Identification of Effective Interaction Types and Engagement Strategies for Online Graduate
Students using the Modified Online Engagement Strategies Questionnaire (OESQ)

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Abstract

The overall purpose of this descriptive and exploratory quantitative study was to gather perceptions of online graduate-level learners at Baker University using a slightly modified version of the Online Engagement Strategies Questionnaire (OESQ). Using the modified OESQ, the types of student interaction and engagement perceived as most important for online graduate-level students learning experience and which strategies were most important for fostering those types of student engagement were examined. The identified population for the current study consisted of all active graduate-level students enrolled in an online program of study during the spring of 2022 at Baker University. There has been a limited amount of research published regarding student engagement in online learning (Redmond, Abawi, Brown, Henderson, & Heffernan, 2018), and even fewer studies related to the engagement of graduate-level online learners. Survey respondents (all Baker University online graduate students) rated, with a Likert-type scale, each engagement strategy under learner-to-learner, learner-to-instructor, and learner-to-content interaction types. For the Likert-type scale, 5 equaled very important, 4 equaled important, 3 equaled neither important nor unimportant, 2 equaled somewhat important, and 1 equaled very unimportant. Using respondents' perceived level of importance for each of the rated engagement strategies, a mean was calculated for each strategy. Means for each strategy under the three interaction types were then used to calculate means for the learner-to-learner, learner-to-instructor, and learner-to-content subscales for all online Baker University graduate-level students, then by gender, content area, and degree level within the education program. Results indicated five key findings. The first finding was learner-to-instructor type interaction was perceived to be most important to all Baker University survey respondents. The second finding was that both female and male respondents perceived learner-to-instructor

interaction type as most important. The third major was that business program respondents rated the learner-to-instructor type interaction as most important, while education program respondents rated both learner-to-instructor and learner-to-content type interactions as very important. The fourth finding was that both doctoral and master's level students in the education program rated both learner-to-instructor and learner-to-content as important, however doctoral students' ratings of importance for both types were higher than the ratings of the master's education program respondents. The fifth finding was two engagement strategies with the highest mean ratings of importance were strategy 19, the instructor posts grading rubrics for all assignments, from learner-to-instructor interaction type and strategy 28, students work on realistic scenarios to apply content, from learner-to-content interaction type. The results from the study informs instructional design and engagement strategies for all graduate-level online programs at Baker University to better meet the needs of students for each program and degree level, and would continue to help expand Baker University online offerings for students at the graduate-level.

Dedication

This is dedicated to all the people who supported and helped me through this process.

Acknowledgments

I would like to acknowledge the faculty in the Baker University Instructional Design and

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Chapter 1

Introduction

"At the most fundamental level, to optimize learning, a teacher must ensure that students are engaged in the learning process" (Boykin & Noguera, 2012, p. 42). Student engagement is an indicator of educational quality (Robinson & Hullinger, 2008). According to Ahlfeldt, Mehta, and Sellnow (2005), "engaging students in learning is one of the many goals that educators face. As our world evolves and students' attention spans change, educators must also adapt to meet the changing needs of their students" (p. 5). Student engagement is also related to positive outcomes and learners' effort levels dedicated to educationally purposeful activities (Hu & Kuh, 2002). Additionally, student engagement has shown potential for addressing issues in modern education such as student boredom, low achievement, and high student dropout rates (Wang & Degol, 2016). Kuh (2009b) noted that while recognizing the importance of engagement, "the construct can be misinterpreted and misused" (p. 15). The construct of engagement has been represented by time on task, quality of effort, student involvement, social and academic integration, good practices in undergraduate education, and student achievement outcomes (Kuh, 2009b). Krause (2005) explained that student engagement is a term used to describe a collection of behaviors that involve student learning and defined it in terms of the "time, energy, and resources students devote to activities designed to enhance learning at university" (p. 3). Kuh (2009b) stated that before 2009, engagement represented the quality of effort and involvement in productive learning activities. Gibbs, in 2014, argued that the term was "now used to refer to so many different things that it is difficult to keep track of what people are actually talking about" (para 2).

Research has shown three types of classroom-based engagement: behavioral, cognitive, and affective (Fredricks, Blumenfeld, & Paris, 2004). Behavioral engagement encompasses learners' positive conduct in the classroom, like following specific rules or not breaking the rules. Behavioral engagement can also involve effort, persistence, concentration, attention, asking questions, and participation in classroom or school-based activities of the learner (Fredricks et al., 2004). Cognitive engagement encompasses learners' investment in learning and desire to go beyond primary instructor or classroom requirements. Fredricks et al. (2004) showed that higher levels of cognitive engagement were related to student levels of intrinsic motivation to learn. Affective or emotional engagement encompasses the learner's interest, boredom, happiness, anxiety, or sadness in classroom activities. According to Fredricks et al. (2004), research on student engagement at both the primary and secondary education levels found that all three types of engagement are necessary for optimal learning, and engagement was "a multidimensional construct that unites the three components in a meaningful way" (p. 60).

The paths to student engagement may be social or academic and stem from opportunities within classes, interpersonal relationships, or intellectual endeavors. The levels of engagement within each dimension suggest that overall engagement can vary in intensity and duration, from short-term and situation-specific to long-term and stable, providing the potential for evolution in intensity and meaningful growth in engagement over time (Fredricks et at., 2004). Fredricks et al. (2004) concluded that engagement was malleable and described student engagement as a problematic construct to measure because of its multidimensional nature and because of the overlap between the three engagement types and other constructs such as student conduct and on-task behavior, student attitudes, and student interests and values. This complexity has led to debate over the most appropriate measure to examine student engagement.

The Community of Inquiry (CoI) model, as described by Moore and Diehl (2019), is a "theoretical framework representing a process of creating a deep and meaningful (collaborative-constructivist) learning experiences through the development of three interdependent elements – social presence, cognitive presence, and teaching presence" (p. 68). The construction of this framework dates to the 1959 work of John Dewey, who believed that inquiry was a social activity and represented an essential part of the educational experience (Garrison, Anderson, & Archer, 2010). The framework has continued to evolve and develop but still relies on Dewey's core principles of inquiry being active and essential. The CoI model does not have to be online and has been used in education environments previously. However, the model can be adapted and implemented online to enhance student engagement.

Figure 1

The Community of Inquiry Model

Community of Inquiry
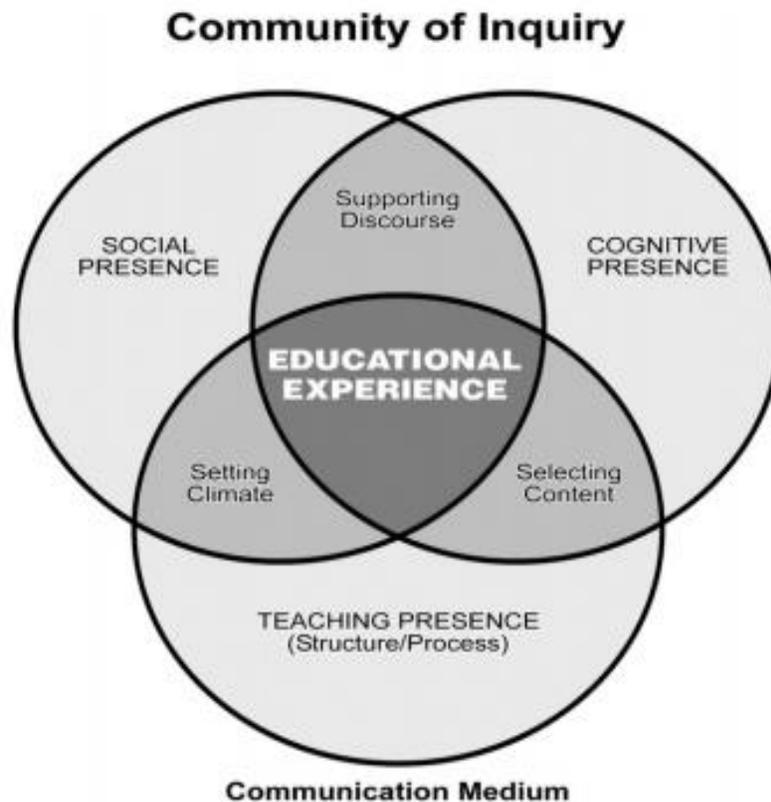
Note. The Community of Inquiry (CoI) model shows the interaction of social presence, cognitive presence, and teaching presence and how these presences tie together to enhance the educational experience. From "The First Decade of the Community of Inquiry Framework: A Retrospective" by Garrison, D. R., Anderson, T, & Archer, W. 2010, *Internet and Higher Education, 13*, p. 6.

The first element of the CoI model, social presence, is the degree to which learners feel connected to one another (Swan & Shih, 2005). Barbour and Bennett (2013) identified that building strong online relationships with students was deemed essential by teachers because it helps develop social presence. Positive social presence or connectedness leads to students feeling comfortable and emotionally engaged in the learning environment (Cleveland-Innes &

Campbell, 2012). Gibbs and Poskitt (2010) argued that connectedness required cognitive engagement.

The second element of the CoI model, cognitive presence, is closely related to critical thinking and focuses on higher-order thinking processes that include creativity and problem-solving (Garrison et al., 2001). Louwrens and Hartnett (2015) found that "interaction and collaboration are key to establishing cognitive presence, which supports both emotional and cognitive engagement" (p. 29). Cognitive presence can be represented by a complex interplay of experiences and is best visualized through the Practical Inquiry (PI) Model (see Figure 2).

Figure 2

The Practical Inquiry Model
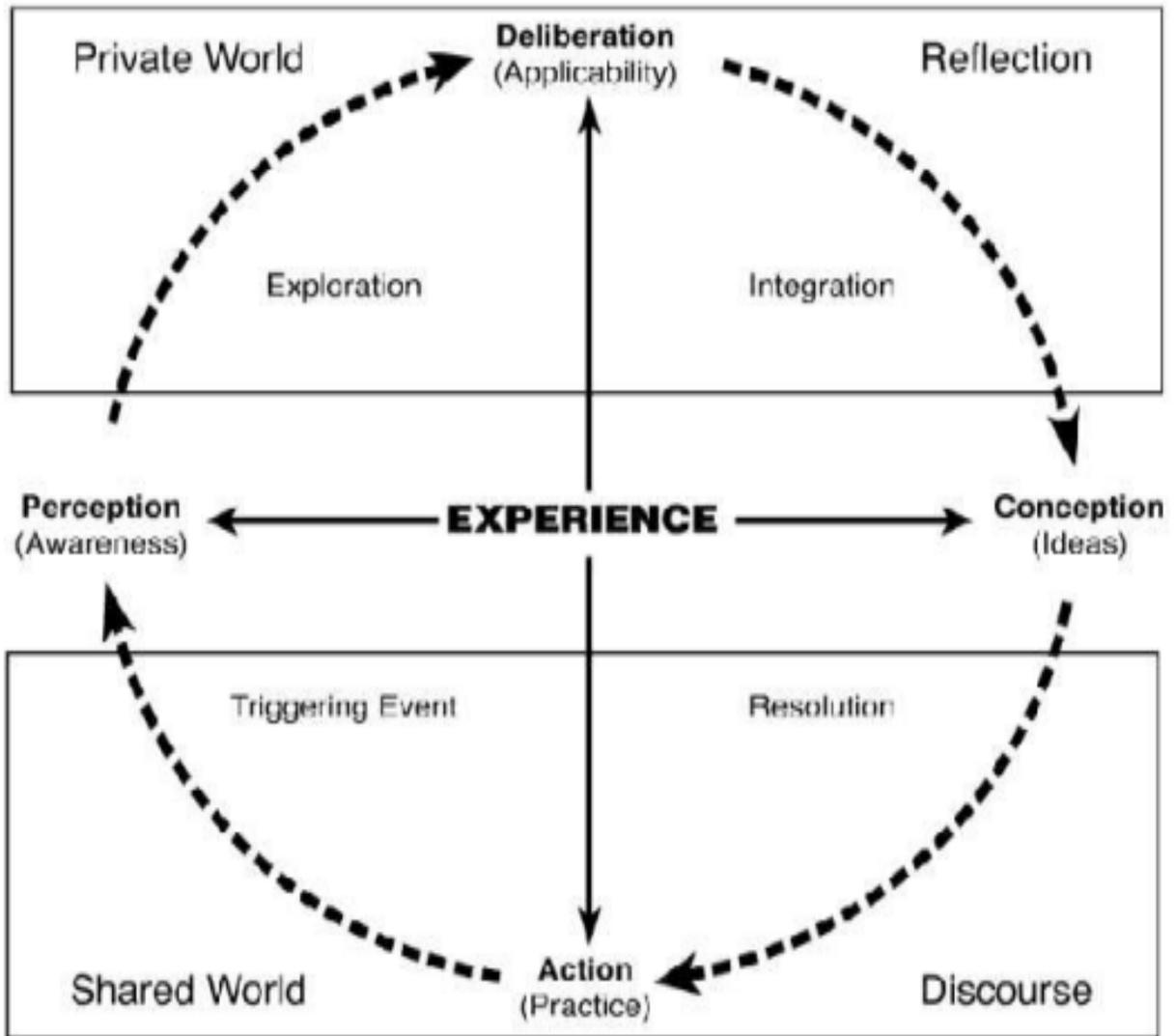
Note. The Practical Inquiry Model reflects the interplay between a learners' private and public worlds. Through this interplay, critical thinking is enhanced, and this allows for the creation of cognitive presence. From "Critical Thinking, Cognitive Presence, and Computer Conferencing in Distance Education" by Garrison, D. R., Anderson, T., & Archer, W., 2001, *American Journal of Distance Education*, *15*, p. 9.

The last element of the CoI model, teaching presence, encompasses many design features of the educational experience. Anderson, Rourke, Garrison, and Archer (2001) described teaching presence as "the design, facilitation and direction of cognitive and social processes for the purpose of realizing personally meaningful and educationally worthwhile learning outcomes" (p. 5). Teaching presence provides students with the structure and leadership required to progress toward higher-order learning (Moore & Diehl, 2019). The educator in an online course plays a vital role in encouraging students to engage in learning (Louwrens & Hartnett, 2015).

Background

Student engagement in learning is important in education and for instructional designers. Chen, Lambert, and Guidry (2010) suggested that student engagement has a greater impact on learning outcomes than who the students are or where they enroll. If students are not engaged in learning, they are unlikely to successfully move on to the next level of education (Bowers, 2010). Through the efforts of both students and their teachers or schools, student engagement levels can be raised to increase academic achievement (Fredricks & McColskey, 2012; Singh, 2015).

Measurement of student engagement can be quite challenging given that engagement is not observable and must be assessed through inferring behavior or self-reported measures (Fredricks et al., 2004). In trying to conceptualize engagement for post-secondary students, much of the research has focused on activities outside the college classroom such as socialization, extracurricular activities, and university services, rather than on in-class instructional practices (Burch, Heller, Burch, Freed, & Steed, 2015). Kahu (2013) studied student engagement in higher education and identified four dominant research perspectives. These perspectives include the behavioral perspective, which focuses on effective teaching practices; the psychological perspective, which views engagement as an individual internal

process; the sociocultural perspective, which considers the sociocultural context of engagement; and the holistic perspective, which draws strands from each of the pervious perspectives into one (Kahu, 2013).

There has been a limited amount of research published regarding student engagement in online learning (Redmond, Abawi, Brown, Henderson, & Heffernan, 2018) and even fewer studies related to the engagement of graduate-level online learners. Researchers have differed in their findings, with some suggesting there was no reason to believe doctoral students differed from other students regarding the value or impact of engagement (Cantwell, Bourke, Scevak, Holbrook, & Budd, 2017). Thus, research surrounding engagement for online doctoral programs has mainly consisted of two types. The first area of research regarding online doctoral student engagement has been defining which activities comprise an engagement practice - such as only counting discussion board posts or the number of emails between student and professor (Dixson, 2010). The second area of research surrounding engagement for online advanced-degree students has examined behavioral engagement activities (Milburn-Shaw & Walker, 2017).

There has been a substantial increase in online learning programs in higher education (Martin & Parker, 2014). In 2020, approximately 2,500 colleges offered students online learning program options (Gallagher & Palmer, 2020). According to a joint report by the Boston Consulting Group and Arizona State University (2018), the overall post-secondary student enrollment has been seeing a yearly decline of 1% to 2%, while the number of students taking online courses grows 5% annually. Snyder, Brey, & Dillow (2018) reported that the percentage of graduate students who took entirely online graduate degree programs has increased from 6.1% in 2008 to 27.3% in 2016, and the percentage of graduate students who take one or more online courses also increased from 16.5% in 2008 to 45.6% in 2016. Another example of this growth is

through massive open online courses given through companies like Coursera. According to their 2021 Impact Report, in 2016 Coursera had approximately 21 million registered online learners. In 2021 that number had jumped to 92 million online registered users (Wood, 2022). With that proliferation, learners should be assured that online courses and learning environments are safe, interactive, social, cognitive, and of equal quality to in-person courses (Griffiths, 2020). Baker University, and its catalog of online graduate programs, represent one such entity attempting to grow and develop its variety of online professional and advanced degree programs for learners.

Constructivist theory proposes that humans build knowledge and meaning through interactions with each other and their environment by bringing "unique knowledge, skills, attitudes, and beliefs to the learning experience" (Swan, 2005, p. 18). This feature of learning is essential, especially as it pertains to the interaction between social, cognitive, and teaching presence within the CoI framework. Student learning outcomes within online environments can match—and, in some cases, potentially exceed—traditional classroom-based instruction (Bakia, Jones, Means, Murphy & Toyama, 2010; Lim, Morris & Kupritz, 2007). However, as Czerkawski and Lyman (2016) noted, student engagement in online learning environments is a relatively new challenge for instructional designers. Rabourn, BrckaLorenz, and Shoup (2018) stated, "To the best of our knowledge, none of the current theories or suggestions for enhancing adult student learning focus broadly on their engagement in effective educational practices" (p. 24).

Statement of the Problem

Engagement is a multifaceted concept (Bolliger & Martin, 2021). Research has shown the importance of student engagement within an in-person learning environment. Wang and Degol (2016) found that when students engaged with learning, they could focus attention and

energy on mastering the task, persist when difficulties arise, build supportive relationships with colleagues, and connect to their learning organizations. High levels of student engagement are critical for student success and academic achievement (Fredricks et al., 2004). Numerous studies have provided evidence that "student engagement is a key element in keeping students connected with the course and, thus, with their learning" (Dixson, 2015, p. 2).

Achieving student engagement in online learning courses may be more important than in traditional face-to-face classrooms because online students have fewer ways to be engaged (Meyer, 2014). According to Banna, Lin, Stewart, and Fialkowski (2015), if content played a central focus in online learning before 2015, engagement played an essential role in stimulating online learning moving forward. The three basic types of student engagement in online learning are learner-to-learner, learner-to-instructor, and learner-to-content (Bernard, Abrami, Borokhovski, Wade, Tamim, Surkes & Bethel, 2009). Lear, Ansorge, and Steckelberg (2010) noted that interactions with content, peers, and instructors help online learners become more active and engaged in their courses. The interactivity of the three types of student engagement can promote a CoI, resulting in high-quality learning and increased critical thinking.

The study of student engagement in graduate-level programs seems to be misunderstood (Rabourn et al., 2018), and research regarding student engagement at the graduate-level is lacking, inconsistent, inconclusive, and poorly understood (Dixson, 2015). Holzweiss, Joyner, Fuller, Henderson, and Young (2014) found that research conducted with higher education students in an online learning environment was minuscule and even less research has been conducted with online students in graduate programs. "Researchers have identified several factors that promote student engagement in the online learning environment, though much of this theorisation is focused primarily on undergraduate-level learning" (Holzweiss et al., 2014, p.

312). Gillet-Swan (2017) noted that while many of the practices used in face-to-face contact modes can be adapted and utilized in the online context, it is not simply the case of applying a 'one size fits all' approach. Instead, scales of adaptation and differentiation within instructional approaches should be more effective in differentiating between levels of learners and various contexts of teaching via online and live modes.

Purpose of the Study

The current descriptive and exploratory quantitative study gathered perceptions of online graduate-level learners at Baker University using a slightly modified version of the Online Engagement Strategies Questionnaire (OESQ) to examine which types of student engagement were perceived as most important for their learning experience and which strategies were most important for fostering those types of student engagement. The first purpose of the study was to describe the mean level of perceived importance for learner-to-learner, learner-to-instructor, learner-to-content types of student engagement for all graduate-level online learners at Baker University, then disaggregated by gender (female or male), content area of program (business, education, or other), and by degree level within the Education program (doctoral or master's). The second purpose was to explore which of the three types of student interactions were perceived as most important for all graduate-level online learners at Baker University, as well as by gender (female or male), content area of program (business, education, or other), and by degree level within the Education program (doctoral or master's). The third purpose of the study was to describe the mean level of perceived importance for strategies aimed at achieving learner-to-learner, learner-to-instructor, learner-to-content types of student engagement for all graduate-level online learners at Baker University, then disaggregated by gender (female or male), content area of program (business, education, or other), and by degree level within the Education

program (doctoral or master's). The fourth purpose was to explore which strategies aimed at achieving the three types of student engagement or interaction were perceived as most important for all graduate-level online learners at Baker University, as well as by gender (female or male), content area of program (business, education, or other), and by degree level within the Education program (doctoral or master's).

Significance of the Study

The utilization of online learning programs in higher education and graduate education continues to grow. To facilitate this growth in online graduate programs of study, educators must continue to develop online graduate programs that effectively engage learners and maximize learning. Educators must also adapt their thinking about student engagement in online education. Crampton, Ragusa, and Cavanagh (2012) found that online learning environments are usually "characterised by different traditions, identities [and] expertise" (p. 2). Sener (2012) described the first era of online education as having been devoted to providing access, while the second era could potentially improve the quality of education. Thus, part of improving the quality of online education would be identifying the types of student engagement and strategies perceived as important to the engagement of graduate-level students in building an interactive and enriching CoI in the online setting while fostering higher-order processing and critical thinking inherent in advanced degree graduate-level learning programs. The significance of knowing these strategies would enable instructional designers and professors for these groups of learners to prioritize and implement those strategies to improve student engagement and achieve a CoI.

The results of the current study could be valuable for the field of instructional design and performance technology as university programs continue to expand their online offerings for

students at the graduate-level. Findings from the current study could help identify which types of student interaction/engagement (learner-to-learner, learner-to-instructor, and learner-to-content) are most beneficial to online graduate-level learners in different content areas. The findings could also help identify which specific engagement strategies align best with achieving the three types of engagement within various content areas of online graduate-level, as well as aid instructors and designers in developing courses or learning materials that maximize engagement and promote student learning and critical thinking through applying that learning. Additionally, according to Kuczero (2019), research regarding student engagement and gender is both scant and of mixed results. Thus, to maximize learning, instructors should make a concerted effort to use teaching strategies that are inclusive and encourage equitable participation by all students (Aguillon, Siegmund, Petipas, Grace Drake, Cotner, & Ballen, 2020).

Delimitations

Delimitations of a study are the boundaries decided upon and set by the researcher that narrow or focus the study (Roberts & Hyatt, 2019). Boundaries of the research can be physical or theoretical, and the delimitations set by the researcher can be associated with the research setting, the selection of participants, or the definition and measurement of the variables investigated (Roberts & Hyatt, 2019). Data collection methods for the current study were delimited to a slightly modified version of one survey instrument, The Online Engagement Strategies Questionnaire (OESQ). No other quantitative or qualitative data were collected. The focus of the current research was delimited to describing and exploring online graduate students' perceived levels of importance of learner-to-learner, learner-to-instructor, learner-to-content student engagement, and the importance of strategies that aim to achieve those types. The researcher sought out participants who have had daily interactions in an online doctoral learning

setting to gain their perspective on the perception of online student engagement at Baker University, where they are enrolled in online advanced degree programs. The sampling of participants was delimited to Baker University due to the institution's multiple online graduate programs in several areas of study and at both master's and doctoral levels, which facilitated the current study's focus on quantifying and exploring student engagement within Baker University's online graduate programs and not across institutions.

Assumptions

Lunenburg and Irby (2008) described research assumptions as things considered true about the "nature, analysis, and interpretation of the data" (p. 135). The current study included the following assumptions: a) the lists of student institutional email addresses received from the registrar were accurate, so the survey reached the intended population, b) participants understood what was being asked of them for the survey items as well as understanding items' associated response options, and c) participants responded honestly.

Research Questions

Research questions are a critical component of a dissertation and, in a quantitative study, research questions explore relationships between and among variables (Lunenburg & Irby, 2008). Drew (1980), as cited in Lunenburg and Irby (2008), identified three general categories of researcher questions: descriptive, relationship, and difference. For this study, the research questions centered around describing the perceived level of importance for each engagement type and its specific strategies by gender, content area, and by degree level within education of online graduate learning programs, and learner preferences. The eight research questions guiding this study were:

RQ1. What is the mean level of perceived importance for the learner-to-learner interaction for all online Baker graduate students, and disaggregated by gender (female or male), graduate program content area (business, education, or other), and degree level within the education program (doctoral or master's)?

RQ2. What is the mean level of perceived importance for the learner-to-instructor interaction for all online Baker graduate students, and disaggregated by gender (female or male), graduate program content area (business, education, or other), and degree level within the education program (doctoral or master's)?

RQ3. What is the mean level of perceived importance for the learner-to-content interaction for all online Baker graduate students, and disaggregated by gender (female or male), graduate program content area (business, education, or other), and degree level within the education program (doctoral or master's)?

RQ4. Which of the three types of interactions (learner-to-learner, learner-to-instructor, learner-to-content) are perceived to be most important in creating a CoI for all online Baker graduate students, as well as by gender (female or male), graduate program content area (business, education, or other), and degree level within the education program (doctoral or master's)?

RQ5. What is the mean level of perceived importance for each engagement strategy in creating learner-to-learner interaction for all Baker graduate students, and disaggregated by gender (female or male), graduate program content area (business, education, or other), and degree level within the education program (doctoral or master's)?

RQ6. What is the mean level of perceived importance for each engagement strategy in creating learner-to-instructor interaction for all Baker graduate students, and disaggregated by

gender (female or male), graduate program content area (business, education, or other), and degree level within the education program (doctoral or master's)?

RQ7. What is the mean level of perceived importance for each engagement strategy in creating learner-to-content interaction for all Baker graduate students, and disaggregated by gender (female or male), graduate program content area (business, education, or other), and degree level within the education program (doctoral or master's)?

RQ8. Which engagement strategies are perceived to be most important for facilitating each type of interaction (learner-to-learner, learner-to-instructor, learner-to-content) for all online Baker graduate students, as well as by gender (female or male), graduate program content area (business, education, or other), and degree level with the education program (doctoral or master's)?

Definition of Terms

To avoid confusion, this study provided definitions and delineations to distinguish between community, community of inquiry, engagement, student engagement, and distance education. Many researchers have used these terms in previous studies; therefore, it was necessary to operationally define these individual terms as used in the current study.

Community. Community is a feeling of belonging, acceptance, and trust for the instructor and other class members (Rovai, 2002).

Community of Inquiry (CoI). At the heart of the CoI framework is the idea that community, critical reflection, and knowledge construction are integral to learning, especially learning online (Garrison & Archer, 2000). Additionally, the CoI framework, based on the constructs of cognitive, social, and teaching presence, considers the various stakeholder groups

involved in an online course (student, instructor, designer) and what each can do to make their course a successful learning experience (Swan, Garrison, & Richardson, 2009).

Engagement. For this study, the researcher is using a combination of engagement definitions from both Kuh (2009b) and Krause (2005). According to Kuh (2009b), engagement represents the quality of effort and involvement in productive learning activities. Krause (2005) explained that student engagement is a term used to describe a collection of behaviors that involve student learning and defined it in terms of the "time, energy, and resources students devote to activities designed to enhance learning at university" (p. 3).

Student Engagement. Dixson (2015) defined student engagement as "the extent to which students actively engage by thinking, talking, and interacting with the content of a course, the other students in the course, and the instructor" (p. 2).

Distance Education. The National Center for Educational Statistics defines distance education as education that uses one or more types of technology to deliver instruction to students who are separated from the instructor and to support regular and substantive interaction between the students and the instructor synchronously or asynchronously (National Center for Educational Statistics, 2021).

Organization of the Study

This dissertation contains five chapters. Chapter 1 included the background of the study, the statement of the problem, the purpose and significance of the study, in addition to the delimitations and assumptions for the current study. Chapter 1 also presented the research questions and provided a definition of the terms used in the current study. Chapter 2 will present a review of the literature associated with student engagement for advanced-degree online learners. Chapter 3 will describe the methodology used to conduct the study, and Chapter 4 will

provide the results of the data analysis. Chapter 5 will summarize the entire study, discuss the

findings and implications for practice, and provide conclusions and recommendations for future

research.

Chapter 2

Review of the Literature

This chapter presents a review of the literature associated with online learning and student engagement with online graduate learners. Included in this review of literature are sections describing online learning, the community of inquiry (CoI) and interaction, gender and engagement, and lastly, online graduate learners and engagement.

Online Learning and Engagement

The use of technology in education is prevalent in the 21st century. From a higher learning perspective, the National Center for Educational Statistics reported that in fall 2018, there were 6,932,074 students enrolled in some form of distance education course (U.S. Department of Education, National Center for Education Statistics). The 2017 Babson survey of distance education found that one out of every three college students take at least one online course, representing a three-fold increase in the last ten years (Allen & Seaman, 2017). As technology has progressed, educators have found themselves in a perplexing situation of effectively combining research-based instruction and pedagogy with technology to foster growth and development in students.

The role of technology in the classroom and enhancing learning has a varied and polarizing past. Clark (1994) claimed that the media had little effect on learning or learning outcomes. To Clark (1994), media was a vehicle for instruction and had no more influence than "a truck delivering groceries" (p. 22). However, modern instructional practices demonstrate and describe a much different narrative. Kentnor (2015), for example, described online education as altering distance education and changing higher education. This fits Cleveland-Innes and

Sangra's (2010) argument that higher education must be restructured in an era of constant change.

Driscoll, Jicha, Hunt, Tichavsky, and Thompson (2012) noted that "if designed properly, in a way that stresses interaction, clear structure, and strong content, online courses can offer a learning environment that is as equally effective and enjoyable as the traditional classroom" (p. 326). Palloff and Pratt (2013) described the online classroom as a potentially powerful teaching and learning arena where new practices and new relationships can make significant contributions to learning. Therefore, student engagement is vital to retaining students in online education and is one of the predictors of student developmental learning (Ramírez & Gillig, 2018).

To harness the power this creates in education, instructors must train not only to use technology but also to shift how they organize and deliver the material. Making this shift can increase the potential for learners to take charge of their learning process and facilitate the development of a sense of community among them (Palloff & Pratt, 2013). The growth of online programs is doubtful to decrease or slow down. Thus, it is paramount that the universities offering these programs develop high-level instructors and instructional methods that engage and motivate learners.

Student engagement is an indicator of educational quality (Robinson & Hullinger, 2008). According to Ahlfeldt, Mehta, and Sellnow (2005), "engaging students in learning is one of the many goals that educators face. As our world evolves and students' attention spans change, educators must also adapt to meet the changing needs of their students" (p. 5). Bolliger and Halupa (2018) found that student engagement in online learning is imperative because online learners seem to have fewer opportunities for engagement within the institution. Colleges and universities recognize students' interest in online courses and programs (Buelow, Barry, & Rich,

2018); thus, creating multiple opportunities for student engagement in the online environment becomes essential.

