Fostering Student Engagement through an Online Community of Learning:

A Mixed Methods Action Research Dissertation

by

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ABSTRACT

Promoting student engagement is a critical performance indicator for undergraduate success and is, therefore, a priority for academic institutions as they seek to improve teaching and learning practices (Meyer, 2014). Educators need to improve their instructional pedagogy by developing unique methods for engaging students with educational opportunities. Instructors who facilitate courses online face an even greater challenge in engaging students. A virtual learning community is a potential solution for improving online engagement.

This mixed methods action research dissertation explores the implementation of an online learning community and how it influences the engagement of students in distance learning environments. The primary research question guiding this inquiry is*: How and to what extent does the implementation of an online learning community influence undergraduate student engagement in online courses?* A sequential triangulation design was used to analyze data collected from surveys and responses collected from study participants during a synchronous online focus group. The analysis of the results of the study provide interesting insight into the online engagement of students. Key findings from the study are: 1) the inclusion of diverse perspectives is important for students and they value having opportunities to share their knowledge with peers; 2) an online learning community is beneficial for student engagement and this type of model is one they would participate in the future; 3) students experience a disconnect with peers when engagement opportunities in online discussion platforms feel insincere.

DEDICATION

This dissertation is dedicated to my mother, the late Denise Paula Reed Azobu. My mother was my greatest inspiration. She encouraged me to follow my dreams and believed that I could achieve anything I aspired to. To my father, Solomon Azobu, who taught me that through hard work and perseverance I can achieve my goals. To my husband, Jessie Earl Sneed Jr., who has been my strength and greatest supporter throughout my doctoral journey. And last but not least, to my children, Taji, Malik, and Khari, my greatest motivation and motivators who kept me pushing forward until I reached the finish line.

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DEFINITION OF TERMS

The following terms and definitions are central to this dissertation research.

Action Research. Any systematic inquiry conducted by educators with a vested interest in the teaching and learning process or environment for the purpose of gathering information about how their academic institutions function and how students at those institutions learn (Mertler, 2014).

Community of Learning. The social gathering of individuals who assume a focus on shared and continuous learning (Hord, 2009).

Distance Learning. "Distance learning is improving capabilities in knowledge and/or behaviors as a result of mediated experiences that are constrained by time and/or distance such that the learner does not share the same situation with what is being learned" (King et al., 2001, p. 10).

Student Engagement. "Student engagement is concerned with the interaction between the time, effort, and other relevant resources invested by both students and their institutions intended to optimize the student experience and enhance the learning outcomes and development of students and the performance and reputation of the institution" (Trowler, 2010). As further discussed in chapter 2, student engagement correlates with the level of motivation students sustain to progress in, and complete education.

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Post-secondary faculty responsible for designing, developing, and facilitating a fully online course often experience a number of challenges. The following scenario, describing a conversation between two professors, exemplifies some of the typical reservations that I have observed when working with faculty to design online courses.

Scenario

Instructor's conversation with a colleague

Characters

Jane (a faculty member at ABC University for 10 years)

Sam (a faculty member at ABC University for 5 years and a colleague of Janes')

Sam: [walks into the lunchroom, sees Jane sitting alone at a table with a troubled expression on her face] Hi Jane! You look like you have a lot on your mind. Is everything alright?

Jane: I don't know. I just finished meeting with the department's course scheduler who informed me that the course I teach every fall will only be offered online.

Sam: Well that sounds exciting! I think? Do you have any reservations about it?

Jane: I'm not too sure about this transition Sam. I've taught this course in person for the last 10 years, since I first came to the university. There are activities that I do in class that I'm not sure will translate well, or if at all, online.

Sam: Well, you know that the climate of education is evolving including the environment in which students learn. Online learning and distance education is creating the

path for a new generation of learners. The needs of today's student population are rapidly changing, and it was only a matter of time before the way we educate students would need to evolve as well.

Jane: Sam, I've never taught online before and at this point I really don't know where I should begin! During the meeting I was reassured that everything would be fine and that an instructional designer would be assigned to assist me with the development my online course.

Sam: Well that sounds promising.

Jane: I don't know. In my current in-person course, I'm able to immediately gauge the direction of my class discussions, based on my student's responses, the way in which they interact with each other, their nuances, and through their reactions to topics discussed. I don't see how I will be able to create that level of interaction and engagement online.

Sam: Don't give up hope Jane. Before coming to any final conclusions first meet with the instructional designer to see what ideas they suggest.

