

**Online Engagement: Student and Faculty Perceptions of Student Engagement Strategies in Online
Courses**

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Table of Contents

Table of Contents	i
List of Tables	v
List of Figures	vii
Abstract	viii
Dedication	ix
Acknowledgments	x
Chapter 1: Problem of Practice	1
Problem of Practice	1
Background	1
Purpose of Study	2
Research Questions	3
Research Methods	3
Definition of Terms	4
Chapter 2: Literature Review	6
History of Distance and Online Education	6
Origins of Distance Learning	6
Advances In One-Way and Two-Way Distance Education	7
Computers and Moving to Online Learning	8
Research in Online Learning	10
COVID-19 and Online Learning Today	12
Theoretical Frameworks	13
Seven Principles	13
Transactional Distance Theory	14
Structure.	15
Dialogue.	16
Autonomy.	16
Bridging the Gap.	17
Community of Inquiry Theoretical Framework	18
Social Presence.	19
Cognitive Presence.	20
Teaching Presence.	21
Student Engagement in Online Learning	22

Defining student engagement in online learning	22
Interactions in online learning	24
Learner-to-Learner Interactions.	24
Learner-to-Instructor Interactions.	25
Learner-to-Content Interactions.	26
Gender in Online Learning	26
Graduate and Undergraduate Online Learning	28
Summary	30
Chapter 3: Methodology	31
Statement of Purpose and Introduction	31
Research Design	32
Instrumentation	33
Research Procedures	34
Administering the Survey	34
Timeline.	35
Participants	35
Data Collection	36
Data Analysis	36
Research Question 1.	36
Research Question 2.	37
Research Question 3.	37
Research Question 4.	37
Research Question 5.	37
Assumptions, Limitations, and Delimitations	38
Assumptions	38
Limitations	38
Delimitations	39
Chapter 4: Findings	40
Description of the Sample	40
Demographics	41
Analysis of Research Questions	47
Research Question 1: What are students' perceptions of online engagement strategies in relation to learner-to-learner, learner-to-instructor, and learner-to-content interactions?	47

Research Question 2: How do students' perceptions of online student engagement strategies differ between undergraduate and graduate courses in relation to learner-to-learner, learner-to-instructor, and learner-to-content interactions?	53
Research Question 3: How do students' perceptions of online student engagement strategies differ between genders in relation to learner-to-learner, learner-to-instructor, and learner-to-content interactions?	54
Research Question 4: What are instructors' perceptions of online engagement strategies in relation to learner-to-learner, learner-to-instructor, and learner-to-content interactions?	55
Research Question 5: How do perceptions of online engagement strategies differ between students and instructors in relation to learner-to-learner, learner-to-instructor, and learner-to-content interactions?	61
Responses to Open Ended Question	62
Conclusion	70
Chapter 5: Conclusions	71
Research Question 1: What are students' perceptions of online engagement strategies in relation to learner-to-learner, learner-to-instructor, and learner-to-content interactions?	71
Learner-to-Learner Strategies	72
Learner-to-Instructor Strategies	73
Learner-to-Content Strategies	74
Research Question 2: How do students' perceptions of online student engagement strategies differ between undergraduate and graduate courses in relation to learner-to-learner, learner-to-instructor, and learner-to-content interactions?	74
Research Question 3: How do students' perceptions of online student engagement strategies differ between genders in relation to learner-to-learner, learner-to-instructor, and learner-to-content interactions?	75
Research Question 4: What are instructors' perceptions of online engagement strategies in relation to learner-to-learner, learner-to-instructor, and learner-to-content interactions?	76
Learner-to-Learner Strategies	76
Learner-to-Instructor Strategies	76
Learner-to-Content Strategies	77
Research Question 5: How do perceptions of online engagement strategies differ between students and instructors in relation to learner-to-learner, learner-to-instructor, and learner-to-content interactions?	78
Implications for Practice	80
Limitations	81
Suggestions for Future Research	81
Summary	83
References	84

Appendix A: Online Engagement Strategies Questionnaire (OESQ)	124
Appendix B: Survey permission from the author	141
Appendix C: Email sent to program directors, chairs, or other contacts	142

List of Tables

Table 1 <i>Demographic Information: Student or Faculty</i>	42
Table 2 <i>Demographic Data: Student Gender Identity</i>	42
Table 3 <i>Demographic Information: Student Status</i>	43
Table 4 <i>Demographic Information: Student Academic Discipline</i>	43
Table 5 <i>Demographic Information: Student Course Modality</i>	44
Table 6 <i>Demographic Information: Student Ages</i>	44
Table 7 <i>Demographic Information: Faculty Academic Rank</i>	45
Table 8 <i>Demographic Information: Faculty Discipline</i>	45
Table 9 <i>Demographic Information: Faculty Level Taught Online</i>	46
Table 10 <i>Demographic Information: Faculty Modality Most Frequently Taught</i>	46
Table 11 <i>Demographic Information: Faculty Experience</i>	46
Table 12 <i>Demographic Information: Faculty Online Course Development Training</i>	47
Table 13 <i>Student Perceptions of Learner-to-Learner Interactions</i>	48
Table 14 <i>Student Learner-to-Learner Ratings and Rankings</i>	49
Table 15 <i>Student Perceptions of Learner-to-Instructor Interactions</i>	50
Table 16 <i>Student Learner-to-Instructor Ratings and Rankings</i>	51
Table 17 <i>Student Perceptions of Lerner-to-Content Interactions</i>	52
Table 18 <i>Student Learner-to-Content Ratings and Rankings</i>	53
Table 19 <i>Mann-Whitney U Results for Interaction Category for Student Academic Status</i>	54
Table 20 <i>Mann-Whitney U Results for Interaction Category for Student Gender</i>	55
Table 21 <i>Faculty Perceptions of Learner-to-Learner Interactions</i>	56
Table 22 <i>Faculty Learner-to-Learner Ratings and Rankings</i>	57
Table 23 <i>Faculty Perceptions of Learner-to-Instructor Interactions</i>	58
Table 24 <i>Faculty Perceptions of Learner-to-Instructor Interactions</i>	59
Table 25 <i>Faculty Perceptions of Lerner-to-Content Interactions</i>	60
Table 26 <i>Faculty Perceptions of Learner-to-Content Interactions</i>	61
Table 27 <i>Mann-Whitney U Results for Interaction Category for Students and Faculty</i>	62
Table 28 <i>Learner-To-Learner Interactions for Most Valuable Strategy</i>	64
Table 29 <i>Learner-To-Instructor Interactions for Most Valuable Strategy</i>	64
Table 30 <i>Learner-To-Content Interactions for Most Valuable Strategy</i>	65
Table 31 <i>Learner-To-Learner Interaction Type for Least Valuable Strategy</i>	66
Table 32 <i>Learner-To-Instructor Interaction Type for Least Valuable Strategy</i>	67

Table 33 <i>Learner-To-Content Interaction Type for Least Valuable Strategy</i>	67
Table 34 <i>Learner-To-Learner Interaction Type for Not Included Strategies</i>	69
Table 35 <i>Learner-To-Instructor Interaction Type for Not Included Strategies</i>	69
Table 36 <i>Learner-To-Content Interaction type for Not Included Strategies</i>	70

List of Figures

Figure 1 <i>Frequency of Interaction Type Response: Most Valuable Strategy</i>	63
Figure 2 <i>Frequency of Interaction Type Response: Least Valuable Strategy</i>	66
Figure 3 <i>Frequency of Interaction Type Response: Not Included Strategy</i>	68

Abstract

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Online Engagement: Student and Faculty Perceptions of Student Engagement Strategies in Online Courses

Chair of Dissertation Committee: Dr. Bonnie L. Beach

The growth of online learning has led to the need for ways that engage students in their learning that differ from that of traditional face-to-face courses. The goal of this research was to identify student engagement strategies that students and faculty deem to be important for their learning. In general, the more engaged a student is in their learning, the better the student outcomes. While research does exist exploring engagement strategies, they have been through different contexts, time periods, and populations of students and faculty. This research is conducted using the online engagement strategies questionnaire (OESQ) that was sent to online programs for distribution at four-year, mid-sized, midwestern, public colleges and universities. Programs were asked to distribute the survey to faculty and students to complete. Through the survey, the responses indicate that both students and faculty perceived that engagement strategies categorized as learner-to-instructor interactions were the most important strategies, while learner-to-learner interactions were the least important group, with learner-to-content interactions falling in between. There was little difference found in the perceptions based on gender or whether students were in graduate or undergraduate programs. Identifying, implementing, and modifying student engagement strategies in programs may help students to have greater academic success in online courses and programs, which may lead to fewer stop-outs or enrollment growth.

Dedication

Dedicated to my wife, Amy, and children, Elizabeth and Samuel, for all of the support over the past four years. To my parents, Dan and Terry, for the support throughout the years. Although you weren't here to be with me through this journey, Mom, I wouldn't have gotten this far without you.

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Chapter 1: Problem of Practice

Problem of Practice

Online learning has become a major avenue for many students to continue or complete their education. Student satisfaction, persistence, and academic performance have been shown to have a positive correlation with increased student engagement (Abuhassna et al., 2020; Baloran et al., 2021; Biner et al., 1994; Blakely & Major, 2019; Bornschlegl & Cashman, 2019; Calarini et al., 2006; Draus et al., 2014; Halverson & Graham, 2019; Marmon, et al., 2014; Meyer, 2014; Nortvig et al., 2018; Reschly, 2020b; Stravredes & Herder, 2019; Sun et al., 2007; Zhu, 2012). A number of studies point to an increase in interactions amongst students with their peers, instructor, and content as being key. Historically online learning has seen higher attrition rates than traditional face-to face learning (Angelino et al. 2007; Department of Education, 2018; Dutton et al, 2001; Greenland & Moore, 2014; Herbert, 2006; Heyman, 2010; Newman et al., 2004; Smith & Ferguson, 2005; Willging & Johnson, 2009; Smith, 2010), identifying the need for instructors to embed engagement strategies and sound pedagogical practices in their online learning courses (Ferguson, 2020; Ilgaz & Gülbahar, 2015; Kehrwald & Parker, 2019; Xu & Jaggars, 2014). Strategies used by instructors may vary depending upon the level of the course, the delivery modality, or the background of learners within a course. To develop high-quality online courses, instructors need guidance in implementing strategies that can engage all students, regardless of gender, levels, and enrollment in different course delivery modalities (Crews & Wilkinson, 2015; Czerkawski & Lyman, 2016; Dunlap et al., 2016; Hosler & Arend, 2012; Martin et al., 2018; Martin et al., 2019; Nizzolino, 2023; Shaw & Irwin, 2017; Young & Norgard, 2006).

Background

Potential online learners may have a fear of the course or program they are undertaking to be impersonal, that they will not have connections with the course instructor or other students

(Cunningham, 2015). This fear can be magnified when they are in a course where the content is not stimulating or there are not meaningful ways for students to engage with the instructor or peers. Those students that are engaged, that do feel a connectedness to their peers, instructor, and content have better feelings regarding the learning process in skill, participation, performance, and emotion (Dixon, 2015).

The importance of engaging learners in online learning in the higher education environment is of great need. As enrollments in higher education are shrinking, the competition amongst institutions for students will increase and there is a growing number of students who want to have the flexibility that online learning provides, while still having access to a quality education (Boss et al., 2023; Nguyen & Tran, 2022). With this growing online student population, it is important to look at those who may traditionally have larger performance gaps, which can be bridged through the use of engagement strategies.

Purpose of Study

The purpose of this quantitative study was to investigate student and faculty perceptions of engagement strategies in online learning courses at four-year, midwestern, mid-sized public colleges and universities. There is a wealth of evidence that shows students who are not engaged in their online learning courses are less likely to complete their courses and programs and are less satisfied with their experiences (Angelino et al., 2007; Bagriacik Yilmaz & Karatas, 2022; Bambara et al., 2009; Bawa, 2016; Bornschlegl & Cashman, 2019; Grandzol & Grandzol, 2010; Hu & McCormick, 2012; Meyer, 2014; Moore, 1989; Muljana & Luo, 2019; Reschly, 2020a; Soffer & Cohen, 2019, Terras et al., 2018; Thistoll & Yates, 2016). Through the examination of student and faculty perceptions, the goal of this study was to improve online course engagement for students through the course design and in return, improving student retention and satisfaction in online courses and programs.

Research Questions

1. What are students' perceptions of online engagement strategies in relation to learner-to-learner, learner-to-instructor, and learner-to-content interactions?
2. How do students' perceptions of online student engagement strategies differ between undergraduate and graduate courses in relation to learner-to-learner, learner-to-instructor, and learner-to-content interactions?
3. How do students' perceptions of online student engagement strategies differ between genders in relation to learner-to-learner, learner-to-instructor, and learner-to-content interactions?
4. What are instructors' perceptions of online engagement strategies in relation to learner-to-learner, learner-to-instructor, and learner-to-content interactions?
5. How do perceptions of online engagement strategies differ between students and instructors in relation to learner-to-learner, learner-to-instructor, and learner-to-content interactions?

Research Methods

This study utilized a correlational research design with quantitative methods. The research was a survey-based study examining perceptions of online engagement strategies of students and faculty in online programs at four-year, midwestern, mid-sized public universities. The population consisted of students and faculty that were enrolled in or taught in an online program (undergraduate or graduate) at four-year, midwestern, mid-sized public colleges and universities. Both students and faculty were asked to complete the online engagement strategies questionnaire (OESQ) developed and validated by Martin and Bolliger (2018). Qualtrics was used to format the survey. A description of the research study and a link to the survey was distributed through program chairs and other representatives of online programs via e-mail with a request to distribute to students enrolled in the program and faculty teaching in the program. The survey was open for 10 business days, during which the survey link was

active. A reminder e-mail was sent to the original recipients five business days after the initial start of the survey. The research questions were analyzed using SPSS and use of descriptive statistics.

Definition of Terms

The following specific terms are defined to help the reader understand the context of terms in this study.

Distance Education – a set of instructional methods that takes part when the learner and instructor or material are not within physical proximity of one another forcing communication between the parties to occur via print, electronic, mechanical, or other communication technologies and it is influenced by an educational organization (Dick, 2009; Johnston, 2020; Keegan, 1980; Moore, 1972; Proctor, 2009; Reilly, 2009).

Online Education or Online Learning – a form of distance education where learning primarily takes place through the use of computers connected to the Internet, the course is planned and designed to be taught in that medium, supporting regular and substantive interaction between learners and instructors (Dorniden, 2009; Kerensky, 2021).

Emergency Remote Teaching (ERT) – a form of education that takes place when a course designed for the face-to-face environment is transitioned quickly to the online environment without changes in methods for teaching the course due to circumstances that disrupt the ability of the face-to-face course to be taught as designed; occurred predominately during the COVID-19 pandemic (Hodges et al., 2020; Paul, 2023; Zawacki-Richer & Jung, 2023)

Face-To-Face Education (F2F) – a form of education that takes place when the student and instructor are in the same physical location or environment at the same time, primarily a classroom (Amorim & Azevedom, 2021; Johnston, 2020).

Interaction – a reciprocal event that involves at least two objects or individuals and two actions and occurs when the objects or individuals influence one another; in an online environment this includes learner-to-learner, learner-to-content, and learner-to-instructor interactions (Lowenthal, 2009; Wagner, 1994).

Student Engagement – students' interactions with the course material, instructor, and other students within the course either synchronously or asynchronously mediated by technology such as a Learning Management System (LMS), discussion forums, email, and video conferencing with the level depending upon the effort and time devoted to learning activities (Axelson & Flick, 2010; Kuh, 2009; Lear, 2009).

Chapter 2: Literature Review

The growth of online learning is a major driving force in higher education that continues to expand, even while traditional enrollments are seeing a decrease (Johnston, 2020). Yet, it is often viewed as a lesser form of learning that is not as engaging as learning completed in a face-to-face environment. The literature highlights the evolution of distance learning, from traditional correspondence courses to modern, technology-enhanced online courses. This evolution underscores the importance of student engagement in online learning and the emergence of theories and frameworks related to teaching and learning at a distance.

History of Distance and Online Education

Origins of Distance Learning

Though the term was not used until the 1960's when researchers at the University of Tübingen in Germany wrote about "fernstudium" ("distance study") (Moore, 2019), distance education's origins can be traced back nearly three hundred years to 1728 when Caleb Phillips advertised the first correspondence course in the *Boston Gazette*. Correspondence courses did not truly begin to flourish until the mid-1800s with the development of the modern postal service and the use of railway (Holmberg, 1995; Peters, 2003; Pittman, 2003; Sleator, 2010). The Phonographic Correspondence Society was formed in the United Kingdom in 1843, following the penny postage system being introduced, later becoming the Sir Isaac Pitman Correspondence Colleges (Holmberg, 1995). Early distance education began to spread, being introduced in Germany in 1856 and Japan in 1892.

The Society to Encourage Study at Home (1873-1897), based in Boston, was founded by Anna Eliot Ticknor, the daughter of a Harvard University professor and is known as the "mother" of American correspondence study (Verduin & Clark, 1991). Ticknor's organization began the idea of communication via letter between instructor and learner, guided reading, and exams. Her students numbered over

7,000 and were mostly female, as they had little access to higher education at the time (Agassiz & Eliot, 1971; Gnanadass & Sanders, 2019; Mathieson, 1971). This was a step towards allowing those who did not traditionally have access to higher education at the time the access to further their education.

Correspondence courses continued throughout the 19th century with several higher education institutions in the United Kingdom and United States offering courses with the University of Chicago being the first major higher education correspondence program in the United States (McIsaac & Gunawardena, 1996). Correspondence courses were being used for both academic learning and occupational study at the start of the 20th century across the globe (Holmberg, 1995).