Chickering and Gamson (1987) proposed seven principles for Good Practice in Undergraduate Education for face-to-face courses such as encouraging contact between students and faculty, developing reciprocity and cooperation among students, using active learning techniques, giving prompt feedback, emphasizing time on task, communicating high expectations, and respecting diverse talents and ways of learning. However, face-to-face principles can also apply to online education (Arum & Roksa, 2011), and these seven principles support student-to-student, student-to-instructor, and student-to-content interactions. For example, Mucundanyi (2019) described the principles as encouraging contact between students and faculty, prompt feedback, and communication of high expectations, which all contribute to strong student-to-instructor interactions. Along with these interactions, the possibility of developing reciprocity and cooperation among students, which generates student-to-student interactions also exists (Mucundanyi, 2019). Additionally, some principles apply to student-to-student and student-to-instructor interactions, such as respecting diverse talents and ways of learning and using active learning techniques. Instructors and instructional designers can use these seven principles to design online courses that engage students. According to Martin and Bolliger (2018):

> Engagement strategies are aimed at providing positive learner experiences, including
> active learning opportunities, such as participating in collaborative group work, having
> students facilitate presentations and discussions, sharing resources actively, creating
> course assignments with hands-on components, and integrating case studies and
> reflections. (p. 206)

One of the most substantial studies related to the engagement of distance learners appeared in 2008. Chen, Gonyea, and Kuh (2008) compared the engagement of distance learners in various educational practices with campus-based students at U.S. four-year degree-granting colleges and universities. The data for the study came from 189,325 randomly sampled first-year and senior students who completed the National Survey of Student Engagement (NSSE) in 2006. Based on the survey and analysis, Chen et al. (2008) conclude that distance learners have multiple priorities in their lives. Learning and attending to their education may be a high priority, but it is not necessarily the most important. The engagement of distance learners compares favorably to that of in-person learners. Chen et al. (2008) noted that distance learners are generally engaged and often more engaged than their campus-based counterparts, except for engagement in active and collaborative learning activities. In addition, the self-reported gains of distance learners tend to be greater than those reported by their campus-based counterparts.

An interesting tool for measuring online student engagement was developed by Bigatel and Williams (2015) at Pennsylvania State University. For this study, researchers wanted to measure the effectiveness of university faculty in promoting student engagement. To do this, the researchers developed a student engagement survey comprised of 23 questions. The questions within the survey were broken down into three categories; student engagement activities (9 items), instructor attitudes and behaviors (9 items), and thinking skills (5 items). 2,296 surveys were e-mailed to students in the 2014 spring semester and the 2014 summer sessions within the Penn State University Bachelor of Business program. Based on their analysis, Bigatel and Williams (2015) described student engagement as a strong predictor of student persistence and degree completion. They recommended training instructors in strategies to encourage student engagement and that this strategy was a valid goal for a faculty development program.

In another study, also done at Pennsylvania State University, Bigatel and Edel-Malizia (2018) examined online students and how often they engaged in research-based practical activities in their courses and how much their instructors engaged them. For the study, Bigatel and Edel-Malizia (2018) described student engagement as easily understood and that the more students study a subject, the more they know about it. The more students practice and get feedback from faculty and staff members on their writing and collaborative problem-solving, the deeper they come to understand what they are learning. In analyzing the data and results, researchers determined that the most engaging activities for learners included

- sharing knowledge and expertise with the learning community,

- using various computer technologies to communicate with the instructor and class peers,

- making a presentation to the class,

- learning through meaningful and challenging activities, and

- working on assignments or activities that involved research skills.

Along with these student-based activities, the researchers also analyzed instructor behaviors. They found that the instructor behaviors that predicted high student engagement were providing prompt (within 72 hours) and meaningful feedback, prompting the student to reflect on learning and think more deeply about the course content, and assessing learning in various ways (Bigatel & Edel-Malizia, 2018). Lastly, in the discussion, Bigatel and Edel-Malizia (2018) noted, "Of interest was the indication that instructor attitudes and behaviors seemed to have more influence than course activities vis a vis keeping students engaged."

Wang and Eccles (2012a, 2012b), Wang and Degol (2016) found that when students were engaged with learning, they could focus attention and energy on mastering the task, persist when difficulties arise, build supportive relationships with colleagues, and connect to their learning organizations. Fredricks et al. (2004) noted that high student engagement levels are a critical factor in student success and academic achievement. Additionally, achieving student engagement in online learning courses may be more important than in traditional face-to-face classrooms because online students have fewer ways to be engaged (Meyer 2014). Fredricks, Filsecker, and Lawson (2016), in describing the popularity of engagement research, policy, and practice, noted that "engagement is a key contributor of learning and academic success" (p. 1).

Research has shown student engagement to be an essential factor in student success academically and personally (Burch, Heller, Burch, Freed, & Steed, 2015). Kuh (2009a) wrote, "… virtually every report … emphasized to varying degrees the important link between student engagement and desired outcomes of college" (p. 684). In addressing components of this link or relationship, Strayhorn (2008), identified some interesting correlations between student engagement and student personal or social learning outcomes. Strayhorn (2008), "found that faculty-student interactions, peer interactions, and active learning were moderately and positively correlated with students' self-reported personal/social learning gains" (p. 9). He suggested college professors and instructors attempt to incorporate more collaborative, active, and problem-based learning experiences for students.

Coates (2006) explained that social relationships are essential, alongside academic engagement, and highlighted the importance institutions have in creating environments that make learning possible, but that "the final responsibility for learning…rests with students" (p. 29). However, it can be argued that student engagement is a shared responsibility between multiple

groups and encompasses numerous aspects. Coates (2005) described learning as a "joint proposition" (p. 26) and that learning is dependent upon institutions and staff providing students with the conditions, opportunities, and expectations to become involved. This aspect of student engagement is crucial to the overall learning experience and environment. By evaluating levels of student engagement, instructors can more effectively plan lessons and activities that will encourage students to be more active participants in their learning and coursework (Mandernach, Donnelli-Sallee, & Dailey-Hebert, 2011).

Engagement in online courses could be a key focus in the future for universities as enrollment continues to increase. Administrators face challenges creating a sense of community in these courses because of a lack of personal contact, technology deficiencies, and poor course design. These factors could lead to higher attrition in online courses (Atchley, Wingebach, & Akers, 2013). Online course faculty should work to create a sense of community and a positive learning environment for student success (Liu, Magjuka, Bonk & Lee, 2007). Students need to feel that the online course environment is safe, interactive, social, cognitive, and of equal quality to face-to-face courses. These factors drive the quality of the course and student achievement.

Redmond et al. (2018), in their research and analysis, proposed a framework for online student engagement. Through their literature study, Redmond et al. (2018) identified five factors or elements that are crucial for effective student engagement in the online environment. The elements included: social engagement, cognitive engagement, behavioral engagement, collaborative engagement, and emotional engagement. From their research, Redmond et al. (2018) identified indicators for social engagement as building community, creating a sense of belonging, developing relationships, and establishing trust.

Next, they identified cognitive engagement. Redmond et al. (2018) described cognitive engagement as "the active process of learning" (p.191). For cognitive engagement, the researchers identified the following indicators: thinking critically, activating metacognition, integrating ideas, justifying decisions, developing deep discipline understandings, and distributing expertise. Interestingly, the researchers were able to identify, within cognitive engagement, two types of levels. The levels, as referred to by Fredricks et al. (2004), are deep and surface. From an instructional perspective, cognitive engagement at the deep level would be of preference. At this level, Redmond et al. (2018) wrote:

Learners working at deep cognitive levels have a psychological investment in learning, a preference towards challenge, as well as a desire to go beyond base requirements. They sustain engagement through persistence and can find relevance in new information by aligning it with previous knowledge. (p 192)

Behavioral engagement was the next component of their online engagement framework. For this component, Redmond et al. (2018) identified developing academic skills, identifying opportunities and challenges, developing multidisciplinary skills, developing urgency, upholding online norms, and supporting and encouraging peers as indicators of this engagement element. The next element, as identified by the researchers, was collaborative engagement. Indicators for collaborative engagement included: learning with peers, relating to faculty members, connecting to institutional opportunities, and developing professional networks (Redmond et al., 2018).

The last element identified by Redmond et al. (2018) was emotional engagement. Indicators for emotional engagement were managing expectations, articulating assumptions, recognizing motivations, and committing to learning (Redmond et al., 2018). In developing this framework, the researchers identify the uniqueness of each online learning environment.

However, the goal of developing this framework, as described by Redmond et al. (2018), was "to build capacity for supporting and enhancing online students' learning journeys" (p. 196).

Community of Inquiry and The Importance of Community

The CoI framework is one of the most extensively used online teaching and learning models (Jan, Vlachopoulos, & Parsell, 2019). The model and concept aim, as Garrison (2009) points out, is in the "creation of communities of learners actively and collaboratively engaged in exploring, creating meaning, and confirming understanding (i.e., inquiry)" (p. 352). With more emphasis and interest in online learning programs and communities, it is not surprising that investigating the CoI model and framework by instructional designers and researchers is essential.

Garrison (2007) noted, "Community is considered essential to engage learners in collaborative learning activities. Collaborative learning activities are what set online learning apart from traditional distance education" (p. 355). At the heart of the CoI framework is the idea that community, critical reflection, and knowledge construction are integral to learning, especially learning online (Garrison & Archer, 2000, p. 91). Additionally, the CoI framework, based on the constructs of cognitive, social, and teaching presence, consider the various stakeholder groups involved in an online course (student, instructor, designer) and what each can do to make their course a successful learning experience (Swan, Garrison, & Richardson, 2009).

It is important to note the interplay and balance that needs to be established for an effective CoI to be established. To achieve higher-order thinking and inquiry, all the presences (cognitive, social, teaching) must be developed in balance (Akyol & Garrison, 2008). Community is a feeling of belonging, acceptance, and trust for the instructor and other class members (Rovai, 2002). Glasser (1986) described belonging as one of the five basic needs

written into the human genetic structure. A sense of community provides humans belonging, identity, emotional connection, and wellbeing (Rovai & Wighting, 2005). Rovai and Wighting (2005) noted that people experiencing or perceiving a solid sense of community are better adjusted, feel supported, have connections to others, have connections to goals that may be above their limited aspirations, and have more substantial levels of social support and social connectedness. About online learners, Rovai and Wighting (2005) wrote, "In order for online students to develop a strong sense of community, it is crucial that the learner feels part of a learning community where his or her contributions add to a common knowledge pool and where a community spirit is fostered through social interactions facilitated by a skilled instructor" (p. 100).

Meaningful online communities do not emerge spontaneously (Wood, 2003). An influential online community requires careful planning and students to feel meaningful connections through purposeful discourse and reflection (Moisey, Neu, & Cleveland-Innes, 2008). In an online community, connections or interactions can occur in many ways. Lear et al. (2010) wrote, "The interactivity component is important in an online class because it is what connects the students, instructor, and course material together" (p. 73). Chapman, Ramondt, and Smiley (2005) suggested that instructors should take time at the beginning of a course to develop online rapport, as this is important to ensure high levels of learning. Additionally, Chapman et al. (2005) wrote, "online learning which focuses on content but discounts community will have more difficulty in generating a deep learning experience for students" (p. 226).

By establishing a robust online community, the instructor's responsibilities become more focused on "the task of facilitating learning through asking thought-provoking questions, critiquing, challenging and identifying which conceptual models need to be clarified" (Chapman

et al., 2005, p. 228). Rovai (2002), in his research, noted that attention must be given to building community in distance education programs because it is a sense of community that attracts and retains learners. Rovai (2002) felt that sense of community was a vital aspect of distance learning environments and programs. Later research done by Lin and Gao (2020) reinforced the belief that the instructor needs to build a strong community for learners in an online environment. This belief fits Lai's (2015) analysis of learners and students receiving both academic and social benefits when they feel a sense of community in distance learning.

Community of Inquiry, Interaction, and Online Learning

The goal of an educational community of inquiry is "to collaboratively engage in discourse and reflection with intent to construct personal meaning and confirm mutual understanding" (Garrison, 2017, p. 2). The needs of students, in a learning sense, come in ways in which the student chooses to interact with other learners, the instructor, or the content. Moore (1989) identified three types of interaction as learner-content interaction, learner-instructor interaction, and learner-learner interaction. Moore (1989) defined the interactions as follows:

- Learner-instructor interaction (L-I) refers to the instructor's efforts in curriculum planning, organizing content and activities, and support and encouragement that stimulate learners' interactions and enhance students' motivation and interest during the course.

- Learner-learner interaction (L-L) is the interaction between one learner and other learner in groups or communities with or without the presence of instructors.

- Learner-content interaction (L-C) is intellectually interacting with subject matter that results in constructing meaning and changing of learner's understanding and cognitive structure (Saadatmand, Hedberg, & Abjornsson, 2017).

This work was instrumental in Martin and Bolliger's (2018) development of the Online Student

Engagement Questionnaire (OSEQ). However, one of the issues regarding interaction is what a

learning organization chooses to focus on. Moore (1989) found that "the main weakness of

many distance education programs is their commitment to a particular communications medium,

and when there is only one medium, it is probable that only one kind of interaction is done well"

(p. 132).

Sharp and Huett (2006) argued that within this interaction framework, the most important

form of interaction, from an online or distance learning perspective, was learner-learner

interaction. They believe one element often missing from distance education programs is the

sense of community a learner can build. Sharp and Huett (2006) described online collaboration

in the form of peer work groups as increasing engagement in the learning process. Ultimately,

however, this places instructors in a conundrum of how to proceed with building online learner-

learner communities because graduate online learners do not fit the mold of traditional learners.

This is important because if done incorrectly, the instructor risks weakening students' sense of

community and engagement in the course. Phirangee (2016) identified seven interactions within

the graduate online setting that could contribute to this weakening. The interactions included:

the keener, which is the person who quickly and constantly responded to online notes; lack of

meaningful data, which referred to being overly nice or polite in discussion forums; selective

listening; lack of attribution, which referred to not giving credit to ideas expressed; going off on

tangents; editing notes; and cultural exclusion (Phirangee, 2016).

In her research, Swan (2001) relates the three interaction types to the CoI model of online

learning (Figure 3).

Figure 3

The Relationship Between the Community of Inquiry and Interaction Types
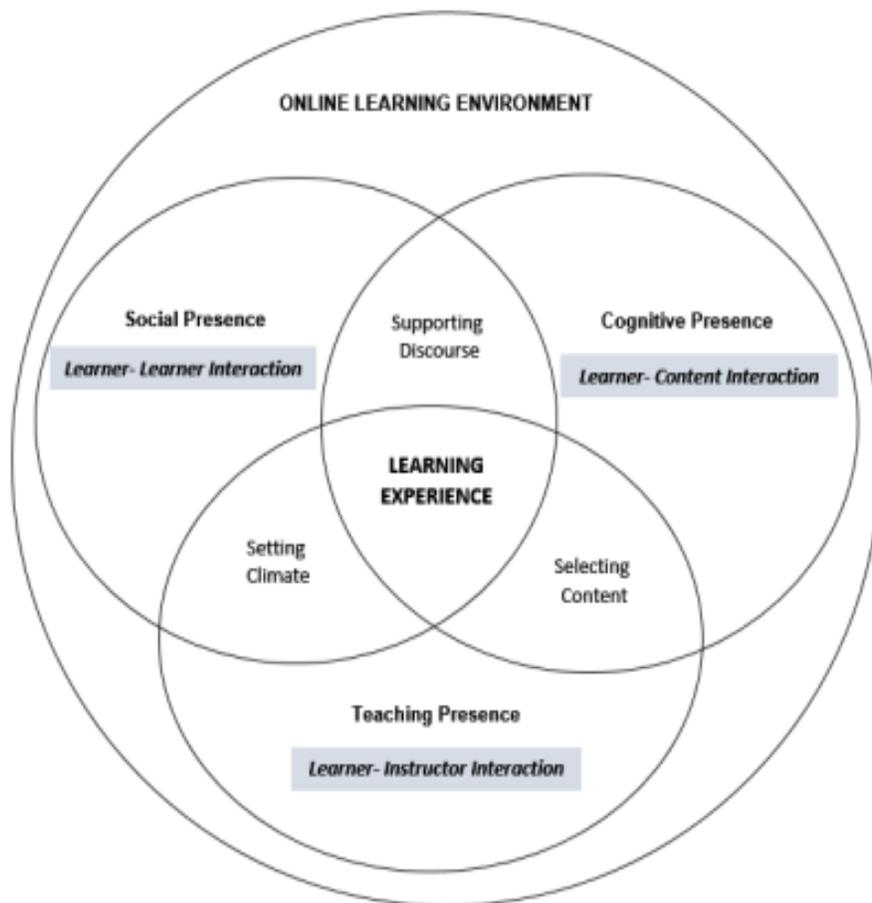
Note. The relationship between the CoI and interaction. From "Examining Learners' Interaction in an Open Online Course Through the Community of Inquiry Framework" by Saadatmand, M., Hedberg, M., & Abjornsson, L., 2017, *European Journal of Open, Distance and e-Learning, 20*(1), p. 63.

About the relationship between the CoI and the three types of interaction Swan (2001) wrote, "If one equates cognitive presence in the model with interaction with content, teaching presence with interaction with instructors, and social presence with interaction among students, it gives a good representation of how all three work together to support learning online" (p. 307). In 2001

Swan produced research highlighting factors associated with online learning and student perceived satisfaction. In total, 1,406 students completed a survey related to online learning experiences within the State University of New York (SUNY) system. When looking at interaction with content, Swan (2001) reported that students with higher levels of activity in the online course had higher satisfaction and learning levels. With interaction between the student and instructor, Swan (2001) noted that students who perceived levels of high interaction have a higher level of satisfaction with the course and higher levels of learning. Lastly, when analyzing interaction among students, Swan (2001) reported that students who reported high levels of interaction with classmates also had high course satisfaction and higher levels of learning.

Swan (2003), in reviewing literature associated with effective online learning, highlighted numerous studies and evidence on how to make learning most effective for online students. Much of the research reported by Swan (2003) related to learner interactions with content, instructors, and classmates. In citing Janicki and Liegle (2001), Swan (2003) described the importance of learner-to-content interaction and instructional design. In this relationship, Swan (2003) noted some effective design practices to support this interaction. The design practices included instructors acting as facilitators, use of a variety of presentation styles, multiple exercises, hands-on problems, learner control of pacing, frequent assessment, clear feedback, consistent layout, clear navigation, and available help screens (Swan, 2003). Along with these design features, Swan (2003) also noted the importance personalization plays in design and learner-to-content interaction. To personalize the experience for learners, Swan (2003) noted the importance of initial assessments to measure student knowledge, skills, and preferred learning styles, using an array of high-quality, interactive learning materials and activities, individualized

study plans for learners, built-in assessment and continuous feedback, and varied forms of human interaction.

When examining the learner-to-instructor interaction Swan (2003) noted the importance this relationship has played in the traditional classroom and reasons that this relationship "would be equally important online" (p. 10). From her research on the learner-to-instructor interaction, Swan (2003) described the significance teacher immediacy and teaching presence played. Immediacy, according to Weiner and Mehrabian (1968), refers to the psychological distance between communicators. Research has shown both teacher verbal immediacy behaviors like giving praise, soliciting viewpoints, humor, and self-disclosure, and non-verbal immediacy behaviors like physical proximately, eye contact, touch, facial expressions, and gestures can lessen the psychological distance between instructor and student, which can then lead to greater learning (Swan, 2003).

Lastly, Swan (2003) examined research related to learner-to-learner interaction in an online environment. This type of interaction is very dependent upon multiple factors and online environmental structures. One of the key attributes of online learner-to-learner interaction is the opportunity for learners to reflect upon classmate contributions and their own contributions to a discussion (Swan, 2003). Additionally, this form of interaction is dependent upon both the learner and instructor. From the learner perspective, there is a strong link between frequency, timeliness, and nature of posts that contributes to a strong interaction developing. From the instructor's perspective, there seems to be a definite dependence on the value the instructor places upon discussion and discourse online.

Another study conducted by Swan, Richardson, Ice, Garrison, Cleveland-Innes, and Arbaugh (2008), examined validating a measurement tool for the CoI in online learning settings.

Specifically, with this study, the researchers wanted to investigate how the three presences,

social, cognitive, and teaching, interact. Upon analyzing the results, Swan et al. (2008) found

this survey tool as a reliable measure of the existence of a CoI in an online learning environment.

Additionally, the researchers highlighted specific characteristics of each presence with the CoI.

With social presence, Swan et al. (2008) wrote, "students experience social presence to the

extent that they participate in open communication, feel a sense of group cohesion, and exhibit

affective expression" (p. 8). Along with this, they describe social presence as a necessary

condition for an effective online experience (Swan et al., 2008). With cognitive presence, Swan

et al. (2008) discuss a spectrum of inquiry within this presence and, for higher education courses,

the need to develop ways that push learners toward higher levels of cognitive processing. Lastly,

with teaching presence, Swan et al. (2008) found, as other research has shown, the importance of

the instructor in the CoI experience.

Griffiths (2020) utilized the CoI model to investigate student engagement in an online

graduate business program. The purpose of Griffiths' 2020 study was to examine how social,

cognitive, and teaching presences interact and create an educational experience for online

learners. To investigate whether a relationship existed between student engagement and

academic achievement, Griffiths (2020) utilized a CoI engagement survey.

Analysis of the survey item responses indicated that, with online graduate learners, there was no

significant correlation between engagement and academic achievement. However, Griffiths

(2020) reported that the results indicated that the design and organization of a course and course

content were important in engaging online students.

Research has shown the concept of CoI to be powerful in online learning. Having a

practical approach to building this community and facilitating meaningful experiences through

the three presences (cognitive, social, and teaching) is crucial. In her research Fiock (2020) described different instructional approaches to help build a CoI in an online learning course. To construct the different instructional approaches, Fiock (2020) utilized Sorensen and Baylen's (2009) seven principles of good practice. Sorensen and Baylen's (2009) seven principles include: (1) student-teacher contact, a principle focusing on the interaction between a student and instructor in an online environment; (2) cooperation among students, a principle for effective teaching focusing on cooperation among students; (3) active learning, a principle emphasizing the importance of students to engage in meaningful learning activities and reflection on the process; (4) prompt feedback, a principle focusing on giving guidance and feedback to ensure students are on the right track in terms of meeting course learning objectives; (5) time on task, a principle concentrating on giving students assistance and guidance for managing their time in an online environment; (6) communicate high expectations, a principle based on the theory that when instructors communicate to their students about high expectations for the course, students will aim to meet these expectations; and (7) respect diverse ways of learning, a principle ensuring instructors are developing and implementing a wide variety of instructional strategies to meet the diverse population of students (p. 71).

For instructional designer and practitioner's purposes, Fiock (2020) took the additional step of sorting activities within each principle of good practice into a specific presence category. For example, the first principle of student-teacher contact had instructional activities broken into the CoI presences of social, cognitive, and teaching. The table of instructional activities is detailed and comprehensive. However, the strength of a CoI comes in the ability of the presences to interplay with each other. The CoI framework is currently becoming a concrete asset for creating online environments and thus meeting the issues online courses and programs

are experiencing (e.g., the disconnect between students and their instructors, and students and their peers) (Moskal, Dziuban, & Hartman, 2013). The cognitive, social, and teaching presences work together in an overlapping, interdependent method to help students gain deep levels of community to support individual learning (Szeto, 2015).

Kozan and Richardson (2014) also investigated the inter-relationships between all the presences. They concluded that there was strong inter-relatedness among all the constructs (Kozan & Richardson, 2014). In their analysis, it was suggested that efforts to increase one presence might also impact other presences and that the inter-relatedness of the presences can change over time. This idea falls in line with Swan et al. (2008) suggestion that the CoI framework represents a dynamic model for learning online over time.

As meaningful and powerful as the CoI framework is to online learning, it is not without criticism. CoI model critics have challenged the power of each of the three presences in the CoI model and their role in student engagement. For example, Griffith (2020) describes critics challenging social presence and its importance to learning outcomes and community connection. Additionally, there have been critiques about the power of cognitive presence in creating deep and meaningful learning experiences, but that students engage in lower levels of inquiry (Rourke & Kanuka, 2009). Arbaugh, Bangert, and Cleveland-Innes (2010) argued that cognitive presence might be better adapted for "soft" (p. 42) disciplines. Arbaugh et al. (2010) reasoning for this is because "hard" (p. 42) disciplines are more content-based, and knowledge is directly delivered versus reflective and discussion-based learning in "soft" (p. 42) disciplines. Along with these studies, Rourke and Kanuka (2009), in their review of research, identified some specific downsides to the CoI. Two areas specifically identified by Rourke and Kanuka (2009) dealt with deep and meaningful learning and cognitive presence arising because of the CoI.

Engagement and Gender

Distance education is gendered and even with women outnumbering men, the specific needs of this group of learners are not being taken into account (Gnanadass & Sanders, 2019). Thompson (2021) wrote, "American colleges and universities now enroll roughly six women for every four men" (para. 1). This ratio represents the largest gap in the history of higher education. Thus, investigating the ways women and men engage in online learning has become an important issue to examine (Morante, Djenidi, Clark, & West, 2017). Over two decades ago, Jacobs (1996) noted that researchers had not paid enough attention to the role gender played in higher education, particularly when researching males, and there have been few efforts to fill the gap in the interim (Lester & Harris, 2015), particularly for doctoral students (Gardner & Barker, 2015).

Examining adolescent achievement and gender differences is not a new concept. Eccles-Parsons, Adler, Futterman, Goff, Kaczala, and Meece (1983) developed a model to explain gender differences in academic achievement. What they found was that students were more likely to be engaged in academic activities within a range of perceived ability to successfully perform them and their enjoyment of the activity (Korlat, Kollmayer, Holzer, Luftenegger, Rosa Pelikan, Schober, & Speil, 2021). This is important as academic achievement is influenced by many social factors (Eccles, 2009), especially teacher support in an online learning setting.

When examining learning and engagement, it is important to note that research suggests men and women seem to learn differently in the online environment. McKnight-Tutein and Thackaberry (2011) noted a strong body of evidence that suggested women learned differently from men, which made women inherently more successful in the online learning environment. Price (2006) also found that women were significantly more academically successful than men in an online version of a course and completed the course at a higher percentage than men. Another

study done by Selwyn (2007) found that female students were more receptive than male students in an online course. Caspi, Chajut and Saporta (2008), sought to examine participation differences in online classroom discussions. More specifically, Caspi et al. (2008) wanted to examine two learning environments, the traditional university classroom and the web-based instructional environment, and assess if this affected participation by gender. Their analysis showed that "men over-proportionally spoke at the face-to-face classroom whereas women over-proportionally posted messages in the web-based conference" (p. 718).

Morante et al. (2017) examined gender differences in online participation. In their literature review, Morante et al. (2017) summarized that patterns of engagement for women tended to be task oriented, personal, and collaborative and that women used communication with other students as a motivator for learning. Men, Morante et al. (2017) found, were more detached online and used the acquisition of new skills as the motivator to learn. For this study, the researchers observed a small cohort of students in a humanity course and an online introductory mathematics course. To gather information related to participation, Morante et al. (2017) utilized reports from Blackboard Learn, online discussion boards, and an online discussion forum called "History Matters Blog." The results of the study showed that females who engage more with the learning community achieve better results (Morante et al., 2017). For men, the results for the history course mimicked those of females, but the mathematics course did not show the same results. Morante et al. (2017) noted that setting up online learning environments that allow students to interact in different ways may facilitate better male engagement and participation. Ultimately, Morante et al. (2017) described engagement as a "highly individual and complex activity" (p. 289) and that "the differences between how men

and women engage varied between the two courses, suggesting that engagement is multifaceted"
(p. 289).

Research investigating interaction (learner-to-learner, learner-to-instructor, learner-to-content), has shown learner-to-instructor and learner-to-content as significant predictors of student satisfaction in an online learning course (Kuo & Belland, 2016). Regarding online learning satisfaction, men and women perceive their success through interactions and relationships with instructors (Anderson, 2011; Micari & Pazos, 2012). However, instructor support is vital to women in an online learning environment (Weatherly, 2011), and Anderson and Haddad (2005) found that women experienced greater expression of voice, which led to deeper online learning – this was not the case with men.

With these differences in both learning preferences and participation, it becomes important for instructors and designers to consider how an online course, learning module, or lesson is constructed for learners based on gender. In their literature review, Garland and Martin (2005) noted observations from both Coombs (2000) and Dede (1996). Coombs (2000) described online tools as being beneficial for all students, and the web allows students to think more about what is being discussed and allows students the opportunity to compose thoughts. Dede (1996) further pointed out, "The most significant influence on the evolution of distance education will be not the technical development of more powerful devices, but rather the professional development of wise designers, educators, and learners" (p. 34).

Garland and Martin (2005) found that when designing online courses, designers should be "aware of how discussions, chats, and groups are affected by gender, keeping in mind that required postings might be intimidating to some female students" (p. 77). They found that group assignments and discussion assignments offer good learning opportunities to both males and

females. Lastly, Garland and Martin (2005) wrote, "The finding that gender can be a factor in online learning supports the need for including gender equity in building and designing courses and programs" (p. 77).

Online Graduate Student Engagement

Few studies have provided in-depth perspective and research into online learner engagement (Farrell & Brunton, 2020). According to Bryan, Lutte, Lee, O'Neil, Maher, and Hoflund, (2018), "while the student engagement literature is well established, the literature on student engagement specific to distance education is limited, yet increasingly a focus of research" (pp. 1-2). However, research has shown that students engaged in online learning tend to complete their courses and graduate (Meyer, 2014). According to Khan, Egbue, Palkie, and Madden (2017):

> It is essential that we continue to develop higher education in ways that promote effective forms of student engagement. The student engagement is particularly important in relation to learning that is supported online, given the challenges associated with retention in online courses (p. 217).

Thus, creating a successful online environment requires engaging students in learning (Dixson, 2010).

Gonzalez and Moore (2020), using a mixed-methods approach, sought to investigate faculty and graduate student perceptions of what contributes to creating an engaging online environment. For their study, Gonzalez and Moore (2020) surveyed 82 graduate-level students and 13 graduate-level instructors from a mid-sized university in the northeastern United States. Participants were given an electronic survey and a four-question semi-structured interview. Survey results, when comparing students and instructors, showed some significant differences.

Students rated, in order from highest to lowest importance of engagement, feedback (91.4%),

organized and structured environment (87.6%), communication (84%), text-based tools (83.3%),

and a variety of instructional methods (70%) (Gonzalez & Moore, 2020). Faculty rated, in order

from highest to lowest importance of engagement, text-based tools (100%), feedback (92.3%), a

variety of instructional methods (92.3%), communication (92.3%), and an organized and

structured environment (84.6%) (Gonzalez & Moore, 2020).

Analysis from the study showed a definite emphasis placed upon social presence,

interaction, and communication from both the student and instructor sides on the qualitative side

of the research. In the interview process, Gonzalez and Moore (2020) found that "students

perceived that faculty should be the guiding presence in the formation of these relationships with

faculty initiating and organizing these interactions" (p. 231). Additionally, students felt that the

faculty need to take a more active role or have a more active presence in the learning process.

Gonzalez and Moore (2020) noted that students who felt instructors were passive in the learning

process felt they were doing the teaching themselves and were less engaged in the course.

Aimiuwu (2019) also investigated the online graduate student perspective. To do this,

Aimiuwu (2019) examined 11 active teaching techniques to keep online students engaged. The

11 teaching techniques were professor interaction, syllabus use, student login, professor social

presence, attendance and punctuality, student participation, energizing the students, tests and

assessments, grading, online communication, and internet access and computer centers.

According to the results from this study, Aimiuwu (2019) noted that for students to be engaged

in online learning, instructors need to be prepared, need to be creative, and need to be able to

communicate with learners effectively. Being prepared, according to Aimiuwu (2019), means

that instructors have adequate expertise in the field or subject matter. Professors need to be able

to use their expertise to interact with students 2-3 times per week and use these interactions to build relationships with students. According to Aimiuwu (2019), being creative means that the instructor creates a syllabus, uses communication, and assesses in unique ways. Aimiuwu (2019) noted that students should log onto the online platform at least 2-3 times weekly to respond to discussions or assignments.

Holzweiss et al. (2014) examined the perceptions of online master's students regarding their learning experiences. Holzweiss et al. (2014) wrote, "Despite the use of similar instructional techniques, differences may be inherent between how graduate and undergraduate students learn. At a basic level, expectations for learning are different" (p. 313). To measure this, the researchers developed an instrument and planned to collect information on the learning environment and social aspects of online graduate students. The instrument incorporated many elements from Dixson's (2010) measurement tool and had a qualitative data element. The research team gathered data from 86 students of varying demographics.