CHAPTER 1

Research Problem and Context

Introduction

The concerns that Jane presented in the scenario described above are commonly shared by faculty in higher education who are tasked with the challenge of designing, developing, and facilitating a course online (Barker, 2003; Bower, 2001). As a senior instructional designer at Arizona State University (ASU), this scenario also accurately depicts conversations that I have experienced while working with faculty during the course development stage. Student engagement and the ability to provide opportunities for students to effectively collaborate through a variety of methods is a critical component of quality teaching and learning (Meyer, 2014).

Jane's concerns in the above scenario are well-founded. As more higher education institutions, including ASU, place a greater focus on producing quality online education programs, it is essential that student engagement is addressed. Designing, developing, and facilitating effective student engagement opportunities for online learners has been challenging for faculty for whom I work with. That is why this issue has been the impetus for my research and dissertation. In this chapter, I contextualize the project's focus by explaining general trends related to the emergence of online higher education, as well as how the primary construct of interest for this study, student engagement, has been studied by researchers. I then describe the specific context for this study, the fully online programs offered by Arizona State University. Finally, I explain the purpose of the study as well as the primary research questions guiding this research.

Larger Context: Online Education

Formal education has historically been the foundation and driving force for various societies to develop and advance economically, socially, and culturally. As education and technology continue to evolve, traditional face-to-face methods of instruction no longer serve exclusively as the primary means by which formal learning can occur. With the growing desire for higher education institutions to better serve their communities and the greater population at large, the demand and popularity for online education have emerged. According to the National Center for Education Statistics (NCES) in the fall of 2015 a total of 29.8% of students were enrolled in at least one distance education course at the post-secondary level. Out of that total, 29.0% of online students were enrolled at the undergraduate level and 34.4% were enrolled at the post-baccalaureate level (see table 1).

Table 1

Number and percentage of students enrolled in degree-granting post-secondary institutions, by distance education participation, and level of enrollment and control of institution: fall 2015

Level of enrollment and control of institution	Number of students					Percent of students				
	Total	No distance education courses	Total, any distance education course(s)	At least one, but not all, of student's courses are distance education courses	Exclusively distance education course(s)	Total	No distance education courses	Total, any distance education course(s)	At least one, but not all, of student's courses are distance education courses	Exclusively distance education course(s)
Total	19,977,270	14,023,149	5,954,121	3,082,333	2,871,788	100.0	70.2	29.8	15.4	14.4
Level of enrollment										
Undergraduate	17,036,778	12,094,521	4,942,257	2,839,348	2,102,909	100.0	71.0	29.0	16.7	12.3
Post baccalaureate	2,940,492	1,928,628	1,011,864	242,985	768,879	100.0	65.6	34.4	8.3	26.1
Control of institution										
Public	14,568,103	10,492,151	4,075,952	2,619,880	1,456,072	100.0	72.0	28.0	18.0	10.0
Private nonprofit	4,063,372	3,048,401	1,014,971	346,331	668,640	100.0	75.0	25.0	8.5	16.5
Private for-profit	1,345,795	482,597	863,198	116,122	747,076	100.0	35.9	64.1	8.6	55.5

In the United States, students participating in higher education, especially in online and virtual environments, have become increasingly demographically diverse over the last few decades (see table 1). In 2014, the EdTech Focus on Higher Education and CollegeAtlas.org reported that the degree-seeking population of students attending colleges and universities no longer primarily consists of young adults between the ages of 18-24, but has expanded to include an older, more experienced generation of students. As table 1 indicates, over 60% of online undergraduate students are aged 30 or older.

Research has also shown that online students of all ages are employed on a full-time basis while pursuing their degrees online (Smith, 2014). It is not surprising that the convenience of the online degree format is attractive to students. Studies have found that a key factor for students who choose to enroll in an online program is the affordance of flexibility in online coursework (Smith, 2014), as well as the opportunity to choose from diverse learning platforms such as hybrid, synchronous, and asynchronous courses (see table 2). Older students who chose to pursue an online education are also especially motivated by a desire to seek a second career, to achieve an advanced degree, or to earn the required credentials for career advancement (Smith, 2014).

