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An Exploratory Study of Learner Characteristics, Perception of Interaction, and Satisfaction in Online Consumer Finance Courses

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Abstract

This study was conducted to investigate the effect of learner characteristics on online interaction, the relationship between online interaction and learner satisfaction, and variances in online interaction across different courses. Three types of online interaction were studied: learner-instructor interaction, learner-learner interaction, and learner-content interaction. To achieve the goals of this study, a survey was sent out to students enrolled in three online consumer finance courses at a large research university. Findings reveal that females rated the instructor-student interaction higher than males. Student-content interaction correlated the most with learner satisfaction. Learner-instructor and learner-learner interaction varied significantly among the three courses, while no statistical difference was found in learner-content interaction across the courses. This study provides insights for instructors, instructional designers, and administrators to implement and improve their design of different types of interaction in online course to enhance learner satisfaction and the quality of online courses.

KEYWORDS: Online Learning, Online Interactions, Consumer Finance, Learner Satisfaction, College Students.

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1. Introduction

Online education continues to grow quickly with an increasing number of enrollments each year worldwide (Allen & Seaman, 2013, 2016). The development of technologies (e.g., learning management systems and multimedia products) has become the driving force for the fast growth of this industry. At the time of this article, institutions of learning had transitioned from face-to-face to online learning to keep students and faculty safe during the COVID-19 pandemic (Bruggeman et al, 2022; Hodges et al., 2020; Maitra & Jain, 2023; Tang et al., 2023; Zhou et al., 2020). Aside from the pandemic, convenience and flexibility are two main features that attract a large number of learners to online courses (Cole, Shelley & Swartz, 2014; Hodges et al., 2020; Li, 2022; Song et al., 2004). Learners often have a more flexible schedule when enrolling in online courses (Gosmire, Morrison, & Van Osdel, 2009; Martin, Xie & Bolliger 2022), allowing them to study the course materials and work on assignments at their preferred time and location.

However, several issues exist with online education, including the loss of face-to-face interaction with the instructor and fellow students (Bolliger & Halupa, 2012; Cole et al., 2014; Sher, 2009), feelings of isolation, and

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insufficient instructor support (Beaudoin, Kurtz & Eden, 2009; Bruggeman et al, 2022; Kurucay & Inan, 2017; Song et al., 2004; Sher, 2009). Additionally, difficulties and anxiety incurred in using technologies could cause negative online learning experiences (Bolliger & Halupa, 2012). All of these factors could lead to high dropout rates and low learner satisfaction in online education (Parker, 2013; Sher, 2009).

To evaluate the effectiveness of an online program, several key indicators have been identified: learner satisfaction, learner performance (e.g., grades), and learner attitude (Bolliger & Halupa, 2012; Ni, 2013). Learner satisfaction is defined as the learner's perception of the instructional quality of their learning experiences (Bolliger & Halupa, 2012; Kuo et al., 2014). Sher (2009) claimed that age, gender, language, and course experiences may affect student satisfaction. Another vital predictor of learner satisfaction is online interaction (Beaudoin et al., 2009; Kuo et al., 2014; Wanstreet, 2006). Online interaction is also a determining factor of the success of online learning (Jung et al., 2002; Picciano, 2002; Swan, 2002). Garrison, Anderson, and Archer (1999) and Parker (2013) believed that learning occurs through interaction. Appropriate design and implementation of interaction in online courses could lead to positive learning experiences (Beaudoin et al., 2009), including higher learner satisfaction (Beaudoin et al., 2009; Jung et al., 2002; Shea, Richardson & Swan, 2022; Swan, 2001, 2002) and increased motivation (Parker, 2013).

According to Kuo et al. (2014), learner satisfaction should be incorporated into evaluating online courses and improving online education programs by the instructors and administrators. Ke and Kwak (2013) pointed out that learner satisfaction can be analyzed in individual online courses as well as across academic programs. To evaluate the effectiveness of online consumer finance courses at a large research university, this study investigates the design of different types of interaction and their impact on learner satisfaction, providing insights for the design of future online consumer finance courses.