Based on their data and analysis, Holzweiss et al. (2014) reported that the results overwhelmingly showed learners responding best to academic programs that serve as a community of practice. Holzweiss et al. (2014) described a community of practice as a place where members gradually become integrated as more learning is done. As this happens, learners in the community participate in analysis and reflection with other members to create new knowledge. Along with this, the researchers highlight that establishment of community is critical to the success of online student learning for "purposes of both engagement and construction of knowledge" (Holzweiss et al., 2014, p. 320). The researchers advocated for graduate students to be reflective in their learning, that some type of professional development be built into online course work, and that students need a guide with their learning and

engagement. Holzweiss et al. (2014) describe the importance of providing students with positive encouragement and reinforcement, as well as guidance regarding practices that can lead to academic and professional progress.

King (2014) also sought to examine online graduate student perceptions regarding engagement practices. For this study, King (2014) decided to examine online course management features like course announcements, emails from the instructor, and discussion board postings and how they affected student engagement. Effects of management features were measured against four factors of student engagement identified by Handelsman, Briggs, Sullivan, and Towler (2005). Those four factors include skills, such as studying and reading materials; emotional, like making the course interesting and relevant; participation/interaction, like asking questions and participating in discussions; and performance, like receiving a good grade in the class (King, 2014).

For the study, King (2014) had 26 graduate-level students complete a questionnaire with four sets of Likert-scaled questions relating to the engagement areas of participation, performance, studying, and relevance. Based on the results and analysis, King (2014) noted that many course management features were rated as extremely important or very important. Specifically, students in the study valued contact with the instructor, information about assignments, course materials, and grades. Of note, as well, were the features that students least valued, which included chat sessions and discussions with other students.

Along with the King (2014) study, Cundell and Sheepy (2018) investigated graduate student perceptions on what were the most effective and engaging online learning activities. To identify effectiveness and engagement the students rated online activities using four criteria. Those criteria were alignment with the course learning outcomes, deep learning, engagement,

and value. To gather data, Cundell and Sheepy (2018) had students complete a questionnaire divided into three sections. The first part focused on student information about their studies, motivations for taking the course, motivations for taking a blended learning course, and their general feelings about online learning. The second section of the questionnaire dealt with student perceptions of online activities. For this section, the students rated 19 online activities. The third section asked students to evaluate the online course. Questions from this section dealt with course navigation, clarity of instruction and expectations, availability of materials, instructor presence, and technical quality of the media (Cundell & Sheepy, 2018).

Based on the results and their analysis, Cundell and Sheepy (2018) described students as finding "passive activities" (p. 99) as not as effective. Passive activities were described as videos and readings that lacked the structure of other activities that might involve student collaboration or learning from peer interactions. However, the researchers identified "peer-review-type activities" (p. 99) as being rated effective by students. Lastly, Cundell and Sheepy (2018) wrote, "above all, the design of online activities should prioritize learner-learner interaction in ways that promote thinking at the highest levels of Bloom's taxonomy through social, collaborative, cognitive, and behavioral engagement" (p. 100).

The learning experience is important to online students and can contribute to increased engagement. Another study similar to Holzweiss et al. (2014) examined student perception. However, this study by Boling, Hough, Krinsky, Saleem, and Stevens (2012) examined what promotes a positive learning environment for online students. For this study, Boling et al. (2012) looked at course content, tasks, and pedagogical approaches, as identified by learners and instructors, that contributed to or hindered the online learning experience. To gather data, researchers interviewed six online instructors and 10 adult students to understand their

experiences. Along with these interviews, the research team utilized the Cognitive

Apprenticeship Model (CAM) to explore what components make up an effective online learning

environment.

Based on their interviews and application of CAM, Boling et al. (2012) described

participants as viewing courses that emphasized text-based content, individualized learning, and

limited interaction with others as less helpful than interactive and incorporated the use of

multimedia. Boling et al. (2012) wrote, "In courses that offered little to no interaction with

others, students reported feeling disconnected with their instructors, the course content, and their

fellow classmates. The majority of participants' online experiences reflected experiences that fit

this model" (p. 120). This connection or social theme was a major finding of this study and

prevalent in many student interviews. Thus, much work and learning are needed to be done

regarding how instructors and instructional designers can create effective and highly interactive

online social learning communities (Boling et al., 2012).

Carr (2014), in addressing some of the same themes, also looked to examine perception

in the online graduate teaching and learning environment. Carr (2014) described online course

development and highlighted the necessity of instructors to be careful and purposeful in their

planning. Carr (2014) wrote, "Online course design continues to be pivotal in the success of

online interactions and student engagement" (p. 107). Along with this, and echoing previous

research, Carr (2014) pointed to her data as supporting the idea that the most effective way to

enhance online learner engagement was through instructor visibility through interactive sessions

and video conferencing. Lastly, she noted, "Online course delivery is a valuable method of

teaching but it requires an organized course format and delivery; an instructor who is

knowledgeable in the environment; and students that are aware of the responsibilities and additional demands of the online setting" (p. 110).

With graduate-level learners, engagement can look different from younger students. These students may have certain requirements and restrictions from supporting a family, economic or time constraints, and different learning styles (Dixson, 2010). Rabourn et al. (2018) reported finding adult learners were typically more engaged than more traditional-aged college students. However, even the most talented professors may not be able to reach the most talented doctoral students without implementing engagement interventions that allow them to interact in meaningful ways (Lawson & Lawson, 2013; Miller, 2012). Higher learning organizations often approach undergraduate and graduate engagement with students in different ways because many institutions of higher learning assume that, having made it that far, graduate and post-graduate students have already developed the abilities and coping skills necessary to achieve at higher levels (Gardner & Barker, 2015). However, engaging graduate students likely requires specialized engagement strategies that are different from undergraduate practices (Pontius & Harper, 2006).

Experiences of online graduate students were the theme Farrell and Brunton's (2020) research. Unlike some other studies, Farrell and Brunton (2020) relied upon learning portfolios and semi-structured interviews to gather data. The learning portfolio acted as a visual and written journal for the students throughout the learning year. Students completed five entries over a year relating to their learning experiences. Results were generated from both interviews and learning portfolios. The researchers were able to construct five themes upon analyzing the data. Those themes were: peer community, module support, studying while balancing life commitments, confidence, and my approach to learning (Farrell & Brunton, 2020).

Farrell and Brunton (2020) noted that online student engagement is affected by socio-cultural influences, structural influences, and psychosocial influences. The researchers, in their analysis, described that being a successful online learner depended on the "structural influence of lifeload" (p. 15) and that the most challenging aspect of being an online learner came from balancing studies and high value time-commitments. This finding fits other research done by Brown, Hughes, Keppell, Hard, and Smith (2015) and Kahu, Stephens, Zepke, and Leach (2014). Farrell and Brunton (2020) noted that a key psychosocial influence on online student engagement came from interaction with the peer community, feelings of belongingness, and support. Additionally, the researchers described other elements as being important to engagement for online learners. These elements included: time management and organizational skills; engaging and supportive online teachers; multiple means of interaction; and opportunities for skill development, confidence building, and self-regulation (Farrell & Brunton, 2020).

In another recent study, Paulsen and McCormick (2020), sought to examine some of the elements that seem to effect the engagement of online learners. Paulsen and McCormick (2020) wrote, "For most facets of engagement, there is no inherent reason to expect differences related to course delivery modality. Yet equivalence should not be assumed, and efforts to assess the educational effectiveness of online learning should investigate the impact of delivery modality on student engagement" (p. 21). In their research, Paulsen and McCormick (2020) noted the positive characteristics of both online learners and face-to-face learners in terms of student engagement. For example, positive benefits for online learners versus face-to-face learners, with regard to engagement, included perceived academic challenge, learning gains, satisfaction, and better study habits (Paulsen & McCormick, 2020). However, with face-to-face learners, there

were perceived benefits of higher environmental support, more collaborative learning, and more faculty interaction (Paulsen & McCormick, 2020).

Unlike other studies and one of the biggest differentiating factors in their work, Paulsen and McCormick (2020) examined demographic variables and how those factors influenced engagement with online and face-to-face learners. For the study, Paulsen and McCormick (2020) examined online and face-to-face learner factors like age, parents' highest education level, single-parent status, student enrollment pattern, and employment while enrolled. They then used propensity score matching as a means of comparing the groups of learners with varying demographic characteristics. In using propensity score matching, the researchers were able to understand better how elements like collaborative learning, quality of interactions, supportive environments, student-faculty interactions, learning strategies, higher order learning, and reflective and integrative learning were enhanced in purely online or face-to-face learning. Based on their analysis, Paulsen and McCormick (2020) identified two critical needs for enhancing the engagement of online learners. Those needs included overcoming obstacles to collaborative learning among students studying at a distance and overcoming limitations inhibiting meaningful interactions with faculty (Paulsen & McCormick, 2020).

Another element affecting engagement in graduate online learners is the sense of connectedness. Bolliger and Inan, (2012) wrote, "Connectedness refers to a person's belief that a relationship exists between him or her and at least one other individual. Connectedness includes a person's sense of belonging or presence, feelings of support, and level of communication/interaction with another person" (p. 43). LaBarbera (2013) suggested that a sense of community or connectedness is important to student success and satisfaction in online learning and that students who have a stronger sense of community or connectedness was more

likely to succeed and feel satisfied than those who are disconnected. Schoen (2021) also studied the relationship between connectedness and online student engagement. The findings of her research showed that student engagement could be increased with higher levels of connectedness. Schoen (2021) noted that instructors often seek to try new instructional strategies and tools to increase student engagement within the course. However, Schoen's (2021) research provided evidence that increasing a feeling of connectedness to the online learning environment may be more beneficial in increasing student engagement than simply the instructional tools and strategies utilized within online graduate education.

Seligman (2012) described learning for undergraduate and graduate students as different and explained that undergraduate students learn more foundational content than compared to graduate students, whose focus is more on advanced content and specific professional skill-building. Gansemer-Topf, Ewing Ross, and Johnson (2006) suggested that graduate students learn best when combining knowledge acquisition, personal investment of energy, time, and involvement with peers and faculty. For graduate students, Gansemer-Topf et al. (2006) emphasized peer relationships and a sense of belonging as important for academic success. When combined with knowledge of a specialized field, the multiple perspectives gained through these connections can propel graduate students to higher levels of learning and understanding (Gansemer-Topf et al., 2006).

Kuczero (2019) described the research on student engagement in higher education as tending to focus more on large groups of participants and making more generalizations. However, Bandura (2006) and Kuczero (2019) have both referred to engagement as being a more personal construct. Identifying the perfect balance of the type of engagement strategies to achieve learner engagement at the graduate-level could therefore differ based on the person,

gender, program of study, or program level. Bandura (2006) argued for a more personal approach to explore engagement. Graduate students are usually afforded opportunities to provide input into how a lesson flows or the outcomes of their work by modifying and enriching learning activities (Reeve & Tseng, 2011).

Lay-Hwa Bowden, Tickle, and Naumann (2021) described many positive outcomes related to student engagement. Specifically, they highlighted five outcomes related to student engagement. Those outcomes included: institutional reputation, student wellbeing, transformative learning, self-efficacy, and self-esteem. As online learning continues to grow, it is crucial that educators and instructional programs develop a better understanding of the needs of their students. This is especially true of graduate-level students in online doctoral programs, where levels of attrition range from around 50 percent to as high as 70 percent (Gittings, Bergman, Shuck, & Rose, 2018; Spaulding & Rockinson-Szapkiw, 2012).

Allen and Seaman (2013) believed universities should make better efforts to improve institutional conditions meant to retain students throughout their graduate studies. Whether it be educators having a clear understanding of their role in the learning process or being proactive in identifying the specific needs of learners, research shows the power they have in helping learners achieve their fullest potential. For example, Swan, Shea, Fredericksen, Pickett, Pelz, and Maher (2000), in describing the online setting, noted that faculty interaction with students is created through high-quality, frequent, and timely faculty communication. Along with this, the quantity and quality of instructor interactions with students in online courses have been linked to student learning (Swan, 2003) and satisfaction with the course (Swan et al., 2000).

Along with keeping learners persistent and in school, high student engagement also has the chance to affect life outside of the classroom setting. Nyquist and Woodford (2000) reported

that doctoral students who experienced higher levels of student engagement while in school had a professional advantage after graduation when it came to employment opportunities, access to funding for research, access to privileged research, and opportunities for paper presentations due in part to better networking while pursuing their degrees. Increased engagement during graduate school helped promote professional expertise later on in solving real-world problems in local communities (O'Meara, 2008). O'Meara (2008) wrote, "Embedding engagement in graduate education will attract students who are eager to envision careers that open doors between universities, disciplines, and the world" (p. 40).

Summary

The purpose of this literature review was intended to serve multiple purposes. Firstly, the intent of the researcher was to highlight literature associated with online learning and overall student engagement. Next, the researcher intended to describe the community of inquiry and its relationship to online learning, engagement, and interaction. Then the researcher discussed literature associated with gender and student engagement. Lastly, the researcher provided literature associated with online graduate students and engagement.

The literature has revealed disparities in the body of knowledge when it comes to understanding engagement levels among graduate-level students in online learning environments. This is especially notable when considering that online programs at high learning levels are gaining in both popularity and number. The literature also points to the impact educators can have on the engagement of students and the overall academic success of those learners. Additionally, the literature points to differences in levels of engagement for students having significant impacts later in life, and thus, significant relevance for understanding current

levels of engagement. More research is needed to understand student engagement in online graduate programs and which strategies contribute best to learners' academic success.

Chapter 3

Methods

The current descriptive and exploratory quantitative study gathered perceptions of online graduate-level learners at Baker University using a slightly modified version of the Online Engagement Strategies Questionnaire (OESQ) to examine which types of student engagement were perceived as most important for their learning experience, and which strategies were most important for fostering those types of student engagement. The first purpose of the study was to describe the mean level of perceived importance for learner-to-learner, learner-to-instructor, learner-to-content types of interaction or student engagement for all graduate-level online learners at Baker University, then disaggregated by gender (female or male), content area of program (business, education, or other), and by degree level within the education program (doctoral or master's). The second purpose was to explore which of the three types of student interaction or engagement were perceived as most important for all graduate-level online learners at Baker University, as well as by gender (female or male), content area of program (business, education, or other), and by degree level within the Education program (doctoral or master's).

The third purpose of the study was to describe the mean level of perceived importance for strategies aimed at achieving learner-to-learner, learner-to-instructor, learner-to-content types of student interaction or engagement for all graduate-level online learners at Baker University, then disaggregated by gender (female or male), content area of program (business, education, or other), and by degree level within the education program (doctoral or master's). The fourth purpose was to explore which strategies aimed at achieving the three types of student engagement were perceived as most important for all graduate-level online learners at Baker University, as well as by gender (female or male), content area of program (business, education,

or other), and by degree level within the education program (doctoral or master's). Chapter 3 describes the methodology used to conduct the study and is organized into six sections: research design, selection of participants, measurement/instrumentation, data collection procedures, data analysis and hypothesis testing, limitations, and summary.

Research Design

A quantitative descriptive exploratory research design was used for the current study. Lunenberg and Irby (2008) wrote that descriptive research was "one of the most basic forms of research" (p. 30), but also noted that this type of research was not unimportant. Descriptive research involves the happening and phenomena of the world in which we live and examined through the perspective of the researcher and participant (Lunenberg & Irby, 2008). This design was appropriate for the current study because, from the descriptive sense, data was gathered quantifying the importance of engagement types and strategies. That information was then summarized for the whole and different sub-groups of interest. From the exploratory sense, the design was appropriate because this methodological approach investigates research questions that have not been studied in depth. Exploratory research is often qualitative form; however, a study with a large sample conducted in an exploratory manner can be quantitative, as well. The independent variables of student gender, content area of students' graduate program, and the degree level of the degree being sought were preexisting and were not manipulated by the researcher. The three independent variables were categorical and used to group and describe the dependent variables measured by the responses to quantitative survey items administered to online graduate students.

The first categorical independent variable was gender. Gender options in the survey were female, male, or prefer not to answer. The second categorical independent variable was the

content area of the program. The content areas were broad and included students in online graduate education programs, business programs, and others. Other programs included nursing, organizational leadership, and sports management. The third categorical independent variable was level of degree being sought within the online education graduate programs of study. Students could be in either the master's track or doctoral track of the online educational programs. The dependent variables for four of the eight research questions were group means of item responses for the perceived level of importance for strategies within each of the student engagement type subscales of learner-to-learner, learner-to-instructor, and learner-to-content. The dependent variables for the other four research questions were the group means of those item means for the learner-to-learner, learner-to-instructor, and learner-to-content engagement type subscales, as measured by the modified Online Engagement Strategies Questionnaire (OESQ).

Selection of Participants

The identified population for the current study consisted of all active graduate-level students enrolled in an online program of study during the spring of 2022 at Baker University. Baker University, located in Baldwin City, Kansas, was founded in 1858 and was the first 4-year university in the state. Baker University offers learners various degrees from their College of Arts and Sciences, School of Education, School of Nursing, and School of Professional and Graduate Studies. Additionally, learners can choose learning formats like hybrid, on-campus, or online. As of Fall 2021, Baker University offered online graduate-level degrees in multiple programs. Specifically, Baker University offers online master's and doctoral degree programs in education, business, and nursing. Altogether, within the Baker online graduate programs, there

were 673 students. Of those 673 students, 456 (68%) were female, and 217 (32%) were male (E. Hays, personal communication, November 17, 2021).

For the graduate-level study of education, Baker University offers master's and doctoral levels of degree-seeking programs. The online graduate-level degree programs include Doctor of Education in Instructional Design & Performance Technology, Doctor of Education in Educational Leadership, Master's of Science in Instructional Design & Performance Technology, Master's of Arts in Education, Master's of Science in Special Education, and Master's of Science in Student Affairs for Leadership in Higher Education. As of fall 2021, the Doctor of Education in Instructional Design & Performance Technology program had a total of 97 students, and the Doctor of Education in Educational Leadership program had 118 students. In online doctoral education programs, there was a total of 215 students, with 167 (78%) female and 48 (22%) male (E. Hays, personal communication, November 17, 2021). The Master's of Science in Instructional Design & Performance Technology program had a total of 18 students, in the Master's of Arts in Education program there were 94 total students, the Master's of Science in Special Education program had 24 total students, and the Master's of Science in Student Affairs for Leadership in Higher Education program had a total of 8 students. In online master's education programs, there was a total of 144 students, with 124 (86%) female and 20 (14%) male (E. Hays, personal communication, November 17, 2021). In total during the fall of 2021, for online education-related graduate-level programs there were a total of 361 students. Within these programs, 291 or 81% were female students, and 70 or 19% were male students.

The Master's of Business Administration had a total of 228 students in the program as of fall 2021 (E. Hays, personal communication, November 17, 2021). Within this program, 119 (52%) were female and 109 (48%) were male. The 'other' category of graduate online learners

encompassed students in various degree levels and programs. Those programs included: Master's of Arts in Organization Leadership, Master's of Science in Sports Management, and Master's of Science in Nursing. Within these programs during the fall of 2021 there were a total of 84 students. Of that 84 total students, 46 (55%) were female, and 38 (45%) were male (E. Hays, personal communication, November 17, 2021). For the current study, all 673 online graduate-level learners from all program content areas received a survey. The sample analyzed for this study consisted of responses from those students who completed and submitted the survey.

Measurement

To measure online graduate student engagement, a slightly adapted form of Martin and Bolliger's (2018) Online Engagement Strategies Questionnaire (OESQ) was used to identify strategies graduate-level online learners perceived to be most important in learner-to-learner, learner-to-instructor, and learner-to-content types of student engagement. The OESQ was designed by Martin and Bolliger (2018) and based on previous work done by Moore (1993a) and Fredricks et al. (2004). The detailed definitions of the three student interaction types by Moore (1989) provided the framework for the OESQ (Martin & Bolliger, 2018).

Martin and Bolliger (2018) described the first type of student interaction, learner-to-learner, as precious for online learning and student engagement, suggesting that building activities to enhance engagement was essential to prevent online students from experiencing potential boredom and isolation in the learning environment. It was the belief of Martin and Bolliger (2018) that participating in these activities could assist students in feeling connected and creating a dynamic sense of community. Regarding learner-to-learner interaction, Moore stated

in 1989 that learner-to-learner interaction were "a new dimension of distance education that will be a challenge to our thinking and practice in the 1990s" (p. 5).

The second type of student interaction, learner-to-instructor, was deemed important by Moore (1989) because the instructor can stimulate or maintain the student's interest in the content being taught. The instructor can also enhance the motivation of the student to learn and can enhance or maintain the learner's interest by encouraging self-direction and self-motivation (Moore, 1989). Regarding learner-to-instructor engagement, Martin and Bolliger (2018), in citing Dixson (2010) and Gayton and McEwen (2007), noted that this type of interaction can lead to high student engagement and that using multiple student-instructor communication channels may be highly related to student engagement.

The third type of student interaction, learner-to-content, Martin and Bolliger (2018) highlighted the need for online instructors to be critical in choosing material or content when they wish to engage students more in their courses (Martin & Bolliger, 2018). "Online students should not merely be given a list of resources; instead, instructors should design authentic activities that provide opportunities to examine the tasks from different perspectives and that encourage students to wisely use relevant information in the process" (Martin & Bolliger, 2018, p. 209). Moore wrote that learner-to-content interaction "is a defining characteristic of education. Without it there cannot be education, since it is the process of intellectually interacting with content that results in changes in the learner's understanding, the learner's perspective, or the cognitive structures of the learner's mind" (1989, p. 2).

Martin and Bolliger (2018) described student engagement as being crucial to the success of online classes because online learners seem to have fewer opportunities to be engaged with the institution at which they are learning; they need to have multiple opportunities for different

types of interactions to build or facilitate engagement. For their research, Martin and Bolliger

(2018) investigated online engagement strategies related to learner-to-learner, learner-to-

instructor, and learner-to-content types of student interactions. Martin and Bolliger (2018)

highlighted the importance of each type of engagement for the online student learning process as

the OESQ was developed. The OESQ, in its development stages, was reviewed by five members

of an expert online teaching panel in higher education (Martin & Bolliger, 2018). The panel was

provided with copies of the instrument and could make changes to items within the survey.

Martin and Bolliger's (2018) instrument was divided into three sections. The first section,

Likert-type questions 1-10, dealt with engagement strategies centered around learner-to-learner

interactions. The second section, Likert-type questions 11-20, dealt with engagement strategies

centered around learner-to-instructor interactions. The third section, Likert-type questions 21-

29, dealt with engagement strategies centered around learner-to-content interactions. The OESQ

was developed after "conducting an intensive literature review on student engagement in higher

education" (Martin & Bolliger, 2018, p. 210).

Martin and Bolliger (2018) administered the OESQ to a random sample of online

students from eight universities across the United States. The final version of the OESQ

instrument included 38 questions: 29 Likert-type items with response options ranging from 1

(very unimportant) to 5 (very important), three open-ended questions, and six demographic

questions. The open-ended questions pertained to students' opinions of the most valuable online

engagement strategies, students' opinions of the least valuable online engagement strategies, and

any other engagement strategies not included in the questionnaire that students believed to be

beneficial. The demographic questions included age and gender, current student status, number

of online courses completed, and discipline and major. Based on the data collected and analyzed

with the OESQ, Martin and Bolliger (2018) determined that all three types of student interactions, learner-to-learner, learner-to-instructor, and learner-to-content, were important to online student engagement. The Cronbach's alpha coefficients were calculated to ensure the OESQ's internal reliability. The instrument had an internal reliability coefficient of .87, and the reliability for each of the three subscales was deemed satisfactory. The Cronbach's alpha coefficient for the learner-to-learner subscale was .74, the Cronbach's alpha coefficient for the learner-to-instructor subscale was .73, and the Cronbach's alpha coefficient for the learner-to-content subscale was .73 (Martin & Bolliger, 2018).

Communication was sent via email to Dr. Florence Martin on July 12, 2021, to attain permission to modify and use the Online Engagement Strategies Questionnaire (OESQ) for the current study. Approval to adapt and use the OESQ was received from Dr. Florence Martin on July 13, 2021 (see Appendix C.). The modified OESQ measurement tool for the current study included 32 total items: 29 Likert-type items with response options ranging from 1 (very unimportant) to 5 (very important), three other Likert-type items with response options ranging from 1 (not at all) to 5 (very much), and three demographic questions. The demographic questions were used to determine each survey participant's gender, graduate program content area, and level of degree groupings. The 29 Likert-type items of the OESQ were divided into three categories. Items 1-10 were related to engagement strategies addressing learner-to-learner interaction type. Items 11-20 were related to engagement strategies addressing learner-to-instructor interaction type. Items 21-29 were related to engagement strategies addressing learner-to-content interaction type. The modified OESQ measurement tool can be found in Appendix B.

Data Collection Procedures

An application to conduct research was submitted to the Baker University Institutional Review Board (IRB) on May 13, 2022, and the IRB committee approved the request on May 24, 2022 (see Appendix D). After permission to conduct the study was granted, the researcher emailed the registrars for the Baker University School of Professional & Graduate Studies and the Baker University School of Education on May 26, 2022 (see Appendix E). The OESQ was administered electronically through a Google Form to collect data from students regarding student engagement strategies and interaction types in online graduate programs at Baker University. The student survey link was distributed via email on June 13, 2022 to 673 online graduate-level learners. The email message provided a description of the study and an informed consent statement with instructions for the completing the modified OESQ (Appendix F).

The informed consent included a description of the current study and an explanation of the protections for participants. This stated that the survey was voluntary, confidential, and that no participant would encounter psychological, social, physical, or legal risk. Students were also informed that no participants would be subjected to stress, no participant would be deceived or misled, and that no participant would be requested to provide personal or sensitive information. Lastly, the informed consent statement included language notifying the participant that no aspect of the data would be made part of any permanent record that would be identified with the participant, that the completion of the survey would indicate consent to participate in the research, and that participants had the right not to answer any question or to discontinue participation at any time.

The survey instructions and protections for participants were also listed at the beginning of the student survey. Students, using personal devices, clicked on the link to the Google Form

and completed the survey. Submission of the completed survey indicated respondents' informed consent to participate in the study. The Google Form survey settings were adjusted to protect student anonymity and allow only one response per student. The initial survey link was sent on June 13, 2022 and a reminder link to the survey was sent on June 21, 2022. The survey closed on June 28, 2022. The data gathered from the Google Form was exported to a Google Sheet, saved on a password-protected online account, and downloaded to a password-protected computer as an excel document. Data were imported into the IBM SPSS Grad Stats Pack Version 26 for statistical analysis. The data collected was analyzed, and the resulting information was used to answer the research questions. All records and collected data from the current study will be kept for three years, then deleted or destroyed.

Data Analysis

Data from the Google Form student survey were downloaded and imported into IBM SPSS Grad Stats Pack Version 26. The respondents (all Baker University online graduate students) rated, through a Likert-type scale, each engagement strategy under learner-to-learner, learner-to-instructor, and learner-to-content interaction type sections. For the Likert-type scale, 5 equaled very important, 4 equaled important, 3 equaled neither important nor unimportant, 2 equaled somewhat important, and 1 equaled very unimportant. A mean and standard deviation was calculated for each strategy using respondents' perceived level of importance from the Likert-type scale. Means for each strategy under the three interaction types were then used to calculate means and average standard deviations for the learner-to-learner (items #1-10), learner-to-instructor (items #11-20), and learner-to-content (items #21-29) subscales for all online Baker University graduate-level students, then by gender, content area, and degree level within the education program. To calculate the means and standard deviations for the various sub-groups

of interest, each sub-group was selected and calculations were performed for only those respondents included in the sub-group. After calculations for all online graduate respondents, females' then males' item and subscale means and standard deviations were calculated, followed by respondents in the business, education, and other program areas. The master's and doctoral degree level sub-group calculations were only performed for the education program respondents. The data analysis was guided by eight research questions. Each research question is listed with its corresponding statistical analysis procedures.

RQ1. What is the mean level of perceived importance for the learner-to-learner interaction for all online Baker University graduate students, and disaggregated by gender (female or male), graduate program content area (business, education, or other), and degree level within the education program (doctoral or master's)?

For RQ1, descriptive statistics (N, mean, standard deviation) for the learner-to-learner engagement subscale were calculated, summarized, and presented in table format for all online Baker University graduate students, by gender (female or male), content area (business, education, or other), and degree within the education program (doctoral or master's).

RQ2. What is the mean level of perceived importance for the learner-to-instructor interaction for all online Baker University graduate students, and disaggregated by gender (female or male), graduate program content area (business, education, or other), and degree level within the education program (doctoral or master's)?

For RQ2, descriptive statistics (N, mean, standard deviation) for learner-to-instructor subscale were calculated, summarized, and presented in table format for all online Baker University graduate students, by gender (female or male), content area (business, education, or other), and degree within the education program (doctoral or master's).

RQ3. What is the mean level of perceived importance for the learner-to-content interaction for all online Baker University graduate students, and disaggregated by gender (female or male), graduate program content area (business, education, or other), and degree level within the education program (doctoral or master's)?

For RQ3, descriptive statistics (N, mean, standard deviation) for the learner-to-content engagement subscale were calculated, summarized, and presented in table format for all online Baker University graduate students, by gender (female or male), content area (business, education, or other), and degree within the education program (doctoral or master's).

RQ4. Which of the three types of interaction (learner-to-learner, learner-to-instructor, learner-to-content) are perceived to be most important in creating a CoI for all online Baker University graduate students, as well as by gender (female or male), graduate program content area (business, education, or other), and degree level within the education program (doctoral or master's)?

For RQ4, the means for each engagement subscale of the modified OESQ for each grouping of interest (all, gender, program content area, and level of program with the education program) were displayed visually using clustered bar charts to explore potential trends or patterns in the mean levels of perceived importance for the learner-to-learner, learner-to-instructor, and learn-to-content interaction types.

RQ5. What is the mean level of perceived importance for each engagement strategy in creating learner-to-learner interactions for all online Baker University graduate students, and disaggregated by gender (female or male), graduate program content area (business, education, or other), and degree level within the education program (doctoral or master's)?

For RQ5, descriptive statistics (N, mean, standard deviation) for each of the learner-to-learner engagement strategies were calculated, summarized, and presented in table format for all online Baker University graduate students, as well as by gender (female or male), content area (business, education, or other), and degree within the education program (doctoral or master's).

RQ6. What is the mean level of perceived importance for each engagement strategy in creating learner-to-instructor interactions for all online Baker University graduate students, and disaggregated by gender (female or male), graduate program content area (business, education, or other), and degree level within the education program (doctoral or master's)?

For RQ6, descriptive statistics (N, mean, standard deviation) for each of the learner-to-instructor engagement strategies were calculated, summarized, and presented in table format for all online Baker University graduate students, as well as by gender (female or male), content area (business, education, or other), and degree within the education program (doctoral or master's).

RQ7. What is the mean level of perceived importance for each engagement strategy in creating learner-to-content interactions for all online Baker University graduate students, and disaggregated by gender (female or male), graduate program content area (business, education, or other), and degree level within the education program (doctoral or master's)?

For RQ7, descriptive statistics (N, mean, standard deviation) for each of the learner-to-content engagement strategies were calculated, summarized, and presented in table format for all online Baker University graduate students, as well as by gender (female or male), content area (business, education, or other), and degree within the education program (doctoral or master's).

RQ8. Which engagement strategies are perceived to be most important for facilitating each type of interaction (learner-to-learner, learner-to-instructor, learner-to-content) for all online Baker University graduate students, as well as by gender (female or male), graduate program

content area (business, education, or other), and degree level with the education program (doctoral or master's)?

For RQ8, the means for each engagement strategy under the learner-to-learner, learner-to-instructor, and learner-to-content interaction types for each grouping of interest (all, gender, program content area, and level of program within the education program) were displayed visually to explore potential trends or patterns in mean levels of perceived importance for strategies in creating their association type of engagement in all online Baker University graduate students, as well as by gender (female or male), content area (business, education, or other), and degree within the education program (doctoral or master's).