Table 2

Demographics of Online Undergraduate Students in the United States

Age Distribution		Employment Status	
Percent	Age Range	Percent	Status
19%	18-24	60%	Employed full-time
20%	25-29	20%	Employed part-time
15%	30-34	12%	Not employed but looking

13%	35-39	7%	Not employed and not looking
11%	40-44	1%	Retired
10%	45-49		
8%	50-54		
4%	55+		

Reasons for Enrollment

Percent	Reason
68%	Balance - The ability to balance work, family, and social responsibilities more easily.
64%	Anytime, Anywhere - Students love the ability to study anytime, anywhere at their own convenience.
37%	Accelerated Courses - Fast-track courses motivate students to earn a college degree in an online setting.
30%	Cheaper - The overall lower cost of online courses is very appealing to online students.
18%	Faster Completion Time - With greater flexibility, online degrees are generally completed faster than traditional degrees.
12%	Variety - Course variety is one of the top reasons' students choose to enroll in online courses.
9%	Credential Potential - Greater potential for specific educational credentials.
9%	Effectiveness - Some students find online learning methods more effective than a traditional college setting.

Note. Data source for online student demographics are from Smith, 2014.

As student demand grows, online degree programs have substantially increased their presence within academic institutions (Seaman, Allen, & Seaman, 2018). Ensuring this alternative delivery system facilitates a high-quality learning environment is critical, as is assessing whether student achievement and success is optimally supported online. Moreover, the growing emphasis on assessment, accountability, and transparency within all levels of education makes it necessary that the effectiveness of online learning education programs are thoroughly assessed and supported by sound research and data.

There are skeptics who believe that the traditional on-campus learning environment is superior to that of its online counterpart. However, recent studies have shown that this perception is not always accurate. According to Robinson and Hullinger (2008),

> Studies on the effectiveness of online learning fall into three broad categories: (a) students' outcomes, focused on test scores and grades; (b) student attitudes about learning; and (c) overall student satisfaction with online learning. Findings largely support the view that the learning outcomes of students online are similar to those in face-to-face settings. (p. 101)

There are a number of approaches to assessing learning in both the face-to-face and online contexts, but this project is focused on one key dimension, which is student engagement. Engagement has been of interest to higher education scholars for more than 70 years (Kuh, 2009). The underlying concept of student engagement asserts that the more a student studies, practices, and actively collaborates with others, the more knowledgeable and adept they become in understanding their own learning and understanding how to manage complexity, tolerate ambiguity, and work with others from diverse backgrounds and perspectives (Kuh, 2009; Trowler, 2010). With respect to student engagement, Kuh (2009) has suggested that "engaging in a variety of educationally productive activities also builds the foundation of skills and dispositions people need to live a productive [and] satisfying life after college" (p. 5). Engagement helps to develop habits of the mind and heart that enlarge the capacity for continuous learning and personal development.

One of the most widely used programs to assess student engagement used by colleges and universities is the National Survey of Student Engagement (NSSE). This

national survey is distributed to four-year colleges and universities throughout the United States and Canada to obtain data on first-year and senior students' participation in activities, experiences, and programs that provide learning and personal development in the post-secondary context (NSSE - National Survey of Student Engagement. (n.d.). Retrieved from http://nsse.indiana.edu/). The survey captures the overarching construct of student engagement within four primary dimensions or themes: academic challenges, learning with peers, experiences with faculty, and campus environment. The academic challenges theme focuses on a university's ability to foster students' intellectual and creative work by providing challenging and engaging forms of deep learning opportunities such as higher-order learning, reflective and integrative learning, learning strategies, and quantitative reasoning. The learning with peers theme focuses on the learning, development, and interactions of students with their peers and course material through collaborative learning and discussions with others. The experiences with faculty theme takes a specific look at how student connections with faculty can serve as a model for pairing students with mentors, role models, and guides for lifelong learning. This theme is also further supported through student-faculty interactions and effective teaching practices. The campus environment theme concentrates on a more active role in universities ensuring that student relationships with peers, faculty, and staff are cultivated within a positive setting and are based on the quality of their interactions and supportive environment. As shown in table 3, each of the four themes are aligned with each respective engagement indicator.