Advances In One-Way and Two-Way Distance Education

Correspondence courses continued without much change throughout the start of the 20th century. In the 1920's, more than 2.5 million students were enrolled in the International Correspondence School which focused on training for iron workers, railroad workers, and miners (Moore & Kearsley, 1996). During that decade, the radio, a new form of technology arose that allowed for live, one-way, distance education to take place. Live broadcasts allowed for reduced instructional delivery time and allowed students to hear from their instructors directly. Educational institutions owned more than 10% of broadcast radio stations and by 1946 the Federal Communications Commission (FCC) granted more than 200 higher education institutions educational radio licenses (Casey, 2008).

The next evolution of distance education was led by a new technology, television, beginning in 1934 when the University of Iowa began to broadcast courses (Casey, 2008). Now students could not only hear but also see the instructor, and the use of television for distance education was quickly adopted by higher education. By 1963, the FCC established a band of 20 television channels made available to educational institutions known as the Instructional Television Fixed Service (ITFS) (Reisslein

et al., 2005). The technology for television transmission was limited to a range of 20 to 35 miles, which limited the distance at which students could be from the transmission source at the time. Partnerships with cable providers allowed for transmission beyond the original range. The limitation to television and radio broadcast distance education was that it was generally a one-way communication.

Satellite communication advancements in the early 1980s allowed for broadcasting of distance education content beyond the previous range of television broadcast signals. National Technological University (NTU), a consortium of 50 higher education institutions, used satellite technology to deliver degree and post-graduate courses to students at a distance in both real-time and recorded video by 1985 (Sleator, 2010). By offering real-time courses, students could engage with their instructors during the broadcast via telephone and could get their questions answered on-air. The National Teleconferencing Network, which consisted of 250 institutions of higher education, was another example of institutions working together to provide distance learning to students (Moore, 2023). The International Business Machines Corporation (IBM) launched the Interactive Satellite Education Network in four cities and learning sites in 20 others. Congress passed the Star Schools Program Assistance Act in 1987 that authorized \$100 million in support of the Star Schools network which included 3,000 schools in 45 states to establish and build upon the telecommunications equipment, facilities, and programming.

Computers and Moving to Online Learning

Technology's next great evolution for distance education started with the creation of the microprocessor in 1971 by Intel Corporation (Betker et al., 2002). The microprocessor allowed for computers to be made smaller and cheaper, allowing them to be brought into the home. That same year, Ray Tomlinson sent the first email, allowing individuals to communicate between computers, shaping computer-mediated communication (CMC), the start of modern-day distance or online education (Spicer, 2016).

The use of computers for distance education became key in the 1990s with the rise of the world wide web in 1991 (Gunawardena & Mclsaac, 2004). The world wide web provided a seemingly limitless supply of information available to anyone with a computer and internet connection. This new form of distance learning, often referred to as online learning, uses the internet and computers as a mechanism for course delivery. The University of Phoenix was one of the first to use online delivery in 1989 with the use of CompuServe, an early consumer online service. With the unveiling of the world wide web two years later, the for-profit University of Phoenix opened the doors for other institutions of higher education to move online (Ashley, 1992).

Rapid growth of online learning from traditional brick-and-mortar institutions did not begin until 1998 (Arenson, 1998). The first fully internet-based institution of higher education to be accredited by the Higher Learning Commission was Jones International University in 1999. By the late 1990s, more universities began to form or move online, offering thousands of courses to students across the world. Some nonprofit schools, such as New York University (NYU), created for-profit online subsidiaries. Many of these for-profit subsidiaries failed, including NYU's which closed in 2001. During this period, the University of Phoenix was dominating the market, nearly doubling their enrollment (Carlson & Carnevale, 2001).

The overall enrollment for online education in 2002 was more than 1.6 million students; in six years that number had tripled (Allen & Seaman, 2008). Even with the growth in the number of students taking online courses, online institutions of all forms were being forced to cease operations. While there may have been many factors, some significant flaws were a lack of understanding of online pedagogy and acceptance from faculty of higher education institutions (Marcus, 2004). As online education takes place in a medium different from traditional face-to-face education, it requires different pedagogy and resistance from faculty to make the change or questioning the quality and validity of online learning

made it difficult for many institutions to find early success online (Arenson, 1998; Bernard et al, 2004; Shelton & Saltsman, 2005).

Research in Online Learning

Research on online learning and teaching has sought to answer many of the questions related to course design, structure, and facilitation as well as addressing the quality of online courses and how they compare with that of traditional face-to-face courses. In reviews of literature, Berge & Mrozowski (2001) reviewed studies from 1990 to 1999 and Zawacki-Richter et al. (2009) reviewed studies from 2000 to 2008, both finding that learner characteristics, engagement, interaction, and design issues were the most frequently studied. Tallent-Runnels et al. (2006) reviewed studies from 1993 to 2004 and found course elements and learner outcomes to be most studied. Martin, Sun, et al. (2020) reviewed research from 2009 to 2018 and found engagement and learner characteristics to be the most studied with nearly half of the research examined fell within those categories. Other themes included evaluation and quality assurance, course technologies, course facilitation, and instructional support.

In order for an online course to be successful, there are three key areas that must be a part of the course: design, facilitation, and assessment and evaluation (Martin et al., 2019). The first of the three phases relates to design. Online course design is described as the components and characteristics of the online course, such as the course materials, assessments, and technologies, but also the methodologies involved in crafting the online course. There are a number of best practices based upon theories and models related to teaching and learning online; however, there is no unified theory of learning for online learning (Martin et al., 2019). The use of the instructional design process, whether using models focused on online learning experiences (Czerkawski & Lyman, 2016; Dunlap et al., 2016; Puzziferro & Shelton, 2008) or those that have been modified for online learning (Kidney & Puckett, 2003; Shelton & Saltsman, 2011), is an effective practice (Martin et al., 2019).

The second phase, facilitation, refers to the actions taken by the online faculty member and the decisions they make that help students meet the learning outcomes identified during course design. This includes answering questions students have, giving feedback on course assignments, and sending announcements or emails to the course participants (Martin et al., 2018). Research has shown that facilitation strategies by the instructor leads to a stronger sense of community among the learners in the course (Epp et al., 2017).

Assessment and evaluation comprise the third phase outlined by Martin et al. (2019). Clearly defining and communicating the student learning outcomes and how they will be assessed has been consistently shown in research (Moore & Kearsley, 2011). Having varied forms of assessment in an online course has been shown to increase overall learner satisfaction (Sun et al., 2008). Assessment online is not without possible issues, as there are concerns of the validity and quality of online assessment methods (Kirkwood & Price, 2015).

The concern of quality in online learning is of paramount concern for many faculty, students, and administrators. There are several national and statewide evaluation tools that can be used to evaluate online courses and programs for quality, which is supported by the literature (Chao et al., 2006; Little, 2009; McGahan et al., 2015; Baldwin et al., 2018). Examples of quality assurance rubrics examined by Baldwin et al. (2018) include Blackboard's Exemplary Course Program Rubric, California Community Colleges' Online Educational Initiative Online Design Rubric, the Open SUNY Course Quality Review Rubric, the Quality Matters Higher Education Rubric, the Illinois Online Network's Quality Online Course Initiative, and California State University Quality Online Learning and Teaching. Consistent amongst all rubrics analyzed, Baldwin et al. (2018) found that having objectives in the course, clear navigation, use of technology to promote engagement and facilitate learning, interactions between learners, instructor contact information, expectations, assessment rubrics and objective alignment, links to institutional

services, accessible content for those with disabilities, and expectations were all deemed as key parts to a quality course.

Difference in student learning is a concern for many faculty when it comes to teaching a course online compared to a traditional face-to-face course. Research has generally found there to be no significant difference between traditional courses and face-to-face courses when analyzing final grades and pre- and post-tests (Ary & Brune, 2011; Daymont & Blau, 2008; Gratton-Lavoie & Stanley, 2009; Hauser, 2013; Hill, 2013; Riggins, 2014). There are studies that find that traditional students have better outcomes than that of online students (Brown & Liedholm, 2002; Figlio et al. 2010; Parsons-Pollard et al., 2008) and others that find online courses having better outcomes (Harmon & Lambrinos, 2006; Means et al., 2010). While the research may vary, the difference in subject matter, course design, and facilitation may need to be considered when examining student outcomes.

COVID-19 and Online Learning Today

The COVID-19 pandemic was a major shift in society with political, social, economic, and educational impacts. These impacts on education changed the way many look at, access, and engage in education (Maloney & Kim, 2020). The growth of online education in the decades preceding paved the way for how education could adjust with the instructional approaches, forms of delivery, and history of online and distance education (Bonk, 2020; Lee, 2019; Moore; 2007; Moore & Kersley, 2011). This is not the first time that education had to adjust to a major health crisis, as the Spanish flu and polio epidemics forced many to learn via alternative means in the past (Kanwar & Daniel, 2020; Miks & McIlwaine, 2020; Theirworld, 2020).

Spring 2020 forced a rapid change with the onset of the COVID-19 pandemic that forced courses to move online. Students taking online courses were growing steadily prior to the pandemic, with 33.1% taking an online course in 2018 and 34.7% in 2019 (Lederman, 2019). That percentage essentially grew

to 100% due to COVID-19 with more than 1.5 billion students in 165 countries learning online (UNESCO, 2020). This rapid movement of courses moving from face-to-face to online could not be seen as a true representation of online learning. Hodges et al. (2020) deemed this “emergency remote teaching” (ERT) to distinguish it from the more traditional, research-based methods of teaching online.

The movement of courses affected both students and teachers equally (Mailizar et al., 2020). Both students and faculty dealt with issues, such as lack of or aging technology, lack of high-speed access to the Internet, or even a safe home environment (Apriyanti, 2020). Faculty and students may not have the technical skills or training to facilitate or navigate an online course (Rasmitaldia et al., 2020; Dhawan, 2020). Some faculty, now working from home, experienced a work-life imbalance in addition to other challenges, such as lack of resources and training (Kalsoom & Shah, 2021; MacIntyre et al., 2020).

Research topics related to online learning from 2020 and 2021 that were completed during the pandemic varied from research completed previously. The topic of engagement was the most frequently studied both before and during the pandemic but did decrease by nearly a quarter; nearly tripling in frequency was research on course design and development, and the frequency of research on course technologies nearly doubled (Doo et al., 2023; Martin, Sun, et al., 2020). Learners’ perceptions and experiences, faculty experiences during COVID-19, and technology acceptance or adoption were seen as emerging during topics of research based upon Doo et al.’s (2023) systematic study of the research during the pandemic.

Theoretical Frameworks

Seven Principles

Chickering and Gamson (1987) defined seven key principles that should be a part of undergraduate education. These seven engagement practices include:

1. Frequent interaction or contact between the faculty and students.

2. Students work collaboratively with one another.
3. Students discuss and apply their learning to their own experiences (active learning).
4. Faculty provide feedback promptly, allowing for students to apply the feedback for improvement.
5. Students are required to spend quality time on academic work.
6. Faculty have high expectations for students and communicate that clearly.
7. Faculty allow students to show their talents in different ways.

While these principles were developed for face-to-face learning within undergraduate education, many can be applied to the online environment. Chickering and Ehrmann (1996) updated the seven principles related to new technologies, including how distance learning might apply to the principles. Some updates include using technology to communicate at a distance and asynchronously, communicating with other students using communication tools, use of simulations, ability to give feedback in new ways, use of technology to make better use of time on task for students, and the use of technology to allow students to demonstrate their learning in a variety of ways.

Transactional Distance Theory

Theory in distance education was non-existent prior to the 1970s due to a lack of research in out-of-classroom practices (Moore, 2019). At this time nearly all research in education was grounded in the assumption that instruction is an activity that only takes place within a classroom setting as set forth by the Association of Supervision and Curriculum Development (ACSD, 1968). Since that time, research has indicated that online education and face-to-face education are equally impactful (Bernard et al., 2004; Nguyen, 2015; Zhao et al., 2005). Yet when compared to traditional courses, online courses and programs have a higher stop-out rate (Aragon & Johnson, 2008; Park & Choi, 2009; Shea & Bidjerano, 2014; Simpson, 2003).

A potential cause of higher stop-out rates is transactional distance. Transactional distance is more than just a geographic distance but also a perceived cognitive and emotional distance between learners and instructors (Moore, 1993a; Moore & Kearsley, 2011). First defined by Moore (1973, 1980, 1991), transactional distance theory consists of three variables: structure, dialogue, and learner autonomy; the extent of transactional distance is a function of these variables (Moore, 1993a; Moore & Kearsley, 2011). These variables help to summarize the relationships and strength of relationships related to the behaviors of learners and instructors. Transactional distance needs to be overcome by learners, instructors, and institutions in order for planned learning to occur, as it is continuous and relative (Moore, 1993a).

Structure. In order for education to occur, there must be a plan. Dewey (1938) stated that learning is a transaction between individuals, instructors and learners, and the learning is not random, but planned and measured. Structure is the variable of transactional distance that involves the elements of course design, the plan set forth by the designer of the course. This includes learning objectives, content, and assessments (Ilagan, 2020). The course structure's rigidity or flexibility can affect the transactional distance a student may experience due to the way it can accommodate the needs of individual learners.

Structure may depend upon the modality of a course, the media used within a course, the instructors and their teaching philosophies and personalities, the types of learners, or constraints placed by the educational institution (Moore, 1993a). Highly structured courses are organized and carefully planned, learning objectives are clearly stated, all students have the same sequence of readings and activities, with feedback given by the instructor at regular intervals. In this type of structure, there is little room for students to work at their own pace or explore a topic of interest at more depth (Moore, 2019). A low structured course may allow for students to identify their own learning objectives, find

their own learning materials, or submit assignments when they are ready. Ultimately, structure can be described as the extent to which it can be responsive to an individual learner's needs and preferences based upon the degree of flexibility in the educational objectives, strategies used by the instructor, and how learning is evaluated.

Dialogue. The variable of dialogue refers to any interaction or interactions having positive qualities that others might have; it has a purpose, it is constructive, and it has value to those involved (Moore, 1993a). The amount of dialogue in a course can vary and depends upon other variables, such as the number of students enrolled in a course, but the structure of a course can be a large mitigating factor in how much dialogue occurs. Moore (1997) indicated that the quality and effectiveness, not frequency, of the dialogue is key to reducing transactional distance.

Two-way video conferencing can allow for a great deal of dialogue between students and instructors; however, if the course is structured as predominantly lecture without opportunity for students to discuss their learning, the use of the synchronous video has little effect on the dialogue. Dialogue can also occur in an asynchronous course environment through the ability of students to comment on or ask questions in recorded lecture, in-depth discussions of topics, course announcements, and consultations with the instructor through email, chat, or video calls (Ilagan, 2020).

Autonomy. Learner autonomy, the third variable in Transactional Distance Theory, focuses on the learner and how they manage their learning. Learner autonomy dates back to studies by both Rogers (1969) and Tough (1971). The amount of learner autonomy in a course depends upon three factors: objective setting, implementation, and evaluation and the extent to which students have autonomy in each of the factors. The degree of autonomy has eight possible levels with each of the three factors rated A or N, where A is learner determined and N is teacher determined. The highest level of Learner Autonomy would be AAA where all three are determined by the learner and the lowest being

NNN where all three are instructor determined (Moore, 2019). Moore (1972, 2019), states that neither AAA nor NNN can truly exist in reality as no learner is free from the influence of others, nor can they be entirely dependent on the instructor.

The level of autonomy a student experiences may vary from course to course, or even within the same course. Moore (2019) states that determining the proper level of autonomy for the learner should be a goal for the design and implementation of every course. This may be accomplished through the creation and withdrawal of scaffolding within the learning, potentially relying less on the instructor and more on peers and content within the course (Suzuki & Hiraoka, 2022).

Bridging the Gap. Through effective course design, the use of student engagement and teaching strategies, transactional distance can be reduced. There have been a number of studies that have shown Moore's Theory of Transactional Distance to be a practical framework against which to analyze distance educational practice (Bischoff, 1993; Bischoff et al., 1996, Chen, 2001a, 2001b; Force, 2004; Jung, 2001; McBrien et al., 2009; Nwanko, 2013; Saba & Shearer, 1994); however, not all agree (Gorsky & Caspi, 2005).

Nwanko (2013) found that faculty with more teaching experience had a greater decrease in transactional distance than those with less experience. The relationship between the variables in Transactional Distance Theory can have an inverse relationship as an increase in one can lead to decreases in others (Mclsaac & Gunawardena, 1996; Moore, 1991). Both dialogue and sense of autonomy, for example, can decrease if the structure of the course is inflexible, which increases the perception of transactional distance. Moore (1997) also pointed out that if the structure is too flexible, it could also increase transactional distance due to possible confusion or dissatisfaction of the student.

Nwanko (2013) identified six elements that are crucial to transactional distance: (1) instructor interface, (2) learner-learner interaction, (3) course structure, (4) instructor-learner interaction, (5)

learner autonomy, and (6) higher learner expectation. Of these, instructor interface and instructor-learner interactions were the most crucial to reducing transactional distance. Chen (2001b) and Nwanko (2013) both determine that the theory of transactional distance is complex and needs to be refined with the developments and changes to technologies and relates with how instructors interact with their students.

Community of Inquiry Theoretical Framework

The community of inquiry theoretical framework's development came from research during the 1990s focusing on computer-mediated conferencing, including the social and demographic features of software (Gunawanda, 1991, 1995; Harasim, 1990), the ability for it to support higher-order thinking and learning (Garrison, 1997), and the role the facilitator plays in the learning process (Fabro & Garrison, 1998; Feenberg, 2000; Gunawardena, 1991; Kaye, 1992). Garrison, Anderson, and Archer (2000) used these three essential elements to form the community of inquiry framework.

