	5.00	1					
Interaction with content	3.36	0.74	Moderate	1.80	5.00	0.533**	1				
Interaction with peers	3.22	0.66	Moderate	1.60	5.00	0.541**	0.608**	1			
Interaction with technology	4.03	0.75	High	1.40	5.00	0.375**	0.319**	0.247*	1		
Interaction	3.64	0.55	Moderate	2.25	5.00	0.810**	0.809**	0.774**	0.648**	1	
Students' satisfaction	4.17	0.73	High	2.00	5.00	0.493**	0.456**	0.358**	0.766**	0.688**	1

** Correlation is significant at (0.01) level

D. Regression Models Results (Hypotheses Testing)

This section presents results of regression models to test the influence of interaction factors on EFL undergraduate university students' satisfaction. Multiple regression model examined the influence of all factors together; meanwhile, simple linear regression model examined the influence of each factor of students' interaction on students' satisfaction. Finally hierarchical multiple linear regression model examined the influence of students' prior experience with online courses on the influence of interaction factors on students' satisfaction.

(a). *Results of Multiple Linear Regression Model*

TABLE 8
MULTIPLE LINEAR REGRESSION MODEL FOR THE INFLUENCE OF EFL UNDERGRADUATE UNIVERSITY STUDENTS' INTERACTION FACTORS ON THEIR SATISFACTION (N = 105)

(R)	(R ²)	Independent variable [Students' interaction] Factor	Beta	Value (T)	Sig. (T)	F Calculate	Sig. F
0.809	0.654	Interaction with instructor	0.156	2.065	0.042*	47.341	0.000*
		Interaction with content	0.152	1.937	0.056		
		Interaction with peers	0.019	0.238	0.812		
		Interaction with technology	0.654	10.194	0.000*		

Dependent variable: EFL undergraduate university students' satisfaction

*Significant at the level ($\alpha \leq 0.05$)

Referring to the results of multiple linear regression displayed in Table 8, students' interaction factors scored a significant influence on their satisfaction. Model F calculate scored [$F = 47.341$, $P = 0.000$] and correlation coefficient scored ($r = 0.809$), showing a positive strong correlation and entailing that whenever students' interaction increase, their satisfaction increases. Model fit was found satisfactory considering that R^2 scored (65.4%), showing that students' interaction explained (65.4%) of variation in their satisfaction. Further, P values for Beta coefficients were significant below (0.05) level for two factors: interaction with instructor and interaction with technology. Meanwhile, interaction with content and interaction with peers were non-significant predictors. Beta coefficients reported that interaction with technology was the strongest predictor ($B = 0.654$) showing that for each 1% increase in students' interaction with technology, students' satisfaction increases by 65.4%.

To test the influence of each interaction factor separately, we used simple linear regression models. The following are the decisions for each hypothesis based on these models:

(b). *Results of Simple Linear Regression Models*

Table 9 shows the results of simple linear regression. Students' interaction with the instructor scored a significant influence on their satisfaction. Model F calculate scored [$F = 33.118$, $P = 0.000$] and correlation coefficient was ($r = 0.493$), showing a positive moderate correlation. Further, R^2 scored (0.243), showing that the students' interaction with the instructor explained (24.3%) of variation in their satisfaction. Beta coefficient reported that the influence of the students' interaction with the instructor was ($B = 0.493$) showing for each 1% increase in the students' interaction with instructor, the students' satisfaction increases by 49.3%. Findings allow for the supporting of H1.