Table 3

National Survey of Student Engagement: Engagement Indicators

Theme	Engagement Indicators
Academic Challenge	Higher-Order Learning Reflective and Integrative Learning Learning Strategies Quantitative Reasoning
Learning with Peers	Collaborative Learning Discussions with Diverse Others
Experiences with Faculty	Student-Faculty Interaction Effective Teaching Practices
Campus Environment	Quality of Interactions Supportive Environment

National Survey of Student Engagement (NSSE) Engagement Indicators [Chart]. In National Survey of Student Engagement (NSSE). Retrieved from: http://nsse.indiana.edu/html/engagement_indicators.cfm

More specifically, the chosen innovation implemented within this study took into account the following engagement indicators implied within the NSSE: reflective and integrative learning, collaborative learning, and discussions with diverse peers. It is also important to note that in an effort to create a learning environment online that fostered each of the NSSE engagement indicators, consideration was placed on the types of technologies that are available to support the engagement of students within online learning platforms.

As I reviewed learning technologies that are available in the education marketplace to support student engagement online, I found that some common trends began to emerge. With the expansion of online learning in higher education, there has also been a significant influx of companies who have demonstrated interest in providing products to support the online education sector. Companies have recognized the

mounting pressures of accountability with which leaders in higher education are faced. Some of those pressures have included the ability to deliver learning outcomes and to meet the needs of their increasingly diverse student populations. With a rise in the development of educational products, many have been promoted to address elements identified in the NSSE annual survey. Companies have developed additional technologies such as interactive textbooks and videos, social engagement networks, robust learning management systems, and adaptive learning platforms devised to increase the learner experience in ways claimed to be as effective or more than that of a face-to-face learning environment.

Local Context: Online Learning at Arizona State University

Working with faculty to design and develop online courses is a primary function of my role as a senior instructional designer at Arizona State University (ASU). This process includes the identification of course and unit level objectives, learning outcomes aligned with those objectives, and the incorporation of learning technologies to aid in the realization of learner outcomes and goals. I provide guidance in identifying the most appropriate pedagogy, course design, and instructional technologies optimally suited for teaching and learning online.

Anecdotally, the faculty I work with have frequently expressed a desire to develop strategies that will replicate the types of student interactions prevalent in their face-to-face course in the virtual learning environment. Although the online learning environment is not meant to be an exact duplication of its bricks and mortar counterpart, many instructors I work with have made this assumption. Even amongst those who

understand the unique nature of online courses, faculty commonly express to me concerns about how to best foster effective engagement of students and promote collaboration and the sharing of ideas. Instructors have shared with me that the nuances, expressions, and responses of students in face-to-face learning environments that act as critical indicators of collaborative activities in their courses.

This study was motivated by the aforementioned ASU faculty concerns about their students' engagement in online courses. To better understand instructor perceptions of teaching online, including their knowledge and level of comfort when using various learning technologies to foster student interactions and learner engagement, in cycle 1, I interviewed three online instructors across multiple academic disciplines. From those interviews there were a few things that I learned that were extremely insightful and relevant to my study. The first was the importance of providing opportunities for students to engage with peers to critically assess course themes. The second was an emphasis on the presentation of learner activities and assessments to meet the needs of diverse learners. The third and fourth findings both are related to one another. The instructors stated that the incorporation of learning technologies can help to realize desired learning outcomes, but they cautioned that technology should not be used as the driving force of engagement but rather act as a means to create opportunities for learning that supports engagement.

During cycle 1, I also distributed a 6-point Likert scale survey to ASU Online undergraduate students to better understand their general perceptions of online courses. Most students "strongly agreed" that when engagement activities are implemented within

an online course, they felt that their overall learning experience was improved. Almost half also "agreed" that the quality of an online course was better when a variety of technologies were employed to engage learners. Over half of all respondents "strongly agreed" or "agreed" that they embraced the use of new technologies to engage with peers and dive deeper into the course material. When asked for open-ended comments about their experiences in online courses, several respondents suggested that the discussion format associated with the university's learning management system was difficult to navigate and that they would prefer their peer interactions to take place in the form of a chat. Another respondent suggested that the use of new technologies could be a distraction if the learning curve was large. Well over half of the survey respondents "slightly" to "strongly" agreed that they felt confident when using new technologies to help strengthen their understanding of the course materials. In conclusion, the results of data collected during cycle 1 of this study from faculty and students provided valuable insight into elements of engagement that are important to online course instructors. The results also demonstrated that it is important to take into account the choice of technologies to support student engagement online. Engagement amongst students is valued, particularly in peer to peer collaboration on discussion platforms. The use of technology also played an important role in how engagement opportunities can be fostered online. These insights have led me to distinguish student engagement in online course environments as the primary focus for this study.

Purpose and Significance of the Study

The practice of teaching and learning serves as the foundation for an instructor's ability to foster effective engagement within virtual learning environments. In my experiences as an instructional designer working with online faculty, a primary challenge lies in finding the most effective way to bridge each component and create opportunities for students to become more authentically engaged.