2. Literature Review

Online interaction is defined as computer-mediated two-way reciprocal communication that enables information exchange and social connection in an online learning environment (Wanstreet, 2006). Wagner (1997) presented a variety of interaction outcomes, including interaction 1) to increase participation, 2) to develop communication, 3) to receive feedback, 4) to enhance elaboration and retention, 5) to support learner control/self-regulation, 6) to increase motivation, 7) for negotiation of understanding, 8) for team building, 9) for discovery, 10) for exploration, 11) for clarification of understanding, and 12) for closure.

Moore (1989) proposed three types of interaction: learner-instructor interaction, learner-learner interaction, and learner-content interaction. Different from traditional education where the interaction between the learner and instructor takes place in a physical setting (e.g., classroom or office), interaction in online education occurs via a learning management system, email, or other digital platforms. Online learners communicate with the instructor and their peers using a variety of technologies, including video chat, instant messenger, social media, and other tools. Interactive learning materials could also be created to provide instant feedback based on learner input information. Swan (2004) mapped learner-learner interaction with social presence, learner-instructor interaction with teaching presence, and learner-content interaction with cognitive presence according to the community of inquiry model (Garrison et al., 1999; Shea, Richardson & Swan, 2022).

Many empirical studies have been conducted to investigate the effects of different types of interaction on learner satisfaction. When instructor-learner interaction and learner-learner interaction were examined in online courses, both factors were identified as significant in affecting learner satisfaction (Ke & Kwak, 2013; Sher, 2009). However, when learner-content interaction was considered or implemented in the experiments, learner-learner interaction was identified as least associated with learner satisfaction or had no influence on learner satisfaction (Bordelon, 2015; Kuo et al., 2013; Kuo et al., 2014; Kuo & Belland, 2016; Marks, Sibley & Arbaugh, 2005). Regarding the most significant interaction predictor for learner satisfaction, some studies reported instructor-learner interaction was the strongest predictor (Gabrielle, 2001; Marks et al., 2005). In contrast, others found that learner-content interaction correlated the most with learner satisfaction (Kuo et al., 2013; Kuo et al., 2014; Kuo & Belland, 2016; Strachota, 2003).

3. Methodology

This study was conducted to investigate different types of online interaction (e.g., learner-instructor interaction, learner-learner interaction, and learner-content interaction) and learner satisfaction in online consumer finance courses. A mixed-method research approach was implemented to collect both quantitative and qualitative data. The findings concluded from this study provide feedback for instructors, designers, and administrators to make decisions that improve interaction design in online courses and enhance the quality of online programs.

3.1 Research questions

1. How do learner characteristics relate to different types of interaction, including learner-instructor

interaction, learner-learner interaction, and learner-content interaction?
2. To what extent do those three different types of interaction affect learner satisfaction?
3. Is there any difference among the three types of interaction in the three online consumer finance courses?

3.2 Data collection

A survey was distributed to a total of 122 students who were enrolled in three online consumer finance courses: *Consumer Rights* with 82 enrolled students, *Housing and the Consumer* with 32 students, and *Resource Management* with 16 students. Four of the 122 students enrolled in two courses, while two students enrolled in all three courses. The survey questions focus on learner demographics (e.g., age, gender, and ethnicity), learner-content interaction (cognitive presence), learner-instructor interaction (teaching presence), learner-learner interaction (social presence), and learner satisfaction. Students were asked to indicate their agreement with the following statements in the survey, such as "The instructor gives feedback on course submissions" (teaching presence), "Collaborating with other students as part of group assignments or discussions" (social presence), and "Interactive assignments are presented in the class" (cognitive presence). Open-ended questions were also created to collect additional feedback about the courses. The Cronbach's coefficient alpha values as shown in Table 1 were calculated to acquire the reliability information for three types of online interaction and learner satisfaction.

Variables	Scale	Number of items	Reliability (Cronbach's alpha)
Learner-instructor	6-point likert scale	4	0.82
Learner-student interaction	6-point likert scale	4	0.88
Learner-content interaction	6-point likert scale	3	0.75
Learner Satisfaction	5-point likert scale	5	0.74

Table 1 - Instrument Reliability.

3.3 Participants

The majority of online students enrolled in those three courses were Caucasian (76.9%), followed by African American/Black (10%), Asian (8.5%), Hispanic (3.8%), and other (0.8%). Forty-nine percent of the students were male, and 51% were female. The youngest student was 18 and the oldest student was 26, whereas most of the students were between the age of 19-22 years old.