H1: Students' interaction with their instructor affects positively the students' satisfaction

TABLE 9
SIMPLE LINEAR REGRESSION MODEL FOR THE INFLUENCE OF EFL UNDERGRADUATE UNIVERSITY STUDENTS' INTERACTION WITH THE INSTRUCTOR ON THEIR SATISFACTION (N = 105)

(R)	(R ²)	Beta	Value (T)	Sig. (T)	F Calculate	Sig. F
0.493	0.243	0.493	5.755	0.000*	33.118	0.000*

Dependent variable: EFL undergraduate university students' satisfaction

*Significant at the level ($\alpha \leq 0.05$)

Results of simple linear regression in Table 10 reported that the students' interaction with the content also scored a significant influence on their satisfaction. Model F calculate scored [$F = 26.998$, $P = 0.000$] and correlation coefficient was ($r = 0.456$) showing a positive moderate correlation. Further, R^2 scored (0.208), showing that the students' interaction with the content explained (20.8%) of variation in their satisfaction. Beta coefficient reported that the influence of the students' interaction with the content was ($B = 0.456$) showing that for each 1% increase in the students' interaction with the content, the students' satisfaction increases by 45.6%. Findings allow for the supporting of H2.

H2: Students' interaction with content affects positively the students' satisfaction.

TABLE 10
SIMPLE LINEAR REGRESSION MODEL FOR THE INFLUENCE OF EFL UNDERGRADUATE UNIVERSITY STUDENTS' INTERACTION WITH THE CONTENT ON THEIR SATISFACTION (N = 105)

(R)	(R ²)	Beta	Value (T)	Sig. (T)	F Calculate	Sig. F
0.456	0.208	0.456	5.196	0.000*	26.998	0.000*

Dependent variable: EFL undergraduate university students' satisfaction

*Significant at the level ($\alpha \leq 0.05$)

The students' interaction with their peers had a significant influence on their satisfaction (see Table 11). Model F calculate scored [F = 15.094, P = 0.000] and correlation coefficient was (r = 0.358), showing a positive moderate correlation. Further, R² scored (0.128), showing that the students' interaction with their peers explained (12.8%) of variation in their satisfaction. Beta coefficient reported that the influence of the students' interaction with their peers was (B = 0.358) showing that for each 1% increase in the students' interaction with their peers, the students' satisfaction increases by 35.8%. Findings also allow for the supporting of H3.

H3: Students' interaction with their peers affects positively the students' satisfaction

TABLE 11
SIMPLE LINEAR REGRESSION MODEL FOR THE INFLUENCE OF THE EFL UNDERGRADUATE UNIVERSITY STUDENTS' INTERACTION WITH THEIR PEERS ON THEIR SATISFACTION (N = 105)

(R)	(R ²)	Beta	Value (T)	Sig. (T)	F Calculate	Sig. F
0.358	0.128	0.358	3.885	0.000*	15.094	0.000*

Dependent variable: EFL undergraduate university students' satisfaction

*Significant at the level (α ≤ 0.05)

Following the results of simple linear regression gathered in Table 12, students' interaction with the technology scored a significant influence on the students' satisfaction. Model F calculate scored [F= 146.382, P = 0.000] and correlation coefficient was (r= 0.766) showing a positive strong correlation. Further, R² scored (0.587), showing that the students' interaction with the technology explained (58.7%) of variation in their satisfaction. Beta coefficient reported that the influence of students' interaction with technology was (B= 0.766) showing that for each 1% increase in students' interaction with technology, the students' satisfaction increases by 76.6%. Findings allow supporting H4.

H4: Students' interaction with technology affects positively the students' satisfaction

TABLE 12
SIMPLE LINEAR REGRESSION MODEL FOR THE INFLUENCE OF EFL UNDERGRADUATE UNIVERSITY STUDENTS' INTERACTION WITH TECHNOLOGY ON THEIR SATISFACTION (N = 105)

(R)	(R ²)	Beta	Value (T)	Sig. (T)	F Calculate	Sig. F
0.766	0.587	0.766	12.099	0.000*	146.382	0.000*

Dependent variable: EFL undergraduate university students' satisfaction

*Significant at the level (α ≤ 0.05)

(c). Results of hierarchal Multiple Linear Regression Model

To test H5 that concerns with moderating the role of students' prior experience with online courses on the influence of students' interaction on their satisfaction. Hierarchical regression model was tested and displayed at Table 13:

H05: There are no statistically significant differences for the effect of students' interaction on students' satisfaction due to the students' past online learning experience.