At the center of this study is a means to potentially facilitate student engagement in online courses at Arizona State University. Student collaboration through discussion is a critical component to further expand their knowledge as well as to build connections with peers. The innovation, an online learning community, was administered through a discussion platform called Yellowdig that is compatible with the LMS used to deliver online courses at ASU. The study's innovation was developed based upon the theories, data, and models discussed more fully in chapter 2. Undergraduate online students at ASU were invited to collaborate within the online learning community for a total of four weeks. A series of foundational tenets, also derived from the research literature, were created to act as a guide for student collaboration and engagement within the online learning community.

The purpose of this study is to examine how the use of collaborative opportunities, such as the implementation of an online learning community, can support student engagement in online courses. More specifically, this action research study explores how the implementation of an innovative online learning community influences engagement amongst learners at ASU. The results are likely to assist college and

university instructional designers in better understanding how faculty can implement instructional practices that optimally support online student engagement. In turn, improvements in student engagement resulting from such innovations are likely to improve student comprehension of course content and result in higher levels of academic achievement.

Research Question

The primary research question guiding this inquiry is*: How and to what extent does the implementation of an online learning community influence undergraduate student engagement in online courses?*

Organization of the Dissertation

The contents presented in chapter 1 introduce the key concepts that are addressed in this dissertation. In chapter 2, an extensive summary of literature, based upon student engagement in higher education as a whole, is explored. In chapter 3, a discussion of the study's demographics, data collection methods, and processes are presented. Chapter 4 provides an overall analysis of the study's findings and results. And lastly, in chapter 5, I present my final thoughts, insights, and implications for future research iterations of this study.

CHAPTER 2

Theoretical Perspectives and Research Guiding the Project

You learn at your best when you have something you care about and
can get pleasure in being engaged.

~ Howard Gardner

The foundation of current higher education institutions collectively embodies a mission to serve communities at both a local and global scale. Access to quality education, alternative educational pathways, and degree attainment represent only a few of the many challenges that universities face in their effort to build upon the foundation of skills and dispositions students need to live productive and satisfying lives after college (Kuh, 2009). In turn, college enrollment has come to include a more diverse student population than ever before. This diversity brings additional challenges that universities must address if they are to effectively create an educational environment that is truly conducive to the academic success of all. As a result of a number of efforts made by institutions and researchers, valuable headway has been made to better understand the nature of engagement amongst co- and extra-curricular student learning opportunities.

The following section of this chapter examines the elements used to guide the development of the study's theoretical framework. Figure A presents the data, theories, and models identified in the research literature. Each of these elements identified within the literature help to conceptually frame the nature of engagement in higher education as well as how engagement could best be approached by facilitators and students in online learning environments.