Through the development of the framework, there were assumptions made. The first being that higher-order learning outcomes are the expectation for the educational experiences, and they are best achieved within a community of inquiry comprised of both learners and instructors (Lipman, 1991). This assumption is in line with the constructionist philosophy of Dewey (1959), which departs from some previous models and theories of distance education focusing on individual learners (Garrison et al., 2003) and builds on the work of Moore (1989, 1991, 1993a, 1993b, 1997) related to communication dynamics between the instructor and learner.

The community of inquiry framework brings three independent elements – social presence, cognitive presence, and teaching presence – together to create a deep and meaningful learning experience. Interpersonal communication is key to creating a sense of being (or presence) and all three presences should be balanced in the development (Akyol & Garrison, 2008). The community of inquiry

framework has been applied to a wide range of learning environments – face-to-face to online, K-12 to higher education (Garrison, 2017) and provides a means to explore relationships amongst the presences and form hypotheses. The survey instrument is widely accepted and has been translated to multiple languages (Arbaugh et al., 2008; Olpak et al., 2016). The development and use of the framework has sufficient consistency and explicatory ability to be considered a theory (Garrison, 2017).

Social Presence. The first of the three presences of the community of inquiry theoretical framework is social presence. Social presence is the ability of individuals, in this case learners, to identify with a group, communicate in an open and trusting manner, and to develop both personal and affective relationships, projecting their own individual personalities (Garrison, 2009), allowing them to see other learners as “real people” (Swan & Shih, 2005).

The development of affective expression is done through the use of text or verbal behaviors such as through humor, self-disclosure, paralanguage, and other expressions of their emotions and values. The ability to identify with a group, or building group cohesion, relates to the learners identifying as a part of the learning community and to collaborate meaningfully. The learning climate in which this takes place should allow for open communication, allowing for participants to trust one another and to identify themselves.

There has been an identified link between perceived social presence and perceived learning satisfaction in online courses (Richardson & Swan, 2003; Swan & Shih, 2005). Social presence may have a direct (Picciano, 2002) and/or mediating (Shea & Bidjerano, 2009) effect on learning and the learning process. Research has shown differences in the social presence of instructors and students through interactions and learning online (Swan & Shih, 2005). Garrison, Anderson, & Archer (1999) explore the idea that cognitive presence is more easily sustained if there is a higher degree of social presence (Garrison, 1997; Gunawardena, 1995).

Cognitive Presence. Based upon the foundational ideas of Dewey (1933) and his thoughts on practical inquiry, cognitive presence is grounded in critical thinking. Cognitive presence is defined by Garrison, Anderson, and Archer (2001) “as the extent to which learners are able to construct and confirm meaning through sustained reflection and discourse in a critical community of inquiry” (p. 11). Critical, or reflective, thinking allows for deeper meaning to come from experiences, authenticating existing knowledge and the generation of new knowledge.

Dewey’s (1933) phases of reflective inquiry is the foundation on which the Practical Inquiry model was built, which is key to cognitive presence. The model is a variation of Garrison’s (1991) critical thinking model and developed by Garrison, Anderson, & Archer (2000). The model consists of four idealized phases of critical inquiry which are not sequential or absolute. The phases include the triggering event, exploration, integration, and resolution. The first phase, the triggering event, should be used to garner student engagement and generate questions and curiosity. The exploration phase provides learners with relevant information, or them seeking relevant information, for possible explanations. The integration phase, which is more structured, allows learners to construct meaning and beginning to develop a solution to their questions. The final phase allows learners to settle on their solution, ideally implementing and testing their solution.

The ideal path through the Practical Inquiry model is not generally seen, specifically through the integration and resolution phases (Garrison et al., 2001; Kanuka et al., 2007; McKlin et al., 2002; Meyer, 2003, 2004; Pawan et al., 2003; Picciano, 2002; Stein et al., 2007; Vaughan & Garrison, 2005), possibly due to the deep and demanding nature of learning at those levels (Garrison & Arbaugh, 2007). A lack of teaching presence may lead to learners not progressing through the four phases, specifically through the design of the task, a lack of needed crucial information, and the need to move discussion along in a timely manner (Garrison & Cleveland-Innes, 2005). Tasks designed to achieve a resolution are more

likely to move learners into to the final two phases (Alavi & Taghizadeh, 2013; Stein et al., 2007), which researchers have found pushes learners into the integration and resolution phases (Akyol & Garrison, 2008, 2011; Richardson & Ice, 2010; Shea & Bidjerano, 2009). Online discussions rarely give enough time for learners to reach resolution (Richardson & Ice, 2010) and projects will often reach resolution offline (Akyol & Garrison, 2008; Archer, 2010; Shea et al., 2010).

Teaching Presence. The third presence, teaching presence, brings social and cognitive presence together through the facilitation, design, and direction of meeting the desired learning outcomes. Teaching presence can go beyond the instructor for the course and may be provided by anyone within the community of inquiry (Garrison et al., 2000). Teaching presence is based on three categories: design and organization, facilitating discourse, and direct instruction.

Design and organization or instructional management relates to the curriculum, course or learning material design, development of assessments, establishment of time parameters, and the medium in which learning takes place. This category takes place throughout the learning experience, both before and during the process.

The second category, facilitating discourse, is crucial to the learning process, but can be difficult. Facilitating discourse allows for the construction of personal meaning, while simultaneously helping to shape that meaning into mutual understanding. The facilitator of learning should bring in less active participants and acknowledge the contributions of the learners to the process through active intervention.

Direct instruction, the final category of teaching presence, relates to specific content issues and helps learners to address misconceptions. Through direct instruction a scholarly and intellectual leadership is shown from an expert on the subject matter where they can add to the conversations of learning with sources of information, direct conversations towards learning goals, and scaffold learner

knowledge to a higher level (Swan et al., 2008). Giving feedback in a timely manner and use of assessment are key to this category of teaching presence.

Student Engagement in Online Learning

Engagement has been studied in the literature for nearly 90 years with changing definitions and focus over that time (Kuh, 2009). The use of student engagement is ever growing in higher education in the United States and is frequently seen as an indicator for student success and of a quality education (Groccia, 2018). Researchers have gone as far as stating that learning can only happen when students are engaged (Shulman, 2005).

Defining Student Engagement in Online Learning

The first to focus on engagement in research was psychologist Ralph Tyler in the 1930s, whose work identified a positive effect of time on task on learning (Merwin, 1969, as cited in Kuh, 2009). Tyler's work later became one of seven principles of good practice in undergraduate education outlined by Chickering and Gamson (1987). Tyler (1949) described learning not from what the instructor does to impart information to the learner, but what the learner does with that information. This idea builds into the College Student Experiences Questionnaire (CSEQ) developed by C. Robert Pace in the 1970s and focused on the quality of the effort the student puts into learning. Through the survey, it was suggested that when students are invested in their learning by putting time and energy into educational tasks, they gained more from their college experience. This included interacting with peers and instructors beyond the superficial and applying what they learn (Kuh, 2009; Pace, 1984, 1990).

The emphasis on student engagement is seen as ever important; the National Survey of Student Engagement pointed out that the actions students take during their college experience is more important than the college they attend based on overall outcomes (Kuh, 2002). Additionally, research

has shown that the best predictor of learning and personal development is student engagement (Kuh, 2003).

Online and face-to-face courses have many differences in how they are structured and there are different roles instructors may take within the courses. There is a need for instructor presence to be seen within their courses and to engage learners within the learning process no matter the modality (Conrad & Donaldson, 2012). How the instructor is in the course differs between the modalities, as in a face-to-face course, the instructor is seen each class meeting and is physically in the same room as the learners. In online courses, however, especially those that are asynchronous, the instructor may not be seen or directly interacted with as easily, but through the use of instructor created video, regular communication, and feedback, instructor presence can be seen in a course (King et al., 2023; Moore, 2014).

While there is not consistency in the research related to completion rates, online courses do appear to have lower completion rates than traditional face-to-face courses. Online courses often face higher attrition rates than those of traditional face-to-face courses, as much as a 10 to 20% difference (Allen & Seaman, 2013; Carr, 2000; Hachey et al., 2013; Tanyel & Griffin, 2014; Xu & Jagers, 2011). Some researchers have found that there is no difference in retention rates of online and face-to-face courses (Soffer & Nachmias, 2018; Wilson & Allen, 2018). With the continued growth of online learning, there is a demand to increase retention rates in online courses and programs (Aragon & Johnson, 2008; Muljana & Luo; 2019; Soffer & Nachmias, 2018).

One potential way to increase retention is through developing student engagement strategies (Angelino et al., 2007). Engagement in a course has been tied to academic performance and the sense of community that is built within a course, both of which contribute to reasons students may stop-out or be dissatisfied with their course (Wu et al., 2017).

Interactions in Online Learning

The types of and quality of interactions students have in online courses impacts student engagement and the learning that takes place in the course (Keengwe et al., 2012). There are three key types of interactions that take place in well-designed online courses: learner-to-learner, learner-to-instructor, and learner-to-content (Moore, 1993b). In each of these types of interactions, the learner will engage with various aspects of the course and the course materials. In studies identifying well-designed courses, students and instructors mention interactions as crucial elements within the course that affects learning (Lowenthal & Dunlap, 2018; Martin et al., 2019; Sadaf, et al., 2019; Trespalacios & Uribe-Florez, 2020).

Learner-to-Learner Interactions. “Good learning, like good work, is collaborative and social, not competitive and isolated” (Chickering & Gamson, 1987, p. 3). Learner-to-learner interaction is a key piece to students feeling connection to one another as a part of a learning community. This can be accomplished in various ways from small group work, whole class discussions, peer review, resource sharing, and can be enhanced through use of technologies (Akcaoglu & Lee, 2016; Costly, 2019; Delmas, 2017; Martin & Bolliger, 2018; ; Trespalacios & Uribe-Florez, 2020;). The importance of learner-to-learner interactions is a focus of a number of award-winning faculty, as they have seen the importance it has to students, who may feel disappointed if they are unable to share or connect with their fellow learners (Dow, 2008; Martin & Bolliger, 2018; Martin et al., 2019; Sadaf et al., 2019).

Learners connect with one another for various reasons in an online course when not directed or forced, such as to get assistance or to ask for more details, but in studies positive emotions often trigger them to communicate with a fellow classmate, often related to enthusiasm for the subject or topic. Negative emotions, such as stress and anxiety, can also cause learners to reach out to one another as well (Angelaki & Mavroidis, 2013). Studies have shown that communication or interaction amongst

students is important for engagement and motivation (Dung, 2020; Hadiyanto et al., 2021; Tratnik et al., 2019). Strategies for connecting students with one another varies and studies may show different results. The use of virtual lounges, for example, has been deemed as important to building relationships among learners (Harrell, 2008), but in other studies, learners felt this strategy was the least important (Martin & Bolliger, 2018).

Learner-to-Instructor Interactions. Although interactions amongst learners is important within a course, it may not be the most important interaction for students. Studies suggest that learner-to-instructor interactions may be more important to students and a gap in this form of interaction may affect learning outcomes (Cuseo, 2018; Lowenthal & Dunlap, 2018; Martin & Bolliger, 2018). There are many strategies that instructors can include in their courses to help bridge the learner-to-instructor gap, including course announcements or regular emails to students, participation in discussion forums, being available for office hours, providing frequent feedback to students, and providing short videos created by the instructor (Bolliger & Martin, 2018; Chickering & Gamson, 1987; Martin & Bolliger, 2018).

The use of learner-to-instructor interactions build connections that can benefit, or if missing, hinder student learning outcomes and growth. There are a number of studies that have shown learner-to-instructor interaction outside of the classroom is beneficial as it can help improve academic achievement and cognitive development (Pascarella, 1980; Thompson, 2001), personal and social development (Endo & Harpel, 1982; Lau, 2003; Pascarella & Terenzini, 1978; Reason et al., 2006), perceptions on the quality of the institution and their commitment to it (Strauss & Volkwein, 2002; Theophilides & Terenzini, 1981), and interest in pursuing advanced degrees (Pascarella, 1980; Stoecker et al., 1988). Research has also shown that learners are more likely to drop out of a course if they do not have connection to instructors (Delmas, 2017) and like learner-to-learner interaction, interaction with

instructors is related to increased student engagement and motivation (Dung, 2020; Hadiyanto et al., 2021; Tratnik et al., 2019).

Learner-to-Content Interactions. The learner-to-content interactions in a course is a defining characteristic of education. There is a need for learners to develop their knowledge of the subject matter; they do this through the materials that are provided in the course (Moore, 1993b). Throughout much of the history of distance learning, learner-to-content interaction was the main type of interaction as learning was a one-way affair with content coming to the learner from the instructor (McIsaac & Gunawardena, 1996). Learner-to-content interaction can be seen as a one-way road that provides information to the learner from a subject matter expert, requiring that the learner be self-directed if this is the only means of interaction provided.

Online course content can vary, but in order to increase student engagement, the use of interactive content, such as multi-media and simulations, have positive outcomes (Abrami et al., 2011; Hodges, 2021; Martin et al., 2018; Muir et al., 2022; Revere & Kovach, 2011; Zimmerman, 2012). The research directly related to learner-to-content interactions is somewhat limited (Bolliger & Martin, 2018; Xiao, 2017). Learner-to-content interactions help to support both learner-to-learner and learner-to-instructor interactions by allowing conversation and feedback regarding the content presented within the course (Martin et al, 2018; Xiao, 2017; Zimmerman, 2012), as much of what is learned in most situations depends on the activity of the learner (Rothkopf, 1970). Through the creation of content, such as videos, the instructor can help to build their presence in the course (Di Paolo et al, 2021). Student engagement through learner-to-content interaction occurs best when students have interest in the content, offered via multi-media, features interaction with the content, and stimulates critical thinking and problem-solving skills (Mukuni et al., 2021).

Gender in Online Learning

Women make up the majority of online students (Best Colleges, 2020; Bolliger & Martin, 2018; Kena et al., 2016; Lai & Lu, 2009; Martin & Bolliger, 2018; Wang et al., 2022). This includes both undergraduate and graduate online programs (Kena et al., 2016). In a study from Martin, et al. (2020), there is no statistical difference related to perceptions of the importance of online readiness competencies or confidence of their readiness for online learning between male and female students surveyed.

There is contradiction in how genders differ when it comes to online learning. Some argue that discrimination may occur due to gender-specific behavior in online learning related to using technologies (Cuadrado-Garcia et al., 2010), but others see it as supportive to women due to the flexibility and interactive approach it can take (Gokool-Ramdoe, 2006). Several studies report that gender does not have any significant effect on online learning (Astleitner & Steinberg, 2005; Linnenbrink-Garcia et al., 2013; Yukselturk & Bulut, 2009); however, others found that there are gender differences when it comes to online learning (Ashong & Commander, 2012; Chanlin, 1999; Chyung, 2007, Gunn et al., 2003, McSporrán & Young, 2001; Price, 2006; Rovai & Baker, 2005).

It has been seen that female students tend to participate more actively and intensively in online learning courses than their male counterparts (Nistor, 2013). They also tend to have a higher positive perception related to teacher support than male students (Ashong & Commander, 2012). Male students tend to benefit more from the use of interactive communication technologies and had a higher perception of satisfaction in online learning (Park & Kim, 2020); however, satisfaction may depend upon more than just gender, but also age as well (Harvey et al., 2017). Female students experience more voice, deeper learning, and greater satisfaction in online courses compared to face-to-face courses (Caspi et al., 2008; Lai & Liu, 2009; Weatherly, 2011).

In relation to interaction, gender does make a difference in learner-to-instructor interaction and learner-to-learner interaction, as women are more likely to seek connection and supportive communication (Anderson, 2003; Anderson & Haddad, 2005; Rovai & Baker, 2005; Ryan et al, 1997; Weatherly, 2011). A study from Mukuni et al. (2021) found that there was no difference between male and female students' perspectives when related to certain aspects of learner-to-content interaction.

The use of technology is an area that has been of interest in studies examining gender and online learning. Studies have shown that female students are more apt to use technology specifically for learning purposes compared to male students who use technology for an enjoyable activity (González-Gómez et al., 2012; Luik, 2009; Nistor, 2013). This may account for differences in how each gender feels, thinks, and behaves with technology as well as their difference in technology literacy and preferences (Luik, 2009).

Graduate and Undergraduate Online Learning

Graduate and undergraduate students have many differences when it comes to online learning, including motivations and experiences. Undergraduate students tend to be more peer-driven as opposed to self-motivated compared to graduate students (Baugher et al., 2003; Benbaunan-Fich & Hiltz, 2003; Hwang & Arbaugh, 2006; Martins & Kellermanns, 2004). It is possible that due to this, the nature of online courses taking place physically apart, and undergraduate students not placing a priority on interacting with other students in the online format, undergraduate students have lower levels of perceived learning (Hornik & Tupchiy, 2006). Graduate students have also been found to have higher levels of critical thinking compared to undergraduates; however, undergraduates have more experiences with online technologies than graduate students and are more likely to take additional online courses in the future (Artino & Stephens, 2009).

Graduate students tend to be more self-motivated than undergraduates (Patel & Patel, 2006). Interaction amongst graduate students has been shown to be important (Arbaugh, 2005; Arbaugh & Rau, 2007; Benbunan-Fich & Arbaugh, 2006; Brower, 2003; Peltier et al., 2003; Williams et al., 2006; Yukselturk & Top, 2006) and learner-to-learner interaction has been shown to be a predictor of positive course learning outcomes (Arbaugh, 2002; Arbaugh & Rau, 2007; Borthick & Jones, 2000; Peltier et al., 2003; Williams et al., 2006, Yukselturk & Top, 2006).