TABLE 13
RESULTS OF HIERARCHICAL REGRESSION MODEL FOR THE INFLUENCE OF EFL UNDERGRADUATE UNIVERSITY STUDENTS' INTERACTION ON THEIR SATISFACTION MODERATED BY THEIR PRIOR EXPERIENCE WITH ONLINE COURSES (N = 105)

n = 105		β Coefficient		
Variable		Model 1	Model 2	Model 3
Independent	Students' interaction	0.688 (0.000*)		
Moderator	Students' prior experience with online courses	0.512 (0.000*)	0.399 (0.000*)	
Interaction effect	Students' interaction x Students' prior experience with online courses	0.480 (0.000*)	0.389 (0.000*)	-0.188 (0.003*)
	R	0.688	0.776	0.797
	R²	0.474	0.602	0.636
	F	92.730 (0.000*)	77.213 (0.000*)	58.812 (0.000*)

Dependent variable: EFL undergraduate university students' satisfaction

*Significant at the level (α ≤ 0.05)

Findings of hierarchical regression model, presented at Table 13, reported three significant models. Model one examined the influence of the students' interaction on their satisfaction. The model was significant (F= 92.730, P= 0.000). Further, Beta coefficient was (B= 0.688) entailing that for each 1% increase in the students' interaction, their satisfaction increases by (68.8%). Model two connected the direct influence of the students' prior experience with online courses. The model was significant (F= 77.213, P= 0.000) and Beta coefficient was (B= 0.399) entailing that for each 1% increase in the students' prior experience with the online courses, their satisfaction increases by (39.9%).

Finally, model three examined the influence of the students' interaction × the students' prior experience with online courses on their satisfaction. The model was also significant (F= 58.812, P= 0.000) and Beta coefficient was (B= -0.188) entailing that the students' prior experience with the online courses was dampening the positive influence of their

interaction on their satisfaction, showing a critical result that should be examined in future studies in depth. Findings allow for rejecting null H05 and supporting alternative H5. Figure 1 depicts the influence of the EFL undergraduate university students' interaction on their satisfaction moderated by the students' prior experience with online courses.

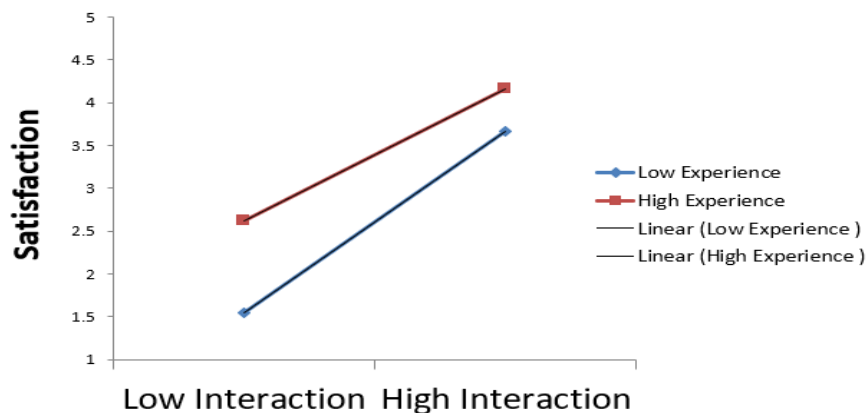


Figure 1: The Influence of the EFL Undergraduate University Students' Interaction on their Satisfaction Moderated by the Students' Prior Experience With Online Courses

V. DISCUSSION AND CONCLUSION

This study seeks to examine interaction as a predictor for EFL undergraduate university students' satisfaction with online English courses, using a sample of 105 students. The findings revealed that with a mean of 4.17, the undergraduate EFL students showed satisfying learning experience with online English language courses. All four types of interaction correlated with the students' satisfaction at a significant level indicating that the more the students are involved in interaction process with their instructor, peers, the content, and the technology the more likely they are satisfied with the online English language courses.