Limitations

Lunenburg and Irby (2008) defined limitations as "factors that may have an effect on the interpretation of the findings or on the generalizability of the results" (p. 133). For the current quantitative study, one of the biggest limitations of generalizing results was sample sizes and accurate representation of the demographic groups of the target population. Baker is a relatively small university. Therefore, the participants completing the modified Online Engagement Strategies Questionnaire (OESQ) may not have been a representative sample of all online Baker University graduate students, or the sample may not be representative of the population of students in each of the groupings examined (gender, content area, and degree level within the education program). Results are not generalizable past Baker University online graduate students as no other universities or student populations in other geographical areas were represented in the study. Data for the current study was collected using a modified version of the OESQ structured survey instrument, and due to the Likert-type response scale, less variation in responses was possible and more difficult to detect. Much of the variation within and between

groups could have been lost due to the calculations of the individual engagement strategy means and three interaction type subscales for the OESQ.

Summary

The current descriptive and exploratory study of the perceived level of importance for student interaction types and engagement strategies creating a CoI for online graduate-level students at Baker University used a modified version of the Online Engagement Strategies Questionnaire (OESQ) by Martin and Bolliger (2018) for data collection. The modified OESQ, administered electronically through a Google Form and distributed via institutional email, addresses allowed the researcher to collect data from students in online graduate programs at Baker University. Chapter 3 included a description of the research design, the selection of the targeted population, the validity and reliability of the survey instrument, the survey items, the data collection procedures, a description of the data analysis procedures, and the limitations of the study. Chapter 4 contains the results of the data analysis for each of the eight research questions.

Chapter 4

Results

The current descriptive and exploratory quantitative study gathered the perceptions of online graduate-level learners at Baker University using a slightly modified version of the Online Engagement Strategies Questionnaire (OESQ) to examine which types of student engagement were perceived as most important for their learning experience and which strategies were most important for fostering those types of student engagement. The first purpose of the study was to describe the mean level of perceived importance for learner-to-learner, learner-to-instructor, and learner-to-content types of student interaction or engagement for all graduate-level online learners at Baker University, then disaggregated by gender (female or male), content area of program (business, education, or other), and by degree level within the education program (doctoral or master's). The second purpose was to explore which of the three types of student interaction or engagement were perceived as most important for all graduate-level online learners at Baker University, as well as by gender (female or male), content area of program (business, education, or other), and by degree level within the Education program (doctoral or master's). The third purpose of the study was to describe the mean level of perceived importance for strategies aimed at achieving the learner-to-learner, learner-to-instructor, learner-to-content types of student interaction or engagement for all graduate-level online learners at Baker University, then disaggregated by gender (female or male), content area of program (business, education, or other), and by degree level within the education program (doctoral or master's). The fourth purpose was to explore which strategies aimed at achieving the three types of student engagement were perceived as most important for all graduate-level online learners at Baker University, as well as by gender (female or male), content area of program (business, education,

or other), and by degree level within the education program (doctoral or master's). Chapter 4 contains the descriptive statistics from the study and the results of the informal visual comparisons of the data analysis.

Descriptive Statistics

A quantitative descriptive exploratory research design was used for the current study. Lunenberg and Irby (2008) wrote that descriptive research was "one of the most basic forms of research" (p. 30), but also noted that this type of research was not unimportant. Descriptive research involves the happening and phenomena of the world in which we live and is examined through the perspective of the researcher and participant (Lunenberg & Irby, 2008). This design was appropriate for the current study because, from the descriptive sense, data was gathered quantifying the importance of engagement types and strategies. That information was then summarized for the whole and different demographic sub-groups of interest. From the exploratory sense, the design was appropriate because the current methodological approach investigates research questions that had not been previously studied in depth. Exploratory research is often qualitative form; however, a study with a large sample conducted in an exploratory manner can be quantitative, as well. The modified OESQ was sent to 673 Baker University online graduate students, and 76 completed surveys were submitted for an 11.29% overall response rate. The independent variables of student gender, content area of students' graduate program, and the level of the degree being sought were preexisting and were not manipulated by the researcher. The three independent variables were categorical and used to group the dependent variables measured by the responses to modified OESQ quantitative survey items administered to online graduate students.

The first categorical independent variable was gender. Gender options in the survey were female, male, or prefer not to answer. Based on the 76 submitted modified OESQ surveys, female respondents ($N = 54$) comprised 71.1% of the sample and had the highest response rate. Male respondents ($N = 21$) comprised 27.6% of the sample. One respondent (1.3%) preferred not to indicate their gender, and it was unknown. Figure 4 shows the percentages of completed surveys by gender.

Figure 4

Percentages of Modified OESQ Respondents by Gender

GenderCode
☐ Unknown
■ Female
■ Male

1.32%

27.63%

71.05%
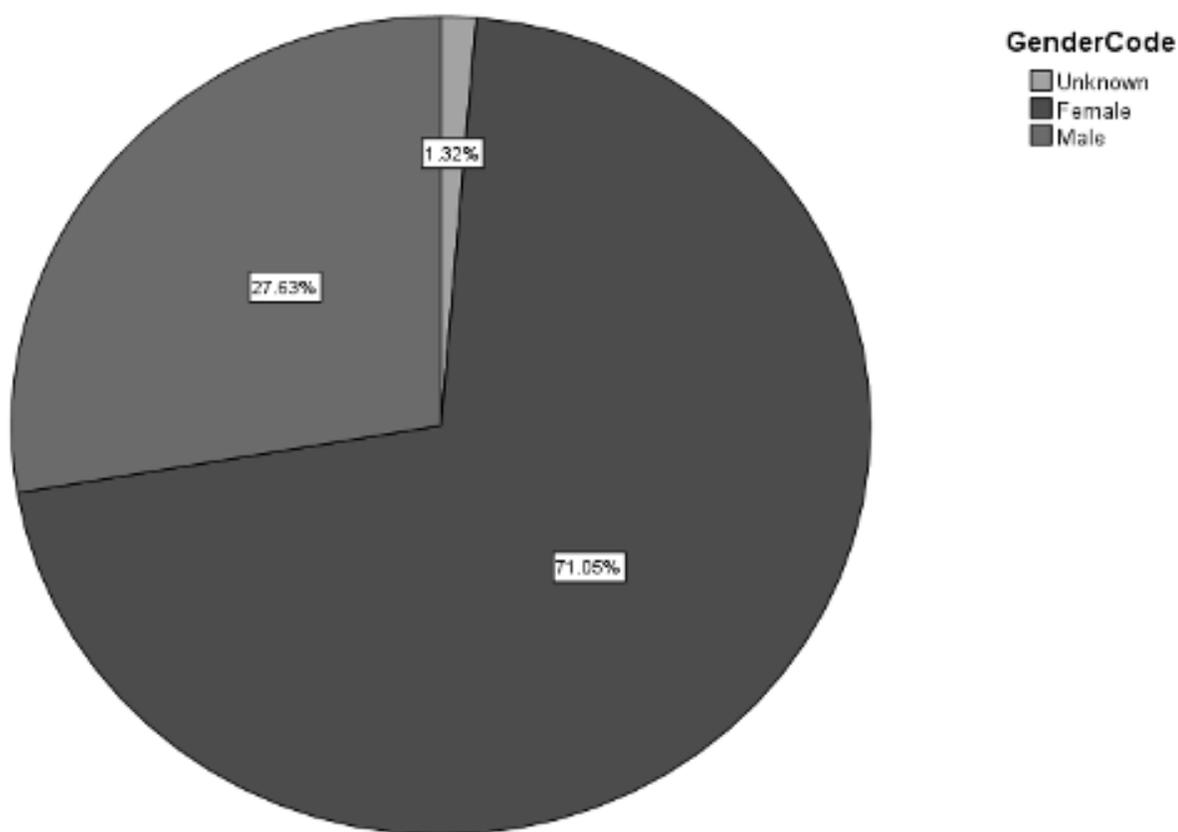
Note. Data was gathered from responses to the modified OESQ ($N = 76$).

The second categorical independent variable was the online graduate-level students' program of study content area. The content areas were broad and included students in online

graduate business programs, education programs, and other programs. Other programs included

nursing, organizational leadership, and sports management. Based on the total of 76 online

graduate student respondents for the modified OESQ, education program students ($N = 61$)

comprised 80.3% of the sample, business program students ($N = 10$) comprised 13.2%, and

students enrolled in other programs ($N = 4$) comprised 5.3%. One respondent (1.3%) did not

indicate their online graduate program of study. Figure 5 shows a percentage breakdown of

respondents by online graduate program content area.

Figure 5

Percentages of Modified OESQ Respondents by Program of Study Content Area
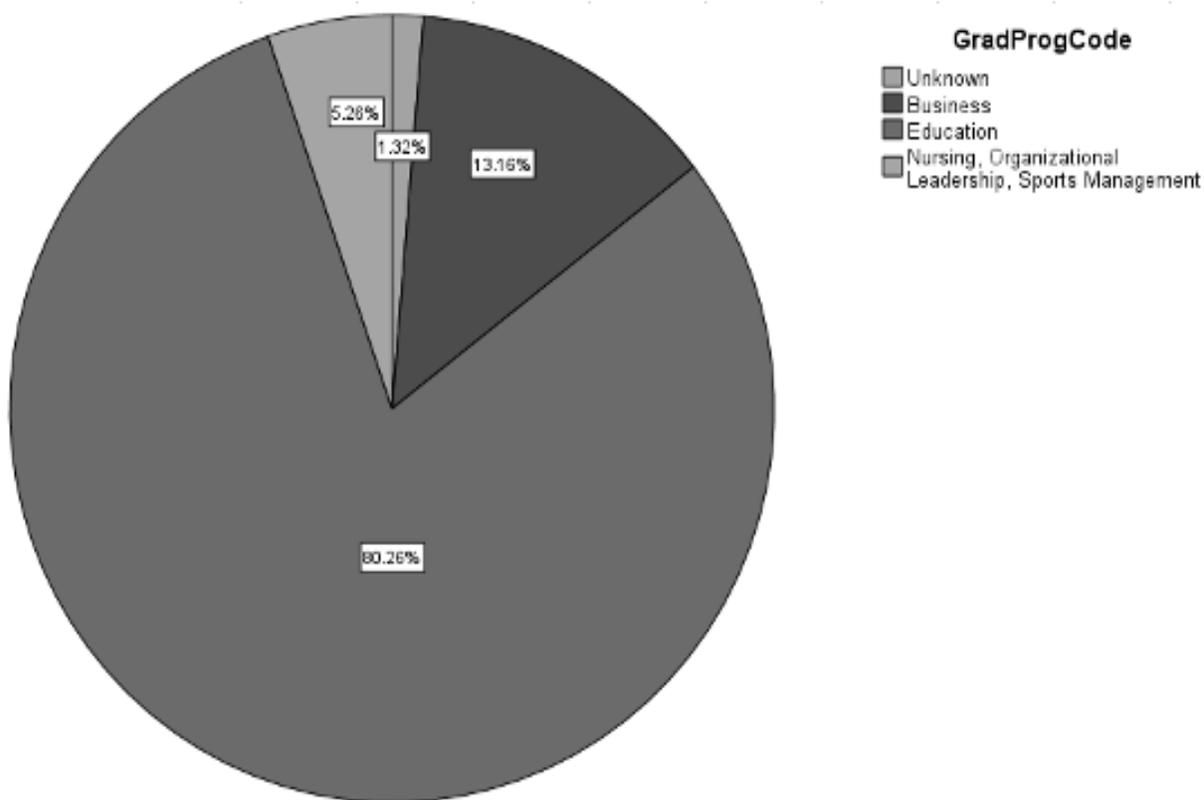
Note. Data was gathered from responses to the modified OESQ ($N = 76$).

The third categorical independent variable was the level of degree being sought within

the online education graduate program of study. Students could be in either the master's track or

doctoral track of the online educational programs. Based on the total of 61 education student responses on the modified OESQ, doctoral students within the online education program ($N =$ 44) comprised 57.9% of the sample and master's students within the online education program ($N = 30$) comprised 39.5%. Two respondents ($N = 2$), 2.6%, did not specify master's or doctoral level. Figure 6 shows the percentages of online graduate education program students by master's or doctoral degree level tracks.

Figure 6

Percentages of Education Program Modified OESQ Respondents by Degree Level Track
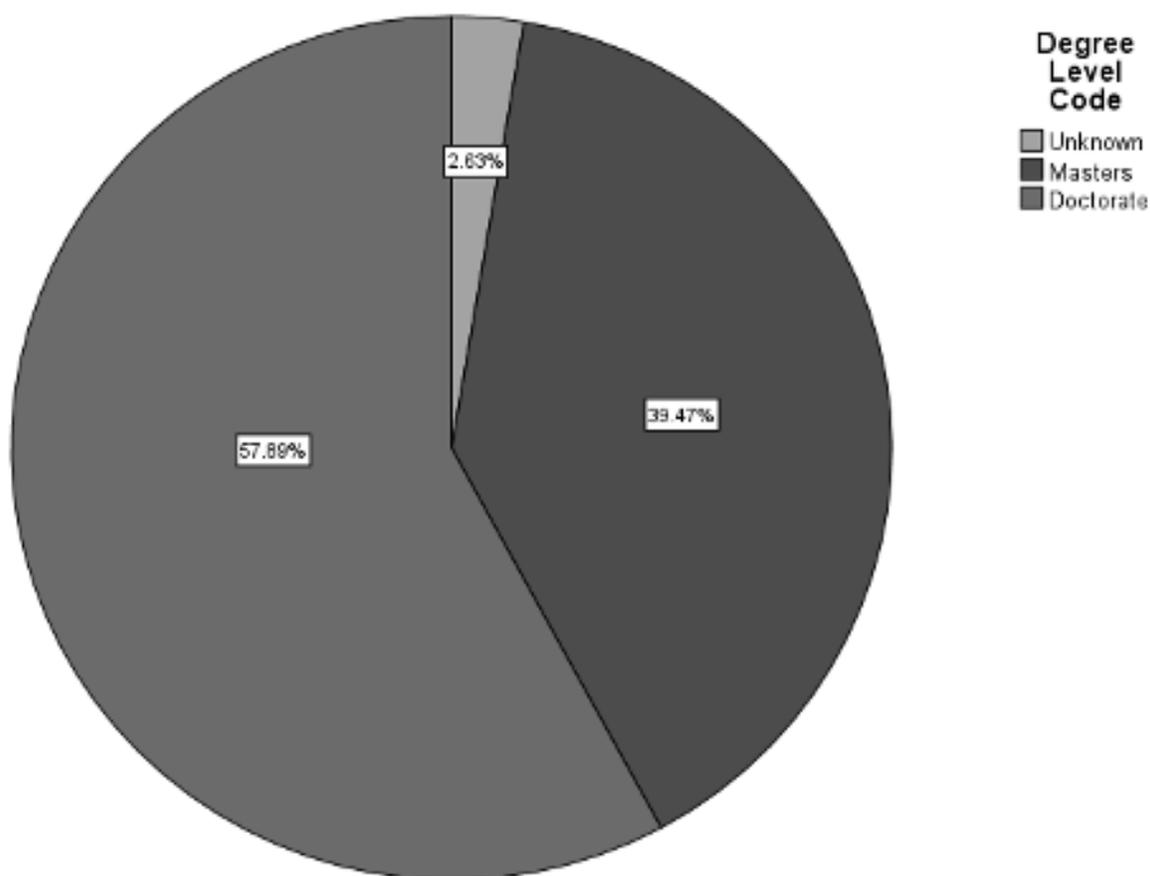
Note. Data was gathered from responses to the modified OESQ ($N = 61$).

Altogether, within the Baker University online graduate programs in fall of 2021, there were 673 students. Of those 673 students, 456 (68%) were female, and 217 (32%) were male (E. Hays, personal communication, November 17, 2021). The modified OESQ was sent to all 673 Baker University online graduate students, with 76 completed surveys submitted for an 11.29% overall response rate. Based on the 76 submitted modified OESQ surveys, female respondents ($N = 54$) comprised 71.1% of the sample and male respondents ($N = 21$) comprised 27.6% of the sample. One respondent (1.3%) preferred not to indicate their gender, and it was unknown.

The Doctor of Education in Instructional Design & Performance Technology program had a total of 97 students, and the Doctor of Education in Educational Leadership program had 118 students as of fall 2021 (E. Hays, personal communication, November 17, 2021). In online doctoral education programs, there was a total of 215 students, with 167 (78%) female and 48 (22%) male. The Master's of Science in Instructional Design & Performance Technology program had a total of 18 students, in the Master's of Arts in Education program there were 94 total students, the Master's of Science in Special Education program had 24 total students, and the Master's of Science in Student Affairs for Leadership in Higher Education program had a total of 8 students. In online master's education programs, there was a total of 144 students, with 124 (86%) female and 20 (14%) male (E. Hays, personal communication, November 17, 2021). In total, for online education-related graduate-level programs there were 361 students. Within these programs, 291 or 81% were female students, and 70 or 19% were male students. For the current study education program students ($N = 61$) comprised 80.3% of the sample, with master's degree level respondents ($N = 17$) or 27.9%, doctoral degree level respondents ($N = 43$) or 70.5%, and one respondent ($N = 1$) or 1.60% as an unknown degree level. By gender, for the

current study, education program female respondents (N = 48) or 78.7% and education program male respondents (N = 13) or 21.3% for a total of 61 responses to the modified OESQ.

The Master's of Business Administration had a total of 228 students in the program. Within this program, 119 (52%) were female and 109 (48%) were male. The 'other' category of graduate online learners encompassed students in various degree levels and programs. Of those 84 total students, 46 (55%) were female, and 38 (45%) were male (E. Hays, personal communication, November 17, 2021). Based on the total of 76 online graduate student respondents for the modified OESQ business program students ($N = 10$) comprised 13.2%, and students enrolled in other programs ($N = 4$) comprised 5.3%. One respondent (1.3%) did not indicate their online graduate program of study. For the current study, within the business program, male respondents ($N = 6$) or 60% and female respondents ($N = 4$) or 40%. For other programs, within the current study, male respondents ($N = 2$) or 50% and female respondents ($N = 2$) or 50%.

The dependent variables for four of the eight research questions were group means of item responses rated on a 5-point Likert-type scale with 1 being very unimportant and 5 being very important for the perceived level of importance for the individual strategies within each of the student engagement type subscales of learner-to-learner, learner-to-instructor, and learner-to-content. The dependent variables for the other four research questions were the group means of those item or individual strategy mean ratings on the 5-point Likert-type scale with 1 being very unimportant and 5 being very important for the learner-to-learner, learner-to-instructor, and learner-to-content engagement type subscales, as measured by the modified Online Engagement Strategies Questionnaire (OESQ).

RQ1. What is the mean level of perceived importance for the learner-to-learner interaction for all online Baker University graduate students, and disaggregated by gender (female or male), graduate program content area (business, education, or other), and degree level within the education program (doctoral or master's)?

The first RQ examined the perceptions of students related to learner-to-learner engagement strategies. The learner-to-learner engagement strategies (1-10) include:

- Students use a virtual lounge where they can meet informally to share common interests.

- Students complete an integrated profile on the Learning Management System that is assessable in all courses.

- Students introduce themselves using an ice-breaker discussion.

- Students moderate discussions.

- Students have choices in the selection of readings (articles, books) that drive discussion group formation.

- Students post audio and/or video files in threaded discussions instead of only written responses.

- Students interact with peers throughout students presentations (asynchronously or synchronously).

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

- Students peer-review classmates' work.

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

For all Baker University survey respondents ($N = 76$), the learner-to-learner interaction type had a mean perceived level of importance of 3.36 on the 5-point scale with a standard deviation of 1.22. The mean of 3.36 was calculated based on respondents rating of importance to the modified OESQ engagement strategies listed as items 1-10. For the learner-to-learner type interaction, female respondents ($N = 54$) to the modified OESQ had a mean perceived level of importance of 3.40 with a standard deviation of 1.20, and male respondents ($N = 21$) had a mean of 3.29 with a standard deviation of 1.24. For learner-to-learner type interaction, business program respondents ($N = 10$) to the modified OESQ had a mean perceived level of importance of 3.71 with a standard deviation of 0.87, and education program respondents ($N = 61$) had a mean perceived level of importance of 3.50 with a standard deviation of 1.50. The other programs of study content area group ($N = 4$), which included nursing, organizational leadership, and sports management, had a mean perceived level of importance of 3.20 with a standard deviation of 0.92. For learner-to-learner type interactions, master's students within the education program respondents ($N = 17$) had a mean perceived level of importance of 3.37 with a standard deviation of 1.27. Doctoral students within the education program respondents ($N = 43$) had a mean level of perceived importance of 3.54 with a standard deviation of 1.14. Table 1 shows the descriptive statistics for perceived learn-to-learner interaction for Baker University respondents to the modified OESQ.

Table 1

Descriptive Statistics for Level of Perceived Importance of Learner-to-Learner Interaction

Characteristic	*N*	*M*	*SD*
Baker Survey Respondents	76	3.36	1.22
Gender			
Male	54	3.39	1.20
Female	21	3.29	1.24
Graduate Program			
Business	10	2.61	1.26
Education	61	3.50	1.19
Other	4	3.90	0.92
Degree Level in Education			
Doctoral	43	3.54	1.14
Master's	17	3.37	1.27

Note. Means (*M*) and standard deviations (*SD*) for each of the different groups of learners were determined from responses to the modified OESQ. Specifically, data was obtained by examining questions 1-10 of the modified OESQ, as these questions pertained to learner-to-learner interaction strategies.

RQ2. What is the mean level of perceived importance for the learner-to-instructor interaction for all online Baker University graduate students, and disaggregated by gender (female or male), graduate program content area (business, education, or other), and degree level within the education program (doctoral or master's)?

The second RQ examined the perceptions of students related to learner-to-instructor engagement strategies. For all Baker University online graduate student respondents ($N = 76$) the mean perceived level of importance for learner-to-instructor interaction type was 4.18 on the 5-point scale with a standard deviation of 0.94. The mean of 4.18 was calculated based on response ratings of importance to the modified OESQ engagement strategies 11-20. Those engagement strategies included:

- The instructor refers to students by name in discussion forum.

- The instructor sends/posts regular announcements or email reminders.

- The instructor creates a forum for students to contact the instructor with questions about the course.

- The instructor creates a course orientation for students.

- The instructor posts a "due date checklist" at the end of each instructional unit.

- The instructor creates short videos to increase instructor presence in the course.

- The instructor provides feedback using various modalities (e.g., text, audio, video).

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

- The instructor posts grading rubrics for all assignments.

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

For the learner-to-instructor type interaction female respondents ($N = 54$) had a mean perceived level of importance of 4.16 with a standard deviation of 0.95, and male respondents ($N = 21$) had a mean perceived level of importance of 4.24 with a standard deviation of 0.93. For learner-to-instructor type interaction, business program respondents ($N = 10$) had a mean perceived level of

importance of 4.21 with a standard deviation of 0.88, and education program respondents ($N =$ 61) had a mean perceived level of importance of 4.19 with a standard deviation of 0.95. Other program content area respondents ($N = 4$) for learner-to-instructor type interaction had a mean perceived level of importance of 3.90 with a standard deviation of 0.86. For learner-to-instructor interaction type, the master's track of education student respondents ($N = 17$) had a mean perceived level of importance of 4.03 with a standard deviation of 0.93. The doctoral student respondents ($N = 43$) had a mean perceived level of importance of 4.26 with a standard deviation of 0.92. Table 2 shows the descriptive statistics for the perceived level of importance of learn-to-instructor interaction for Baker University online graduate student respondents to the modified OESQ.

Table 2

Descriptive Statistics for Level of Perceived Importance of Learner-to-Instructor Interaction

Characteristic	*N*	*M*	*SD*
Baker Survey Respondents	76	4.18	0.95
Gender			
Male	54	4.16	0.95
Female	21	4.24	0.93
Graduate Program			
Business	10	4.21	0.88
Education	61	4.19	0.95
Other	4	3.90	0.86
Degree Level in Education			
Doctoral	43	4.26	0.92
Master's	17	4.03	0.93

Note. Means (*M*) and standard deviations (*SD*) for each of the different groups of learners were determined from responses to the modified OESQ. Specifically, data was obtained by examining questions 11-20 of the modified OESQ, as these questions pertained to learner-to-instructor interaction strategies.

RQ3. What is the mean level of perceived importance for the learner-to-content interaction for all online Baker University graduate students, and disaggregated by gender (female or male), graduate program content area (business, education, or other), and degree level within the education program (doctoral or master's)?

The third RQ examined the perceptions of students related to learner-to-content engagement strategies. For all Baker University online graduate respondents ($N = 76$), the mean perceived level of importance of learner-to-content interaction was 4.11 on the 5-point scale with a standard deviation of 0.89. The mean of 4.11 was calculated based on responses to the modified OESQ engagement strategies 21-29. Those engagement strategies included:

- Students interact with content in more than one format (e.g., text, video, audio, interactive games or simulations).

- Students use optional online resources to explore topics in more depth.

- Students experience live, synchronous web conferencing for class events and/or guest talks.

- Discussions are structured with guiding questions and/or prompts to deepen their understanding of the content.

- 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).

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

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

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

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

For the learner-to-content interaction type female respondents ($N = 54$) had a mean perceived level of importance of 4.11 with a standard deviation of 0.92 and male respondents ($N = 21$) had

a mean of 4.12 with a standard deviation of 0.85. For learner-to-content interaction type, business program respondents ($N = 10$) had a mean perceived level of importance of 3.71 with a standard deviation of 0.87 and education program respondents ($N = 61$) had a mean of 4.18 with a standard deviation of 0.90. Respondents from other program content areas ($N = 4$) for learner-to-content interaction had a mean perceived level of importance of 4.06 with a standard deviation of 0.53. For education program respondents, master's students ($N = 17$) had a mean perceived level of importance of 4.02 with a standard deviation of 0.90 and doctoral student respondents ($N = 43$) had a mean of 4.25 with a standard deviation 0.90. Table 3 shows the descriptive statistics of perceived level of importance for learn-to-content interaction for Baker University online graduate student respondents to the modified OESQ.

Table 3

Descriptive Statistics for Level of Perceived Importance of Learner-to-Content Interaction

Characteristic	*N*	*M*	*SD*
Baker Survey Respondents	76	4.11	0.90
Gender			
Male	54	4.11	0.92
Female	21	4.12	0.85
Graduate Program			
Business	10	3.71	0.87
Education	61	4.18	0.90
Other	4	4.06	0.53
Degree Level in Education			
Doctoral	43	4.25	0.87
Master's	17	4.02	0.90

Note. Means (*M*) and standard deviations (*SD*) for each of the different groups of learners were determined from responses to the modified OESQ. Specifically, data was obtained by examining questions 21-29 of the modified OESQ, as these questions pertained to learner-to-content interaction strategies.

RQ4. Which of the three types of interaction (learner-to-learner, learner-to-instructor, learner-to-content) are perceived to be most important in creating a CoI for all online Baker University graduate students, as well as by gender (female or male), graduate program content area (business, education, or other), and degree level within the education program (doctoral or master's)?

Of the three interaction types, learn-to-instructor interaction had the highest mean perceived level of importance on the 5-point scale with 4.18 for all online Baker University graduate students who completed the modified OESQ. This was followed in the level of perceived importance by learner-to-content interaction with a mean of 4.11, and then learner-to-learner with a mean of 3.36. When examining gender, females perceived learner-to-instructor interaction as most important with a mean of 4.16, this was followed in perceived importance by learner-to-content interaction with a mean of 4.11, and learner-to-learner interaction with a mean of 3.39. Males perceived learner-to-instructor interaction as most important with a mean of 4.24, this was followed by learner-to-content interaction with a mean of 4.12, and learner-to-learner interaction with a mean of 3.29.

When comparing interaction type preference among all Baker University online graduate respondents by content area of program, both business and education learners perceived learner-to-instructor interaction as most important with means of 4.21 and 4.19, respectively. Respondents enrolled in the other content area programs perceived learner-to-content type interactions as most important with a mean of 4.19. The final groups examined were online graduate students enrolled in the education program at either the master's or doctorate level. For respondents in the education program at the master's level, the learner-to-instructor interaction type was perceived as most important with a mean of 4.03, and for respondents within the education program at the doctoral level, the learner-to-content interaction type was perceived as most important with a mean of 4.25. For both master's and doctoral respondents within the education program, the lowest mean perceived level of importance was for the learner-to-learner interaction with means of 3.37 and 3.54, respectively. Figure 7 displays the three interaction

types (learner-to-learner, learner-to-instructor, leaner-to-content) and the mean levels of

perceived importance for each interaction type.

Figure 7

Interaction Type Mean Perceived Level of Importance for Online Graduate Respondent Groups
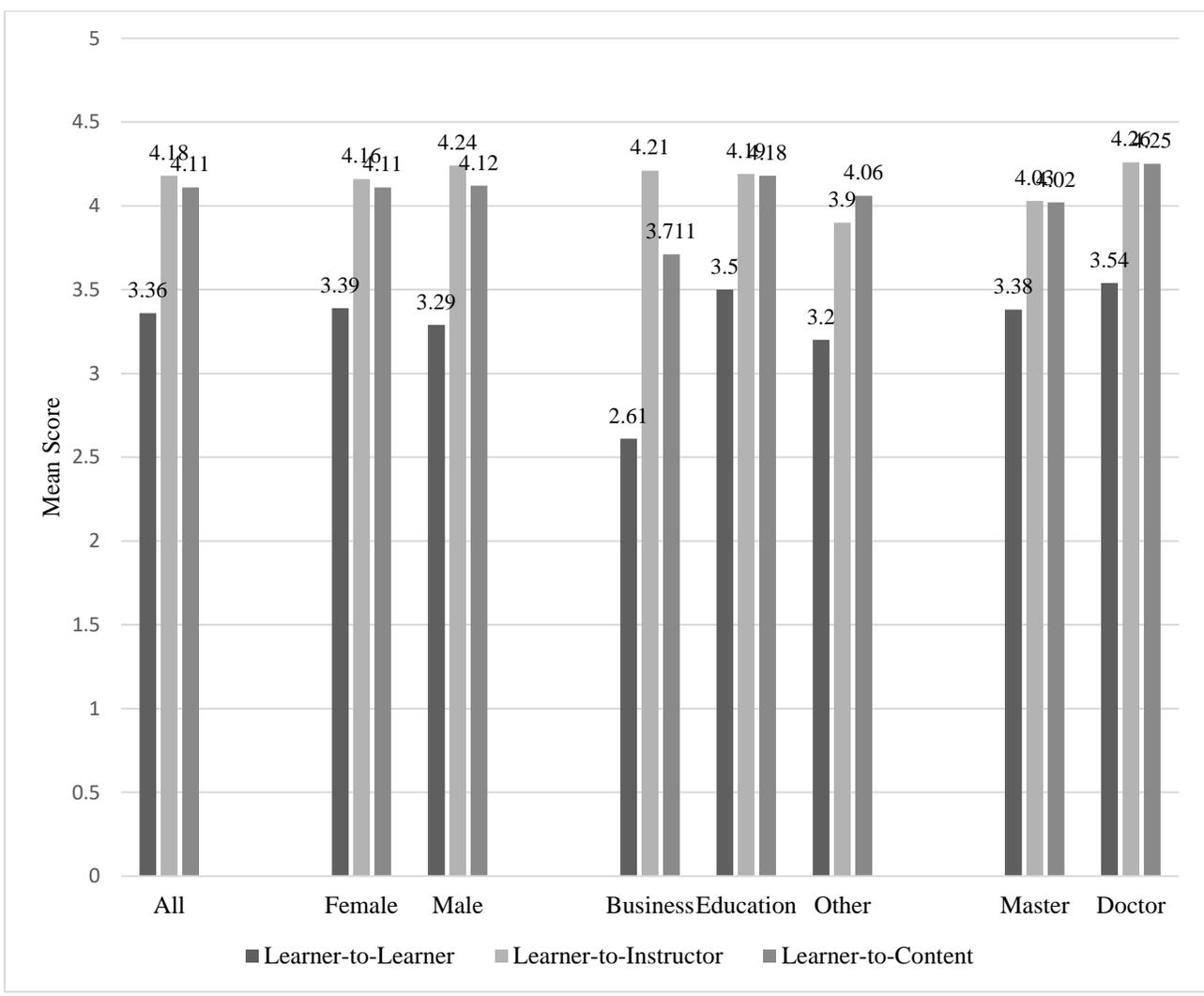
Note. Mean scores for learner-to-learner, learner-to-instructor, and learner-to-content interaction

types by online graduate Baker University respondents of the modified OESQ ($N = 76$).