Interactions with the instructor are important for both graduate and undergraduate students. Undergraduate students tend to interact with instructors most related to feedback, with the use of empathetic feedback being a predictor of online course effectiveness (Eom et al., 2006; Simon et al., 2003). Graduate students tend to find instructor interactions related to interaction facilitation and as a participant to be important (Arbaugh & Hwang, 2006; Kellogg & Smith, 2009; Millson & Wilemon, 2008). Younger students tend to find announcements or reminders more important than older students (Martin & Bolliger, 2018).

Course content and design is important to both graduate and undergraduate students. Starting with simpler activities and building into more complex ideas and assignments benefits both groups (Allan & Lawless, 2003; Mariola & Manley, 2002). Graduate students' view of interaction leads to a greater use of consistent student groups (Dunbar, 2004; Hodgson & Reynolds, 2005; Williams et al., 2006) and variety in the type of assignments in the course (Arbaugh & Rau, 2007). Discussions may be more beneficial for graduate students due to having more experience than that of undergraduate students (Sautter, 2007). Undergraduate students are more likely to procrastinate in completing their work, yet they found greater value in the task than graduate students (Artino & Stephens, 2009).

For online learning as a whole, both undergraduate and graduate students like the flexibility and convenience of the medium (Arbaugh, 2000; Benbunan-Fich & Hiltz, 2003; Kellogg & Smith, 2009). In a

study by Martin, et al. (2020), there was not a statistically significant difference between the importance of online readiness competencies and the confidence of readiness for online learning between undergraduate and graduate students.

Summary

The change in technology throughout the history of distance education, from simple correspondence courses dating back to 1728 through modern day's online education that can be delivered nearly anywhere to nearly anyone has allowed for students to engage with the content of their courses and to interact with their instructor and other students in different ways and at different levels. These changes have led to the development of a number of theories and frameworks to help better engage students and to design courses that will help students' cognitive development and incorporate the content into their lives.

It has also led to the defining of how and with what or whom students interact in a course. Developed by Moore (1993b), the three predominate types of interaction are learner-to-learner, learner-to-instructor, and learner-to-content. The continued development of technology has allowed for these types and the depth of the interactions to increase. Much research has been done on student engagement, but there are further areas that can be explored with different populations of students and instructors, including gender and level of the course and the perceptions of both students and faculty related to different strategies of engagement.

Chapter 3: Methodology

Statement of Purpose and Introduction

The purpose of this quantitative study was to investigate student and faculty perceptions of engagement strategies in online learning courses at four-year, midwestern, mid-sized public colleges and universities. There is a plethora of evidence that shows students who are not engaged in online learning courses are less likely to complete their courses and programs (Angelino et al., 2007; Bagriacik Yilmaz & Karatas, 2022; Bambara et al., 2009; Bawa, 2016; Bornschlegl & Cashman, 2019; Grandzol & Grandzol, 2010; Hu & McCormick, 2012; Meyer, 2014; Moore, 1989; Muljana & Luo, 2019; Reschly, 2020a; Soffer & Cohen, 2019, Terras et al., 2018; Thistoll & Yates, 2016). Through the examination of student and faculty perceptions, the goal of this study was to improve online course engagement for students through the course design and in return, to improve student retention in online courses and programs.

Online learning has become a major avenue for many students to continue or complete their education. Numerous studies have revealed that student engagement in online classes has a positive relationship with student satisfaction, persistence, and academic performance (Abuhassna et al., 2020; Baloran et al., 2021; Biner et al., 1994; Blakely & Major, 2019; Bornschlegl & Cashman, 2019; Carini et al., 2006; Draus et al., 2014; Halverson & Graham, 2019; Marmon, et al., 2014; Meyer, 2014; Reschly, 2020b; Stravredes & Herder, 2019; Nortvig et al., 2018; Sun et al., 2007; Zhu, 2012). Many of these studies encourage instructors to implement ways for students to engage with each other, the instructor, and the content. Online education historically has higher attrition rates than traditional face-to face learning (Angelino et al. 2007; Department of Education, 2018; Dutton et al, 2001; Greenland & Moore, 2014; Herbert, 2006; Heyman, 2010; Newman et al., 2004; Smith, 2010; Smith & Ferguson, 2005; Willging & Johnson, 2009), identifying the need for instructors to embed engagement strategies and

sound pedagogical practices in their online learning courses (Ferguson, 2020; Ilgaz & Gülbahar, 2015; Kehrwald & Parker, 2019; Xu & Jaggars, 2014). Engagement strategies can vary depending upon the level of the course, the delivery modality, or the general make-up of the students within the course. To develop high-quality online courses, instructors need guidance in implementing strategies that can engage all students, regardless of gender, levels, and enrollment in different course delivery modalities (Crews & Wilkinson, 2015; Czerkawski & Lyman, 2016; Dunlap et al., 2016; Hosler & Arend, 2012; Martin et al., 2018; Martin et al., 2019; Nizzolino, 2023; Shaw & Irwin, 2017; Young & Norgard, 2006).

In order to determine the perceptions of online student engagement strategies, the following research questions are examined:

1. What are students' perceptions of online engagement strategies in relation to learner-to-learner, learner-to-instructor, and learner-to-content interactions?
2. How do students' perceptions of online student engagement strategies differ between undergraduate and graduate courses in relation to learner-to-learner, learner-to-instructor, and learner-to-content interactions?
3. How do students' perceptions of online student engagement strategies differ between genders in relation to learner-to-learner, learner-to-instructor, and learner-to-content interactions?
4. What are instructors' perceptions of online engagement strategies in relation to learner-to-learner, learner-to-instructor, and learner-to-content interactions?
5. How do perceptions of online engagement strategies differ between students and instructors in relation to learner-to-learner, learner-to-instructor, and learner-to-content interactions?

Research Design

This study was to be viewed through a postpositivist worldview and utilized a correlational research design with quantitative methodology. The postpositivist worldview challenges the idea of

absolute truth of knowledge, acknowledging that by studying human actions and behaviors we cannot be fully certain about any claims of knowledge (Creswell & Creswell, 2018). The use of a postpositivist worldview with quantitative research is appropriate in that its methodology is already determined and objectively verifies theories or explanations through scientific thinking (Nardi, 2018). The epistemology of the postpositivist worldview is rooted in statistical measures and encompasses objective, quantifiable data. Correlational research is grounded in the postpositivist worldview due to maintaining an objective view through investigating relationships (Terrell, 2023). Correlational research allows for the testing and exploring of constructs to better understand a phenomenon.

Instrumentation

The data collection instrument (see Appendix A) is the online engagement strategies questionnaire (OESQ) (Martin & Bolliger, 2018). The authors of the survey provided approval for using the survey, as long as it is cited (see Appendix B). The instrument uses Moore's (1993) interaction theory as a basis for student engagement strategies. The instrument consists of 29 Likert-type items that range from 1 (very unimportant) to 5 (very important), three open-ended questions, and eight demographic questions that varied based on whether the respondent was a student or a faculty member.

The instrument developed by Martin & Bolliger (2018) originally consisted of 47 questions, 36 Likert-type items, three open-ended questions, and eight demographic questions. Through a review by a five-member expert panel, the survey was reduced to its current format. The members of the expert panel had a minimum of seven years of online higher education teaching experience with two members also being experts in research methods.

The 29 Likert-type items are divided into three main categories related to interaction type. The first set of 10 questions is related to learner-to-learner interaction. The second set of 10 questions are

related to learner-to-instructor interaction. The final nine questions are related to learner-to-content interaction.

The three open ended questions ask participants to identify the most valuable strategy for student engagement, the least valuable strategy for student engagement, and to share student engagement strategies that they perceived to be important but were not included in the survey through an open-ended question.

The instrument had previously established psychometric properties and is considered to be a valid and reliable instrument. The instrument's internal reliability coefficient was determined to be .87 in the first use of the instrument (Martin & Bolliger, 2018) and in the second use it was determined to be .93 (Bolliger & Martin, 2018). The three subscales were deemed to be satisfactory in both the first and second uses: learner-to-learner ($\alpha = .74$ and $\alpha = .76$), learner-to-instructor ($\alpha = .73$ and $\alpha = .81$), and learner-to-content ($\alpha = .73$ and $\alpha = .79$) (Bolliger & Martin, 2018; Martin & Bolliger, 2018;).

Research Procedures

Administering the Survey

The survey was formatted, developed, and distributed using Qualtrics. Distributing the survey online is a convenient method when emails or other paths of digital contact for the population to be sampled is readily available (Rea & Parker, 2014). The ability to collect online surveys is convenient for transferring data collected to tools for analysis and following up with the sample population (Creswell & Creswell, 2018; Rea & Parker, 2014). By transferring data from the online survey to IBM's Statistical Package for the Social Sciences (SPSS), data entry errors will be avoided and the time it takes to test and analyze data will be diminished (Creswell & Creswell, 2018). Though useful for distribution, online surveys can only reach those to whom they were sent, either originally or forwarded by others to those

in the population, which may limit responses to the emails. Potential respondents may also fear the use of technology or have confusion with the questions or directions (Rea & Parker, 2014).

Emails were sent to program directors of online programs at four-year, midwestern, mid-sized public colleges and universities who were asked to send the survey to students enrolled in and faculty who taught in their program. The email included the purpose of the study, detailed instructions, consent procedures, benefits, risks, the deadline for completion, and a link to the survey. Those who consented to participate clicked on the survey link; those who declined to participate did not click the link. The survey took respondents 10-15 minutes to complete, which is a timeframe shown to increase completion rates by respondents (Rea & Parker, 2014).

Timeline. The research was conducted following the approval of the proposal by the dissertation committee and university's Institutional Review Board. The collection of data lasted for 10 business days (Rea & Parker, 2014). The link to the survey remained active during the survey window and was deactivated upon its completion. A reminder email was sent to program chairs after five business days after the initial start of the survey. The data and other materials used for the survey will be kept for five years and then destroyed (Creswell & Creswell, 2018).

Participants

Participants for this study were students from four-year, midwestern, mid-sized public colleges and universities who were enrolled in fully or partially online programs at either the undergraduate or graduate level and full-time or adjunct faculty at the same universities that taught online courses at either level. The courses and programs were either synchronous or asynchronous.

States that are considered midwestern were identified using the U.S. Census Bureau's (n.d.) Census regions and divisions map, which divides the country into four regions. The Midwest has two divisions, East North Central and West North Central. States comprising both divisions are included.

Further, colleges and universities within those states were identified and sorted, first if they were considered medium sized four-year institutions consisting of a full-time enrollment between 3,000 and 9,999 students (Carnegie Classification of Institutions of Higher Education, 2023), second, if they were public institutions, and third, if they offered online programs (National Center for Education Statistics, 2023). Upon review of all colleges and universities that fit within the criteria, 48 colleges and universities were identified.

Data Collection

Through the survey instrument, demographic data collected had respondents identify if they are faculty or students. The faculty branch asked for gender, academic rank, discipline taught, level regularly taught, modality most frequently taught, how long they have taught online courses, and how many online courses they have taught. For students, they were asked their gender, class/level, discipline, academic major, major modality, age, and number of online courses taken.

The survey consisted of 29 Likert-type items of student engagement strategies that were divided into different interaction types (learner-to-learner, learner-to-instructor, and learner-to-content). Additionally, three short-answer questions were asked to determine the most and least valuable engagement strategy they have encountered and additional strategies that were not included in the Likert-type items.

Data Analysis

Demographic data was tallied, coded, and descriptive statistics analyzed.

Research Question 1. What are students' perceptions of online engagement strategies in relation to learner-to-learner, learner-to-instructor, and learner-to-content interactions? Question 1 was answered using descriptive statistics based upon the five-point Likert-type scale by finding the mean of

the ratings completed by the student respondents. Individual strategies were then ranked in order of mean from largest to smallest within each interaction type and among all strategies.

Research Question 2. How do students' perceptions of online student engagement strategies differ between undergraduate and graduate courses in relation to learner-to-learner, learner-to-instructor, and learner-to-content interactions? Variables were created based upon the three interaction types by determining overall mean for each of the three types resulting from student responses. A test to see if the data were distributed normally was run and it was determined that a nonparametric test, the Mann-Whitney U test, be run to determine differences based upon undergraduate and graduate students.

Research Question 3. How do students' perceptions of online student engagement strategies differ between genders in relation to learner-to-learner, learner-to-instructor, and learner-to-content interactions? Variables were created based upon the three interaction types by determining overall mean for each of the three types based upon student responses. A test to see if the data were distributed normally was run and it was determined that a nonparametric test, the Mann-Whitney U test, be run to determine differences based upon genders.

Research Question 4. What are instructors' perceptions of online engagement strategies in relation to learner-to-learner, learner-to-instructor, and learner-to-content interactions? Question 4 was answered using descriptive statistics based upon the five-point Likert-type scale by finding the mean of the ratings completed by the instructor respondents. Individual strategies were then ranked in order of mean from largest to smallest within each interaction type and among all strategies.

Research Question 5. How do perceptions of online engagement strategies differ between students and instructors in relation to learner-to-learner, learner-to-instructor, and learner-to-content interactions? Variables were created based upon the three interaction types for students and instructors

by determining overall mean for each of the three types based upon student responses and instructor responses. A test to see if the data were distributed normally was run and determined that a nonparametric test, the Mann-Whitney U test, be run to determine differences based upon the responses of each group.

Assumptions, Limitations, and Delimitations

Assumptions

It was assumed that the chairs of programs who agree to distribute the survey would distribute the survey to all students and instructors within their programs. As the survey was anonymous, it was assumed that those taking the survey would answer the questions presented truthfully. In addition, it was assumed that the methodology chosen would address the research questions to be answered.

Limitations

As this was a study of student and instructor perceptions, it cannot be assumed that the answers submitted truly match that of reality which is a limitation of this study. Additionally, a quantitative methodology comprised of survey has several limitations, including areas of sampling, social desirability bias, central tendency bias, researcher bias, low response rates, and missing survey answers, all of which can have an effect on the reliability of the survey (Nardi, 2018). Related to sampling, this research study proposes the use of purposive sampling, which is a non-probability sampling technique that cannot be used to generalize the entire population (Nardi, 2018; Terrell, 2023). This study is limited only to four-year, midwestern, mid-sized, public colleges and universities with online graduate and/or undergraduate programs.

While the survey directions indicate anonymity, respondents may have given socially acceptable responses rather than their honest response (Nardi, 2018). Students may have rated engagement strategies used by courses they are enrolled in higher than other strategies, thus providing inaccurate

data for analysis. Respondents on longer Likert-type scale surveys may avoid choosing responses on either end of the scale, causing a central tendency bias, where fewer responses strongly disagree (1) and strongly agree (5) as respondents avoid these extremes. Creswell and Creswell (2018) indicate that as the researcher has a similar background to many of those in the sample population, this may shape the thoughts and perceptions on the current topic. This may shape decisions made about conducting the research and the analysis unintentionally.

A final limitation when conducting correlational research there is the possibility of confounding variable(s) (Terrell, 2023). While the analysis of the correlation may be negative or positive, there may be other variables that are not included in the correlation that would better explain the relationship. Correlational research is also limited as it cannot establish causation; simply because two variables are correlated. It does not indicate that they cause one another (Terrell, 2023).

Delimitations

The quantitative methodology of this research is a delimitation to this study. There are three short open-ended questions within the research. This qualitative design could provide information from participants that are of interest that are not addressed in the Likert-type questions. This research only looked at a small subsection of colleges and universities. There may be colleges and universities that use strategies not addressed that could add to the continued study of student engagement.

Chapter 4: Findings

The purpose of this quantitative study was to investigate student and faculty perceptions of engagement strategies in online learning courses at four-year, midwestern, mid-sized public colleges and universities. In the Spring 2024 semester, an email was sent to department chairs, program directors, or other contacts of online programs housed in midwestern, mid-sized public colleges and universities in the United States, which asked them to participate in my survey and to send it to students enrolled in and faculty teaching in their programs. The survey was comprised of five main sections: perceptions of learner-to-learner engagement strategies, perceptions of learner-to-instructor engagement strategies, perceptions of learner-to-content engagement strategies, a short answer section, and demographic information.

Description of the Sample

The survey was distributed to a purposive sampling of faculty and students with online teaching and learning experience at midwestern, mid-sized public colleges and universities. The population was chosen as they had experience with teaching and learning online, attended or taught at colleges and universities in a specific region, and were a size of interest to the researcher. The population was reached through a search of the Integrated Postsecondary Education Data System (IPEDS) database related to the geographic region, Midwest Region of the United States (U.S. Census Bureau, n.d.), and size based on full-time enrollment numbers between 3000 and 9999 students based upon Carnegie classification for medium sized four-year colleges and universities (Carnegie Classification of Institutions of Higher Education, 2023). A total of 456 emails were sent to program chairs, directors, and other contacts at 45 institutions across the Midwest Region of the United States. Of those the survey was sent to and forwarded to, 196 started the survey and 156 completed the survey. Of the 40 unfinished surveys, participants either had not agreed to consent or were not an online student or faculty member.

In addition, five emails were either no longer valid or the recipient had retired from their university. A potential number of participants is not available due to contacts at the universities being asked to forward the survey on to students and other faculty members in their programs.

Demographics

In order to assist in understanding the data collected from respondents, demographic data was collected. The demographic data differed between faculty and students. For faculty, their current academic rank, discipline taught, level of courses they teach, modality of the online courses they teach, number of years they have taught online, and whether they have had training related to developing online courses was collected. Student demographics included gender identity, current student status, discipline they are studying, modality of most of their online courses, age, and number of online courses they have taken.

Of the 156 that completed the survey, 110 (70.5%) were students and 46 (29.5%) were faculty (Table 1). An overwhelming majority of the student respondents were female (85.4%) and graduate students (80%). Half of the respondents were in education programs (50%) with those in arts and sciences programs following (21.8%). There was a wide range of student ages, from 17 to 68, with 21-23 (13.6%) and 39-41 (12.7%) being the most common age ranges. Further characterizations of student respondents can be seen in Tables 2 through 6.