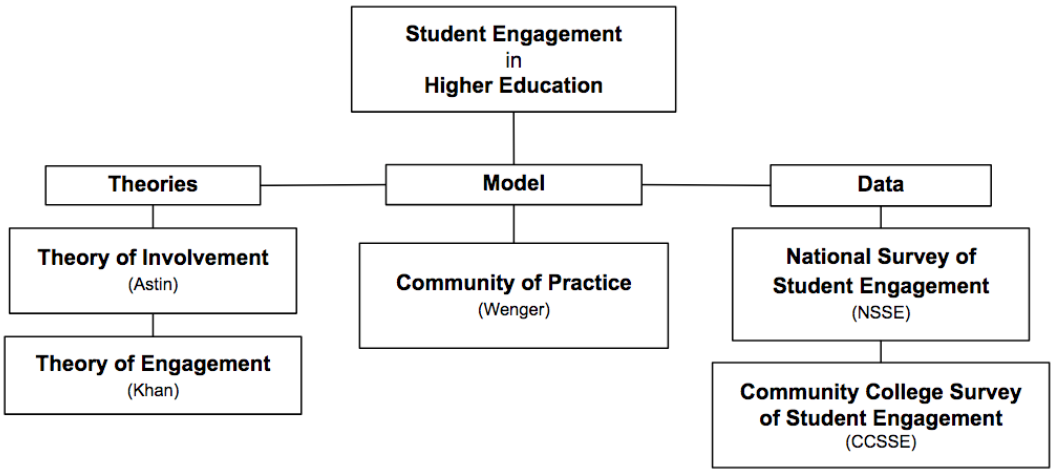


Figure A. Student Engagement in Higher Education

National Assessments of Student Engagement

During the late 1990s and early 2000s, higher education institutions realized the value of student engagement and how it impacts on the overall college student experience and academic success. Pascarella and Terenzini (2005) undertook a meta-synthesis of college impact research during that timeframe. They have suggested that if individual effort and involvement are critical determinants of college impact, academic institutions should place greater emphasis on how to shape academic, interpersonal, and extracurricular offerings to encourage student engagement. Empirical investigations of student engagement not only meet accountability demands from accrediting bodies, but they also help colleges and universities to optimally support students' learning and post-college outcomes. For example, the Commission on the Future of Higher Education (2006), convened by Margaret Spellings (President George W. Bush's Secretary of Education), highlighted engagement as an indicator of student and institutional

performance. The Commission's work underscored the role universities and colleges must play to motivate students to engage in educationally purposeful activities (Kuh, 2009).

The National Survey of Student Engagement. The National Survey of Student Engagement is a foundational benchmark of empirical work on college student engagement. Established in 2002, and hosted at Indiana University, NSSE collects high-quality actionable data that institutions can use to improve the undergraduate experience, document effective educational practices, and advocate the acceptance of empirically-derived conceptions of collegiate quality (Kahn, 2014; Kuh, 2009; Kuh & George, 2003). Colleges and universities pay a service fee to NSSE to administer its cross-sectional surveys to first-year and senior students. Table 4 demonstrates the benchmarks based on a total of 42 questions presented in the NSSE survey. These benchmarks are used to capture and reference the most critical components of the student experience including specific high impact indicators of each.

Academic institutions often choose to distribute their NSSE results to stakeholders in an effort to demonstrate a deeper understanding of the dimensions of student and institutional performance as well as leverage to support decision-making processes that maximize student learning and development. According to Kuh (2009), students learn more when they are intensely involved in their education, participate in diverse activities in and out of the course, and when the university demonstrates a commitment to their success through the cultivation of positive working and social relationships.

In all, NSSE provides valuable data in which two recurring themes are prevalent across the construct of student engagement: collaboration and discussion. These elements are critical determinants that may represent a student's quality of effort and involvement in productive learning activities (Kuh, 2009). The analysis of results gleaned from NSSE's data has led to a better understanding of how elements of collaboration and discussion are closely related to student engagement and could serve as beneficial performance indicators for institution-wide improvements on the practice of teaching and learning for instructors.

Community College Survey of Student Engagement. Although the setting of this study is situated at the university level, the Community College Survey of Student Engagement (CCSSE) is of particular relevance to online student populations. Community colleges have developed a more tailored assessment of student engagement to address the unique strengths and challenges they face, which is derived from the NSSE. Unlike most four-year baccalaureate-granting universities, community colleges often provide the opportunity and access to post-secondary education to low-income, first-generation, and academically under-prepared students (McClenney, Marti, & Adkins, 2012). The Community College Survey of Student Engagement focuses on institutional practices and student behaviors that promote student engagement and are built on the foundation of student involvement, integration, and quality of effort in social and academic collegiate experiences. These are significantly linked to student learning, persistence, and academic attainment (McClenney, Marti, & Adkins, 2012). These outcome measures also serve as proxies for the desired outcomes of the college

experience, which are similar to the NSSE. According to McClenney, Marti, and Adkins (2012), outcome measures including course completion, grade point average (GPA), and graduation tend to become evident late in a students' educational experience and do not accurately assess educational practices and areas for improvement. There is strong belief that greater focus should be placed on engagement, which, in turn, gives colleges systematic evidence for improving educational experiences and student outcomes.

The conception of the CCSSE, in conjunction with the NSSE, has helped to cement student engagement within the higher education lexicon and has demonstrated that student engagement can be measured across institutions at scale (Kuh, 2009). Table 4 represents the set of benchmarks embodied within CCSSE. Of these benchmarks, active and collaborative learning are the most consistent predictors of student success across studies and measures, suggesting its pervasiveness in the college experience (McClenney, Marti, & Adkins, 2012). The impact of the student-faculty interaction benchmark was similar to results observed for active and collaborative learning, which both measure the extent to which students are actively processing their learning experience with peers (McClenney, Marti, & Adkins, 2012).