    RQ5. What is the mean level of perceived importance for each engagement strategy in

creating learner-to-learner interactions for all online Baker University graduate students, and

disaggregated by gender (female or male), graduate program content area (business, education, or other), and degree level within the education program (doctoral or master's)?

Learner-to-learner interactions consisted of 10 engagement strategies for which respondents rated their level of importance for engagement on a 5-point Likert-type scale with 1 being very unimportant and 5 being very important. These learner-to-learner strategies were item numbers 1-10 of the modified OESQ. The strategies included:

1. Students use a virtual lounge where they can meet informally to share common interests.

2. Students complete an integrated profile on the Learning Management System that is assessable in all courses.

3. Students introduce themselves using an ice-breaker discussion.

4. Students moderate discussions.

5. Students have choices in the selection of readings (articles, books) that drive discussion group formation.

6. Students post audio and/or video files in threaded discussions instead of only written responses.

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.

Within the subset of engagement strategies for learner-to-learner interaction, there was a total of

75 or 76 respondents (depending upon the strategy). The engagement strategy rated as most

important within the learner-to-learner interaction subset for all Baker University online graduate

respondents was engagement strategy 8. Engagement strategy 8, students work collaboratively

using online communication tools to complete case studies, projects, reports, etc., had a mean

perceived level of importance of 3.950. This was followed in level of perceived importance by

engagement strategy 5, students have choices in the selection of readings (articles, books) that

drive discussion group formation, with a mean of 3.790 and engagement strategy 7, students

interact with peers through student presentations (asynchronously or synchronously), with a

mean of 3.590. The engagement strategy rated as least important within the learner-to-learner

interaction subset for all Baker University online graduate respondents was engagement strategy

10. Engagement strategy 10, students are required to rate individual performance of team

members on projects, had a mean perceived level of importance of 2.740. Table 4 shows the

descriptive statistics for perceived level of importance for engagement strategies within the

learner-to-learner interaction subset of the modified OESQ for all Baker University online

graduate respondents.

Table 4

Level of Perceived Importance for Engagement Strategies within Learner-to-Learner Interaction

for all Baker University Online Graduate Respondents

OESQ Item	*N*	Range	Min.	Max	*M*	*SD*	Skewness	Kurtosis
8	76	4	1	5	3.950	1.326	-1.171	0.206
5	76	4	1	5	3.790	1.050	-0.771	0.268
7	76	4	1	5	3.590	1.191	-0.565	-0.502
3	76	4	1	5	3.570	1.226	-0.580	-0.555
4	76	4	1	5	3.380	1.019	-0.290	-0.321
2	75	4	1	5	3.290	1.271	-0.291	-0.799
6	76	4	1	5	3.340	1.231	-0.160	-0.912
1	75	4	1	5	3.080	1.249	-0.069	-0.993
9	75	4	1	5	3.000	1.284	-0.157	-1.044
10	76	4	1	5	2.740	1.320	0.146	-1.131

Note. Data obtained by examining questions 1-10 of the modified OESQ, as these strategies

pertained to learner-to-learner interaction.

When examining the subset of engagement strategies for the learner-to-learner interaction type by gender, there were a total of 53 or 54 female respondents (depending upon the strategy) and a total of 21 male respondents to the modified OESQ. Female respondents perceived engagement strategy 8, students work collaboratively using online communication tools to complete case studies, projects, reports, etc., as most important with a mean of 4.090. Male respondents perceived engagement strategy 7, students interact with peers through student presentations (asynchronously or synchronously), as most important with a mean of 3.620. Female respondents perceived engagement strategy 10, students are required to rate individual performance of team members on projects, as least important with a mean of 2.590. Male respondents perceived engagement strategy 1, students use a virtual lounge where they can meet informally to share common interests, as least important with a mean of 3.000. Table 5 shows descriptive statistics for female respondents' levels of perceived importance of each engagement strategy within learner-to-learner interaction. Table 6 shows descriptive statistics for male respondents' levels of perceived importance of each engagement strategy with learner-to-learner interaction.

Table 5

Level of Perceived Importance for each Engagement Strategy within Learner-to-Learner

Interaction for Female Respondents

OESQ Item	*N*	Range	Min.	Max	*M*	*SD*	Skewness	Kurtosis
8	54	4	1	5	4.090	1.278	-1.419	0.964
5	54	3	2	5	3.960	0.931	-0.508	-0.630
3	54	4	1	5	3.610	1.220	-0.625	-0.463
7	54	4	1	5	3.590	1.190	-0.473	-0.631
4	54	4	1	5	3.410	0.981	-0.167	-0.517
2	53	4	1	5	3.400	1.349	-0.430	-0.914
6	54	4	1	5	3.280	1.265	-0.202	-0.996
1	53	4	1	5	3.080	1.269	-0.029	-1.098
9	53	4	1	5	2.890	1.187	-0.060	-0.901
10	54	4	1	5	2.590	1.367	0.328	-1.111

Note. Data obtained by examining questions 1-10 of the modified OESQ, as these strategies

pertained to learner-to-learner interaction.

Table 6

Level of Perceived Importance for each Engagement Strategy within Learner-to-Learner

Interaction for Male Respondents

OESQ Item	*N*	Range	Min.	Max	*M*	*SD*	Skewness	Kurtosis
7	21	4	1	5	3.620	1.244	-0.903	0.063
8	21	4	1	5	3.570	1.434	-0.720	-0.747
3	21	4	1	5	3.380	1.244	-0.475	-0.581
5	21	4	1	5	3.380	1.244	-0.819	-0.066
9	21	4	1	5	3.330	1.494	-0.637	-0.960
4	21	4	1	5	3.330	1.155	-0.518	-0.081
6	21	4	1	5	3.140	1.195	-0.107	-0.617
10	21	4	1	5	3.140	1.153	-0.305	-0.579
2	21	4	1	5	3.050	1.071	-0.103	0.139
1	21	4	1	5	3.000	1.183	-0.200	-0.476

Note. Data obtained by examining questions 1-10 of the modified OESQ, as these strategies

pertained to learner-to-learner interaction.

When examining the subset of engagement strategies for the learner-to-learner interaction type by program of study content area the online graduate business program had 10 respondents, the education program had 60 or 61 (depending on the strategy), and the other programs (nursing, sports management, and organizational leadership) had 4 respondents. Business program respondents perceived engagement strategy 7, students interact with peers through student presentations (asynchronously or synchronously), as most important with a mean of 3.200. Education program respondents and other content area program respondents perceived engagement strategy 8, students work collaboratively using online communication tools to complete case studies, projects, reports, etc., as most important with means of 4.100 and 4.000, respectively.

Business program respondents and other content area program respondents perceived engagement strategy 9, students peer-review classmates' work, as the least important with means of 2.000 and 2.750, respectively. Education program respondents perceived engagement strategy 10, students are required to rate individual performance of team members on projects, as least important with a mean of 2.790. Table 7 shows the descriptive statistics for perceived level of importance for each engagement strategy within the learner-to-learner interaction type for business program respondents. Table 8 shows the descriptive statistics for the perceived importance for each engagement strategy within the learner-to-learner interaction type for education program respondents. Table 9 shows the descriptive statistics for the perceived importance for each engagement strategy within the learner-to-learner interaction type for other program respondents.

Table 7

Level of Perceived Importance for each Engagement Strategy within Learner-to-Learner

Interaction for Business Program Respondents

OESQ Item	*N*	Range	Min.	Max	*M*	*SD*	Skewness	Kurtosis
7	10	4	1	5	3.200	1.229	-0.467	-0.544
8	10	4	1	5	3.000	1.563	-0.436	-1.782
5	10	4	1	5	2.700	1.494	0.140	-1.622
3	10	4	1	5	2.700	1.418	-0.076	-1.155
4	10	3	1	4	2.700	0.949	-0.234	-0.347
6	10	3	1	4	2.700	0.949	-0.234	-0.347
2	10	4	1	5	2.600	1.174	0.474	1.027
10	10	3	1	4	2.400	1.265	0.280	-1.663
1	10	4	1	5	2.100	1.197	1.709	3.711
9	10	3	1	4	2.000	1.333	0.703	-1.577

Note. Data obtained by examining questions 1-10 of the modified OESQ, as these questions

pertained to learner-to-learner interaction.

Table 8

Level of Perceived Importance for each Engagement Strategy within Learner-to-Learner

Interaction for Education Program Respondents

OESQ Item	*N*	Range	Min.	Max	*M*	*SD*	Skewness	Kurtosis
8	61	4	1	5	4.100	1.274	-1.339	0.699
5	61	3	2	5	4.020	0.866	-0.510	-0.463
7	61	4	1	5	3.720	1.185	-0.738	-0.186
3	61	4	1	5	3.690	1.162	-0.673	-0.385
4	61	4	1	5	3.510	1.010	-0.374	-0.195
2	60	4	1	5	3.430	1.294	-0.480	-0.724
6	61	4	1	5	3.330	1.274	-0.300	-0.952
1	60	4	1	5	3.200	1.219	-0.223	-0.883
9	60	4	1	5	3.200	1.232	-0.283	-0.827
10	61	4	1	5	2.790	1.343	0.148	-1.100

Note. Data obtained by examining questions 1-10 of the modified OESQ, as these questions

pertained to learner-to-learner interaction.

Table 9

Level of Perceived Importance for each Engagement Strategy within Learner-to-Learner

Interaction for Other Program Respondents

OESQ Items	*N*	Range	Min.	Max	*M*	*SD*	Skewness	Kurtosis
8	4	2	3	5	4.000	0.816	0.000	1.500
3	4	2	3	5	3.500	1.000	2.000	4.000
6	4	3	2	5	3.250	1.258	1.129	2.227
4	4	2	2	4	3.250	0.957	-0.855	-1.289
1	4	1	3	4	3.250	0.500	2.000	4.000
5	4	1	3	4	3.250	0.500	2.000	4.000
10	4	3	1	4	3.000	1.414	-1.414	1.500
2	4	2	2	4	3.000	0.816	0.000	1.500
7	4	2	2	4	2.750	0.957	0.850	-1.289
9	4	2	2	4	2.750	0.957	0.850	-1.289

Note. Data obtained by examining questions 1-10 of the modified OESQ, as these questions

pertained to learner-to-learner interaction.

For the subset of engagement strategies within the learner-to-learner interaction type, the online graduate education program respondents were broken into two levels of degree track. In the online education graduate program there were 16 or 17 participants from the master's degree level and 42 or 43 participants from the doctoral degree level (depending upon the number of responses). Master's degree respondents perceived engagement strategy 5, students have choices in the selection of readings (articles, books) that drive discussion group formation, as most important with a mean of 4.120, and doctoral degree respondents perceived engagement strategy 8, students work collaboratively using online communication tools to complete case studies, projects, reports, etc., as most important with a mean of 4.370.

Master's degree respondents perceived engagement strategy 2, students complete an integrated profile on the learning management system that is accessible in all courses, as least important with a mean of 2.880. Doctoral degree respondents perceived engagement strategy 10, students are required to rate individual performance of team members on projects, as least important with a mean of 2.740. Table 10 shows the descriptive statistics for perceived level of importance for each engagement strategy within the learner-to-learner interaction type for master's degree education program respondents. Table 11 shows the descriptive statistics for perceived importance for each engagement strategy within the learner-to-learner interaction type for doctoral degree education program respondents.

Table 10

Level of Perceived Importance for each Engagement Strategy within Learner-to-Learner

Interaction for Education Program Master's Degree Level Respondents

OESQ Item	*N*	Range	Min.	Max	*M*	*SD*	Skewness	Kurtosis
5	17	3	2	5	4.120	0.928	-0.789	-0.084
6	17	4	1	5	3.650	1.412	-0.793	-0.596
7	17	4	1	5	3.650	1.412	-1.095	0.116
4	17	3	2	5	3.590	0.939	-0.032	-0.670
8	17	4	1	5	3.410	1.622	-0.567	-1.317
3	17	4	1	5	3.290	1.263	-0.209	-1.202
1	16	4	1	5	3.120	1.147	0.028	-0.613
9	17	4	1	5	3.060	1.435	-0.259	-1.103
10	17	4	1	5	2.940	1.345	0.120	-0.836
2	17	4	1	5	2.880	1.166	-0.281	-0.447

Note. Data obtained by examining questions 1-10 of the modified OESQ, as these questions

pertained to learner-to-learner interaction.

Table 11

Level of Perceived Importance for each Engagement Strategy within Learner-to-Learner

Interaction for Education Program Doctoral Degree Level Respondents

OESQ Item	*N*	Range	Min.	Max	*M*	*SD*	Skewness	Kurtosis
8	43	4	1	5	4.370	1.024	-1.660	2.139
5	43	3	2	5	3.950	0.844	-0.408	-0.422
3	43	4	1	5	3.860	1.104	-0.937	0.435
7	43	4	1	5	3.770	1.109	-0.501	-0.621
2	42	4	1	5	3.640	1.303	-0.676	-0.556
4	43	4	1	5	3.440	1.031	-0.453	-0.057
9	42	4	1	5	3.240	1.165	-0.199	-0.798
1	43	4	1	5	3.210	1.264	-0.266	-0.932
6	43	4	1	5	3.210	1.226	-0.177	-0.901
10	43	4	1	5	2.740	1.364	-0.135	-1.196

Note. Data obtained by examining questions 1-10 of the modified OESQ, as these questions

pertained to learner-to-learner interaction.

RQ6. What is the mean level of perceived importance for each engagement strategy in creating learner-to-instructor interactions for all online Baker University graduate students, and disaggregated by gender (female or male), graduate program content area (business, education, or other), and degree level within the education program (doctoral or master's)?

Learner-to-instructor interactions consisted of 10 engagement strategies for which respondents rated the level of importance for engagement on a 5-point Likert-type scale with 1 being very unimportant and 5 being very important. These learner-to-instructor strategies were item numbers 11-20 of the modified OESQ. The strategies included:

11. The instructor refers to students by name in discussion forum.

12. The instructor sends/posts regular announcements or email reminders.

13. The instructor creates a forum for students to contact the instructor with questions about the course.

14. The instructor creates a course orientation for students.

15. The instructor posts a "due date checklist" at the end of each instructional unit.

16. The instructor creates short videos to increase instructor presence in the course.

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

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).

Within the subset of engagement strategies for the learner-to-instructor interaction type, there was a total of 75 or 76 total respondents (depending upon the strategy). The engagement

strategy rated as most important within the learner-to-instructor interaction type subset for all Baker University online graduate respondents was engagement strategy 19. Engagement strategy 19, the instructor posts grading rubrics for all assignments, had a mean perceived level of importance of 4.680. This was followed in level of perceived importance by engagement strategy 15, the instructor posts a due date checklist at the end of each instructional unit, with a mean of 4.570 and then engagement strategy 12, the instructor sends/posts regular announcements or email reminders, with a mean of 4.550. The engagement strategy rated as least important within the learner-to-instructor interaction type subset for all Baker University online graduate respondents was engagement strategy 16. Engagement strategy 16, the instructor creates short videos to increase instructor presence in the course, had a mean perceived level of importance of 3.640. Table 12 shows the descriptive statistics for engagement strategies within the learner-to-instructor interaction type subset for all Baker University online graduate respondents.

Table 12

Level of Perceived Importance for each Engagement Strategy within Learner-to-Instructor

Interaction for all Baker University Online Graduate Respondents

OESQ Item	*N*	Range	Min.	Max	*M*	*SD*	Skewness	Kurtosis
19	76	4	1	5	4.680	0.677	-2.951	11.415
15	76	3	2	5	4.570	0.699	-1.562	1.895
12	76	3	2	5	4.550	0.737	-1.723	2.623
13	76	4	1	5	4.510	0.872	-2.088	4.307
20	75	3	2	5	4.110	0.924	-0.639	-0.647
11	76	4	1	5	4.090	1.213	-1.286	0.713
14	76	4	1	5	4.080	1.004	-1.137	1.031
17	76	4	1	5	3.870	1.050	-0.724	-0.044
18	76	4	1	5	3.720	1.184	-0.826	-0.131
16	75	4	1	5	3.640	1.111	-0.577	-0.171

Note. Data obtained by examining questions 11-20 of the modified OESQ, as these strategies

pertained to learner-to-learner interaction.

When examining the perceived level of importance for engagement strategies within the learner-to-instructor interaction type by gender, there were a total of 53 or 54 female respondents and a total of 20 or 21 male respondents to the modified OESQ (depending on the number of item responses). Both female and male respondents perceived engagement strategy 19, the instructor posts grading rubrics for all assignments, as most important with mean perceived levels of importance of 4.690 and 4.670, respectively. Female respondents perceived engagement strategy 16, the instructor creates short videos to increase instructor presence in the course, as least important with a mean of 3.410. Male respondents perceived engagement strategy 18, the instructor provides students with an opportunity to reflect, as least important with a mean of 3.810. Table 13 shows the descriptive statistics for levels of perceived importance for each engagement strategy within the learner-to-instructor interaction type for female respondents. Table 14 shows descriptive statistics for levels of perceived importance for each engagement strategy within the learner-to-instructor interaction type for male respondents.

Table 13

Level of Perceived Importance for each Engagement Strategy within Learner-to-Instructor

Interaction for Female Respondents

OESQ Item	*N*	Range	Min.	Max	*M*	*SD*	Skewness	Kurtosis
19	54	4	1	5	4.690	0.722	-3.183	12.582
12	54	3	2	5	4.590	0.714	-1.791	2.775
15	54	3	2	5	4.560	0.718	-1.630	2.282
13	54	4	1	5	4.520	0.947	-2.204	4.487
11	54	4	1	5	4.150	1.139	-1.255	0.696
20	53	3	2	5	4.110	0.954	-0.786	-0.371
14	54	4	1	5	4.020	1.055	-1.140	0.984
17	54	4	1	5	3.870	1.010	-0.643	-0.095
18	54	4	1	5	3.670	1.116	-0.818	0.065
16	54	4	1	5	3.410	1.125	-0.380	-0.263

Note. Data obtained by examining questions 11-20 of the modified OESQ, as these strategies

pertained to learner-to-learner interaction.

Table 14

Level of Perceived Importance for each Engagement Strategy within Learner-to-Instructor

Interaction for Male Respondents

OESQ Item	*N*	Range	Min.	Max	*M*	*SD*	Skewness	Kurtosis
19	21	2	3	5	4.670	0.577	-1.595	1.895
15	21	2	3	5	4.570	0.676	-1.357	0.758
13	21	2	3	5	4.520	0.680	-1.150	0.260
12	21	3	2	5	4.480	0.814	-1.763	3.218
16	20	3	2	5	4.250	0.851	-1.104	1.067
14	21	3	2	5	4.240	0.889	-0.989	0.332
20	21	2	3	5	4.050	0.865	-0.097	-1.695
11	21	4	1	5	3.950	1.431	-1.266	0.416
17	21	4	1	5	3.860	1.195	-0.864	0.007
18	21	4	1	5	3.810	1.365	-0.926	-0.286

Note. Data obtained by examining questions 11-20 of the modified OESQ, as these strategies

pertained to learner-to-learner interaction.

For the subset of engagement strategies within the learner-to-instructor interaction type, the online graduate business program had 10 respondents, the education program had 60 or 61 (depending on the strategy), and the other content area programs (nursing, sports management, and organizational leadership) had 4 respondents. Both business program respondents and other content area program respondents perceived engagement strategy 13, the instructor creates a forum for students to contact the instructor with questions about the course, as most important with means of 4.700 and 4.740, respectively. Education program respondents perceived engagement strategy 19, the instructor posts grading rubrics for all assignments, as most important with a mean of 4.750.

Business program respondents perceived engagement strategy 18, the instructor provides students with an opportunity to reflect, as the least important with a mean of 3.200. Education program respondents perceived engagement strategy 16, the instructor creates short videos to increase instructor presence in the course, as least important with a mean of 3.580. Respondents from the other programs perceived engagement strategy 11, the instructor refers to students by name in discussion forums, as least important with a mean of 2.500. Table 15 shows the descriptive statistics for the perceived level of importance for each engagement strategy within the learner-to-instructor interaction type for business program respondents. Table 16 shows the descriptive statistics for the perceived level of importance for each engagement strategy within the learner-to-instructor interaction type for education program respondents. Table 17 shows the descriptive statistics for the perceived level of importance for each engagement strategy within the learner-to-instructor interaction type for other content area program respondents.

Table 15

Level of Perceived Importance for each Engagement Strategy within Learner-to-Instructor

Interaction for Business Program Respondents

OESQ Item	*N*	Range	Min.	Max	*M*	*SD*	Skewness	Kurtosis
13	10	1	4	5	4.700	0.483	-1.035	-1.224
12	10	2	3	5	4.600	0.669	-1.658	2.045
15	10	2	3	5	4.600	0.699	-1.658	2.045
14	10	2	3	5	4.500	0.707	-1.179	0.571
19	10	2	3	5	4.500	0.707	-1.179	0.571
17	10	3	2	5	4.300	1.059	-1.444	1.258
11	10	4	1	5	4.100	1.370	-1.516	1.802
16	10	3	2	5	4.000	1.054	-0.712	-0.450
20	10	2	3	5	3.600	0.699	0.780	-0.146
18	10	4	1	5	3.200	1.317	-0.088	-0.751

Note. Data obtained by examining questions 11-20 of the modified OESQ, as these strategies pertained to learner-to-instructor interaction.

Table 16

Level of Perceived Importance for each Engagement Strategy within Learner-to-Instructor

Interaction for Education Program Respondents

OESQ Item	*N*	Range	Min.	Max	*M*	*SD*	Skewness	Kurtosis
19	61	4	1	5	4.750	0.650	-3.863	18.702
12	61	3	2	5	4.570	0.763	-1.887	3.099
15	61	3	2	5	4.570	0.694	-1.663	2.506
13	61	4	1	5	4.480	0.942	-1.969	3.430
11	61	4	1	5	4.200	1.108	-1.317	0.911
20	60	3	2	5	4.180	0.930	-0.904	-0.118
14	61	4	1	5	4.000	1.049	-1.075	0.772
18	61	4	1	5	3.800	1.181	-0.986	0.184
17	61	4	1	5	3.790	1.066	-0.665	-0.074
16	60	4	1	5	3.580	1.154	-0.552	-0.275

Note. Data obtained by examining questions 11-20 of the modified OESQ, as these strategies

pertained to learner-to-instructor interaction.

Table 17

Level of Perceived Importance for each Engagement Strategy within Learner-to-Instructor

Interaction for Other Content Area Program Respondents

OESQ Item	*N*	Range	Min.	Max	*M*	*SD*	Skewness	Kurtosis
13	4	1	4	5	4.750	0.500	-2.000	4.000
14	4	2	3	5	4.250	0.957	-0.855	-1.289
15	4	2	3	5	4.250	0.957	-0.855	-1.289
12	4	1	4	5	4.250	0.500	2.000	4.000
20	4	2	3	5	4.000	1.155	0.000	-6.000
17	4	2	3	5	4.000	0.816	0.000	1.500
19	4	2	3	5	4.000	0.816	0.000	-1.500
16	4	1	3	4	3.500	0.577	0.000	-6.000
18	4	1	3	4	3.500	0.577	0.000	-6.000
11	4	3	1	4	2.500	1.732	0.000	-6.000

Note. Data obtained by examining questions 11-20 of the modified OESQ, as these strategies

pertained to learner-to-instructor interaction.

For the subset of engagement strategies within the learner-to-instructor interaction type, the online graduate education program respondents were broken into two levels of degree program. In the online education graduate program there were 16 or 17 respondents from the master's degree level and 42 or 43 respondents from the doctoral degree level (depending on the number of item responses). Both education program master's and doctoral degree track respondents perceived engagement strategy 19, the instructor posts grading rubrics for all assignments, as most important with means of 4.760 and 4.770, respectively.

Education program master's degree respondents perceived engagement strategy 20, the instructor uses various features in synchronous sessions to interact with students, as least important with a mean of 3.240. Doctoral degree respondents perceived engagement strategy 16, the instructor creates short videos to increase instructor presence in the course, as least important with a mean of 3.530. Table 18 shows the descriptive statistics for the level of perceived importance for each engagement strategy within the learner-to-instructor interaction type for master's degree education program respondents. Table 19 shows the descriptive statistics for the level of perceived importance for each engagement strategy within the learner-to-instructor interaction type for doctoral degree education program respondents.

Table 18

Level of Perceived Importance for each Engagement Strategy within Learner-to-Instructor

Interaction for Education Program Master's Degree Level Respondents

OESQ Item	*N*	Range	Min.	Max	*M*	*SD*	Skewness	Kurtosis
19	17	2	3	5	4.760	0.562	-2.473	5.840
15	17	1	4	5	4.710	0.470	-0.994	-1.166
12	17	2	3	5	4.590	0.618	-1.275	0.877
13	17	4	1	5	4.350	1.115	-2.035	4.309
14	17	2	3	5	4.120	0.697	-0.161	-0.674
11	17	4	1	5	4.000	1.225	-1.157	0.714
16	16	4	1	5	3.690	1.078	-0.739	1.115
17	17	4	1	5	3.470	1.231	-0.835	0.167
18	17	4	1	5	3.410	1.372	-0.532	-0.938
20	17	3	2	5	3.240	0.970	0.399	-0.563

Note. Data obtained by examining questions 11-20 of the modified OESQ, as these strategies

pertained to learner-to-instructor interaction.

RQ7. What is the mean level of perceived importance for each engagement strategy in creating learner-to-content interactions for all online Baker University graduate students, and disaggregated by gender (female or male), graduate program content area (business, education, or other), and degree level within the education program (doctoral or master's)?

Learner-to-content interactions, as measured by the modified OESQ, consisted of 9 engagement strategies for which respondents rated their level of importance on a 5-point Likert-type scale with 1 being very unimportant and 5 being very important. These learner-to-content strategies were item numbers 21-29 of the modified OESQ. The strategies included:

21. Students interact with content in more than one format (e.g., text, video, audio, interactive games or simulations).

22. Students use optional online resources to explore topics in more depth.

23. Students experience live, synchronous web conferencing for class events and/or guest talks.

24. Discussions are structured with guiding questions and/or prompts to deepen their understanding of the content.

25. Students research an approved topic and present their findings in a delivery method of their choice (e.g., discussion forum, chat, web conference, multimedia presentation).

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.

Within the subset of engagement strategies for the learner-to-content interaction type, there was a total of 76 respondents. The engagement strategy within the learner-to-content interaction subset rated as most important for all Baker University online graduate respondents was engagement strategy 28. Engagement strategy 28, students work on realistic scenarios to apply content, had a mean perceived level of importance of 4.640. This was followed in level of perceived importance by engagement strategy 24, discussions are structured with guiding questions and/or prompts to deepen their understanding of the content, with a mean perceived level of importance of 4.300, and then engagement strategy 21, students interact with content in more than one format, with a mean perceived level of importance of 4.120. The engagement strategy within the learner-to-content interaction type subset rated as least important was engagement strategy 29. Engagement strategy 29, students use self-tests to check their understanding of materials., had a mean perceived level of importance of 3.660. Table 20 shows the descriptive statistics for the perceived level of importance for engagement strategies within the learner-to-content interaction type subset for all Baker University online graduate respondents.

Table 20

Level of Perceived Importance for each Engagement Strategy within Learner-to-Content

Interaction for all Baker University Online Graduate Respondents

OESQ Item	*N*	Range	Min.	Max	*M*	*SD*	Skewness	Kurtosis
28	76	2	3	5	4.640	0.582	-1.425	1.080
24	76	3	2	5	4.300	0.817	-0.918	0.027
21	76	4	1	5	4.120	0.938	-1.139	1.547
27	76	3	2	5	4.090	0.803	-0.487	-0.437
22	76	4	1	5	4.080	0.891	-0.971	1.040
23	76	4	1	5	4.040	1.051	-0.858	0.114
25	76	4	1	5	4.030	0.993	-1.061	0.942
26	76	4	1	5	4.030	1.032	-0.950	0.432
29	76	4	1	5	3.660	1.027	-0.326	-0.369

Note. Data obtained by examining questions 21-29 of the modified OESQ, as these strategies

pertained to learner-to-content interaction.

When examining the subset of engagement strategies within the learner-to-content interaction type by gender, there were a total of 54 female respondents and a total of 21 male respondents to the modified OESQ. Both female and male respondents perceived engagement strategy 28, students work on realistic scenarios to apply content, as most important with means of 4.690 and 4.520, respectively. Both female and male respondents perceived engagement strategy 29, students use self-tests to check their understanding of materials, as least important with means of 3.670 and 3.670, respectively. Table 21 shows the descriptive statistics for the perceived levels of importance for each engagement strategy within the learner-to-content interaction type for female respondents. Table 22 shows the descriptive statistics for the perceived levels of importance for each engagement strategy within the learner-to-content interaction type for male respondents.

Table 21

Level of Perceived Importance for each Engagement Strategy within Learner-to-Content

Interaction for Female Respondents

OESQ Item	*N*	Range	Min.	Max	*M*	*SD*	Skewness	Kurtosis
28	54	2	3	5	4.690	0.543	-1.531	1.520
24	54	3	2	5	4.390	0.763	-1.066	0.528
21	54	4	1	5	4.150	0.940	-1.439	2.833
27	54	3	2	5	4.110	0.793	-0.675	0.196
23	54	4	1	5	4.090	1.086	-1.107	0.686
22	54	4	1	5	4.020	0.921	-0.940	1.037
26	54	4	1	5	3.940	1.106	-0.930	0.233
25	54	4	1	5	3.940	1.054	-0.992	0.677
29	54	4	1	5	3.670	1.099	-0.443	-0.415

Note. Data obtained by examining questions 21-29 of the modified OESQ, as these strategies

pertained to learner-to-content interaction.

Table 22

Level of Perceived Importance for each Engagement Strategy within Learner-to-Content

Interaction for Male Respondents

OESQ Item	*N*	Range	Min.	Max	*M*	*SD*	Skewness	Kurtosis
28	21	2	3	5	4.520	0.680	-1.150	0.260
25	21	3	2	5	4.290	0.784	-1.265	2.297
26	21	2	3	5	4.290	0.784	-0.576	-1.078
22	21	3	2	5	4.240	0.831	-1.074	1.145
24	21	3	2	5	4.140	0.910	-0.745	-0.285
21	21	3	2	5	4.000	0.949	-0.388	-1.007
27	21	2	3	5	4.000	0.837	0.000	-1.579
23	21	3	2	5	3.900	0.995	-0.130	-1.441
29	21	2	2	5	3.670	0.856	0.215	-0.718

Note. Data obtained by examining questions 21-29 of the modified OESQ, as these strategies

pertained to learner-to-content interaction.

For the subset of engagement strategies within the learner-to-content interaction type, the online graduate business program had 10 respondents, the education program had 61, and the other content area programs (nursing, sports management, and organizational leadership) had 4 respondents. Both business program respondents and education program respondents perceived engagement strategy 28, students work on realistic scenarios to apply content, as most important with means of 4.500 and 4.670, respectively. Respondents enrolled in other content area programs perceived engagement strategy 24, discussions are structured with guiding questions and/or prompts to deepen their understanding of the content, as most important with a mean of 5.000.

Both business respondents and respondents enrolled in other content area programs perceived engagement strategy 23, students experience live, synchronous web conferencing for class events and/or guest talks, as the least important with means of 3.100 and 3.000, respectively. Education program respondents perceived engagement strategy 29, students use self-tests to check their understanding of materials, as least important with a mean of 3.670. Table 23 shows the descriptive statistics for each engagement strategy within the learner-to-content interaction type for business program respondents. Table 24 shows the descriptive statistics for each engagement strategy within the learner-to-content interaction type for education program respondents. Table 25 shows the descriptive statistics for each engagement strategy within the learner-to-content interaction type for other content area program respondents.