Faculty respondents were generally full-time faculty members who were either full professors (23.9%), associate professors (34.8%), or assistant professors (28.3%). Like the student respondents, most faculty members taught in the field of education (39.1%) and most either taught strictly graduate online courses (45.7%) or both graduate and undergraduate online courses (37%). Most courses taught by the faculty were asynchronous courses (54.4%) with the faculty having online teaching experience

between one and 25 years, with the most common response of 15 years experience (15.2%) followed by 10 years experience (10.9%). Additional faculty demographic data is found in Tables 7 through 12.

Table 1

Demographic Information: Student or Faculty

Status	<i>n</i>	%
Student	110	70.5
Faculty	46	29.5
Total	156	100

Table 2

Demographic Data: Student Gender Identity

Level Taught	<i>n</i>	%
Female	94	85.5
Male	15	13.6
Transgender	0	0
Non-binary/non-conforming	0	0
Other	0	0
Prefer not to answer	1	0.9
Total	110	100

Table 3*Demographic Information: Student Status*

Status	<i>n</i>	%
Freshman	1	0.9
Sophomore	2	1.8
Junior	3	2.73
Senior	9	8.2
Post-baccalaureate	1	.9
Master's Student	50	45.5
Doctoral Student	35	31.9
Post-doctorate	3	2.7
Other: Non-degree	1	0.9
Other: Endorsement	2	1.8
Other: High School	1	0.9
Other: General	2	1.8
Total	110	100

Table 4*Demographic Information: Student Academic Discipline*

Discipline	<i>n</i>	%
Agriculture/Natural Resources	1	0.9
Arts and Sciences	24	21.8
Business	7	6.3
Education	55	50.0
Engineering/Applied Sciences	3	2.7
Health Sciences	12	10.9
Law	1	0.9
Medicine	5	4.5
Other: General	2	1.8
Total	110	100

Table 5*Demographic Information: Student Course Modality*

Modality	<i>n</i>	%
Asynchronous	57	51.8
Synchronous	25	22.7
Bichronous	28	25.5
Total	110	100

Table 6*Demographic Information: Student Ages*

Age (years)	<i>n</i>	%
<18	1	0.9
18-20	2	1.8
21-23	15	13.6
24-26	8	7.2
27-29	8	7.2
30-32	8	7.2
33-35	10	9.1
36-38	7	6.4
39-41	14	12.7
42-44	7	6.4
45-47	6	5.5
48-50	6	5.5
51-53	3	2.7
54-56	6	5.5
57-59	0	0
>59	5	4.5
Not Available	4	3.6
Total	110	100

Table 7*Demographic Information: Faculty Academic Rank*

Academic Rank	<i>n</i>	%
Full Professor	11	23.9
Associate Professor	16	34.8
Assistant Professor	13	26.3
Instructor	3	6.5
Adjunct Faculty	1	2.17
Graduate Teaching Assistant	0	0
Instructional Designer	0	0
Librarian	0	0
Other: Clinical Professor	1	2.2
Other: Senior Lecturer	1	2.2
Total	46	100

Table 8*Demographic Information: Faculty Discipline*

Discipline	<i>n</i>	%
Agriculture/Natural Resources	0	0
Arts and Sciences	7	15.2
Business	6	13.0
Education	18	39.1
Engineering/Applied Sciences	1	2.2
Health Sciences	5	10.9
Law	0	0
Medicine	1	2.2
Other: Chemistry	1	2.2
Other: Criminal Justice/Criminology	2	4.3
Other: Communication	2	4.3
Other: Social Sciences	1	2.2
Other: Leadership Studies	1	2.2
Other: Library Science	1	2.2
Total	46	100

Table 9*Demographic Information: Faculty Level Taught Online*

Level Taught	<i>n</i>	%
Undergraduate	8	17.4
Graduate	21	45.7
Both	17	37.0
Total	46	100

Table 10*Demographic Information: Faculty Modality Most Frequently Taught*

Modality	<i>n</i>	%
Asynchronous	25	54.4
Synchronous	7	15.2
Bichronous	14	30.4
Total	46	100

Table 11*Demographic Information: Faculty Experience*

Experience (years)	<i>n</i>	%
1-3	5	10.9
4-6	7	15.2
7-9	8	17.4
10-12	7	15.2
13-15	8	17.4
16-18	7	15.2
19-21	1	2.2
22-24	2	4.3
>25	1	2.2
Total	46	100

Table 12*Demographic Information: Faculty Online Course Development Training*

Training	<i>n</i>	%
Yes	43	93.5
No	3	6.5
Total	46	100

Analysis of Research Questions***Research Question 1: What are students' perceptions of online engagement strategies in relation to learner-to-learner, learner-to-instructor, and learner-to-content interactions?***

The survey questions were divided into three categories: learner-to-learner interactions, learner-to-instructor interactions, and learner-to-content interactions. Each category of questions was presented as a group and students were asked to rate each statement from one (very unimportant) to five (very important).

Table 13 identifies statements that were related to student perceptions of learner-to-learner interaction. Of the statements provided, the ability to choose discussion groups based upon materials ($M = 3.65$, $SD = 0.99$) and working with peers to complete work, such as case studies and projects ($M = 3.51$, $SD = 1.26$), were identified as the most important strategy in their online courses. The learner-to-learner category had the lowest overall mean ($M = 3.28$, $SD = 1.19$), with the most favorable strategy tied for 18th overall and the remainder are ranked at 20th or below.

Table 13*Student Perceptions of Learner-to-Learner Interactions*

Perception statement	<i>n</i>	Range		Mean	<i>SD</i>
		Minimum	Maximum		
1. Students use a virtual lounge where they can meet to share common interests.	110	1	5	2.82	1.17
2. Students complete an integrated profile on the Learning Management System that is accessible in all courses.	110	1	5	3.11	1.21
3. Students introduce themselves using an ice-breaker discussion.	110	1	5	3.41	1.15
4. Students moderate discussions.	110	1	5	3.45	0.93
5. Students have choices in the selection of readings (articles, books) that drive discussion group formation.	110	1	5	3.65	0.99
6. Students post audio and/or video files in threaded discussions instead of only written responses.	110	1	5	3.14	1.19
7. Students interact with peers through presentations (asynchronously or synchronously).	110	1	5	3.46	1.20
8. Students work collaboratively using online communication tools to complete case studies, projects, reports, etc.	110	1	5	3.51	1.26
9. Students peer-review classmates' work.	110	1	5	3.26	1.20
10. Students are required to rate individual performance of team members on projects.	110	1	5	3.01	1.26

Table 14 identifies the student perception statement ranking within the learner-to-learner group, amongst all perception statements, and the number and percentage of answers categorized as very important or important (VI+I), neither important nor unimportant (N), and unimportant or very unimportant (U+VU).

Table 14*Student Learner-to-Learner Rankings and Ratings*

Perception statement	Group Rank	Overall Rank	Ratings		
			VI+I (%)	N (%)	U+VU (%)
1. Students use a virtual lounge where they can meet to share common interests.	10	29	38 (34.5)	31 (28.2)	41 (37.3)
2. Students complete an integrated profile on the Learning Management System that is accessible in all courses.	8	27	50 (45.5)	29 (26.4)	31 (28.2)
3. Students introduce themselves using an ice-breaker discussion.	5	23	62 (56.4)	25 (22.7)	23 (20.9)
4. Students moderate discussions.	4	22	57 (51.8)	38 (34.5)	15 (13.6)
5. Students have choices in the selection of readings (articles, books) that drive discussion group formation.	1	18*	71 (64.5)	23 (20.9)	16 (14.5)
6. Students post audio and/or video files in threaded discussions instead of only written responses.	7	26	48 (43.6)	29 (26.4)	33 (30.0)
7. Students interact with peers through presentations (asynchronously or synchronously).	3	21	64 (58.2)	23 (20.9)	23 (20.9)
8. Students work collaboratively using online communication tools to complete case studies, projects, reports, etc.	2	20	70 (63.6)	24 (21.8)	24 (21.8)
9. Students peer-review classmates' work.	6	25	54 (49.1)	30 (27.3)	30 (27.3)
10. Students are required to rate individual performance of team members on projects.	9	28	44 (40.0)	35 (31.8)	35 (31.8)

*Tied

Table 15 identifies student perceptions of learner-to-instructor interaction, which had the highest rated strategies ($M = 4.14$, $SD = 1.02$) in all three groups with eight of 10 questions placing in the top 10 out of 29 overall questions. The most favorable learner-to-instructor interactions were the instructor posting grading rubrics for all assignments ($M = 4.64$, $SD = 0.75$), and the instructor sending regular announcements or e-mails ($M = 4.53$, $SD = 0.71$). The strategy ranked least effective in the

learner-to-instructor category, the instructor providing students an opportunity to reflect ($M = 3.65$, $SD = 1.03$) was ranked equally with the highest ranked learner-to-learner interaction strategy.

Table 15

Student Perceptions of Learner-to-Instructor Interactions

Perception statement	<i>n</i>	Range		Mean	<i>SD</i>
		Minimum	Maximum		
11. The instructor refers to students by name in discussion forums.	110	1	5	4.02	0.96
12. The instructor sends/posts regular announcements or email reminders.	110	1	5	4.53	0.71
13. The instructor creates a forum for students to contact the instructor with questions about the course.	110	1	5	4.40	0.83
14. The instructor creates a course orientation for students.	110	1	5	4.08	0.99
15. The instructor posts a “due dates checklist” at the end of each instructional unit.	110	1	5	4.45	0.93
16. The instructor creates short videos to increase instructor presence in the course.	110	1	5	3.95	1.10
17. The instructor provides feedback using various modalities (e.g., text, audio, video)	110	1	5	3.95	1.16
18. The instructor provides students with an opportunity to reflect (e.g., via a journal or surveys)	110	1	5	3.65	1.03
19. The instructor posts grading rubrics for all assignments.	110	1	5	4.64	0.75
20. The instructor uses various features in synchronous sessions to interact with students (e.g., polls, emoticons, whiteboard, text, and audio and video chat).	110	1	5	3.76	1.08

Table 16 identifies the student perception statement ranking within the learner-to-instructor group, amongst all perception statements, and the number and percentage of answers categorized as very important or important (VI+I), neither important nor unimportant (N), and unimportant or very unimportant (U+VU).

Table 16*Student Learner-to-Instructor Rankings and Ratings*

Perception statement	Group Rank	Overall Rank	Ratings		
			VI+I (%)	N (%)	U+VU (%)
11. The instructor refers to students by name in discussion forums.	6	8	89 (80.9)	11 (10.0)	10 (9.1)
12. The instructor sends/posts regular announcements or email reminders.	2	2	105 (95.5)	2 (1.8)	3 (2.7)
13. The instructor creates a forum for students to contact the instructor with questions about the course.	4	4	100 (90.9)	7 (6.4)	3 (2.7)
14. The instructor creates a course orientation for students.	5	7	88 (80.0)	14 (12.7)	8 (7.3)
15. The instructor posts a “due dates checklist” at the end of each instructional unit.	3	3	97 (88.2)	7 (6.4)	6 (5.5)
16. The instructor creates short videos to increase instructor presence in the course.	7*	9*	79 (71.8)	21 (19.1)	10 (9.1)
17. The instructor provides feedback using various modalities (e.g., text, audio, video)	7*	9*	80 (72.7)	17 (15.5)	13 (11.8)
18. The instructor provides students with an opportunity to reflect (e.g., via a journal or surveys)	10	18*	67 (60.9)	31 (28.2)	12 (10.9)
19. The instructor posts grading rubrics for all assignments.	1	1	102 (92.7)	6 (5.5)	2 (1.8)
20. The instructor uses various features in synchronous sessions to interact with students (e.g., polls, emoticons, whiteboard, text, and audio and video chat).	9	16	74 (67.3)	23 (20.9)	13 (11.8)

*Tied

Student perceptions of learner-to-content interactions are identified in Table 17. Students identified working on realistic scenarios to apply content ($M = 4.35$, $SD = 0.76$) and having discussions with guided questions ($M = 4.18$, $SD = 0.75$) as the most favorable strategies. The highest overall strategy in this category ranked fifth overall and the mean rating for the category fell between learner-to-learner and learner-to-instructor interactions ($M = 3.88$, $SD = 0.93$).

Table 17*Student Perceptions of Learner-to-Content Interactions*

Perception statement	<i>n</i>	Range		Mean	<i>SD</i>
		Minimum	Maximum		
21. Students interact with the content in more than one format (e.g., text, video, audio, interactive games or simulations).	110	1	5	3.91	0.95
22. Students use optional online resources to explore topics in more depth.	110	2	5	3.85	0.80
23. Students experience live, synchronous web conferencing for class events and/or guest talks.	110	1	5	3.37	1.12
24. Discussions are structured with guiding questions and/or prompts to deepen their understanding of the content.	110	1	5	4.18	0.75
25. Students research an approved topic and present their findings in a delivery method of their choice (e.g., discussions forum, chat, web conference, multimedia presentation).	110	1	5	3.95	0.91
26. Students search and select applicable materials (e.g., articles, books) based on their interests.	110	1	5	3.77	0.83
27. Students have an opportunity to reflect on important elements of the course (e.g., use of communication tools, their learning, team projects, and community).	110	1	5	3.88	0.92
28. Students work on realistic scenarios to apply content (e.g., case studies, reports, research papers, presentations, client projects).	110	1	5	4.35	0.76
29. Students use self-tests to check their understanding of materials.	110	1	5	3.66	0.93

Table 18 identifies the student perception statement ranking within the learner-to-content group, amongst all perception statements, and the number and percentage of answers categorized as very important or important (VI+I), neither important nor unimportant (N), and unimportant or very unimportant (U+VU).

Table 18*Student Learner-to-Content Rankings and Ratings*

Perception statement	Group Rank	Overall Rank	Ratings		
			VI+I (%)	N (%)	U+VU (%)
21. Students interact with the content in more than one format (e.g., text, video, audio, interactive games or simulations).	4	12	83 (75.5)	19 (17.3)	8 (7.3)
22. Students use optional online resources to explore topics in more depth.	6	14	80 (72.7)	23 (20.9)	7 (6.4)
23. Students experience live, synchronous web conferencing for class events and/or guest talks.	9	23	53 (48.2)	35 (31.8)	22 (20.0)
24. Discussions are structured with guiding questions and/or prompts to deepen their understanding of the content.	2	6	98 (89.1)	8 (7.3)	4 (3.6)
25. Students research an approved topic and present their findings in a delivery method of their choice (e.g., discussions forum, chat, web conference, multimedia presentation).	3	9*	87 (79.1)	13 (11.8)	10 (9.1)
26. Students search and select applicable materials (e.g., articles, books) based on their interests.	7	15	74 (67.3)	29 (26.4)	7 (6.4)
27. Students have an opportunity to reflect on important elements of the course (e.g., use of communication tools, their learning, team projects, and community).	5	13	78 (70.9)	24 (21.8)	8 (7.3)
28. Students work on realistic scenarios to apply content (e.g., case studies, reports, research papers, presentations, client projects).	1	5	103 (93.6)	4 (3.6)	13 (11.8)
29. Students use self-tests to check their understanding of materials.	8	17	62 (56.4)	39 (35.5)	13 (11.8)

*Tied

Research Question 2: How do students' perceptions of online student engagement strategies differ between undergraduate and graduate courses in relation to learner-to-learner, learner-to-instructor, and learner-to-content interactions?

After evaluating the data regarding student perceptions of student engagement strategies for normal distribution and test assumptions, a nonparametric Mann-Whitney U test was run to determine if there was a difference between student engagement strategies related to academic status of the

student (graduate or undergraduate). Six responses were eliminated due to not falling into a specific category of graduate or undergraduate. Distributions of the perceptions were not similar, as assessed by visual inspection. Overall, undergraduate students' perceptions of strategies (66.07) were not statistically significantly higher than graduate students (50.21), $U = 464.00$, $z = -1.884$, $p = .060$.

To identify if there was significance in any specific interaction category, a Mann-Whitney U test was run on each of the three categories: learner-to-learner, learner-to-instructor, and learner-to-content. Learner-to-instructor interactions ($U = 433.50$, $z = -2.170$, $p = .030$) were the only category to show a statistically significant difference between undergraduate (68.10) and graduate (49.87) students at the $p < .05$ level. Table 19 displays the means for each interaction category and the test statistics.

Table 19

Mann-Whitney U Results for Interaction Category for Student Academic Status

Interaction Category	Mean		U	z	p
	Undergraduate (n)	Graduate (n)			
Learner-To-Learner	63.30 (15)	50.68 (89)	505.50	-1.503	.133
Learner-To-Instructor	68.10 (15)	49.87 (89)	433.50	-2.170	.030*
Learner-To-Content	59.00 (15)	51.40 (89)	570.00	-0.906	.365

* $p < .05$

Research Question 3: How do students' perceptions of online student engagement strategies differ between genders in relation to learner-to-learner, learner-to-instructor, and learner-to-content interactions?

After evaluating the data regarding student perceptions of student engagement strategies for normal distribution and test assumptions, a Mann-Whitney U test was run to determine if there was a difference between student engagement strategies related to gender. One response was removed due to not identifying as female or male for the purpose of this analysis. Distributions of the perceptions were not similar, as assessed by visual inspection. Overall, perceptions of engagement strategies for

students identifying as female (55.90) were not statistically significantly higher than students identifying as male (49.37), $U = 620.00$, $z = -.744$, $p = .457$.

To identify if there was significance in any specific interaction category, a Mann-Whitney U test was run on each of the three categories: learner-to-learner, learner-to-instructor, and learner-to-content. No category had a statistically significant difference at the $p < .05$ level. Table 20 displays the means for each interaction category and the test statistics.