3.4 Data analysis

Survey data was analyzed using statistical software SPSS. ANOVA and Pearson correlation were adopted to investigate the research questions. In addition, content analysis was performed to analyze students' answers to open-ended questions. The authors of this paper examined the answers independently and checked each other's codes afterwards.

4. Findings

4.1 Descriptive statistics

The statistical results showed that students rated learner-content interaction the highest among those three types of interaction with a mean score of 4.50 (SD=1.03), followed by learner-instructor (M=4.26; SD=1.07), and then learner-learner interaction (M=3.15; SD=1.18) based on a scale of 6. The average score of learner satisfaction in taking online courses is 3.94 (based on a scale of 5).

4.2 Learner characteristics and interaction

One-way ANOVA was used to examine the relationship between learner characteristics and interaction. Statistical results show that age and ethnicity had no effect on the three types of interaction; however, gender was linked to learner-instructor interaction.

4.3 Gender and interaction

The results shown in Table 2 indicate that gender relates closely with learner-instructor interaction ($p < .05$). The average rating on learner-instructor interaction by female participants is 4.46, whereas the average score for learner-instructor interaction for male is 4.05. In contrast, there is no significant difference between male and female regarding the ratings for learner-learner and learner-content interactions.

	Male		Female		F
	M	SD	M	SD	
Learner-instructor interaction	4.05	1.15	4.46	0.95	4.98*
Learner-learner interaction	3.28	1.11	3.03	1.24	1.48
Learner-content interaction	4.46	1.05	4.55	1.02	0.22

* $p < .05$

Table 2 - Gender and instructor-student interaction.

4.4 Interaction and learner satisfaction

Pearson correlation was utilized to identify the relationship between the three types of interaction and learner satisfaction. As shown in Table 3, the results

indicate that learner-content interaction is highly correlated with learner satisfaction (r= .257, p < .01). The higher students rated the learner-content interaction, the more satisfied they were with taking online courses. Learner-learner interaction and learner-instructor interaction did not have a significant relationship with learner satisfaction.

	Learner-instructor	Learner-learner	Learner-content	Satisfaction
Learner-instructor	–	.425**	.369**	.148
Learner-learner		–	.398**	.123
Learner-content			–	.257**
Satisfaction				–

Table 3 - Correlation between interaction and learner satisfaction.

To answer the third research question: Is there any difference among the three types of interaction in the three online consumer finance courses? One-way ANOVA was adopted to examine if differences exist in learner-instructor interaction, learner-learner interaction, and learner-content interaction among the three courses. The means and differences are displayed in Figure 1.

As Figure 1 shows, the three types of interaction vary among the courses, which are represented by the average scores. There are statistically significant differences between learner-instructor interaction (F=4.07, p < .05) and learner-learner interaction (F=3.50, p < .05). No statistically significant difference in learner-content interaction is found across those three courses.

4.5 Learner Feedback on Interaction

Learners were also asked to comment on the interaction design of the course in the open-ended questions of the survey.

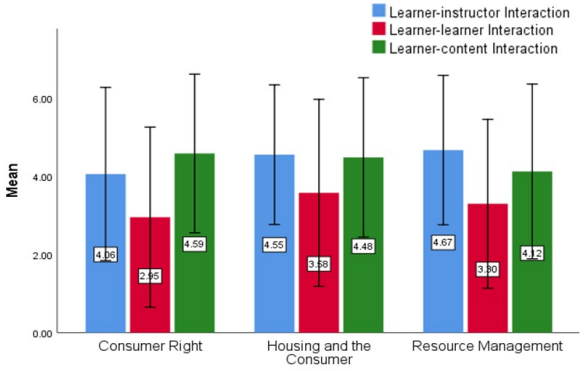

Figure 1. Interaction in three online courses.

The responses from the participants have been analyzed and presented based on the types of interaction.

Table 4 shows examples of quotes from the participants according to the three types of interaction. Learner responses indicate that participants prefer to have more learner-learner and learner-content interactions in an online course.

Discussion forum was used as the online platform for learner-learner interaction. According to participants who answered the question on their interaction preference, about 30 participants (24.39%) prefer to interact with their peers, while approximately 31 participants (25.20%) like the learner-content interaction the most. Eighteen participants (14.63%) prefer to have more interaction with the instructor.