Table 4

Community College Survey of Student Engagement (CCSSE) Benchmarks

Benchmarks	Active and Collaborative Learning
	Student Effort
	Academic Challenge
	Student-faculty Interaction
	Support for Learners

In part, CCSSE substantiates data supporting the need for two-year colleges to foster student engagement opportunities at both the institutional and pedagogical level. As stated by McClenney, Marti, and Adkins (2012), the more actively engaged that students are with instructors, peers, and their studies, the more likely they are to learn, be engaged, and attain their academic goals.

Theoretical Foundation: Theories Guiding the Study

According to Meyer and Ebrary (2014), theories explain what and why something happens, and also generate educational and improvement practices that are critical in understanding how students engage and learn online. The following section summarizes the three main frameworks that support the conceptual foundation of this study: Astin's (1984) theory of student involvement, Kahn's theory of engagement, and Wenger's (1998) communities of practice model. Each are presented with a brief description highlighting essential constructs and their relevance to the concept of student engagement in post-secondary education.

Theory of Involvement. The theory of involvement was originally developed by Alexander Astin (1984), who pioneered the concept of quality of effort through the importance of a student's involvement as a direct relation to their achievement (Kuh, 2009). Astin's theory of involvement, as defined, places an emphasis on the amount of physical and psychological energy that the student devotes to the academic experience (Astin, 1984). A highly involved student is one who devotes his or her energy to studying, campus involvement, engages in student organizations, and collaborates with faculty and peers (Astin, 1984). It is claimed that involvement closely resembles the

Freudian concept of cathexis meaning that individuals tend to invest their psychological energy into objects and people outside of themselves (Astin, 1984). In other words, individuals have the ability to invest mentally and emotionally in their commitments and relationships with others.

The concept of involvement implies a behavioral component, which is critical to understanding the variables that this theory entails. The behavioral component suggests that it is not concerned with what individuals think or feel, but rather with what they do and how they behave (Astin, 1984). Table 5 outlines the essential components of this theory including a description of each. Astin (1984) has argued that the theory of involvement may offer instructors the necessary tools needed for designing more effective learning environments. According to Astin (1984), in order for desired learning outcomes to be achieved, students must have a sufficient amount of energy and effort to bring about successful learning and development. The application of student involvement to education encourages course facilitators to focus less on what they are doing and more on what their students are doing. This includes a focus on student's motivation, time, and energy devoted to the learning process.

Table 5

Theory of Involvement

	Postulates	Description
1	Investment of physical and psychological energy	Involvement refers to the investment of physical and psychological energy in various objects. The objects may be highly generalized (the student experience) or highly specific (preparing for a chemistry examination).

2	Occurrence along a continuum	Regardless of its object, involvement occurs along a continuum; that is, different students manifest different degrees of involvement in a given object, and the same student manifests different degrees of involvement in different objects at different times.
3	Features: Quantitative & Qualitative	Involvement has both quantitative and qualitative features. The extent of a student's involvement in academic work, for instance, can be measured quantitatively (how many hours the student spends studying) and qualitatively (whether the student reviews and comprehends reading assignments or simply stares at the textbook and daydreams).
4	Quality and quantity of involvement	The amount of student learning and personal development associated with any educational program is directly proportional to the quality and quantity of student involvement in that program.
5	Policy and practice	The effectiveness of any educational policy or practice is directly related to the capacity of that policy or practice to increase student involvement.

Table 6 outlines the traditional theories that, according to Astin (1984), often guide the actions of personnel at post-secondary institutions. Based on the content, resource, and eclectic theory categories listed in table 5, Astin (1984) has asserted that student involvement may be more directly tied, in addition to providing the missing link between variables associated with these pedagogical theories and the desired learning outcomes of colleges and universities.

Table 6

Traditional Pedagogical Theories

Theory	Definition	Characteristics
Subject Matter/Content	Student learning and development depend primarily on exposure to the right subject matter	Assortment of "worthwhile"' courses Course syllabi Intense study and completion of work Strong focus on readings and lectures