Table 20

Mann-Whitney U Results for Interaction Category for Student Gender

Interaction Category	Mean		U	z	p
	Female (n)	Male (n)			
Learner-To-Learner	55.76 (94)	50.27 (15)	634.00	-0.626	.531
Learner-To-Instructor	55.15 (94)	54.07 (15)	691.00	-.0123	.902
Learner-To-Content	55.90 (94)	49.37 (15)	523.50	-1.603	.109

Research Question 4: What are instructors' perceptions of online engagement strategies in relation to learner-to-learner, learner-to-instructor, and learner-to-content interactions?

Like students, faculty ($N = 46$) were given groups of statements divided into three categories based upon interaction type: learner-to-learner, learner-to-instructor, and learner-to-content. Each statement was rated on a Likert-type scale from one (very unimportant) to five (very important).

Table 21 identifies faculty perceptions of statements related to learner-to-learner interactions. Faculty identified student introductions through an ice-breaker activity ($M = 4.09$, $SD = 1.02$) and students interacting with peers via presentations ($M = 4.02$, $SD = 0.95$) as what they perceive to be the most important strategies. Learner-to-learner interactions were the lowest rated overall category for faculty ($M = 3.52$, $SD = 1.13$) with the most favorable strategy ranked 11th overall and five ranked 24th or below.

Table 21*Faculty Perceptions of Learner-to-Learner Interactions*

Perception statement	<i>n</i>	Range		Mean	<i>SD</i>
		Minimum	Maximum		
1. Students use a virtual lounge where they can meet to share common interests.	46	1	5	2.83	1.01
2. Students complete an integrated profile on the Learning Management System that is accessible in all courses.	46	1	5	3.02	0.99
3. Students introduce themselves using an ice-breaker discussion.	46	1	5	4.09	1.02
4. Students moderate discussions.	46	1	5	3.59	1.07
5. Students have choices in the selection of readings (articles, books) that drive discussion group formation.	46	1	5	3.35	1.15
6. Students post audio and/or video files in threaded discussions instead of only written responses.	46	1	5	3.48	1.17
7. Students interact with peers through presentations (asynchronously or synchronously).	46	1	5	4.02	0.94
8. Students work collaboratively using online communication tools to complete case studies, projects, reports, etc.	46	1	5	3.89	0.98
9. Students peer-review classmates' work.	46	2	5	3.61	0.99
10. Students are required to rate individual performance of team members on projects.	46	1	5	3.28	1.23

Table 22 identifies the faculty perception statement ranking within the learner-to-learner group, amongst all perception statements, and the number and percentage of answers categorized as very important or important (VI+I), neither important nor unimportant (N), and unimportant or very unimportant (U+VU).

Table 22*Faculty Learner-to-Learner Rankings and Ratings*

Perception statement	Group Rank	Overall Rank	Ratings		
			VI+I (%)	N (%)	U+VU (%)
1. Students use a virtual lounge where they can meet to share common interests.	10	29	12 (26.1)	19 (41.3)	15 (32.6)
2. Students complete an integrated profile on the Learning Management System that is accessible in all courses.	9	28	16 (34.8)	16 (34.8)	14 (30.4)
3. Students introduce themselves using an ice-breaker discussion.	1	11	38 (82.6)	4 (8.7)	4 (8.7)
4. Students moderate discussions.	5	23	27 (58.7)	13 (28.3)	6 (13.0)
5. Students have choices in the selection of readings (articles, books) that drive discussion group formation.	7	26	22 (47.8)	13 (28.3)	11 (23.9)
6. Students post audio and/or video files in threaded discussions instead of only written responses.	6	24	24 (52.2)	14 (30.4)	8 (17.4)
7. Students interact with peers through presentations (asynchronously or synchronously).	2	12	37 (80.4)	5 (10.9)	4 (8.7)
8. Students work collaboratively using online communication tools to complete case studies, projects, reports, etc.	3	17*	33 (71.7)	10 (21.7)	3 (6.5)
9. Students peer-review classmates' work.	4	21*	27 (58.7)	11 (23.9)	8 (17.4)
10. Students are required to rate individual performance of team members on projects.	8	27	22 (47.8)	9 (19.6)	15 (32.6)

*Tied

Table 23 identifies the faculty perceptions of learner-to-instructor interactions. This category ranked the highest overall amongst faculty ($M = 4.16$, $SD = 0.95$). Faculty identified sending regular announcements or email reminders ($M = 4.63$, $SD = 0.64$) and referring to students by name in discussions ($M = 4.46$, $SD = 0.83$) as the most important strategies. Learner-to-instructor interactions had six of its 10 statements ranked in the top 10 out of 29 statements overall.

Table 23*Faculty Perceptions of Learner-to-Instructor Interactions*

Perception statement	<i>n</i>	Range		Mean	<i>SD</i>
		Minimum	Maximum		
11. The instructor refers to students by name in discussion forums.	46	1	5	4.46	0.83
12. The instructor sends/posts regular announcements or email reminders.	46	2	5	4.63	0.64
13. The instructor creates a forum for students to contact the instructor with questions about the course.	46	2	5	4.24	0.89
14. The instructor creates a course orientation for students.	46	2	5	4.15	0.86
15. The instructor posts a “due dates checklist” at the end of each instructional unit.	46	1	5	4.00	1.14
16. The instructor creates short videos to increase instructor presence in the course.	46	2	5	4.13	0.85
17. The instructor provides feedback using various modalities (e.g., text, audio, video)	46	2	5	4.20	0.92
18. The instructor provides students with an opportunity to reflect (e.g., via a journal or surveys)	46	2	5	3.91	0.97
19. The instructor posts grading rubrics for all assignments.	46	2	5	4.24	0.84
20. The instructor uses various features in synchronous sessions to interact with students (e.g., polls, emoticons, whiteboard, text, and audio and video chat).	46	1	5	3.63	1.15

Table 24 identifies the faculty perception statement ranking within the learner-to-instructor group, amongst all perception statements, and the number and percentage of answers categorized as very important or important (VI+I), neither important nor unimportant (N), and unimportant or very unimportant (U+VU).

Table 24*Faculty Perceptions of Learner-to-Instructor Interactions*

Perception statement	Group Rank	Overall Rank	Ratings		
			VI+I (%)	N (%)	U+VU (%)
11. The instructor refers to students by name in discussion forums.	2	2*	41 (89.1)	4 (8.7)	1 (2.2)
12. The instructor sends/posts regular announcements or email reminders.	1	1	44 (95.7)	1 (2.2)	1 (2.2)
13. The instructor creates a forum for students to contact the instructor with questions about the course.	3*	5*	36 (78.3)	8 (17.4)	2 (4.3)
14. The instructor creates a course orientation for students.	6	9	36 (78.3)	8 (17.4)	2 (4.3)
15. The instructor posts a “due dates checklist” at the end of each instructional unit.	8	13	33 (71.7)	6 (13.0)	7 (15.2)
16. The instructor creates short videos to increase instructor presence in the course.	7	10	36 (78.3)	8 (17.4)	2 (4.3)
17. The instructor provides feedback using various modalities (e.g., text, audio, video)	5	7*	36 (78.3)	7 (15.2)	3 (6.5)
18. The instructor provides students with an opportunity to reflect (e.g., via a journal or surveys)	9	16	32 (69.6)	9 (19.6)	5 (10.9)
19. The instructor posts grading rubrics for all assignments.	3*	5*	38 (82.6)	6 (13.0)	2 (4.3)
20. The instructor uses various features in synchronous sessions to interact with students (e.g., polls, emoticons, whiteboard, text, and audio and video chat).	10	20	30 (65.2)	9 (19.6)	7 (15.2)

*Tied

Faculty perceptions of learner-to-content interactions are identified in Table 25. Faculty identified students working on realistic scenarios to apply content ($M = 4.46$, $SD = 0.62$) and having discussions with guiding questions used to deepen understanding of the content ($M = 4.30$, $SD = 0.75$) as the top engagement strategies for this category. Learner-to-content interactions as a category ($M = 3.93$, $SD = 0.97$) fell between the learner-to-instructor and learner-to-learner interactions categories.

The top strategy in the category tied for second overall and three of nine strategies were ranked in the overall top 10.

Table 25

Faculty Perceptions of Learner-to-Content Interactions

Perception statement	<i>n</i>	Range		Mean	<i>SD</i>
		Minimum	Maximum		
21. Students interact with the content in more than one format (e.g., text, video, audio, interactive games or simulations).	46	1	5	4.20	0.85
22. Students use optional online resources to explore topics in more depth.	46	2	5	3.93	0.79
23. Students experience live, synchronous web conferencing for class events and/or guest talks.	46	1	5	3.61	1.28
24. Discussions are structured with guiding questions and/or prompts to deepen their understanding of the content.	46	1	5	4.30	0.75
25. Students research an approved topic and present their findings in a delivery method of their choice (e.g., discussions forum, chat, web conference, multimedia presentation).	46	1	5	3.67	1.02
26. Students search and select applicable materials (e.g., articles, books) based on their interests.	46	1	5	3.89	1.00
27. Students have an opportunity to reflect on important elements of the course (e.g., use of communication tools, their learning, team projects, and community).	46	1	5	3.98	0.87
28. Students work on realistic scenarios to apply content (e.g., case studies, reports, research papers, presentations, client projects).	46	3	5	4.46	0.62
29. Students use self-tests to check their understanding of materials.	46	1	5	3.37	0.89

Table 26 identifies the faculty perception statement ranking within the learner-to-content group, amongst all perception statements, and the number and percentage of answers categorized as very important or important (VI+I), neither important nor unimportant (N), and unimportant or very unimportant (U+VU).

Table 26*Faculty Perceptions of Learner-to-Content Interactions*

Perception statement	Group Rank	Overall Rank	Ratings		
			VI+I (%)	N (%)	U+VU (%)
21. Students interact with the content in more than one format (e.g., text, video, audio, interactive games or simulations).	3	7*	40 (87.0)	4 (8.7)	2 (4.3)
22. Students use optional online resources to explore topics in more depth.	5	15	36 (78.3)	7 (15.2)	3 (6.5)
23. Students experience live, synchronous web conferencing for class events and/or guest talks.	8	21*	27 (58.7)	11 (23.9)	8 (17.4)
24. Discussions are structured with guiding questions and/or prompts to deepen their understanding of the content.	2	4	43 (93.5)	2 (4.3)	1 (2.2)
25. Students research an approved topic and present their findings in a delivery method of their choice (e.g., discussions forum, chat, web conference, multimedia presentation).	7	19	31 (67.4)	10 (21.7)	5 (10.9)
26. Students search and select applicable materials (e.g., articles, books) based on their interests.	6	17*	33 (71.7)	8 (17.4)	5 (10.9)
27. Students have an opportunity to reflect on important elements of the course (e.g., use of communication tools, their learning, team projects, and community).	4	14	37 (80.4)	6 (13.0)	3 (6.5)
28. Students work on realistic scenarios to apply content (e.g., case studies, reports, research papers, presentations, client projects).	1	2*	43 (93.5)	3 (6.5)	0 (0.0)
29. Students use self-tests to check their understanding of materials.	9	25	23 (50.0)	15 (32.6)	8 (17.4)

*Tied

Research Question 5: How do perceptions of online engagement strategies differ between students and instructors in relation to learner-to-learner, learner-to-instructor, and learner-to-content interactions?

After evaluating the data regarding student perceptions of student engagement strategies for normal distribution and test assumptions, a Mann-Whitney U test was run to determine if there was a

difference between student engagement strategies related to classification (student or faculty).

Distributions of the perceptions were not similar, as assessed by visual inspection. Overall, perceptions of engagement strategies for students ($M = 76.69$) were not statistically significantly higher than faculty ($M = 82.83$), $U = 2331.00$, $z = -.774$, $p = .439$.

To identify if there was significance in any specific interaction category, a Mann-Whitney U test was run on each of the three categories: learner-to-learner, learner-to-instructor, and learner-to-content. No category had a statistically significant difference at the $p < .05$ level. Table 27 displays the means for each interaction category and the test statistics.

Table 27

Mann-Whitney U Results for Interaction Category for Students and Faculty

Interaction Category	Mean		U	z	p
	Student (n)	Faculty (n)			
Learner-To-Learner	74.03 (110)	89.20 (46)	2038.00	-1.916	.055
Learner-To-Instructor	79.55 (110)	75.98 (46)	2414.00	-.452	.651
Learner-To-Content	77.31 (110)	82.83 (46)	2399.00	-.511	.609

Responses to Open-Ended Question

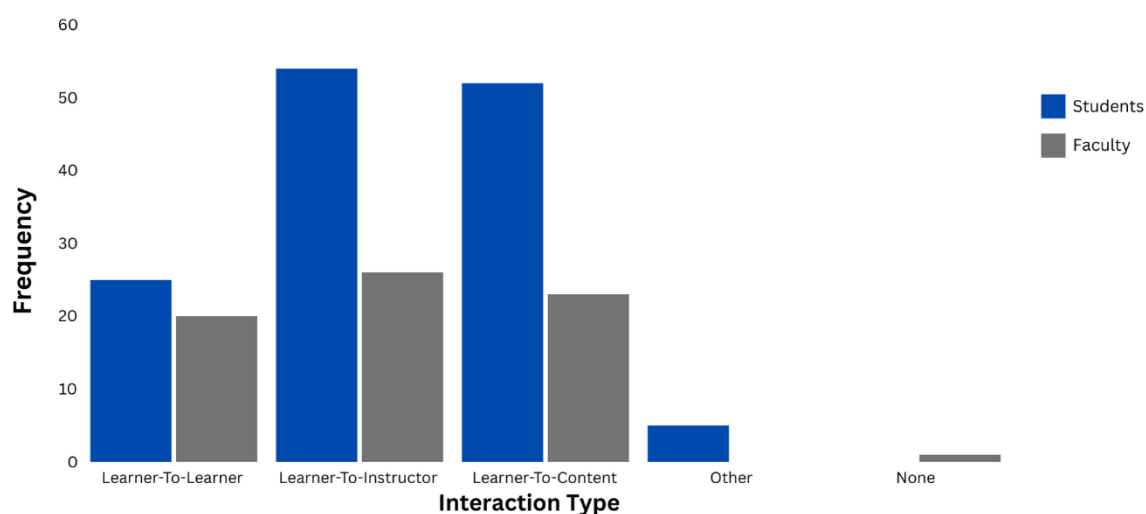
There were three open response questions that were asked of both the students and faculty who took the survey. Each response was coded as a learner-to-learner interaction, a learner-to-instructor interaction, a learner-to-content interaction, another type of strategy, or no answer given. Some responses fit more than one category or type of interaction and were coded as both, resulting in a greater number of responses in the total of all categories than total respondents to the questions. Each response was also coded for a general category within each interaction type, which again may have matched multiple types depending on the response.

Most Valuable Engagement Strategy. The first open response question was: “What is the most valuable strategy to engage an online learner?” Student responses ($N = 110$) resulted in 25 learner-to-

learner interactions, 54 learner-to-instructor interactions, 52 learner-to-content interactions, and five other types of responses. Faculty ($N = 46$) resulted in 20 learner-to-learner interactions, 26 learner-to-instructor interactions, 23 learner-to-content interactions, and one nonresponse. These totals can be seen in Figure 1.

Figure 1

Frequency of Interaction Type Response: Most Valuable Strategy



Students ($N = 110$) and Faculty ($N = 46$)

The question was further disaggregated into general categories within each interaction type. Learner-to-learner interaction responses were further divided into four specific categories and a general/other category. The 25 student responses resulted in 28 strategies and the 20 faculty responses resulted in 20 strategies for learner-to learner interactions. Results are shown in Table 28.

Table 28*Learner-To-Learner Interactions for Most Valuable Strategy*

Learner-To-Learner Interaction Type	Students		Faculty	
	<i>n</i>	%	<i>n</i>	%
Synchronous Sessions	10	35.7	7	35.0
Group Work	5	17.9	4	20.0
Peer Review	3	10.7	0	0
Discussion Boards	10	35.7	2	10.0
General/Other	0	0.0	7	35.0

Learner-to-instructor interaction responses were divided into five specific categories and a general/other category. The 54 student responses resulted in 61 different strategies and the 26 faculty responses resulted in 27 responses. The results are found in Table 29.

Table 29*Learner-To-Instructor Interactions for Most Valuable Strategy*

Learner-To-Instructor Interaction Type	Students		Faculty	
	<i>n</i>	%	<i>n</i>	%
Regular/Clear Communication	26	42.6	10	37.0
Faculty Engaged in Course	12	19.7	1	3.7
Faculty Created Video/Audio	9	14.8	5	18.5
Synchronous Meetings	4	6.6	6	22.2
Regular/Meaningful Feedback	10	16.4	4	14.8
Other	0	0.0	1	3.7

Learner-to-content interaction responses were divided into seven specific categories and a general/other category. The 51 student responses resulted in 51 strategies and the 23 faculty responses resulted in 25 strategies reported. The results are found in Table 30.