In addition to reflecting on their experience of interacting with the instructor, peers, and course content, the learners reported on other experiences and provided suggestions for future course design including setting reminders, using projects to showcase course work, and providing live lectures periodically.

Learner- Instructor	Learner-Learner	Learner-Content
"I think the most important aspect of online learning is when the instructor communicates often/responds often. Online classes almost feel more personal this way (if the instructor sends info/feedback/encouragement often) as with in-person classes issues get pushed to office hours or you HAVE to ask a question in front of the entire class...." "Teachers who respond quickly helps you feel engaged in the class"	"Talking with classmates about class topics broadens the horizon of how I think about the subject matter." "We have more discussions in my online class compared to my other classes." "I think an online class can be more engaging when students have to respond to other students discussion questions."	"The narrated slides are very helpful." "When watching recorded lectures is better for note taking because you can pause the video if the instructor talks too fast or rewatch it multiple times if the concept isn't coming across too well." "Online classes are more engaging to me when I have lecture videos to watch." "The material is all presented in front of you, so it is easy to access and look back on."

Table 4 - Learner Feedback on Interaction Experiences in the Consumer Finance Courses.

5. Discussion and Conclusions

Gender was the only learner characteristic identified as influencing learner interaction in this study. Females rated learner-instructor interaction higher than males; this may be interpreted as females viewing learner-instructor interaction as more important in their learning process. According to Kuo and Belland (2016), age had an impact on learner-instructor interaction. However, participants in their studies had a wide age range, from 18 to above 56 years old. In contrast, no relationship was identified between age and learner satisfaction in this study; this may be because participants in this study were within a narrow age range (18 to 26 years old). Unlike Kwak's (2013) study indicating that minority status influenced learner-instructor interaction, the findings from this study showed that ethnicity had no effect on learner perception of the three types of interaction. Other learner characteristics not included in the current study (e.g., previous online learning experiences, education level, and instructor characteristics) may affect the interaction in addition to race. Future research could be conducted to investigate the effects of a particular variable on interaction while controlling other variables.

Despite learner-content interaction being fundamental in distance education, research on learner-content interaction has received far less attention in comparison to learner-learner and learner-instructor interaction (Xiao, 2017). The improvement in learner-content interaction design in online courses could enhance learner satisfaction (Kuo et al., 2014; Tzeng et al., 2022); thus, instructors and designers should spend more effort designing the content to improve learner satisfaction in online courses. Learner-content interaction correlated the most with learner satisfaction, whereas learner-instructor interaction and learner-learner interaction had no statistically significant effect on learner satisfaction.

One reason why the learner-content interaction is the most important factor for learner satisfaction is because high-quality and well-designed content is more effective for student learning. The three courses used in this study were initially taught face-to-face (F2F) and provided an opportunity for instructors to work with the university's instructional designers to convert the F2F course to an online course. The instructors worked with instructional designers and attended a two-and-a-half-day workshop session on course design. Instructors attended a workshop session and then worked with an instructional designer weekly to redesign or design their course into an online course. Instructional designers met to review courses, provided group feedback on the particular course, and decided if the courses met the university standards. Instructional designers met with instructors to determine if, among other things, the course activities, assessments, and content aligned with the objectives and to ensure that the course was designed to meet accessibility and universal design principles. Instructors were also provided with an opportunity to showcase their courses to the university at an online course showcase event.

The three courses were well-designed, and all three included a variation of narrated PowerPoints and/or content videos highlighting key points in each course.

Although this study's findings are beneficial for administrators at academic institutions, online instructors, and online course developers, there are a couple of limitations worth noting.

First, the sample size was taken from one department at a large public university, limiting the generalizability of these results. In the future, the sample size could be expanded to include more disciplines and online instructional techniques. The use of larger samples of students, including undergraduate and graduate students, may help uncover more preferences and insights on the three learning interactions explored in this study. Second, the reliability could be improved. The questionnaire will be further refined based on published research and on feedback from focus groups and academic professionals to improve the reliability (Cronbach's Alpha value) of the items in the survey.

In light of the COVID-19 pandemic, systemic changes may have occurred in educational settings that may affect this study's results. A similar study could be conducted after the pandemic so that the results could be compared. The study's findings corroborate what the authors believe to be effective strategies and techniques to improve the design of different types of interactions in online courses to enhance learner satisfaction and the quality of online courses.

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