Table 23

Level of Perceived Importance for each Engagement Strategy within Learner-to-Content

Interaction for Business Program Respondents

OESQ Item	*N*	Range	Min.	Max	*M*	*SD*	Skewness	Kurtosis
28	10	2	3	5	4.500	0.707	-1.179	0.571
24	10	3	2	5	3.900	1.101	-0.388	-1.236
26	10	2	3	5	3.900	0.876	0.223	-1.734
22	10	3	2	5	3.700	0.949	-0.234	-0.347
27	10	2	3	5	3.700	0.949	0.742	-1.640
29	10	3	2	5	3.700	0.949	-0.234	-0.347
25	10	3	2	5	3.600	1.075	-0.322	-0.882
21	10	2	3	5	3.300	0.675	2.277	4.765
23	10	2	2	4	3.100	0.568	0.091	1.498

Note. Data obtained by examining questions 21-29 of the modified OESQ, as these strategies

pertained to learner-to-content interaction.

Table 24

Level of Perceived Importance for each Engagement Strategy within Learner-to-Content

Interaction for Education Program Respondents

OESQ Item	*N*	Range	Min.	Max	*M*	*SD*	Skewness	Kurtosis
28	61	2	3	5	4.670	0.569	-1.562	1.549
24	61	3	2	5	4.340	0.750	-0.913	0.270
23	61	4	1	5	4.260	1.031	-1.498	1.883
21	61	4	1	5	4.250	0.925	-1.694	3.610
22	61	4	1	5	4.130	0.903	-1.108	1.432
27	61	3	2	5	4.130	0.785	-0.666	0.145
25	61	4	1	5	4.100	0.995	-1.252	1.592
26	61	4	1	5	4.080	1.053	-1.141	0.877
29	61	4	1	5	3.670	1.076	-0.381	-0.428

Note. Data obtained by examining questions 21-29 of the modified OESQ, as these strategies

pertained to learner-to-content interaction.

Table 25

Level of Perceived Importance for each Engagement Strategy within Learner-to-Content

Interaction for Other Content Area Program Respondents

OESQ Item	N	Range	Min.	Max	M	SD	Skewness	Kurtosis
24	4	0	5	5	5.000	0.000	-	-
28	4	1	4	5	4.500	0.577	0.000	-6.000
22	4	1	4	5	4.250	0.500	2.000	4.000
25	4	1	4	5	4.250	0.500	2.000	4.000
27	4	1	4	5	4.250	0.500	2.000	4.000
21	4	2	3	5	4.000	0.816	0.000	1.500
26	4	3	2	5	3.750	1.258	-1.129	2.227
29	4	1	3	4	3.500	0.577	0.000	-6.000
23	4	0	3	3	3.000	0.000	-	-

Note. Data obtained by examining questions 21-29 of the modified OESQ, as these strategies

pertained to learner-to-content interaction.

For the subset of engagement strategies within the learner-to-content interaction type, the online graduate education program respondents were broken into two levels of degree program. In the online education graduate program there were 17 respondents from the master's degree level and 43 respondents from the doctoral degree level. Both educational program master's degree and doctoral degree respondents perceived engagement strategy 28, students work on realistic scenarios to apply content, as most important with means of 4.410 and 4.770, respectively.

Both educational program master's degree and doctoral degree respondents perceived engagement strategy 29, students use self-tests to check their understanding of materials, as least important with means of 3.350 and 3.840, respectively. Table 26 shows the descriptive statistics for the perceived level of importance for each engagement strategy within the learner-to-content interaction type for master's degree education program respondents. Table 27 shows the descriptive statistics for the perceived level of importance for each engagement strategy within the learner-to-content interaction type for doctoral degree education program respondents.

Table 26

Level of Perceived Importance for each Engagement Strategy within Learner-to-Content

Interaction for Education Program Master's Degree Level Respondents

OESQ Item	*N*	Range	Min.	Max	*M*	*SD*	Skewness	Kurtosis
28	17	2	3	5	4.410	0.618	-0.522	-0.443
22	17	2	3	5	4.350	0.702	-0.634	-0.576
24	17	2	3	5	4.350	0.702	-0.634	-0.576
25	17	3	2	5	4.290	0.849	-1.344	2.050
26	17	2	3	5	4.180	0.809	-0.353	-1.342
21	17	4	1	5	3.940	1.144	-1.292	1.560
27	17	3	2	5	3.710	0.849	-0.740	0.441
23	17	4	1	5	3.590	1.278	-0.936	0.190
29	17	4	1	5	3.350	1.115	-0.194	-0.104

Note. Data obtained by examining questions 21-29 of the modified OESQ, as these strategies

pertained to learner-to-content interaction.

Table 27

Level of Perceived Importance for each Engagement Strategy within Learner-to-Content

Interaction for Education Program Doctoral Degree Level Respondents

OESQ Item	*N*	Range	Min.	Max	*M*	*SD*	Skewness	Kurtosis
28	43	2	3	5	4.770	0.527	-2.269	4.488
23	43	3	2	5	4.510	0.798	-1.514	1.386
21	43	4	1	5	4.350	0.813	-1.853	5.555
24	43	3	2	5	4.330	0.778	-0.971	0.457
27	43	2	3	5	4.300	0.708	-0.513	-0.835
22	43	4	1	5	4.050	0.975	-1.067	1.119
26	43	4	1	5	4.050	1.154	-1.168	0.628
25	43	4	1	5	4.020	1.058	-1.188	1.342
29	43	4	1	5	3.840	1.022	-0.501	-0.203

Note. Data obtained by examining questions 21-29 of the modified OESQ, as these strategies

pertained to learner-to-content interaction.

RQ8. Which engagement strategies are perceived to be most important for facilitating each type of interaction (learner-to-learner, learner-to-instructor, learner-to-content) for all online Baker University graduate students, as well as by gender (female or male), graduate program content area (business, education, or other), and degree level with the education program (doctoral or master's)?

Learner-to-learner interactions, as measured by the modified OESQ, consisted of 10 engagement strategies for which respondents rated the level of importance for an engaged learning experience on a 5-point Likert-type scale with 1 being very unimportant and 5 being very important. These learner-to-learner strategies were item numbers 1-10 of the modified OESQ. The strategies included:

1. Students use a virtual lounge where they can meet informally to share common interests.

2. Students complete an integrated profile on the Learning Management System that is assessable in all courses.

3. Students introduce themselves using an ice-breaker discussion.

4. Students moderate discussions.

5. Students have choices in the selection of readings (articles, books) that drive discussion group formation.

6. Students post audio and/or video files in threaded discussions instead of only written responses.

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.

The engagement strategy within the learner-to-learner interaction type subset rated as most important for all Baker University online graduate students was engagement strategy 8. Engagement strategy 8, students work collaboratively using online communication tools to complete case studies, projects, reports, etc., had a mean perceived level of importance of 3.950. This was followed in perceived level of importance by engagement strategy 5, students have choices in the selection of readings (articles, books) that drive discussion group formation, with a mean perceived level of importance of 3.790, and then engagement strategy 7, students interact with peers through student presentations (asynchronously or synchronously), with a mean perceived level of importance of 3.590. The engagement strategy within the learner-to-learner interaction type subset rated as least important by all Baker University online graduate respondents was engagement strategy 10. Engagement strategy 10, students are required to rate individual performance of team members on projects, had a mean perceived level of importance of 2.740. Figure 8 shows a visual display of the mean perceived level of importance for the learner-to-learner type engagement strategies for all Baker University online graduate respondent to the modified OESQ.

Figure 8

Mean Levels of Importance for Learner-to-Learner Engagement Strategies for All Baker
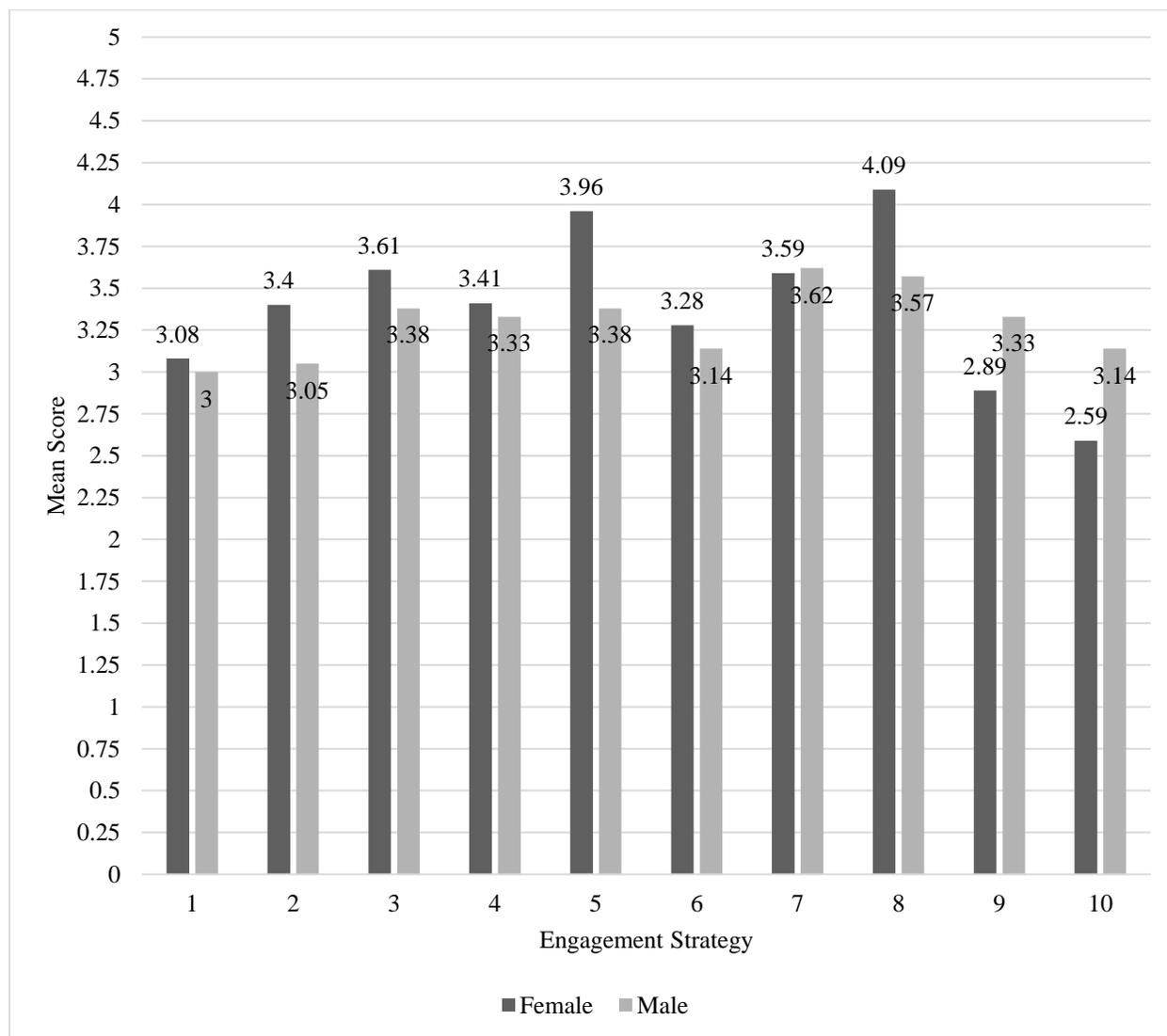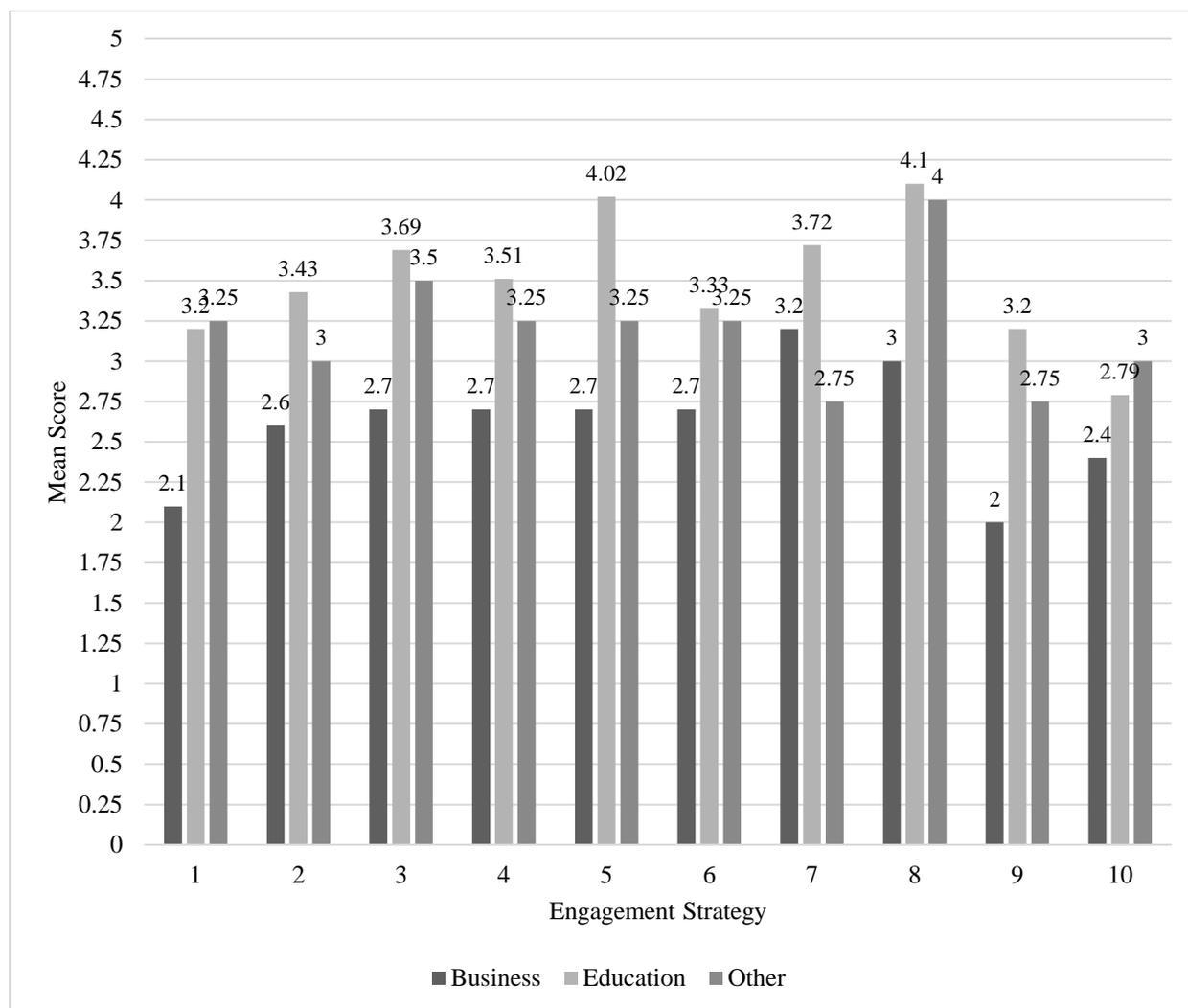
University Online Graduate Respondents
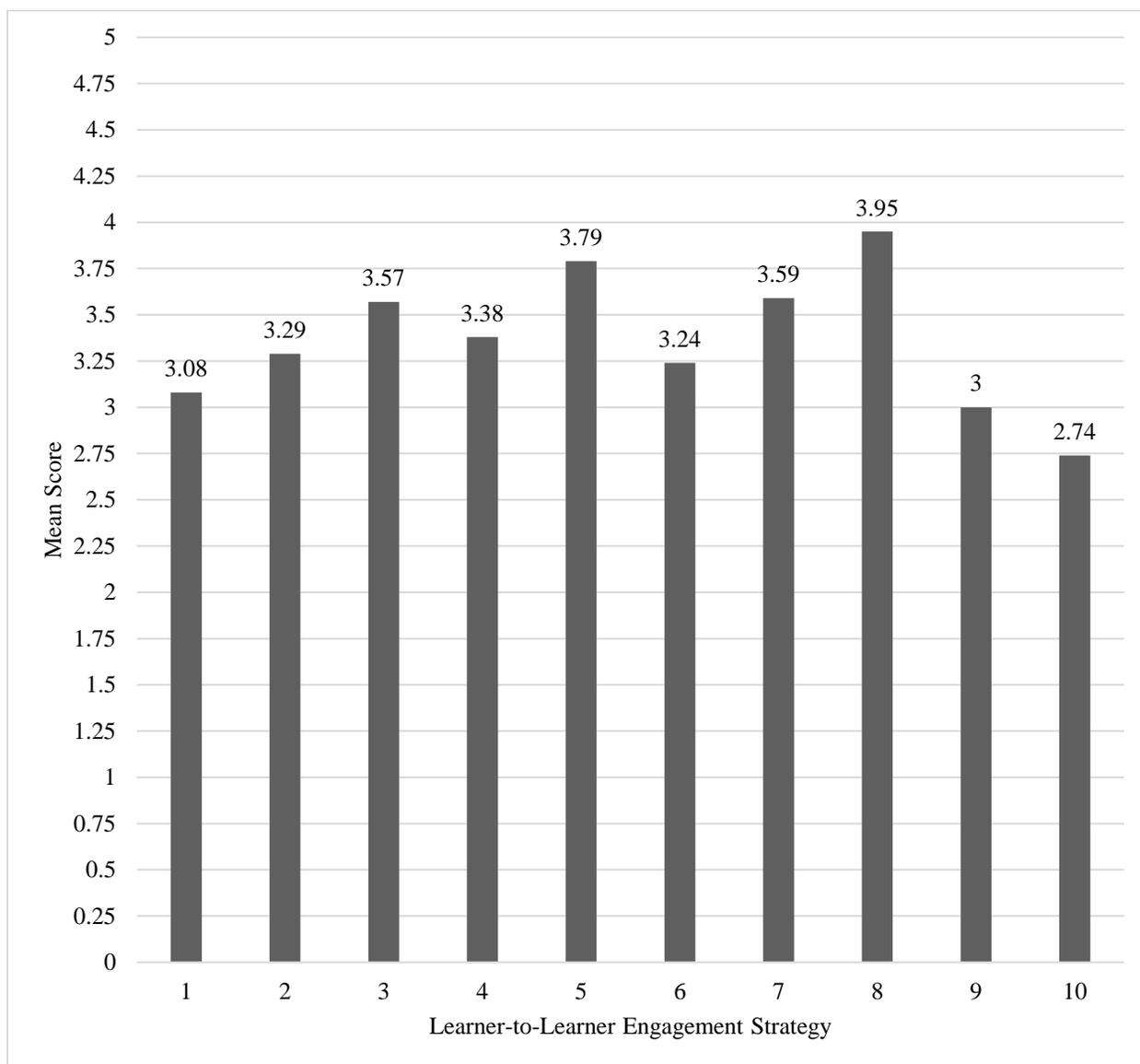
Note. Mean learner-to-learner engagement scores for all Baker University respondents of the

modified OESQ (*N* = 76).

Female respondents ($N = 54$) perceived engagement strategy 8, students work collaboratively using online communication tools to complete case studies, projects, reports, etc., as most important with a mean perceived level of importance of 4.090. Male respondents ($N = 21$) perceived engagement strategy 7, students interact with peers through student presentations (asynchronously or synchronously), as most important with a mean perceived level of importance of 3.620. Female respondents perceived engagement strategy 10, students are required to rate individual performance of team members on projects, as least important with a mean perceived level of importance of 2.590. Male respondents perceived engagement strategy 1, students use a virtual lounge where they can meet informally to share common interests, as least important with a mean perceived level of importance of 3.000. Figure 9 shows the mean perceived level of importance for the learner-to-learner type engagement strategies for Baker University modified OESQ respondents by gender.

Figure 9

Mean Levels of Importance for Learner-to-Learner Engagement Strategies by Gender

Note. Mean learner-to-learner engagement scores for Baker University respondents of the modified OESQ by gender. For this data set female respondents ($N = 54$) and male respondents ($N = 21$).

Business program respondents ($N = 10$) perceived engagement strategy 7, students interact with peers through student presentations (asynchronously or synchronously), as most important with a mean perceived level of importance of 3.200. Education program respondents ($N = 61$) perceived engagement strategy 8, students work collaboratively using online communication tools to complete case studies, projects, reports, etc., as most important with a mean perceived level of importance of 4.100. Respondents in the other content area programs ($N = 4$) perceived engagement strategy 8, students work collaboratively using online communication tools to complete case studies, projects, reports, etc., as most important with a mean perceived level of importance of 4.000. Both respondents from the business program ($N = 10$) and respondents from other content area programs ($N = 4$) perceived engagement strategy 9, students peer-review classmates' work, as least important with mean perceived levels of importance of 2.000 and 2.750, respectively. Education program respondents ($N = 61$) perceived engagement strategy 10, students are required to rate individual performance of team members on projects, as least important with a mean perceived level of importance of 2.790. Figure 10 shows the mean perceived levels of importance for learner-to-learner engagement type strategies on the modified OESQ by respondents' program content area.

Figure 10

Mean Levels of Importance for Learner-to-Learner Engagement Strategies by Program Content Area
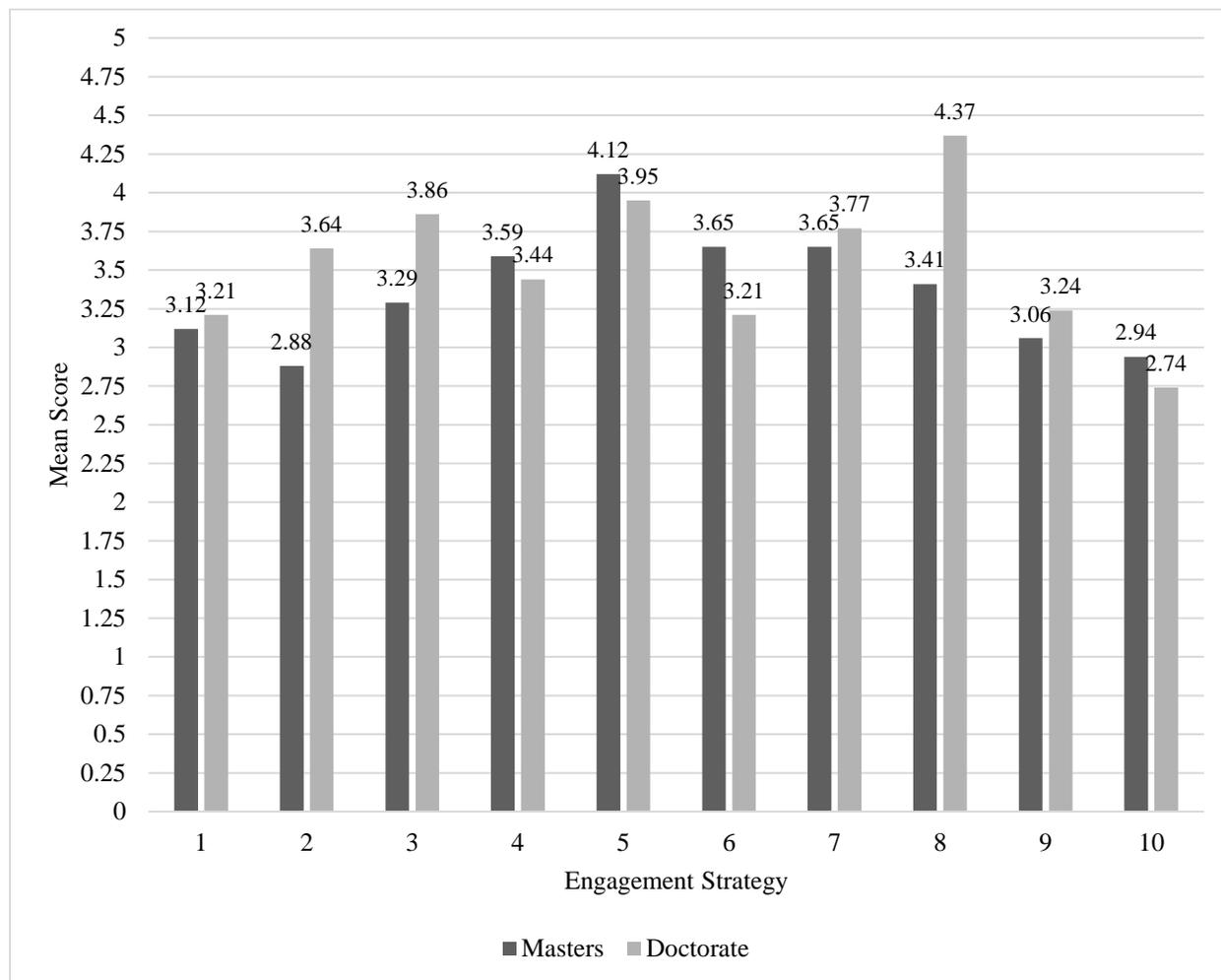

Note. Mean learner-to-learner engagement strategy scores by program content area for Baker University respondents on the modified OESQ. For this data set, business program respondents ($N = 10$), education program respondents ($N = 61$), and other content area program respondents ($N = 4$).

For online graduate respondents in the education program, master's degree respondents ($N = 30$) perceived engagement strategy 5, students have choices in the selection of readings (articles, books) that drive discussion group formation, as most important with a mean perceived level of importance of 4.120. Doctoral degree education program respondents ($N = 44$) perceived engagement strategy 8, students work collaboratively using online communication tools to complete case studies, projects, reports, etc., as most important with a mean perceived level of importance of 4.370. Master's degree education program respondents perceived engagement strategy 2, students complete an integrated profile on the learning management system that is accessible in all courses, as least important with a mean perceived level of importance of 2.880. Doctoral degree education program respondents perceived engagement strategy 10, students are required to rate individual performance of team members on projects, as least important with a mean perceived level of importance of 2.740. Figure 11 shows the mean perceived levels of importance for the learner-to-learner engagement type strategies by degree level within the education program.

Figure 11

Mean Level of Importance for Learner-to-Learner Engagement Strategies by Degree Level in the

Education Program

Note. Mean learner-to-learner engagement strategy scores by education program degree level for

Baker University respondents of the modified OESQ. For this data set, master's degree

education program respondents (*N* = 30) and doctoral degree education program respondents (*N*

= 44).

Learner-to-instructor interactions, as measured by the modified OESQ, consisted of 10 engagement strategies for which respondents rated the level of importance for an engaged learning experience on a 5-point Likert-type scale with 1 being very unimportant and 5 being very important. These learner-to-instructor strategies were item numbers 11-20 of the modified OESQ. The strategies included:

11. The instructor refers to students by name in discussion forum.

12. The instructor sends/posts regular announcements or email reminders.

13. The instructor creates a forum for students to contact the instructor with questions about the course.

14. The instructor creates a course orientation for students.

15. The instructor posts a "due date checklist" at the end of each instructional unit.

16. The instructor creates short videos to increase instructor presence in the course.

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

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).

The engagement strategy within the learner-to-instructor interaction type subset rated as most important for all Baker University online graduate respondents ($N = 76$) was engagement strategy 19. Engagement strategy 19, the instructor posts grading rubrics for all assignments, had a mean perceived level of importance of 4.680. This was followed in level of importance by engagement strategy 15, the instructor posts a due date checklist at the end of each instructional

unit, with a mean perceived level of importance of 4.570, and then engagement strategy 12, the instructor sends/posts regular announcements or email reminders, with a mean perceived level of importance of 4.550. The engagement strategy within the learner-to-instructor interaction type subset rated as least important for all Baker University online graduate respondents was engagement strategy 16. Engagement strategy 16, the instructor creates short videos to increase instructor presence in the course, had a mean perceived level of importance of 3.640. Figure 12 shows the mean perceived levels of importance for the learner-to-instructor engagement strategies for all Baker University online graduate respondents of the modified OESQ.

Figure 12

Mean Levels of Importance for Learner-to-Instructor Engagement Strategies for All Baker University Online Graduate Respondents

Note. Mean learner-to-instructor engagement strategy scores for all Baker University respondents of the modified OESQ ($N = 76$).

Both female respondents ($N = 54$) and male respondents ($N = 21$) perceived engagement strategy 19, the instructor posts grading rubrics for all assignments, as most important with mean perceived levels of importance of 4.690 and 4.670, respectively. Female respondents perceived engagement strategy 16, the instructor creates short videos to increase instructor presence in the course, as least important with a mean level of importance of 3.410. Male respondents perceived engagement strategy 18, the instructor provides students with an opportunity to reflect, as least important with a mean perceived level of importance of 3.810. Figure 13 shows the mean perceived levels of importance for the learner-to-instructor engagement type strategies by gender for Baker University online graduate respondents of the modified OESQ.