The students' interaction with technology was the highest interaction factor showing a good indicator of students' satisfaction with online English language courses. This result is supported by DeTure (2004), Cho (2011), Kuo et al. (2013), Shee and Wang (2008), and Womble (2007) who found positive relation between the students' interaction with technology and their online learning satisfaction. This is because technology and its tools, which become inseparable part of the students' daily lives, facilitate their individual access and sharing information, in addition to motivating and supporting their learning (Pinto & Leite, 2020).

Students' interaction with their instructor is also a high predicative factor revealing a good indicator of students' satisfaction with online English language courses. This result is consistent with previous studies (Moore, 1989; Deloach & GreenLaw, 2007; Vesely et al., 2007; Turkiewicz et al., 2022; Pham et al., 2021; Dharmadjaja & Tiatri, 2021; Lin et al., 2016). One possible explanation for this may be that the students and the instructor were ready for online classes. It is possible that the teachers succeeded in interacting socially with their students and using variety of effective and pedagogical methods and strategies that attract the students' attention and enhance their interaction in the online English language courses.

Findings also showed that the students' interaction with the content has moderate but positive influence on the students' satisfaction. This finding corresponds to some studies' results that were addressed previously (Fredericksen et al., 2000; Chen & Chen, 2007; Zhang, 2003; Moore, 2014; Muzammil et al., 2020; Ngo & Ngadiman, 2021; Pham et al., 2021; Dharmadjaja & Tiatri, 2021). One possible explanation for this modest positive influence may refer to the fact that the content was not designed well and enough to attract students' attention and motivate them to interact. Furthermore, this finding may be attributed to the fact that many online English language courses operate like traditional correspondence courses providing limited interactional opportunities between the students and the content. Accordingly, further investigation becomes a necessity to examine this construct.

Moving to the student- student interaction and its impact on the students' satisfaction with online English language courses, findings revealed positive but modest impact. This finding is in agreement with the previous studies that revealed positive impact for student - student interaction on the students' satisfaction (Muzammil et al., 2020; Ngo & Ngadiman, 2021; Pham et al., 2021; Dharmadjaja & Tiatri, 2021). One of the possible causes for this result could be that online students usually do not like to interact with their classmates with whom they are unfamiliar. Furthermore, as students do not have face-to-face interaction with their classmates in online courses, they are possibly unable to interact and communicate personally; even they do not have the real chance to evaluate each other as well. Therefore, we may suggest that the instructors should activate their roles as facilitators who motivate their students to interact with each other. They can design specific activities that provide the opportunities for their students to interact with each other. Using discussion boards is an example to encourage students to participate and share opinions. Lou et al. (1996) pointed

that to enhance student-student interaction; the instructors should pay much attention to collaborative or cooperative activities.

Finally, we expected that there would be no significant differences to the effect of interaction on the students' satisfaction attributed to their prior experience in using online courses. However, our findings were in contrary to the expectations. Prior experience revealed positive influence, showing a critical issue that researchers should investigate in depth.

VI. IMPLICATIONS AND LIMITATIONS

Instructors need to think of developing various ways of designing and displaying the content to motivate their students to interact with it. For instance, they could incorporate audio-visual media while they are explaining the content and in the tasks. They may also choose content that matches the students' interests particularly in language skills assignments. Instructors may also assign time to student-student interaction during / off classes by activating interacting tools of online learning system platforms such as Forums in Moodle and Chats in Microsoft Teams.

The results of this study have the following limitations: The sample of the study is taken from one university in Jordan. Accordingly, future studies sample may include public and private universities for generalization. Moreover, other factors that contribute to the students' satisfaction should be examined as motivation towards online learning and expectation. Finally, the study relied on online survey. Future research may consider other data collection methods like interviews, observations and focus group discussions.

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