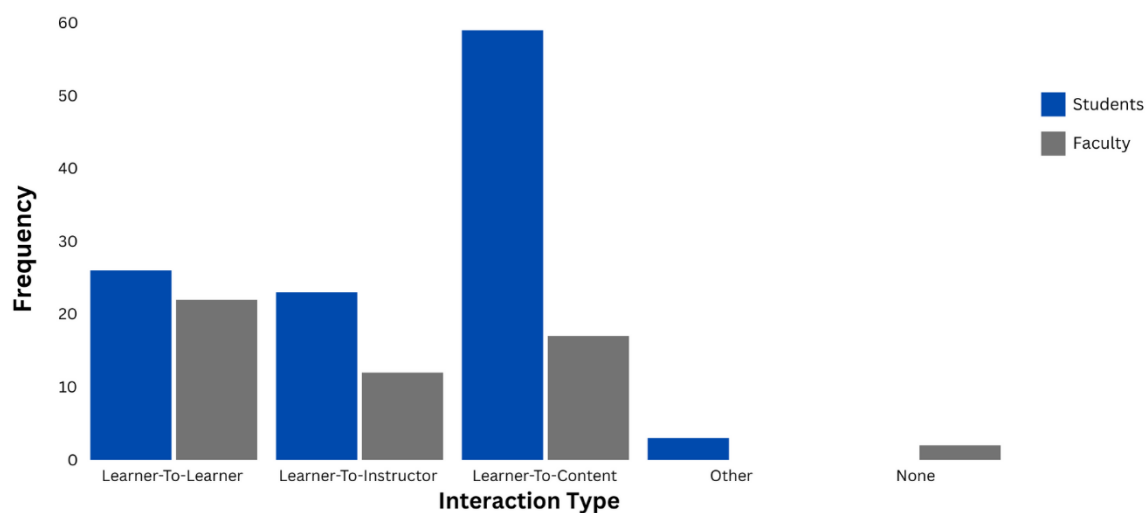
Table 30*Learner-To-Content Interactions for Most Valuable Strategy*

Learner-To-Content Interaction Type	Students		Faculty	
	<i>n</i>	%	<i>n</i>	%
Clear Organization/Expectations	5	9.6	3	12.0
Interactive Content	13	25.0	0	0.0
Reading & Writing	3	5.8	0	0.0
Student Choice	8	15.4	5	20.0
Videos	8	15.4	1	4.0
Applicable/Real World	6	11.5	7	28.0
Variety of Content	0	0.0	5	20.0
General/Other	9	17.3	4	16.0

Least Valuable Engagement Strategy. The second open response question asked was “What is the least valuable strategy to engage an online learner?” Student responses ($N = 106$) resulted in 26 learner-to-learner interactions, 23 learner-to-instructor interactions, 59 learner-to-content interactions, and three other types of responses. Faculty responses ($N = 44$) included 22 learner-to-learner interactions, 12 learner-to-instructor interactions, 17 learner-to-content interactions, and two no responses. The totals are shown in Figure 2.

Figure 2

Frequency of Interaction Type Response: Least Valuable Strategy



Students (N = 106) and Faculty (N = 44)

The question was further disaggregated into general categories within each interaction type. Learner-to-learner interaction responses were further divided into five specific categories and a general/other category. The 26 student responses resulted in 28 strategies and the 22 faculty responses resulted in 24 strategies for learner-to learner interactions. Results are shown in Table 31.

Table 31

Learner-To-Learner Interaction Type for Least Valuable Strategy

Learner-To-Learner Interaction Type	Students		Faculty	
	<i>n</i>	%	<i>n</i>	%
Discussion Boards	6	21.4	18	75
Asynchronous – General	2	7.1	1	4.2
Groups/Teams	8	28.6	2	8.3
Synchronous – General	3	10.7	0	0.0
Non-Academic Discussion	5	17.9	2	8.3
Other/General	4	14.3	1	4.2

Learner-to-instructor interaction responses were divided into five specific categories and a general/other category. The 23 student responses resulted in 28 different strategies and the 12 faculty responses resulted in 14 responses. The results are found in Table 32.

Table 32

Learner-To-Instructor Interaction Type for Least Valuable Strategy

Learner-To-Instructor Interaction Type	Students		Faculty	
	<i>n</i>	%	<i>n</i>	%
Little/No Communication	12	42.9	2	14.3
Little/No Feedback Given	5	17.9	2	14.3
Unclear Communication	6	21.4	0	0.0
Welcome/Introduction	1	3.6	0	0.0
Little/No Faculty Engagement	4	14.3	3	21.4
Other	0	0.0	7	50.0

Learner-to-content interaction responses were divided into seven specific categories and a general/other category. The 59 student responses resulted in 59 strategies and the 17 faculty responses resulted in 17 strategies reported. The results are found in Table 33.

Table 33

Learner-To-Content Interaction Type for Least Valuable Strategy

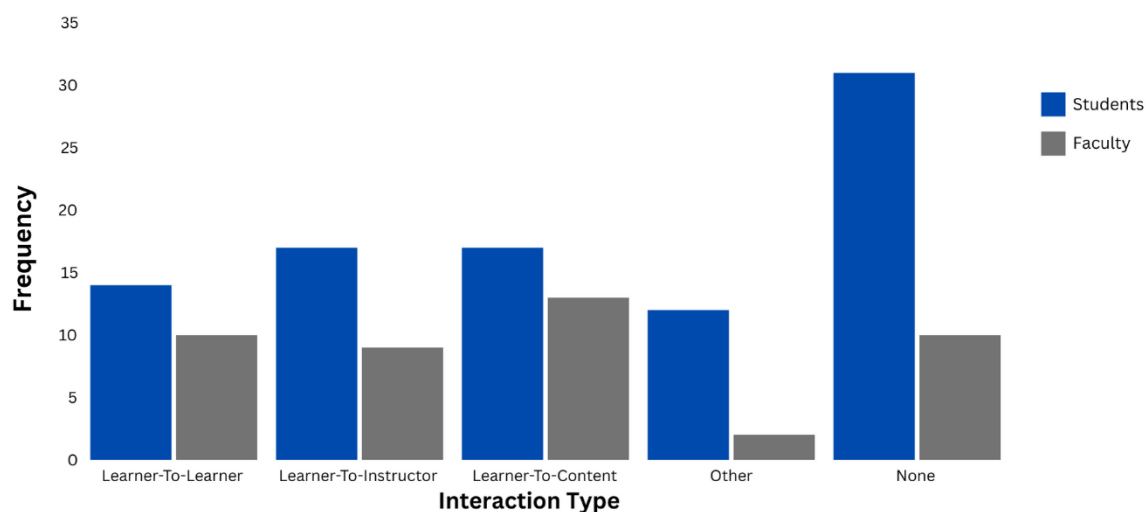
Learner-To-Content Interaction Type	Students		Faculty	
	<i>n</i>	%	<i>n</i>	%
Text Heavy/Only Text	10	16.9	6	35.3
Text Only Discussions	11	18.6	4	23.5
No Audio/Video for Presentations	6	10.2	0	0.0
Papers/Reflections	4	6.8	0	0.0
Lectures Only	7	11.9	3	17.6
Repeated Content/Design	2	3.4	1	5.9
Unclear Descriptions/Rubrics	3	5.1	0	0.0
Other	16	27.1	3	17.6

Other Beneficial Engagement Strategies. The final open response question was “What strategies not included in the questionnaire are beneficial to an online learner?” Student responses (*N* =

86) resulted in 14 learner-to-learner interactions, 17 learner-to-instructor interactions, 17 learner-to-content interactions, 12 other types of responses, and 31 non-responses. Faculty ($N = 38$) resulted in 10 learner-to-learner interactions, nine learner-to-instructor interactions, 13 learner-to-content interactions, two other responses and 10 nonresponses. These totals can be seen in Figure 3.

Figure 3

Frequency of Interaction Type Response: Not Included Strategy



Students ($N = 86$) and Faculty ($N = 38$)

The question was further disaggregated into general categories within each interaction type. Learner-to-learner interaction responses were further separated into four specific categories and a general/other category. The 14 student responses resulted in 14 strategies and the 10 faculty responses resulted in 12 strategies for learner-to learner interactions. Some strategies listed did overlap with strategies in the survey. The results are shown in Table 34.

Table 34*Learner-To-Learner Interaction Type for Not Included Strategies*

Learner-To-Learner Interaction Type	Students		Faculty	
	<i>n</i>	%	<i>n</i>	%
Synchronous Groups/Discussions	9	64.3	5	41.7
Student Moderated Discussion Groups/Cohorts	0	0.0	1	8.3
Social or Back Channel	3	21.4	2	16.7
Other/General	1	7.1	1	8.3
	1	7.1	3	25.0

Learner-to-instructor interaction responses were divided into four specific categories and a general/other category. The 17 student responses resulted in 17 different strategies and the nine faculty responses resulted in nine responses. Some strategies did overlap with strategies listed in the survey.

The results are found in Table 35.

Table 35*Learner-To-Instructor Interaction Type for Not Included Strategies*

Learner-To-Instructor Interaction Type	Students		Faculty	
	<i>n</i>	%	<i>n</i>	%
Feedback	4	23.5	2	22.2
Office Hours/Regular Meetings	8	47.1	1	11.1
Regular/Early Communication	2	11.8	1	11.1
Videos	1	5.9	0	0.0
Other/General	2	11.8	5	55.6

Learner-to-content interaction responses were divided into four specific categories and a general/other category. The 12 student responses resulted in 17 strategies and the 13 faculty responses resulted in 14 strategies reported. Some strategies given did overlap with strategies listed in the survey.

The results are found in Table 36.

Table 36*Learner-To-Content Interaction type for Not Included Strategies*

Learner-To-Content Interaction Type	Students		Faculty	
	<i>n</i>	%	<i>n</i>	%
Applicable/Relevant Material	2	11.8	1	7.1
Clear Structure/Descriptions	6	35.3	3	21.4
Interactive Materials	2	11.8	1	7.1
Practice/Examples	4	23.5	1	7.1
Other/General	3	17.6	8	51.7

Conclusion

The following chapter, Chapter 5, discusses the results and inferred conclusions based on the findings of this study. Additional implications for use by online educators, instructional designers, and others are made and suggestions offered for areas of continued and future research.

Chapter 5: Conclusions

The goal of this research was to build upon existing research from Martin & Bolliger (2018) and Bolliger & Martin (2018), to add to the body of knowledge related to how important students and faculty view student engagement strategies in online courses, and to view how perceptions may have been altered since the COVID-19 pandemic. Faculty members have numerous decisions to make when developing online courses, with how they will engage their students being of high importance. By identifying where faculty and students differ in their perceptions of student engagement strategies, faculty can further develop their courses to best serve their students.

This chapter discusses the findings of the research organized by research questions. Some of the results will be compared to that of past findings in the body of student engagement research. Adding this population of faculty and student perspectives to the body of knowledge will help to provide a better understanding of the effectiveness of student engagement strategies from both a student and faculty perspective. Additionally, the implications for how this information can be used in course development and educational practice will be discussed. Limitations of the current study and recommendations for future research will also be addressed.

Research Question 1: What are students' perceptions of online engagement strategies in relation to learner-to-learner, learner-to-instructor, and learner-to-content interactions?

Student perceptions of online engagement strategies clearly favored learner-to-instructor engagement strategies with eight of the 10 questions in the category ranking in the top 10 overall based upon mean rating. Conversely, students found student-to-student engagement strategies to be the least important with nine of the 10 strategies ranking in the bottom 10 overall based upon mean rating. Learner-to-content engagement strategies ranked near the middle with two of nine strategies in the top

10 and one in the bottom 10. Students clearly felt that student-to-instructor engagement strategies were the most important in their online courses.

Learner-to-Learner Strategies

Students rated having a choice in the selection of readings that drive discussions as the most important strategy within this category. In previous iterations of the survey, this item ranked fourth of 10 within the category (Martin & Bolliger, 2018). This difference may be based on a variety of reasons related to the population of students or the difference in time between the surveys, with the previous version having run in the years prior to the COVID-19 pandemic, which has changed the way in which many view online learning and its practices.

Martin & Bolliger (2018) found student introductions to be the highest ranked strategy in this category, which was the fifth highest ranked for the current iteration of the survey. This difference has similar possible reasons for the difference from the past iteration of the OESQ survey to the present iteration.

The second highest ranked strategy was that of interacting with peers through presentations. This rating is similar to that of Martin & Bolliger's (2018) research, as students rated that item as the third most important. The need to have students interact academically can be an important strategy, as it can help to increase knowledge, opportunities to practice skills, and quality (Ridge & Lavigne, 2020). The benefits that can be gained through listening to, asking questions, and giving feedback to peers is important, and it is evident through the ranking that students have seen some level of importance with this type of engagement strategy.

The use of a virtual lounge was found to be the least important strategy for both this study and the previous iteration from Martin & Bolliger (2018). As most students involved in this study were graduate students, time may be a factor in the ranking of this strategy, as graduate students frequently

work full-time while continuing their education. While there have been studies that show that these types of activities help to build relationships with students (Harrell, 2008; Lomicka, 2020; Nicholson, 2002), the lack of ability to participate may have inevitably led students to find them to be less important. There is also the additional possibility of students not understanding what a virtual lounge may be if different vocabulary for a similar strategy were used in their courses or at their institutions.

Learner-to-Instructor Strategies

Learner-to-Instructor strategies consisted of eight strategies ranking in the overall top 10, with an instructor posting grading rubrics being the most important strategy. Martin & Bolliger (2018) found this strategy to be the second most important. This may be due to the nature of rubrics in that they allow students to clearly see the expectations of the assignment and may ease anxiety towards the assignment (Andrade & Du, 2005; Pandero et al., 2013) and allow them to prioritize sections of their assignment (Haagsman et al., 2021). With both instances of the survey finding this to be highly important to students, this strategy is one that should be adopted by faculty in all courses.

The second ranked strategy, sending or posting regular announcements or email reminders, was the top strategy identified by Martin & Bolliger (2018). This strategy has been deemed to be important in many studies as it allows instructors to reach all students (Cuthrell & Lyon, 2007; Ko & Rossen, 2010) and it has been shown that students who are in classes where instructors send more frequent communications do better overall (d'Alessio et al., 2019). As the first and second highest ranked strategies for both the current and past iteration of the survey, it demonstrates the importance that students place on both having rubrics and regular communication from their instructors.

The least important strategy as identified by the students in both iterations of the survey was allowing students to reflect on their learning. Previous findings have shown that reflection is important and can add depth to the students' learning allowing them to internalize their learning (Chang, 2019;

Kolb, 1984; Larsen et al., 2016). The lower rating by students could be due to the larger number of graduate students versus undergraduate students, or it could be that the students simply have not seen or been shown the value in reflecting on their own learning.

Learner-to-Content Strategies

The use of realistic scenarios to apply content was identified as the most important strategy related to learner-to-content interaction in both this and Martin & Bolliger's (2018) survey. The use of active learning, to which this category relates, is an effective strategy that has been shown to improve students' academic outcomes (Hartikainen et al., 2019). The importance of choosing and developing course materials and activities that allow for students to explore and gain knowledge of the concepts taught were shown to help engage students (Khan et al., 2017; Stavredes and Hereder, 2014).

The second most important strategy identified in both this and Martin & Bolliger's (2018) studies was the use of discussions structured with guiding questions or prompts. Discussions can be a valuable strategy to help develop understanding of content, especially in online asynchronous courses, but does depend upon the quality of discussions and interactions (Decker & Beltran, 2016).

The use of live, synchronous web conferencing was found to be the least important strategy of the category. This may be accounted for due to the large number of graduate students involved in the survey, as they may have a schedule that does not allow them to participate in synchronous meetings due to work or other family commitments. There have been studies that show synchronous meetings are beneficial or may give a perception of a more quality learning experience (Parker & Martin, 2010; Ward et al., 2010).

Research Question 2: How do students' perceptions of online student engagement strategies differ between undergraduate and graduate courses in relation to learner-to-learner, learner-to-instructor, and learner-to-content interactions?

The data related to the differences of the importance of learner-to-learner and learner-to-content interactions do not differ significantly. However, learner-to-instructor interaction types do differ significantly. This could be accounted for due to the differences in the needs of graduate and undergraduate students. Studies have shown that graduate students are more self-motivated (Patel & Patel, 2006) and in return may not need the same level of interaction with an instructor that undergraduate students may need. Feedback has been shown to be a motivation for undergraduate students, which could also account for a difference between the two groups (Eom et al., 2006; Simon et al., 2003). Additionally, graduate students often have more responsibilities outside of their education than undergraduate students, such as families and full-time employment, although this is not necessarily always true.

Research varies on the importance of learner-to-learner interactions. Some studies have shown positive correlations between learner-to-learner interactions and student outcomes (Bernard et al., 2009) and others have found the opposite (Arbaugh & Rau, 2007; Grandzol & Grandzol, 2010). Research has also shown that graduate students, in general, do not desire learner-to-learner interaction (Moore et al., 2016). There is limited research on learner-to-content interactions related to graduate and undergraduate students (Xio, 2017; Zimmerman, 2012).

Research Question 3: How do students' perceptions of online student engagement strategies differ between genders in relation to learner-to-learner, learner-to-instructor, and learner-to-content interactions?

The lack of significant differences between the three interaction types in this study does not indicate that there is any difference between the importance assigned to the types of interactions amongst genders. This is supported by research, which has been shown to be inconclusive related to each of the three interaction types (Martin & Bolliger, 2018; Yukselturk & Bulut, 2009).

Research Question 4: What are instructors' perceptions of online engagement strategies in relation to learner-to-learner, learner-to-instructor, and learner-to-content interactions?

Like students, faculty perceptions of online engagement strategies clearly favored learner-to-instructor engagement strategies with seven of the 10 questions in the category ranking in the top 10 overall based upon mean rating. Conversely, faculty found learner-to-learner engagement strategies to be the least important with seven of the 10 strategies ranking in the bottom 10 overall based upon mean rating. Learner-to-content engagement strategies ranked near the middle with three of nine strategies in the top 10 and two in the bottom 10.

Learner-to-Learner Strategies

Faculty ranked students introducing themselves as the most important strategy. Previous iterations of the survey completed with instructors found the same results (Bolliger & Martin, 2018). Research has shown that these types of introductory activities assist in creating supportive and friendly interactions within the course (Reushle & Mitchell, 2009) and can be used to enhance student participation in the course (Gazder, 2023).

Students interacting with peers through presentations was found to be the second highest ranked strategy, which also coincided with results from previous iterations of the OESQ survey (Bolliger & Martin, 2018). The least important strategy ranked by faculty was the use of a virtual lounge by students to share common interests.