Figure 13

Mean Level of Importance for Learner-to-Instructor Engagement Strategies by Gender
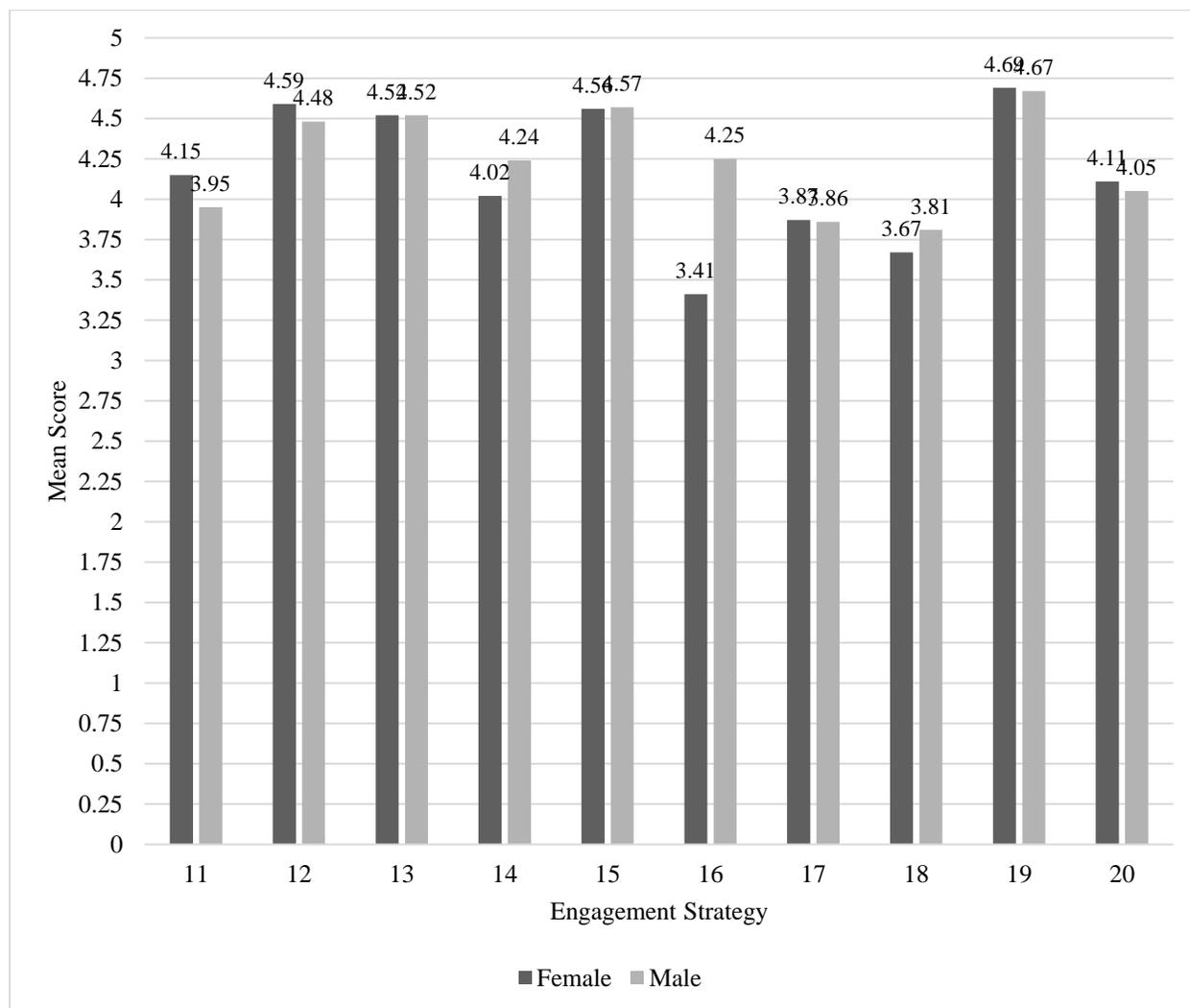
Note. Mean learner-to-instructor engagement strategy scores by gender for Baker University respondents of the modified OESQ. For this data set, female respondents ($N = 54$) and male respondents ($N = 21$).
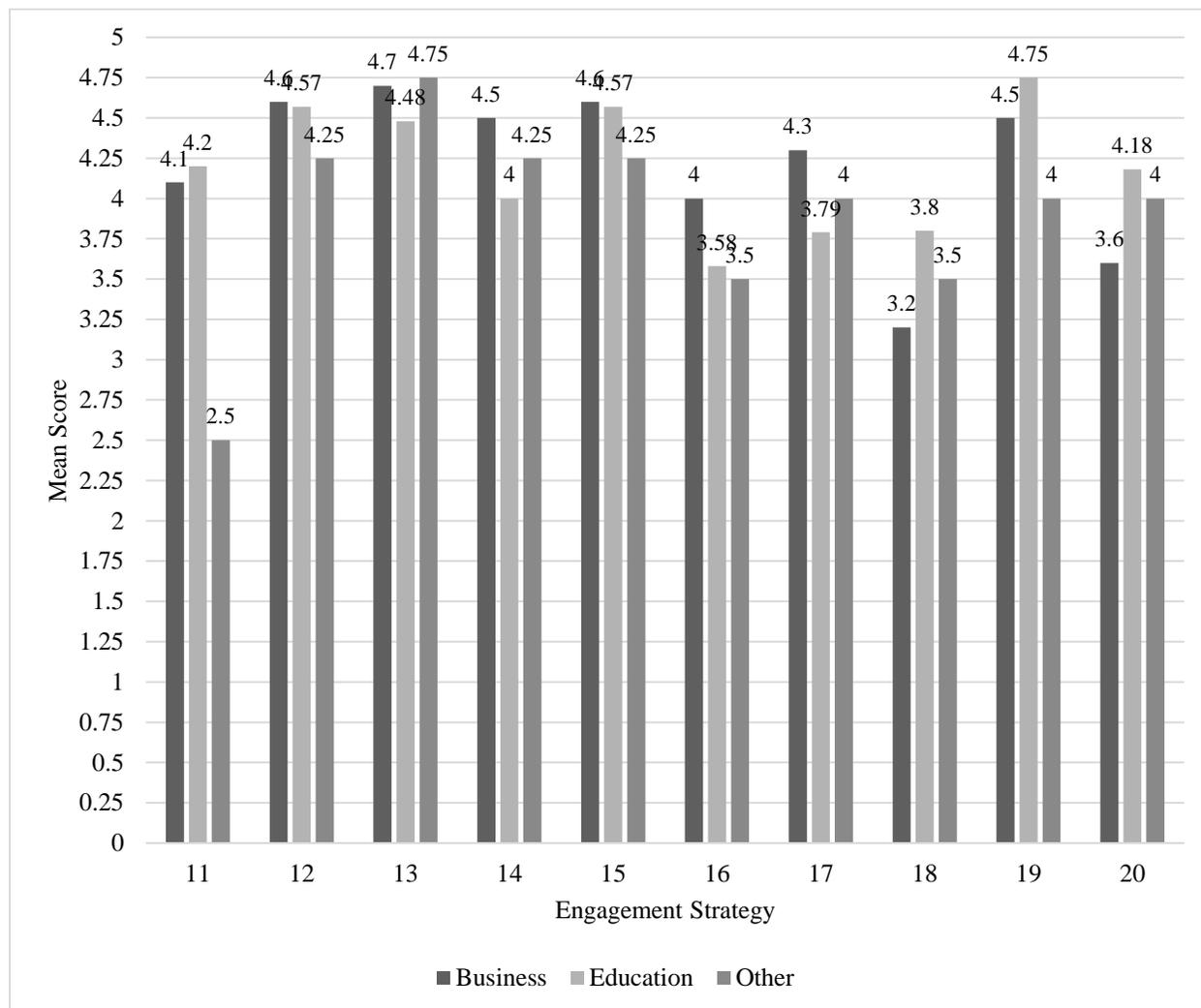
Both business program respondents ($N = 10$) and other content area program respondents ($N = 4$) perceived engagement strategy 13, the instructor creates a forum for students to contact the instructor with questions about the course, as most important with mean perceived levels of importance of 4.700 and 4.740, respectively. Education program respondents ($N = 61$) perceived

engagement strategy 19, the instructor posts grading rubrics for all assignments, as most important with a mean perceived level of importance of 4.750. Business program respondents perceived engagement strategy 18, the instructor provides students with an opportunity to reflect, as the least important with a mean perceived level of importance of 3.200. Education program respondents perceived engagement strategy 16, the instructor creates short videos to increase instructor presence in the course, as least important with a mean perceived level of importance of 3.580. Respondents from other content area programs perceived engagement strategy 11, the instructor refers to students by name in discussion forums, as least important with a mean perceived level of importance of 2.500. Figure 14 shows the mean levels of perceived importance for the learner-to-instructor engagement type strategies by program content area for Baker University online graduate respondents of the modified OESQ.

Figure 14

Mean Levels of Importance for Learner-to-Instructor Engagement Strategies by Program
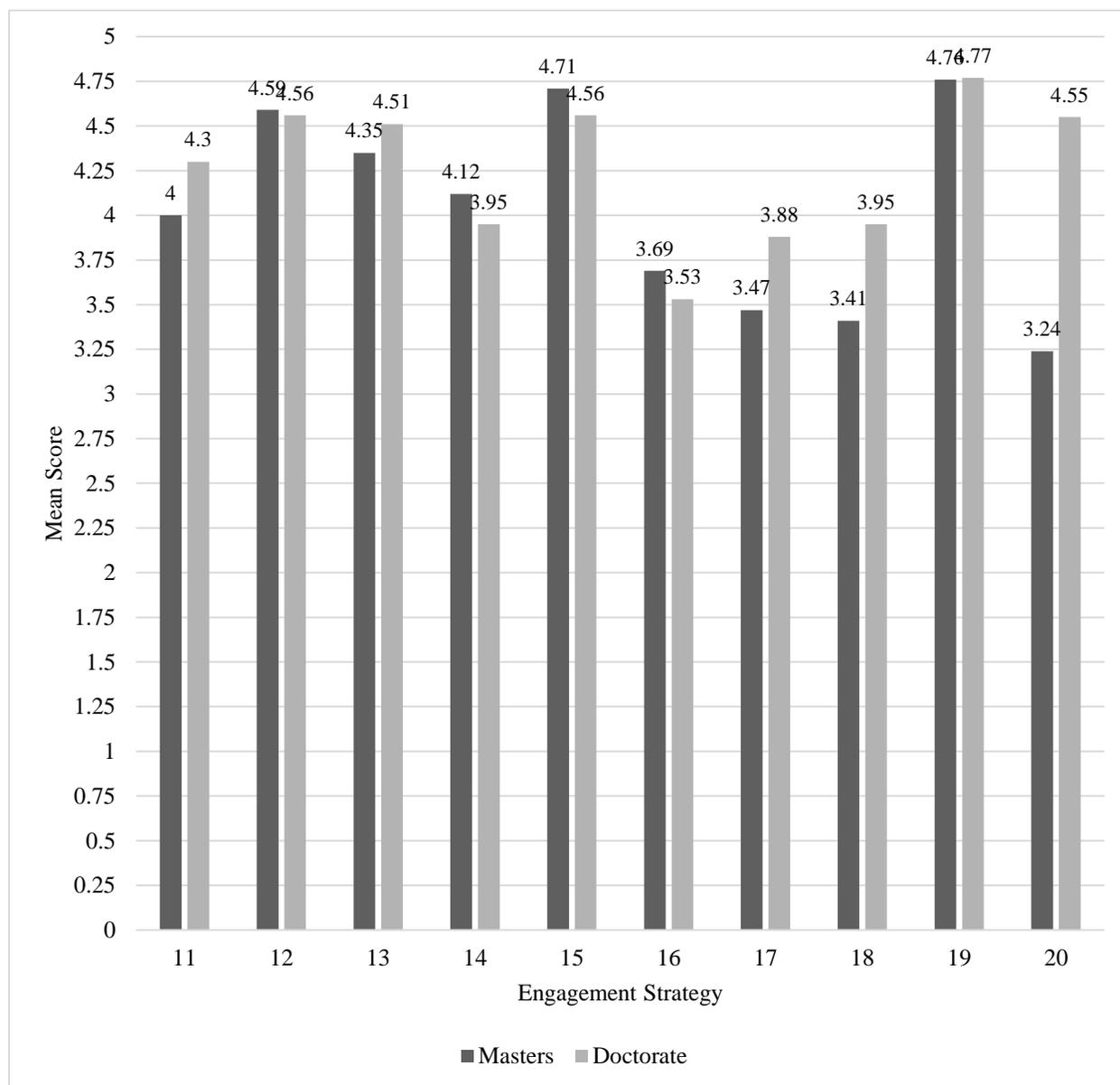
Content Area

Note. Mean learner-to-instructor engagement strategy scores by program content area for Baker University respondents of the modified OESQ. For this data set, business program respondents ($N = 10$), education program respondents ($N = 61$), and other content area program respondents ($N = 4$).

Both master's degree education program respondents ($N = 21$) and doctoral degree education program respondents ($N = 44$) perceived engagement strategy 19, the instructor posts grading rubrics for all assignments, as most important with mean perceived levels of importance of 4.760 and 4.770, respectively. Master's degree education program respondents perceived engagement strategy 20, the instructor uses various features in synchronous sessions to interact with students, as least important with a mean perceived level of importance of 3.240. Doctoral degree education program respondents perceived engagement strategy 16, the instructor creates short videos to increase instructor presence in the course, as least important with a mean perceived level of importance of 3.530. Figure 15 shows the mean levels of perceived importance for the learner-to-instructor engagement type strategies by degree level within the education program for modified OESQ respondents.

Figure 15

Mean Levels of Importance for Learner-to-Instructor Engagement Strategies by Degree Level in

the Education Program

Note. Mean learner-to-instructor engagement strategy scores by education program degree level

for Baker University respondents of the modified OESQ. For this data set, master's degree

education program respondents ($N = 21$) and doctoral degree education program respondents (N

$= 44$).

Learner-to-content interactions, as measured by the modified OESQ, consisted of 9 engagement strategies for which respondents rated the level of importance for an engaged learning experience on a 5-point Likert-type scale with 1 being very unimportant and 5 being very important. These learner-to-content strategies were item numbers 21-29 of the modified OESQ. The strategies included:
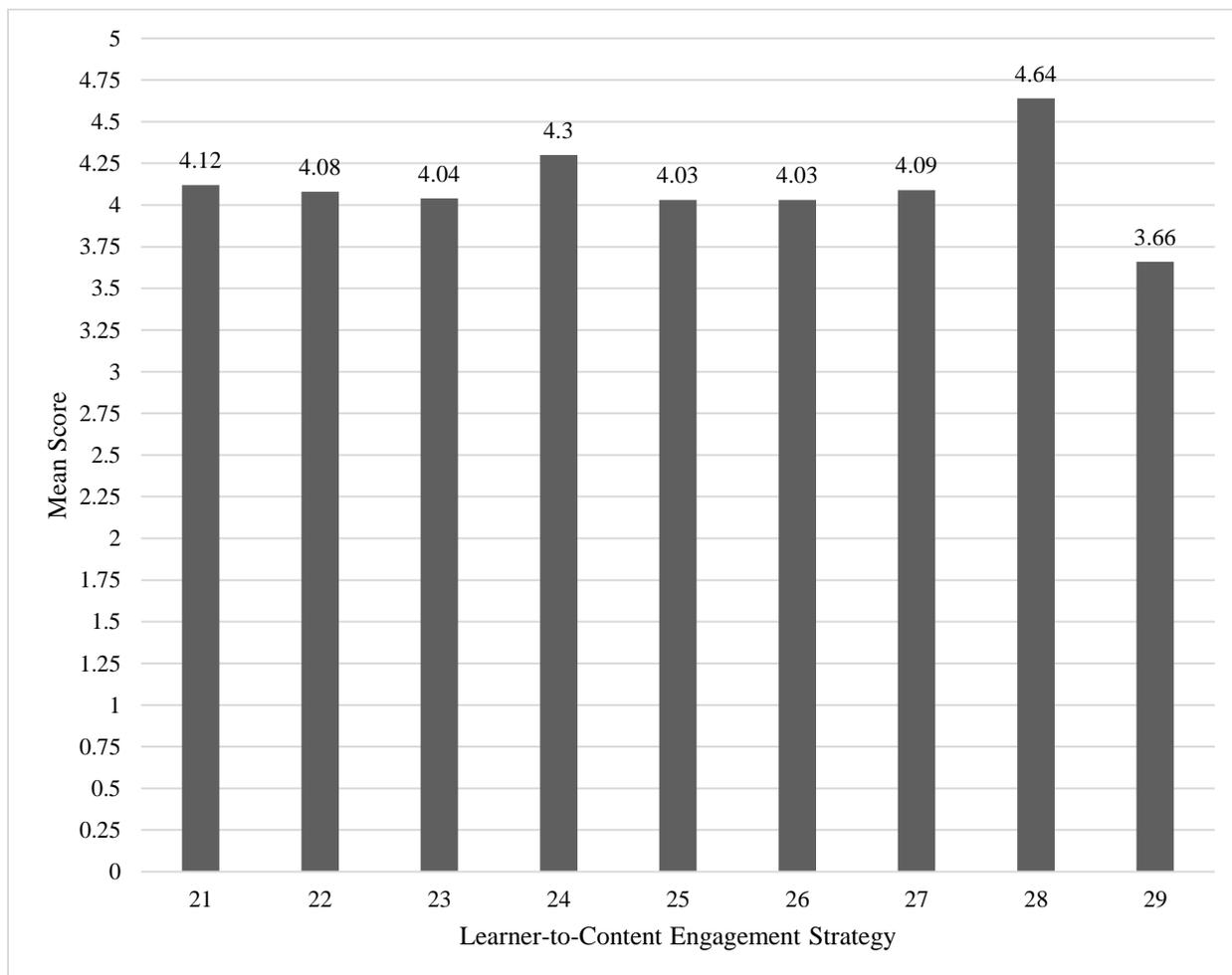
21. Students interact with content in more than one format (e.g., text, video, audio, interactive games or simulations).

22. Students use optional online resources to explore topics in more depth.

23. Students experience live, synchronous web conferencing for class events and/or guest talks.

24. Discussions are structured with guiding questions and/or prompts to deepen their understanding of the content.

25. Students research an approved topic and present their findings in a delivery method of their choice (e.g., discussion forum, chat, web conference, multimedia presentation).

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.

The engagement strategy within the learner-to-content interaction type subset rated as most important for all Baker University online graduate respondents ($N = 76$) was engagement

strategy 28. Engagement strategy 28, students work on realistic scenarios to apply content, had a

mean perceived level of importance of 4.640. This was followed in perceived level of

importance by engagement strategy 24, discussions are structured with guiding questions and/or

prompts to deepen their understanding of the content, with a mean perceived level of importance

of 4.300, and then engagement strategy 21, students interact with content in more than one

format, with a mean perceived level of importance of 4.120. The engagement strategy within the

learner-to-content interaction type subset rated as least important by all Baker University online

graduate respondents was engagement strategy 29. Engagement strategy 29, students use self-

tests to check their understanding of materials, had a mean perceived level of importance of

3.660. Figure 16 shows the mean levels of perceived importance for the learner-to-content

engagement type strategies for all Baker University online graduate respondents of the modified

OESQ.

Figure 16

Mean Levels of Importance for Learner-to-Content Engagement Strategies for All Baker

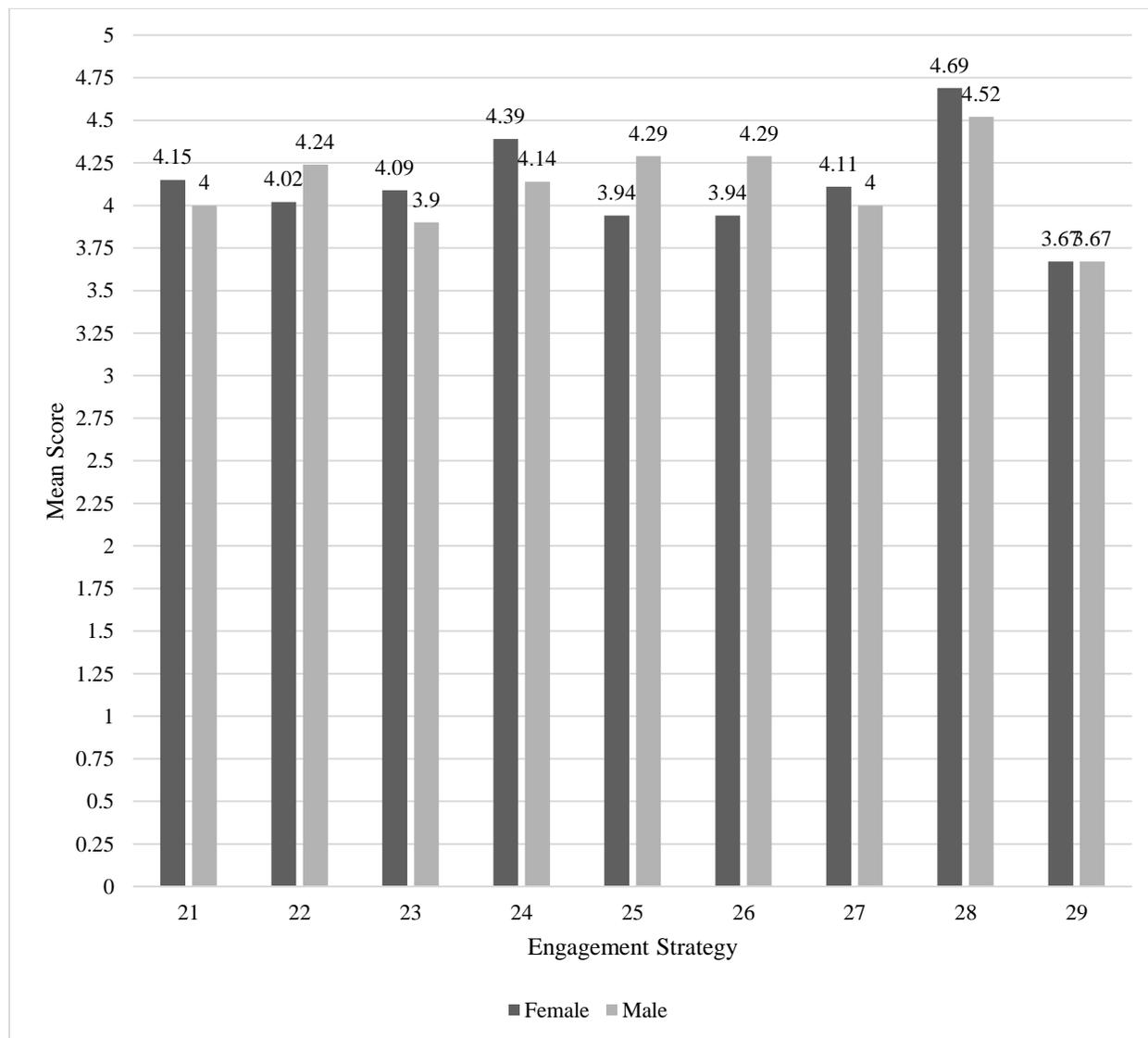*University Online Graduate Respondents*

Note. Mean learner-to-content engagement strategy scores for all Baker University online

graduate respondents of the modified OESQ (*N* = 76).

Both female respondents (*N* = 54) and male respondents (*N* = 21) perceived engagement

strategy 28, students work on realistic scenarios to apply content, as most important with mean

perceived levels of importance of 4.690 and 4.520, respectively. Both female respondents and

male respondents perceived engagement strategy 29, students use self-tests to check their

understanding of materials, as least important with mean perceived levels of importance of 3.670

and 3.670, respectively. Figure 17 shows the mean levels of importance for the learner-to-content engagement type strategies for Baker University online graduate respondents to the modified OESQ by gender.

Figure 17

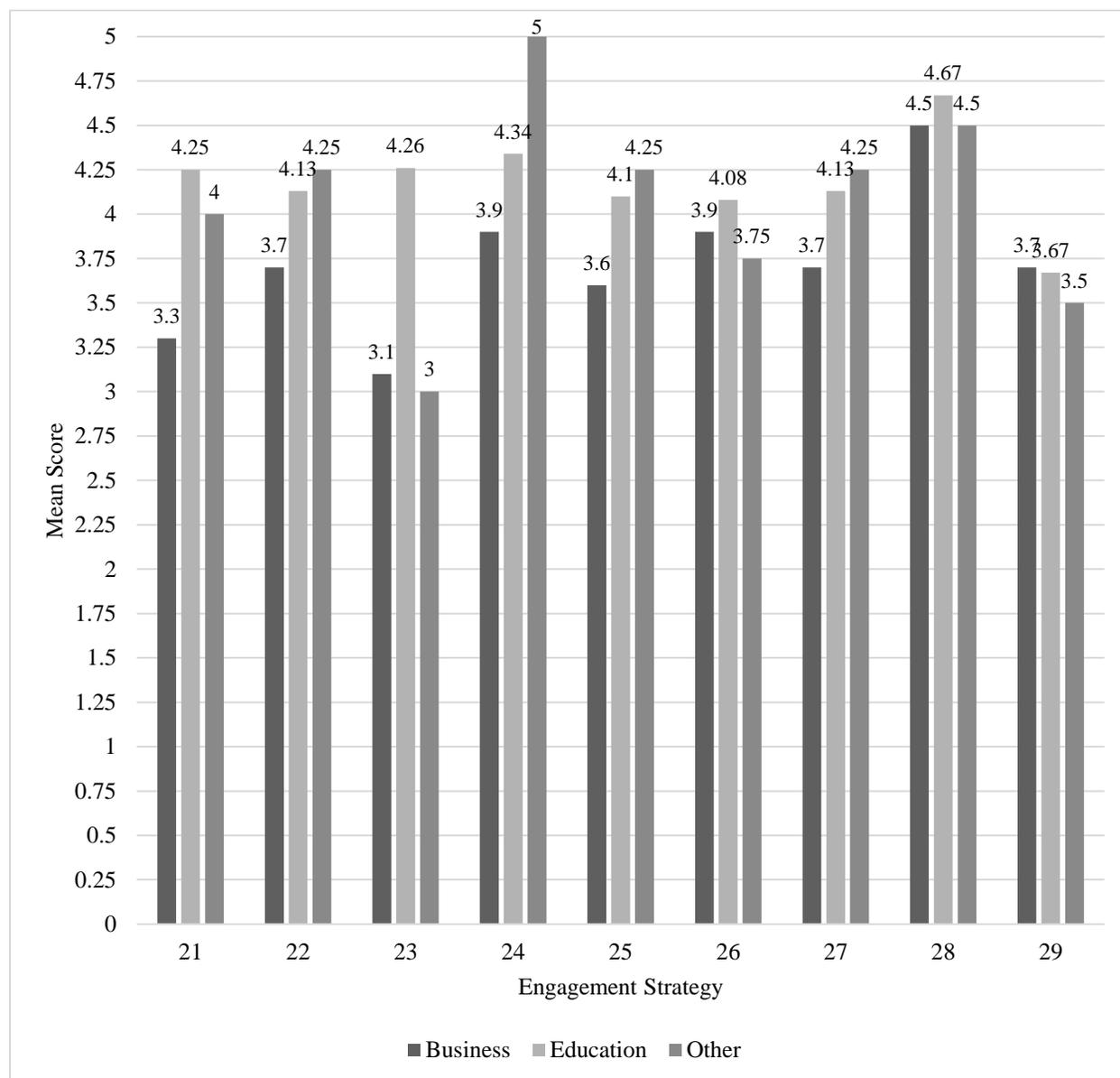*Mean Levels of Importance for Learner-to-Content Engagement Strategies by Gender*

Note. Mean learner-to-content engagement strategy scores by gender for Baker University respondents of the modified OESQ. For this data set, female respondents ($N = 54$) and male respondents ($N = 21$).

Both business program respondents ($N = 10$) and education program respondents ($N = 61$) perceived engagement strategy 28, students work on realistic scenarios to apply content, as most important with mean perceived levels of importance of 4.500 and 4.670, respectively. Respondents from other content are programs ($N = 4$) perceived engagement strategy 24, discussions are structured with guiding questions and/or prompts to deepen their understanding of the content, as most important with a mean perceived level of importance of 5.000. Business respondents and respondents from other content area programs perceived engagement strategy 23, students experience live, synchronous web conferencing for class events and/or guest talks, as the least important with mean perceived levels of importance of 3.100 and 3.000, respectively. Education program respondents perceived engagement strategy 29, students use self-tests to check their understanding of materials, as least important with a mean perceived level of importance of 3.670. Figure 18 shows the mean perceived levels of importance for the learner-to-content engagement type strategies by program content area for Baker University online graduate respondents of the modified OESQ.

Figure 18

Mean Levels of Importance for Learner-to-Content Engagement Strategies by Program Content
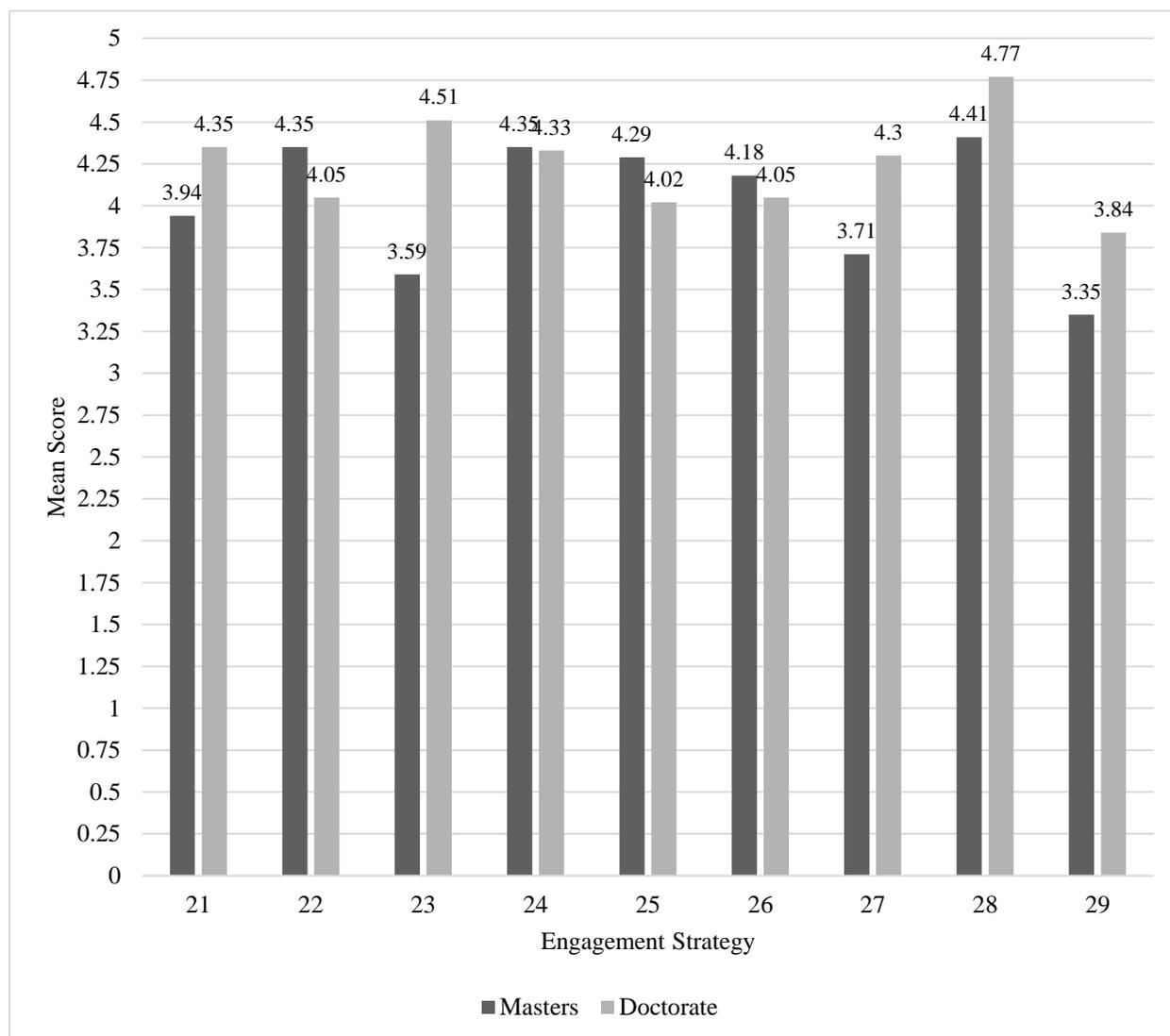
Area

Note. Mean learner-to-instructor engagement strategy scores by program content area for Baker University respondents of the modified OESQ. For this data set, business program respondents ($N = 10$), education program respondents ($N = 61$), and other content area program respondents ($N = 4$).

Both education program master's degree respondents ($N = 21$) and doctoral degree respondents ($N = 44$) perceived engagement strategy 28, students work on realistic scenarios to apply content, as most important with mean perceived levels of importance of 4.410 and 4.770, respectively. Both master's and doctoral degree education program respondents perceived engagement strategy 29, students use self-tests to check their understanding of materials, as least important with mean perceived levels of importance of 3.350 and 3.840, respectively. Figure 19 shows the mean perceived levels of importance for the learner-to-content engagement type strategies by degree level within the education program for Baker University online graduate respondents to the modified OESQ.

Figure 19

Mean Levels of Importance for Learner-to-Content Engagement Strategies by Degree Level in the Education Program

Note. Mean learner-to-instructor engagement strategy scores by education program degree level for Baker University respondents of the modified OESQ. For this data set, master's degree education program respondent ($N = 21$) and doctoral degree education program respondents ($N = 44$).

Summary

A slightly modified version of the Online Engagement Strategy Questionnaire (OESQ) was emailed to all Baker University online graduate students to gain a better understanding of their perceptions regarding learner-to-learner, learner-to-instructor, and learner-to-content interactions, and to determine which engagement within each of the three interaction types strategies were perceived as most important to the graduate-level online student learning experience. For the 76 total respondents, perceived level of importance was examined for the student groups of gender (female or male), graduate program content area (business, education, or other), and degree level within the education program (doctoral or master's) to examine where differential trends in engagement strategy preference might exist. The data analysis results derived from the survey responses addressed eight research questions and were presented in Chapter 4. Chapter 5 provides a study summary, findings related to literature, and conclusions.

Chapter 5

Interpretation and Recommendations

The current descriptive and exploratory quantitative study collected perceptions of online graduate-level learners at Baker University using a slightly modified version of the Online Engagement Strategies Questionnaire (OESQ) to examine which types of student engagement were perceived as most important for their learning experience and which strategies were most important for fostering those types of student engagement. Chapter 5 contains a summary of the study, with sub-sections related to an overview of the problem, purpose statement and research questions, a review of the methodology, and major findings. Chapter 5 also contains results from the current study and those findings' relationship to research literature, and a conclusion section with implications for action, recommendations for future research, and concluding remarks.

Study Summary

Overview of the problem. Research has shown the importance of student engagement within an in-person learning environment. Wang and Degol (2016) found that when students engaged with learning, they could focus attention and energy on mastering the task, persist when difficulties arise, build supportive relationships with colleagues, and connect to their learning organizations. High levels of student engagement were also shown to be critical for student success and academic achievement (Fredricks et al., 2004). Numerous studies have provided evidence that "student engagement is a key element in keeping students connected with the course and, thus, with their learning" (Dixson, 2015, p. 2).

Achieving student engagement in online learning courses may be more important than in traditional face-to-face classrooms because online students have fewer ways to be engaged (Meyer, 2014). According to Banna, Lin, Stewart, and Fialkowski (2015), if content played a

central focus in online learning before 2015, engagement plays an essential role in stimulating online learning moving forward. The three basic types of student engagement in online learning are learner-to-learner, learner-to-instructor, and learner-to-content (Bernard et al., 2009). Lear et al. (2010) noted that interactions with content, peers, and instructors helped online learners become more active and engaged in their courses. The three types of student engagement interactions can promote a community of inquiry, resulting in high-quality learning and increased critical thinking (Martin & Bolliger, 2018).

The research literature about student engagement in graduate-level programs seems to have been misunderstood (Rabourn et al., 2018), and has been noted as lacking, inconsistent, inconclusive, and poorly understood (Dixson, 2015). Holzweiss, Joyner, Fuller, Henderson, and Young (2014) found that research conducted with higher education students in an online learning environment was minuscule, and that even less research had been conducted with online students in graduate programs. "Researchers have identified several factors that promote student engagement in the online learning environment, though much of this theorisation is focused primarily on undergraduate-level learning" (Holzweiss et al., 2014, p. 312). Gillet-Swan (2017) noted that while many of the practices used in face-to-face contact modes can be adapted and utilized in the online context, it is not simply the case of applying a 'one size fits all' approach. Instead, scales of adaptation and differentiation within instructional approaches could possibly be more effective for various levels of graduate learners and various program content areas for online and in-person educational settings.

Purpose statement and research questions. The first purpose of the current study was to describe the mean level of perceived importance for learner-to-learner, learner-to-instructor, and learner-to-content types of student interaction or engagement for all graduate-level online

learners at Baker University, then disaggregated by gender (female or male), the content area of program (business, education, or other), and by degree level within the education program (master's and doctoral). The second purpose was to explore which of the three types of student interaction or engagement were perceived as most important for all graduate-level online learners at Baker University, as well as by gender (female or male), the content area of program (business, education, or other), and by degree level within the Education program (master's and doctoral). The third purpose of the study was to describe the mean level of perceived importance for strategies aimed at achieving learner-to-learner, learner-to-instructor, learner-to-content types of student interaction or engagement for all graduate-level online learners at Baker University, then disaggregated by gender (female or male), the content area of program (business, education, or other), and by degree level within the Education program (master's and doctoral). The fourth purpose was to explore which strategies aimed at achieving the three types of student engagement were perceived as most important for all graduate-level online learners at Baker University, as well as by gender (female or male), the content area of program (business, education, or other), and by degree level within the Education program (master's and doctoral).

The current descriptive and exploratory quantitative study was guided by eight research questions. The first three research questions examined the mean perceived level of importance of learner-to-learner (RQ1), learner-to-instructor (RQ2), and learner-to-content (RQ3) interaction types for all Baker University online graduate respondents, and disaggregated by gender (female or male), graduate program content area (business, education, or other), and degree level within the education program (master's or doctoral). RQ4 informally compared the means to examine which of the three types of interaction (learner-to-learner, learner-to-instructor, learner-to-content) was perceived as most important in creating a community of inquiry and higher levels

of critical thinking for all online Baker graduate students, as well as by gender (female or male), graduate program content area (business, education, or other), and degree level within the education program (master's and doctoral).

The fifth, sixth, and seventh research questions examined the specific engagement strategies within each interaction type and the mean perceived levels of importance of those strategies for facilitating or impacting their associated interaction or engagement type. RQ5 examined engagement strategies 1-10 which pertain to the learner-to-learner interaction type, RQ6 examined engagement strategies 11-20 which pertain to the learner-to-instructor interaction type, and RQ7 examined engagement strategies 21-29 which pertain to the learner-to-content interaction type. RQ8 informally compared the means for engagement strategies within each type to examine which individual strategies were perceived to be most important for facilitating each type of interaction (learner-to-learner, learner-to-instructor, learner-to-content) for all online Baker graduate students, as well as by gender (female or male), graduate program content area (business, education, or other), and degree level with the education program (master's and doctoral).

Review of the methodology. A descriptive and exploratory quantitative research design was employed to gather perceptions of all online graduate-level learners at Baker University using a slightly modified version of the Online Engagement Strategies Questionnaire (OESQ) to examine which types of student engagement were perceived as most important for their learning experience and which strategies were perceived as most important for fostering those types of student engagement**.** The Google Form's respondent survey data was downloaded and imported into IBM SPSS Grad Stats Pack Version 26. The respondents (all Baker University online graduate students) rated, on a 5-point Likert-type scale of importance, each engagement strategy

under the learner-to-learner, learner-to-instructor, and learner-to-content interaction types. For

the Likert-type scale, five equaled very important, four equaled important, three equaled neither

important nor unimportant, two equaled somewhat important, and one equaled very unimportant.

Item means were calculated for each strategy using respondents' perceived level of importance

as rated on the Likert-type scale overall and for each sub-group of interest. These strategy means

were used to calculate subscale means for each of the three interaction types overall and for the

sub-groups of interest. These calculations were conducted to create the learner-to-learner,

learner-to-instructor, and learner-to-content interaction type subscale mean levels of perceived

importance for all online Baker University graduate-level student respondents, then by gender,

program content area of study, and degree level (master's or doctoral track) within the education

program.

Major findings. The first three research questions were intended to describe the mean

level of perceived importance for the three interaction types of learner-to-learner (RQ1), learner-

to-instructor (RQ2), and learner-to-content (RQ3) overall and for different sub-groups of online

graduate learners at Baker University. RQ4 evaluated which of the three types of interactions

(learner-to-learner, learner-to-instructor, learner-to-content) were perceived to be most important

in creating a community of inquiry and fostering increased critical thinking and problem solving

for all Baker University online graduate respondents, as well as by gender (female or male),

graduate program content area (business, education, or other), and degree level within the

education program (master's or doctoral). Based on mean levels of importance rated by

respondents who completed the modified OESQ, all Baker University online graduate

respondents perceived the learner-to-instructor interaction type to be most important to facilitate

engagement in learning ($M = 4.18$, $SD = 0.95$, $N = 76$), followed by learner-to-content interaction

type ($M = 4.11$, $SD = 0.90$, $N = 76$), and the learner-to-learner interaction type ($M = 3.36$, $SD = 1.22$, $N = 76$). The engagement strategies, from all three interaction types, with the highest mean perceived levels of importance were item 19, the instructor posts grading rubrics for all assignments, ($M = 4.680$, $SD = 0.677$, $N = 76$) and item 28, students work on realistic scenarios to apply content (e.g., case studies, reports, research papers, presentations, client projects), ($M = 4.640$, $SD = 0.582$, $N = 76$). These two engagement strategies were categorized under the learner-to-instructor interaction and learner-to-content interaction type item subsets, respectively.

When examining the results by gender (female or male), both females and males rated the learner-to-instructor interaction type to be most important ($M = 4.16$, $SD = 0.95$, $N = 54$ and $M = 4.24$, $SD = 0.93$, $N = 21$, respectively). When examining results by online graduate program content area, business and education program respondents perceived the learner-to-instructor interaction type as most important ($M = 4.21$, $SD = 0.88$, $N = 10$ and $M = 4.19$, $SD = 0.95$, $N = 61$, respectively). The other online graduate program respondents, which included nursing, organizational leadership, and sports management, perceived the learner-to-content interaction type to be most important ($M = 4.06$, $SD = 0.53$, $N = 4$). When examining results by degree level of education program respondents, both master's degree and doctoral degree sub-groups perceived the learner-to-instructor interaction type to be most important ($M = 4.03$, $SD = 0.93$, $N = 17$ and $M = 4.26$, $SD = 0.92$, $N = 43$, respectively).

The next research questions examined the perceived levels of importance for specific engagement strategies under the learner-to-learner (RQ5), learner-to-instructor (RQ6), and learner-to-content (RQ7) interaction types for all Baker University online graduate respondents and by gender, program content area, and degree level within the education program. RQ8 informally compared individual strategy means to examine which engagement strategies were

perceived to be most important for facilitating each type of interaction (learner-to-learner, learner-to-instructor, learner-to-content) for all Baker University online graduate respondents, as well as by gender (female or male), graduate program content area (business, education, or other), and degree level with the education program (master's or doctoral).

Of the ten learner-to-learner interaction type strategies rated on the 5-point Likert-type scale by all Baker University online graduate respondents item 8, students work collaboratively using online communication tools to complete case studies, projects, reports, etc., was perceived as most important ($M = 3.950$, $SD = 1.326$, $N = 76$) for facilitating the learner-to-learner interaction type. The learner-to-learner engagement strategy perceived as least important by all Baker University online graduate respondents was item 10, students are required to rate individual performance of team members on projects ($M = 2.740$, $SD = 1.320$, $N = 76$). Regarding gender, females and males perceived two different learner-to-learner strategies as most important for the learner-to-learner interaction type. Females perceived item 8, students work collaboratively using online communication tools to complete case studies, projects, reports, etc., as most important ($M = 4.090$, $SD = 1.278$, $N = 54$). Males perceived item 7, students interact with peers through student presentations (asynchronously or synchronously), as most important ($M = 3.620$, $SD = 1.244$, $N = 21$). Business program respondents perceived engagement strategy 7, students interact with peers through student presentations (asynchronously or synchronously), as most important ($M = 3.200$, $SD = 1.229$, $N = 10$) for facilitating the learner-to-learner interaction type. Education program respondents and other content area program respondents perceived engagement strategy 8, students work collaboratively using online communication tools to complete case studies, projects, reports, etc., as the most important ($M = 4.100$, $SD = 1.274$, $N = 61$, and $M = 4.000$, $SD = 0.816$, $N = 4$,

respectively). Master's degree education program respondents perceived engagement strategy 5, students have choices in the selection of readings (articles, books) that drive discussion group formation, as most important ($M = 4.120$, $SD = 0.928$, $N = 17$) for the learner-to-learner interaction type. Doctoral degree education program respondents perceived engagement strategy 8, students work collaboratively using online communication tools to complete case studies, projects, reports, etc., as the most important learner-to-learner interaction type strategy ($M = 4.370$, $SD = 1.024$, $N = 43$).

Of the ten learner-to-instructor interaction type strategies rated on perceived level of importance by all Baker University online graduate respondents item 19, the instructor posts grading rubrics for all assignments, as most important ($M = 4.680$, $SD = 0.677$, $N = 76$) for facilitating learner-to-instructor interaction type. The learner-to-instructor engagement strategy perceived as least important by all Baker University online graduate respondents was item 16, the instructor creates short videos to increase instructor presence in the course ($M = 3.640$, $SD = 1.111$, $N = 75$). Both female and male respondents perceived learner-to-instructor engagement strategy 19, the instructor posts grading rubrics for all assignments, as most important for the learner-to-instructor interaction type ($M = 4.690$, $SD = 0.722$, $N = 54$ and $M = 4.670$, $SD = 0.577$, $N = 21$, respectively). Both business program respondents and other content area program respondents perceived engagement strategy 13, the instructor creates a forum for students to contact the instructor with questions about the course, as most important ($M = 4.700$, $SD = 0.483$, $N = 10$ and $M = 4.740$, $SD = 0.500$, $N = 4$, respectively). Education program respondents perceived engagement strategy 19, the instructor posts grading rubrics for all assignments, as the most important learner-to-instructor interaction type strategy ($M = 4.750$, $SD = 0.650$, $N = 61$). Both education program master's and doctoral degree track respondents perceived engagement

strategy 19, the instructor posts grading rubrics for all assignments, as most important ($M =$ 4.760, $SD = 0.562$, $N = 17$ and $M = 4.770$, $SD = 0.684$, $N = 43$, respectively) for facilitating the learner-to-instructor interaction type. Education program master's degree respondents perceived engagement strategy 20, the instructor uses various features in synchronous sessions to interact with students, as least important ($M = 3.240$, $SD = 0.970$, $N = 17$). Doctoral degree respondents perceived engagement strategy 16, the instructor creates short videos to increase instructor presence in the course, as the least important learner-to-instructor interaction type strategy ($M =$ 3.530, $SD = 1.202$, $N = 43$).

Of the nine learner-to-content interaction type strategies rated on the 5-point Likert-type scale of perceived importance by all Baker University online graduate respondents engagement item 28, students work on realistic scenarios to apply content (e.g., case studies, reports, research papers, presentations, client projects), was perceived as most important ($M = 4.640$, $SD = 0.582$, $N = 76$) for facilitating the learner-to-content interaction type. The learner-to-content engagement strategy perceived as least important for all Baker University online graduate respondents was item 29, students use self-tests to check their understanding of materials ($M =$ 3.660, $SD = 1.027$, $N = 76$). Both female and male respondents perceived engagement strategy 28, students work on realistic scenarios to apply content, as the most important learner-to-content interaction type engagement strategy ($M = 4.690$, $SD = 0.543$, $N = 54$ and $M = 4.520$, $SD =$ 0.680, $N = 21$, respectively). Business program respondents and education program respondents perceived learner-to-content engagement strategy 28, students work on realistic scenarios to apply content, as most important ($M = 4.500$, $SD = 0.707$, $N = 10$ and $M = 4.670$, $SD = 0.569$, N = 61, respectively). Respondents enrolled in other content area programs perceived engagement strategy 24, discussions are structured with guiding questions and/or prompts to deepen their

understanding of the content, as the most important for facilitating the learner-to-content interaction type ($M = 5.000$, $SD = 0.000$, $N = 4$). Both educational program master's degree and doctoral respondents perceived engagement strategy 28, students work on realistic scenarios to apply content, as most important for the learner-to-content interaction type ($M = 4.410$, $SD = 0.618$, $N = 17$ and $M = 4.770$, $SD = 0.527$, $N = 43$, respectively). Educational program master's degree and doctoral respondents perceived engagement strategy 29, students use self-tests to check their understanding of materials, as least important for the learner-to-content interaction type ($M = 3.350$, $SD = 1.115$, $N = 17$ and $M = 3.840$, $SD = 1.022$, $N = 43$, respectively).

Findings Related to the Literature

One of the primary objectives of the current study was to explore the relationship between interaction types (learner-to-learner, learner-to-instructor, learner-to-content), engagement strategies related to these interactions, and how they contribute to the formation of a Community of Inquiry (CoI) fostering higher levels of critical thinking and application of knowledge in the Baker University online graduate program. Research has suggested that meaningful online communities do not emerge spontaneously (Wood, 2003), and that an influential online educational community requires careful planning and students to feel meaningful connections through purposeful discourse and reflection (Moisey et al., 2008). In an online community, connections or interactions can occur in many ways. Lear et al. (2010) wrote, "The interactivity component is important in an online class because it is what connects the students, instructor, and course material together" (p. 73). Additionally, research conducted by Akyol and Garrison (2008) suggested that to achieve higher-order thinking and inquiry, all presences (cognitive, social, teaching) must be developed in balance. Results from the current analysis of the modified OESQ survey responses suggest that there is work to do in

strengthening a CoI within the Baker University graduate online learning program, specifically regarding the learner-to-learner interaction type.

While the learner-to-instructor and learner-to-content interaction types were perceived as important by respondents, the learner-to-learner interaction type was perceived as "neither important" nor "unimportant or somewhat unimportant" by all demographic sub-groups of survey respondents examined. Sharp and Huett (2006) argued that the most important form of interaction, for online or distance learning, was learner-learner interaction and believed that one element often missing from distance education programs is the sense of community a learner can build. Sharp and Huett (2006) described online collaboration in the form of peer work groups as being able to increase engagement in the learning process. Paulsen and McCormick's 2020 analysis identified two critical needs for enhancing the engagement of online learners and one of those needs included overcoming obstacles to collaborative learning among students studying at a distance. Ultimately, however, this places instructors in a conundrum of how to proceed with building online learner-to-learner communities because graduate online learners do not fit the mold of traditional learners. Building online learner communities is important because if done incorrectly, the instructor risks weakening students' sense of community and engagement in the course. As online learning continues to grow, it is crucial that educators and instructional program instructional designers develop a better understanding of the needs of their students, which is especially true of graduate-level students in online doctoral programs where attrition levels range from around 50 percent to as high as 70 percent (Gittings et al., 2018; Spaulding & Rockinson-Szapkiw, 2012).

The lower level of importance placed upon learner-to-learner type interaction by the modified OESQ respondents in the current study could be due to the nature of online learning

and the characteristics of graduate learners at Baker University. Farrell and Brunton (2020) identified "lifeload" (p. 1) and balancing studies with other time commitments as factors of being a successful online student. It is possible that learners within the online graduate Baker learning community do not see the value in learner-to-learner interactions. However, research has suggested that a key influence on online student engagement comes from interaction with a peer community and feelings of belongingness and support (Farrell & Brunton, 2020). Bolliger and Inan, (2012) wrote, "Connectedness refers to a person's belief that a relationship exists between him or her and at least one other individual. Connectedness includes a person's sense of belonging or presence, feelings of support, and level of communication/interaction with another person" (p. 43). LaBarbera (2013) suggested that a sense of community or connectedness was important to student success and satisfaction in online learning, and that students who have a stronger sense of community or connectedness were more likely to succeed and feel satisfied than those who were disconnected. Critics have also challenged the power of each of the three types of interactions or presences in the CoI model and their role in student engagement, especially regarding social presence or the learner-to-learner interaction type. For example, Griffiths (2020) described critics challenging social presence and its importance to learning outcomes and community connection. Additionally, there have been critiques about the power of cognitive presence in creating deep and meaningful learning experiences, but that students engage in lower levels of inquiry (Rourke & Kanuka, 2009).

In the current study, respondents perceived learner-to-instructor type interactions and engagement strategies within that grouping to be the most important for a quality learning experience. This was followed closely by learner-to-content type interactions and engagement strategies. Respondents of the modified OESQ rated the learner-to-learner interaction type and

engagement strategies to be least important to their learning experience. These findings were

consistent with the 2018 Martin and Bolliger study and development of the OESQ. In their

study, Martin and Bolliger (2018) also identified student levels of importance for specific

strategies within each interaction type. Martin and Bolliger's (2018) findings were very similar

to results of the current study surrounding the perceived levels of importance reported for

interaction types of Baker University respondents. For example, respondents from Martin and

Bolliger's (2018) study perceived strategy 12 (the instructor sends/posts regular announcements

or email reminders), strategy 15 (the instructor posts a due date checklist at the end of each

instructional unit), and strategy 19 (the instructor posts grading rubrics for all assignments) as

very important within the learner-to-instructor interaction type. Baker University respondents in

the current study rated these same engagement strategies within the learner-to-instructor

interaction type as very important. According to Felder and Brent (1996), active learning

strategies were found to engage students effectively and improve their academic outcomes.

Engagement strategy 28, learners being able to able learning to realistic scenarios, was rated as

one of the most important for the learning experience of Baker University online graduate

students. This result was consistent with the findings of Martin and Bolliger's (2018) study and

reinforces how important it is for online educators to choose and design course materials and

activities to enable learners to explore, discover, perfect their skills, and gain knowledge

(Stavredes & Herder, 2014).

Additionally, Bigatel and Edel-Malizia (2018) examined how often online students

engaged in research-based practical activities in their courses, and in what ways their instructors

engaged them. Bigatel and Edel-Malizia (2018) determined that the most engaging activities for

learners included learning through meaningful and challenging activities and working on

assignments or activities that involved research skills. Findings from the Bigatel and Edel-Malizia (2018) study were consistent with results of the current study and Baker University online graduate learner respondents' perceived level of importance of integrating real-world scenarios into the structure of the online learning class. Increased engagement during graduate-level learning helped promote professional expertise later for solving real-world problems in local communities (O'Meara, 2008). According to O'Meara (2008), "Embedding engagement in graduate education will attract students who are eager to envision careers that open doors between universities, disciplines, and the world" (p. 40).

Examining demographic subgroup trends in engagement preferences was a primary purpose of the current study. As of fall 2022, higher education is experiencing the largest gender gap in its history, with a much higher ratio of females than males participating in higher education. Results from the current study seem to reflect this trend as 72% of the respondents to the modified OESQ were female, with only 28% of respondents being male. The substantially higher percentage of female learners in the online setting was consistent with findings from previous research and reported perceptions of learners in the graduate-level online educational environment. In examining perceptions of online learning by gender groupings, Anderson and Haddad (2005) found that female respondents experienced greater expression of voice, which led to deeper online learning than in face-to-face courses – this was not the case with male respondents. Anderson and Haddad (2005) also found a gender difference in the extent to which students experience professor support (Weatherly, 2011), as females reported experiencing more professor support online than in face-to-face classrooms, and no significant difference in experience existed for males. It was hypothesized that the finding might be due to female students in online courses being more willing to reach out to their professors than in face-to-face

environments where role socialization inhibited them from speaking out or even seeking help

(Anderson & Haddad, 2005). Anderson and Haddad's (2005) observations were consistent with

the interaction type and engagement strategy preference for the learner-to-instructor interaction

type and its associated strategies reported by females on the current modified OESQ. For males,

research has suggested that men have tended to be more detached online and use the acquisition

of new skills as a primary motivator for learning (Morante et al., 2017). This could explain why

male online graduate learners, based on the current study results at Baker University, seem to

prefer learner-to-instructor and learner-to-content interactions and those accompanying

engagement strategies over interactions with other learners.

Conclusions

Findings from the current study represent online graduate Baker University students'

perceptions of learner-to-learner, learner-to-instructor, and learner-to-content type interactions

and the individual engagement strategies associated with those interaction types. Based on the

participants' responses, the researcher identified five major themes. The five themes included the

following: (a) the learner-to-instructor interaction type was perceived to be most important to all

Baker University survey respondents; (b) both female and male respondents perceived the

learner-to-instructor interaction type as most important; (c) business program respondents rated

the learner-to-instructor interaction type as most important, while education program respondents

rated both the learner-to-instructor and the learner-to-content interaction types as very important;

(d) both doctoral and master's level students in the education program rated both the learner-to-

instructor and the learner-to-content interaction types as important, however doctoral students'

ratings of importance for both types were higher than the ratings of the master's education

program respondents; and (e) the two engagement strategies with the highest mean ratings of

importance were strategy 19, the instructor posts grading rubrics for all assignments, from the learner-to-instructor interaction type and strategy 28, students work on realistic scenarios to apply content, from the learner-to-content interaction type.

Implications for action. Findings from the current study present implications for existing online graduate students, future online graduate students, and instructors of online graduate courses at Baker University. Baker University offers numerous online graduate programs, and part of improving the quality of online education at this institution would be identifying the types of student engagement and strategies perceived as important to engage graduate-level students for their respective program of study, content areas, and different degree-level tracks. Knowing which strategies are perceived as most important would enable instructional designers and professors for these groups of learners to prioritize and implement those strategies to improve student engagement and achieve a CoI.

Recommendations for future research. Based on the findings from this study, continuing research on interaction and engagement in online graduate learning environments should be conducted. The current study was delimited to one independent university in the Midwestern United States. Future studies could also expand to a wider variety of postsecondary educational institutions (e.g., community colleges, private institutions, technical colleges, and for-profit higher education institutions). Additionally, the study could also be expanded to include instructors and perceptions of the three types of interactions and engagement strategies perceived to be most important for effectively engaging graduate-level online learners in the instructors' courses.

Concluding remarks. Swan et al. (2009) described the CoI framework as the constructs of cognitive, social, and teaching presence considering the various entities involved in an online

course (student, instructor, designer) and what each can do to ensure their course a successful learning experience. Thus, the relationship between the different entities involved in online learning is critical. Lear et al. (2010) noted that interactions with content, peers, and instructors help online learners become more active and engaged in their courses. The interactivity among three types of student engagement can promote a CoI, resulting in high-quality learning and increased critical thinking. Rabourn et al. (2018) described the study of student engagement in graduate-level programs as seeming to be misunderstood, while Dixson (2015) noted that research regarding student engagement at the graduate-level was lacking, inconsistent, inconclusive, and poorly understood. The results of the current study show from the learner perspective, the types of interactions (learner-to-learner, learner-to-instructor, and learner-to-content) and associated engagement strategies that could be leveraged for the field of instructional design and performance technology as university programs continue to expand their online offerings for students at the graduate-level.

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Appendices

Appendix A: Online Engagement Strategies Questionnaire (OESQ)

<u>Online Engagement Strategies Questionnaire (OESQ)</u>

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

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

[Learner–Learner Interaction] (10)

1. Students use a virtual lounge where they can meet informally to share common interests.
2. Students complete an integrated profile on the Learning Management System that is accessible in all courses.
3. Students introduce themselves using an ice-breaker discussion.
4. Students moderate discussions.
5. Students have choices in the selection of readings (articles, books) that drive discussion group formation
6. Students post audio and/or video files in threaded discussions instead of only written responses.
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.

[Learner–Instructor Interaction] (10)

11. The instructor refers to students by name in discussion forums.
12. The instructor sends/posts regular announcements or email reminders.
13. The instructor creates a forum for students to contact the instructor with questions about the course.
14. The instructor creates a course orientation for students.
15. The instructor posts a "due date checklist" at the end of each instructional unit.
16. The instructor creates short videos to increase instructor presence in the course.
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).

[Learner–Content Interaction] (9)

21. Students interact with content in more than one format (e.g., text, video, audio, interactive games or simulations).
22. Students use optional online resources to explore topics in more depth.
23. Students experience live, synchronous web conferencing for class events and/or guest talks.
24. Discussions are structured with guiding questions and/or prompts to deepen their understanding of the content.
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).
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.

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

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

_____
_____
_____

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

_____
_____
_____

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

_____
_____
_____

33. How many online courses have you completed? _____

What online program are you a part of? _____

Appendix B: Online Engagement Strategies Questionnaire (OESQ) (Modified Version)

Online Engagement Strategies Questionnaire (OESQ)

Thank you for participating in this survey on online engagement strategies. Your honest and sincere responses are appreciated and important to the integrity of the research study. Your survey responses are anonymous. Your participation is voluntary. You will not be requested to provide personal or sensitive information. No aspect of the data will be made part of any permanent record that could be identified with you. Your completion of the survey will indicate your permission to participate in the survey study. You have the right not to answer any question and you have the right to discontinue participation at any time.

Gender:

☐ Male

☐ Female

☐ Prefer Not to Respond

Online Graduate Program:

☐ Education

☐ Business

☐ Nursing, Organizational Leadership, Sports Management

Degree Level:

☐ Master

☐ Doctor

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

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

[Learner–Learner Interaction] (10)

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3. Students introduce themselves using an ice-breaker discussion.

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6. Students post audio and/or video files in threaded discussions instead of only written responses.
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.

[Learner–Instructor Interaction] (10)

11. The instructor refers to students by name in discussion forums.
12. The instructor sends/posts regular announcements or email reminders.
13. The instructor creates a forum for students to contact the instructor with questions about the course.
14. The instructor creates a course orientation for students.
15. The instructor posts a "due date checklist" at the end of each instructional unit.
16. The instructor creates short videos to increase instructor presence in the course.
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).

[Learner–Content Interaction] (9)

21. Students interact with content in more than one format (e.g., text, video, audio, interactive games or simulations).
22. Students use optional online resources to explore topics in more depth.
23. Students experience live, synchronous web conferencing for class events and/or guest talks.
24. Discussions are structured with guiding questions and/or prompts to deepen their understanding of the content.
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).
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.

Appendix C: Email for Survey Approval from Dr. Florence Martin

Permission to use a survey you designed   Report message · Block user

John McCormick   Jul 12, 2021

Hi Dr. Martin. My name is John McCormick and I am currently working in the
IDPT program at Baker University in Overland Park, KS. I have begun working
on my dissertation on graduate student engagement and I am curious about
gaining permission to utilize a survey you and Dr. Bollinger designed. The
instrument was used in your research article: Engagement Matters: Student
Perceptions on the Importance of Engagement Strategies in the Online
Learning Environment.
I am new to research and if is not the most appropriate way to first seek out
permission, then I would be very thankful if you could direct me or guide me
in the correct direction.
Thank you for your consideration.
John McCormick

Florence Martin to you   Jul 13, 2021

Dear John,
Good to hear that you are considering extending our work on 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://webpages.uncc.edu/fmartin3/site2018/instruments/EngagementStr
ategies_OnlineLearning.docx
And good luck with your study.
Florence

John McCormick   Jul 13, 2021

Thank you.
Very much appreciated.
John

Reply   Mark as unread   More ~

Appendix D: Baker University IRB Approval Letter

Baker University Institutional Review Board

May 24th, 2022

Dear John McCormick and Regena Aye,

The Baker University IRB has reviewed your project application and approved this project under Expedited Status Review. As described, the project complies with all the requirements and policies established by the University for protection of human subjects in research. Unless renewed, approval lapses one year after approval date.

Please be aware of the following:

1. Any significant change in the research protocol as described should be reviewed by this Committee prior to altering the project.
2. Notify the IRB about any new investigators not named in original application.
3. When signed consent documents are required, the primary investigator must retain the signed consent documents of the research activity.
4. If this is a funded project, keep a copy of this approval letter with your proposal/grant file.
5. If the results of the research are used to prepare papers for publication or oral presentation at professional conferences, manuscripts or abstracts are requested for IRB as part of the project record.
6. If this project is not completed within a year, you must renew IRB approval.

If you have any questions, please contact me at npoell@bakeru.edu or 785.594.4582.

Sincerely,

Nathan Poell, MLS
Chair, Baker University IRB

Baker University IRB Committee
   Sara Crump, PhD
   Nick Harris, MS
   Susan Rogers, PhD

Appendix E: Email to Baker University School of Professional & Graduate Studies Registrar and School of Education Registrar

Good day.

My name is John McCormick. I am currently a doctoral candidate in the Baker University Instructional Design and Performance Technology (IDPT) program. As part of program requirements, I am beginning work on data collection for my dissertation topic. To gather this data, I need survey participants currently enrolled at Baker University. I am requesting names of all active graduate-level online students and their institutional email addresses. Attached are copies of my Institutional Review Board (IRB) Letter of Approval, survey to be shared with students, email invitation and reminder email to be sent to students, and the informed consent statement that will appear at the beginning of the survey.

Thank you.

John McCormick

Appendix F: Informed Consent Statement and Instructions for Completing the Modified

OESQ

Informed Consent

You are invited to participate in a research study about interaction and engagement in online graduate courses. The goal of this research study is to examine which types of student engagement are perceived as most important for a graduate-level learning experience and which strategies are most important for fostering/facilitating those types of student engagement. This study is being conducted by John McCormick. The criteria for eligible participants in this study are as follows: (1) currently enrolled online graduate student at Baker University; and (2) working towards a Master's or Doctoral degree in an education, business, nursing, organizational leadership, or sports management online graduate program at Baker University.

Participation in this study is voluntary. As a participant you have the option of leaving questions blank or you may also decide to stop participation in this study at any point. If you agree to participate in this study, you would be surveyed on 32 total questions. Of those 32 questions, three are demographic in nature and 29 are Likert-type scaled questions. Participating in this study may not benefit you directly, but it will help us learn how to engage advanced degree students better and develop more graduate-level online courses at Baker University.

The information you will share with us if you participate in this study will be kept completely confidential to the full extent of the law. The Google Form survey settings are adjusted to protect student anonymity and allow only one response per student. The data gathered from the Google Form will be exported to a Google Sheet, saved on a password-protected online account, and downloaded to a password-protected computer as an Excel document. Data will then be imported into the IBM SPSS Faculty Stats Pack Version 26 for

statistical analysis. The data collected will be analyzed and the resulting information used to answer the research questions. All records and collected data from the current study will be kept for three years, then deleted or destroyed. While the investigator will keep your information confidential, there are some risks of data breaches when sending information over the internet that are beyond the control of the investigator.

Please note: You must be 18 or older to participate in this study.

If you have any questions about this study, please contact John McCormick at 913-231-9060 or JohnMcCormick@stu.bakeru.edu. If you have questions about your rights as a research participant, please contact the Baker University Institutional Review Board (IRB) at irbproposals@bakerU.edu.

By submitting your completed survey, you are consenting to participate in this study.

Please print or save a copy of this form for your records