Learner-to-Instructor Strategies

Bolliger & Martin (2018) found that instructors rated sending regular announcements or emails as the most effective strategy, which this survey also found to be true. It was the highest overall ranked strategy by faculty in any group.

The second most important strategy as ranked in this survey was referring to students by their name in discussion forums. This also coincides with past iterations of the OESQ survey (Bolliger & Martin, 2018). This strategy may be employed to help improve social presence in the online course, as research shows that faculty referring to students by name may be an indicator of the quality of the interactions (Rourke et al., 2007).

The lowest ranked strategy by faculty was using various features in synchronous sessions for interaction with students. These results could have been ranked as they were for various reasons, one being that the faculty surveyed may only teach asynchronous online courses and not use a synchronous tool for interaction. Other possibilities may be related to time constraints within the allotted synchronous time or technology or tool issues (Park & Bonk, 2007).

Learner-to-Content Strategies

Faculty ranked students working in realistic scenarios as the top strategy of the category. This also aligns with past findings of the survey (Bolliger & Martin, 2018). Stravredes & Herder (2014) identify the importance of having course materials that allow students to apply their learning to discover new information and develop needed skills. Having structured discussions with guided questions or prompts followed, which also coincided with past findings (Bolliger & Martin, 2018). Discussions which are guided can help students to further discover new information and apply their learning (Decker & Beltran, 2016).

Faculty ranked having students use self-tests to check their understanding as the least valuable strategy. Research shows that the use of self-tests or practice tests to check understanding leads to better student outcomes, fosters students' critical thinking skills, and can help improve retention of information (Carvalho et al., 2022; Hopkins et al., 2016; van Peppen et al., 2021).

Research Question 5: How do perceptions of online engagement strategies differ between students and instructors in relation to learner-to-learner, learner-to-instructor, and learner-to-content interactions?

Each category of interaction was not found to have any significant difference between students and faculty; however, individual rankings of strategies did vary between groups. For students, the highest ranked learner-to-learner strategy was students having choices on materials related to discussion groups, while faculty found it to be one of the lesser important strategies, ranking seventh within the category. The faculty's highest ranked strategy was the use of icebreakers or student introductions, but students ranked this in the middle at fifth. Students and faculty were closer on their second and third ranked strategies, where students rated working collaboratively to complete group work second and interacting with peers through presentations third, while the faculty reversed the picks. Students and faculty agreed on the least important strategy, the use of virtual lounges. Although students and faculty disagreed on the order or importance, especially their highest ranked items, seven of 10 items were separated by only one rank. This seems to show a general agreement amongst the groups in the importance of the strategies for this category.

Learner-to-instructor interaction was the highest rated category by both students and faculty. They were not quite as in agreement of the order as learner-to-learner interactions, as only six of 10 items are separated by only one rank. Students ranked posting grading rubrics as their top pick, while faculty found this to be the third most important strategy. Faculty ranked sending announcements or emails regularly as their most important strategy, which students felt was important as well, as it was their second highest strategy. There was minor disagreement in the least important strategy of the group. Students ranked allowing for reflection as the least important, while faculty ranked it as the

second least important. Faculty ranked using features in synchronous tools the least important, while students found that to be the second to least important strategy.

Within the last type of interaction, learner-to-content, students and faculty agreed within one rank on eight of nine items. Both students and faculty agreed on their two most important strategies: working on realistic scenarios to apply content and structured discussions with guiding questions. The largest division in choice was the students' third ranked strategy, students research an approved topic and present their findings in a delivery method of their choice. Faculty ranked this as the seventh most important strategy. The least important strategy for students was the use of live, synchronous sessions, which faculty ranked one spot above. The faculty's least important strategy, and eighth ranked strategy for students, was the use of self-tests to check understanding of materials.

When viewed with some of the statements from open-ended questions, the rankings do not seem to coincide. Although there were a number of positive statements related to the use of synchronous sessions that fell in both the learner-to-learner category and the learner-to-instructor category, yet the use of synchronous sessions were deemed to be the least important by students and second least by faculty.

The open responses related to the most valuable strategy for student engagement is clear and regular communication by faculty for both students and faculty. This seems to coincide with the survey results.

The open responses to the least valuable strategy were a bit mixed with the survey results. Students cited group or team work to be the most commonly listed least valuable strategy, yet group related tasks ranked second and third in the survey. Faculty listed discussion boards as the least valuable in the open-ended responses by a large margin, which may be due to a lack of quality responses given by students, poorly designed discussion topics, or unclear directions or expectations. This relates to the

overall least valuable strategy listed by students, that of little or no communication from the instructor. Students also listed text only discussions highly in relation to least valuable interaction strategies. The lack of multimedia-based discussion could lead to less interaction amongst students, and in turn, faculty feel the strategy is not valuable.

The final open-ended question responses related to additional interaction strategies included a number of strategies that were previously listed within the survey. The most common strategy given for both students and faculty related to having synchronous groups or discussions. Students do seem to value discussions, when not in text-only format and allowing for more personal interaction.

Implications for Practice

When designing online courses, faculty members must carefully consider the use of engagement strategies. Although research has shown the importance of all three interaction types, learner-to-instructor is seen as the most important type and should be implemented in different ways throughout a course. The format of the course, whether it be synchronous, asynchronous, or bichronous, can affect the types of learner-to-instructor interaction that occur, but it is clear that both students and faculty see and value the importance of these types of interactions.

Overall, the majority ratings were in the important or very important category for students (67.0%) and faculty (69.9%), these high rankings of engagement strategies across all three interaction types clearly show the importance of using strategies within online courses. There are many ways that faculty can choose to engage their students and based upon the results of the survey, instructors can choose from a wide range of strategies to help engage their students in their courses and learning.

These results may assist in the design and development of online courses by faculty and instructional designers. Whether it is converting a traditional face-to-face course online, revising a

current online course, or developing a brand-new course from the ground up, the use of strategies outlined here can help to engage their students in various ways.

Limitations

There are limitations to this study. The sample size was relatively small and although focused on a specific sub-set of mid-sized, public, four-year colleges and universities in the Midwest, not all contacted chose to participate. The majority of students sampled came from graduate programs, which may skew results in their favor and nearly half of all students indicated being a part of a program in the field of education. Faculty responses may have been influenced in the same way as nearly 40% of faculty surveyed taught within education departments. The disproportionate number of females to males who completed the survey for students may also cause the data to be skewed.

Second, due to the nature of the study, the data was self-reported. Although looking for perceptions, this may not match the respondent's actual perception of the strategies listed. There is also a possibility that students or faculty may not have fully understood a strategy within a category.

Third, the list of possible strategies was not exhaustive, as there are numerous strategies that can be used to engage students in an online course. There are strategies that may be seen as more important by students and faculty that were not listed.

As the responses for the survey were solicited from a number of colleges and universities, the design and delivery of the courses, programs, or the implementation of strategies are out of the control of the researcher. Each of these areas of course design and delivery could influence how a student or faculty member rates the strategies that were included. The results, therefore, may not be generalizable to different settings, locations, or populations.

Suggestions for Future Research

While this study added to and created additional literature within the body of research related to student engagement, there are more avenues to explore for future research studies. This study looked at an overall view of all three types of interaction described by Moore (1993b). Future research may focus more on each of the interaction types individually with a more in-depth list of interactions within each category. The area of learner-to-content interaction had the fewest individual studies located by the researcher and is a specific area of research that should be looked at more in-depth.

Additionally, future research focused on individual student engagement strategies within specific contexts may better identify the effectiveness of the strategies as a whole. This could yield results that may identify specific ways to implement strategies most effectively to improve student learning and engagement.

Research may be limited when using a survey for quantitative research. The use of a qualitative approach to this topic could gain further information from online students and faculty related to the use of engagement strategies in online courses. This may lead to a better understanding of how strategies are implemented within courses.

With the increasing role that adult learners have in education, specifically online education, identifying the ways those learners are engaged compared to the traditional undergraduate student could be beneficial. Adult learners may have needs and goals that differ from the traditional undergraduate and thus have different needs when it comes to being engaged in an online course.

Additional research may focus on the modality of a course and the engagement strategies used. Students who take and faculty who teach asynchronous courses may have different levels of importance related to specific strategies than those who are a part of a synchronous course. Bichronous courses, though they have aspects of both synchronous and asynchronous courses, may differ from the other modalities as well.

Finally, as technologies change, there will be an ever present need to continue this research. In the currently growing area of extended reality (XR) in areas such as augmented reality (AR) and virtual reality (VR), there will be new ways to engage students in an online course. The growth of artificial intelligence is another area that may impact student engagement and strategies that can be implemented using this new technology, such as chat bots to answer student questions, adaptive assessments and practice, as well as study aids for students, all of which should be studied to see their impact on student engagement.

Summary

The results of this study add new aspects to the body of knowledge related to student engagement in online courses through perceptions of the strategies of students and faculty from public, mid-sized, midwestern colleges and universities. This study shows that both students and faculty perceive the use of student engagement strategies to be important, holding those strategies that fall into learner-to-instructor interactions the most important of all. The continued growth of online courses and programs points to the need of developing a greater understanding and application of student engagement strategies, as it has been shown that student engagement matters when it comes to student success and perceptions of course quality.

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Appendices

Appendix A: Online Engagement Strategies Questionnaire (OESQ)



Online Engagement Strategies Questionnaire

Hello,

My name is JD Weagley, and I am a doctoral student at the University of Southern Indiana. I am conducting an online survey to study the student and faculty perceptions of engagement strategies in courses that are part of online programs. In order to participate, you must be 18 or older and be a student enrolled in or a faculty member teaching an online course in an online program.

The following survey includes 29 questions where you will rate your thoughts on different types of engagement strategies. There are three open-response questions and eight demographic questions. It will take 10 to 20 minutes of your time to complete the survey. Your participation in this study is voluntary and there are no risks to individuals participating beyond those that exist in daily life. If you decide to participate, your responses will be anonymous - that is, recorded without any identifying information that is linked to you. If you have any questions regarding this survey, please contact me at jdweagley@usi.edu. If you have any questions regarding your rights as a human subject and participant in this study, or to report research-related problems, you may email the University of Southern Indiana IRB at rcc@usi.edu (IRB Number 2129061-1).

By clicking the next button and completing the survey you indicate that you have consented to participate in this research. If you do not wish to participate, please close the survey.

Do you agree to participate in this study?

Yes, I agree

No, I disagree

Next →



Instructions: Please rate how important the following strategies and/or activities are to support student interactions as an online learner or instructor.

1 = Very Unimportant, 2 = Somewhat Unimportant, 3 = Neither Important nor Unimportant, 4 = Important, 5 = Very Important

	1 Very Unimportant	2 Somewhat Unimportant	3 Neither Important nor Unimportant	4 Important	5 Very Important
1. Students use a virtual lounge where they can meet informally to share common interests.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. Students complete an integrated profile on the Learning Management System that is accessible in all courses.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. Students introduce themselves using an ice-breaker discussion.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4. Students moderate discussions.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5. Students have choices in the selection of readings (articles, books) that drive discussion group formation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6. Students post audio and/or video files in threaded discussions instead of only written responses.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

7. Students interact with peers through student presentations (asynchronously or synchronously).

8. Students work collaboratively using online communication tools to complete case studies, projects, reports, etc.

9. Students peer-review classmates' work.

10. Students are required to rate individual performance of team members on projects.

Next →



Instructions: Please rate how important the following strategies and/or activities are to support student interactions as an online learner or instructor.

1 = Very Unimportant, 2 = Somewhat Unimportant, 3 = Neither Important nor Unimportant, 4 = Important, 5 = Very Important

	1 Very Unimportant	2 Somewhat Unimportant	3 Neither Important nor Unimportant	4 Important	5 Very Important
11. The instructor refers to students by name in discussion forums.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
12. The instructor sends/posts regular announcements or email reminders.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
13. The instructor creates a forum for students to contact the instructor with questions about the course.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
14. The instructor creates a course orientation for students.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
15. The instructor posts a "due date checklist" at the end of each instructional unit.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
16. The instructor creates short videos to increase instructor presence in the course.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

17. The instructor provides feedback using various modalities (e.g., text, audio, video, and

18. The instructor provides students with an opportunity to reflect (e.g., via a journal or surveys).

19. The instructor posts grading rubrics for all assignments.

20. The instructor uses various features in synchronous sessions to interact with students (e.g., polls, emoticons, whiteboard, text, and audio and video chat).

Next →



Instructions: Please rate how important the following strategies and/or activities are to support student interactions as an online learner or instructor.

1 = Very Unimportant, 2 = Somewhat Unimportant, 3 = Neither Important nor Unimportant, 4 = Important, 5 = Very Important

	1 Very Unimportant	2 Somewhat Unimportant	3 Neither Important nor Unimportant	4 Important	5 Very Important
21. Students interact with content in more than one format (e.g., text, video, audio, interactive games or simulations).	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
22. Students use optional online resources to explore topics in more depth.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
23. Students experience live, synchronous web conferencing for class events and/or guest talks.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
24. Discussions are structured with guiding questions and/or prompts to deepen their understanding of the content.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
25. Students research an approved topic and present their findings in a delivery method of their choice (e.g., discussions forum, chat, web conference, multimedia presentation).	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

26. Students search for and select applicable materials (e.g., articles, books) based on their interests.



27. Students have an opportunity to reflect on important elements of the course (e.g., use of communication tools, their learning, team projects, and community).



28. Students work on realistic scenarios to apply content (e.g., case studies, reports, research papers, presentations, client projects).



29. Students use self-tests to check their understanding of materials.



Next →



Instructions: Please type your responses to the following questions.

30. What is the most valuable strategy to engage an online learner?

31. What is the least valuable strategy to engage an online learner?

32. What strategies not included in this questionnaire are beneficial to an online learner?

Next →



From what perspective are you answering this survey, a student or a faculty member?

Student

Faculty

Next →



Instructions: Please select one answer for each of the following questions.

What is your gender identity?

Female

Male

Transgender

Non-binary/non-conforming

Other

Prefer not to answer

What is your current student status?

Freshman

Sophomore

Junior

Senior

Post-baccalaureate

Master's student

Doctoral student

Post-doctorate

Other, please specify

In which discipline are you studying?

Agriculture/Natural Resources

Arts and Sciences

Business

Education

Engineering/Applied Sciences

Health Sciences

Law

Medicine

Other, please specify

Instructions: Please type in your responses to the following question.

What is your academic major?

What modality are most of the online courses you have taken?

Asynchronous (no live course meetings)

Synchronous (technology-mediated live meetings)

Bichronous (mix of Asynchronous & Synchronous)

Instructions: Please fill in the numerical value for each of the following questions.

What is your age?

How many online courses have you completed prior to taking your current course(s)?

Next →



Instructions: Please select one answer for each of the following questions.

What is your current academic rank?

Full Professor

Associate Professor

Assistant Professor

Instructor

Adjunct Faculty

Graduate Teaching Assistant

Instructional Designer

Librarian

Other, please specify

In which discipline do you teach?

Agriculture/Natural Resources

Arts and Sciences

Business

Education

Engineering/Applied Sciences

Health Sciences

Law

Medicine

Other, please specify

Instructions: Please select your responses to the following question.

What level do you regularly teach online?

Undergraduate

Graduate

Both

What modality are most of the online courses you have taught?

Asynchronous (no live course meetings)

Synchronous (technology-mediated live meetings)

Bichronous (mix of Asynchronous & Synchronous)

Instructions: Please fill in the numerical value for each of the following questions.

How many years have you taught online courses?

Have you completed any training related to developing an online course?

Yes

No

Next →



Thank you for taking the time to complete this survey. We appreciate your assistance with our research project.

Appendix B: Survey permission from the author

Re: Request permission to use survey instrument

Florence Martin <fmartin3@ncsu.edu>
To: Weagley, JD

Monday, May 1, 2023 at 7:50 AM

*** This message was sent from a non-USI address. Please exercise caution when responding, clicking on links or opening attachments. ***

Hi JD Weagley,
Good to hear that you are considering extending our work on online engagement strategies.
You have my permission to use and adapt the instrument for your research as long as we are cited and credited appropriately in the publication.
Here is the link to the instrument -
https://florencemartin.wordpress.ncsu.edu/files/2022/06/EngagementStrategies_OnlineLearning.docx

And good luck with your study.
Florence

Appendix C: Email sent to program directors, chairs, or other contactsStudent Engagement Survey  USI Internal

Weagley, JD

Bcc: 

Mon 1/15/2024 10:00 AM

Hello,

My name is JD Weagley, and I am a doctoral student at the University of Southern Indiana, conducting research on the student and faculty perceptions of student engagement strategies in online courses that are part of online programs.

I would appreciate it if you could forward this survey to **students** currently enrolled in your online program and **faculty** that are teaching courses in the online program.

The information collected through this survey will contribute to a better understanding of student engagement in online courses amongst multiple groups.

Survey Details:**Title:** Online Engagement Strategies Questionnaire**Estimated Time:** 10-20 minutes**Survey Link:** https://usisurvey.az1.qualtrics.com/jfe/form/SV_5pXsVWsGVgaHUsm**Confidentiality and Ethical Considerations:**

All responses to the survey will remain confidential and data will be anonymized to insure privacy. The survey has been reviewed and approved by the Institutional Review Board at the University of Southern Indiana (IRB ID: 2129061-1).

Survey Window:

The survey will be available between January 15 and January 26, 2024.

If there are any questions regarding the survey, please do not hesitate to reach out to me (jdweagley@usi.edu).

Thank you for your time and consideration.

Regards,

JD Weagley**University of Southern Indiana**

8600 University Boulevard

Evansville, IN 47712

Phone: 812-461-5325

jdweagley@usi.edu