		Students are passive learners Hinders educational opportunities for underprepared students and continues the adherence of this theory by many faculty
Resource	An election of resources that are used and believed to enhance student learning. The line of thought is that if adequate resources are brought together in one place (i.e., the acquisition of resources), student learning and development will occur	Examples include physical facilities, human resources, and fiscal resources Student-faculty ratio - the lower the ratio, the greater personal learning and development will occur Increase of "high-quality" professors on the faculty (i.e., scholarly productivity and national visibility) (a finite resource) High achieving students are a highly valued resource - belief that large numbers of highly achieving students enhance the quality of the learning environment for all students (a finite resource)
Individualized/ Eclectic	Assumes that no single approach to subject matter, teaching, or resource allocation is adequate for all students. In other words, it attempts to identify the curricular content and instructional methods that best meet the needs of the individual student	Emphasizes college electives, that is, students must take and complete a subset of required college courses to meet degree requirements but are also provided with the option of taking elective courses Emphasizes the importance of student advising and counseling of independent study Associated with self-paced instruction (i.e., competency-based learning model)

Within each underlying theory, it becomes clear that there is not one particular curriculum that can be used to achieve intended learner outcomes, but rather students must elicit sufficient effort and energy to achieve desired learning and development goals. Content theory places students in a passive role, which is very similar to Paulo Freire's (1970) banking system of education, whereas, the theory of involvement emphasizes active participation of students in the learning process (Astin, 1984). The

resource theory places a greater need on resources believed to enhance student learning. In comparison, the theory of involvement encourages educators to focus less on what they do and more on what the student does (Astin, 1984). In other words, a look into student's motivation, devoted time, and energy to the learning process is greatly valued and necessitates course instructors to adopt a more supportive role rather than one that is dominant in the learning environment (King, 1993; Morrison, 2014).

In all, the theory of involvement is primarily concerned with the behavioral mechanisms that are associated with the "how" of student development. It can be argued that a student's time is one of the most precious institutional resources in which student goal achievement is a direct function of the time and effort they devote to activities that produce gains in knowledge and learning. Instructors can increase their effectiveness if a greater focus is placed on the intended outcomes of their pedagogical efforts to achieve maximum student involvement and learning (Astin, 1984). A practical application of the theory of involvement for practitioners in higher education should include a focus on learning opportunities that foster engagement through a student's involvement with course activities and their peers.

Kahn's Theory of Engagement. Kahn's theory of engagement explores an individual's involvement in learning, including their responsibility to take action in the face of uncertainty in pursuit of personal or communal goals (Kahn, 2014). Khan's theory is used to understand engagement in a wide variety of circumstances and is applied to college students in particular. Engagement is the contribution that students make towards their learning, time, commitment, and resources (Kahn, 2014). As explained in the

literature, student engagement is seen as the interaction between the time, effort, and resources invested by students and academic institutions to optimize learning experiences and enhance development and performance outcomes (Astin, 1984; Kahn, 2014; Kuh, 2009). Research drawing on this theory has linked student engagement and outcomes such as student retention and academic performance (Kahn, 2014; McClenney, Marti, & Adkins, 2012).

For the purposes of the present study, the concept that sets Kahn's theory of engagement apart is that it places greater emphasis on the student as an agent of shaping his or her own engagement. Reflexivity is the mental process in which individuals identify themselves in relation to their social contexts (Kahn, 2014). Engagement, therefore, involves not only participation in practice (i.e., behaviors), but also feelings students have around their practices in an attempt to make sense of the activity. This may suggest that there is a need for students to not only be actively involved in their engagement with peers but also feel a sense of community and pride in their contributions to the community as a whole. This key finding is discussed further in chapter 3 and has aided the design and function of this study of how participants are guided to engage with others within a community-centered environment.

Kahn (2014) has called for educators to expand their understanding of engagement to include a discussion that goes beyond the agency of an individual learner, but to also address the means by which groups of learners engage together. As further defined by Khan (1990), within the act of being engaged, individuals often employ and express themselves physically, cognitively, and emotionally. These factors may indicate

that not only is it important to consider what the student is doing while engaging with others, but also to consider the psychological state the engagement activity creates within the learner. Effective learning environments encourage students to take account of meaning making within their own learning and integrate supportive social relations amongst peers (Kahn, 2014). More intensive forms of educational design can enable students to be engaged through their proximity and access to others, which may be enhanced through the use of technology in online learning environments (Kahn, 2014). Determining the design of the discussion platform used to implement this study was carefully considered. As suggested by Khan (2014), it was important that the design and function of the discussion platform for this study created a learning environment that was conducive to positive social interactions and encouraged students to be actively involved.

Communities of Practice. The concept of a community of practice (CoP) was first introduced by Etienne Wenger (1998). It is a group of individuals who share common interests and learn from one another through the sharing of knowledge and ideas. Communities of practice involve mutual engagement around a joint enterprise that brings groups together through the collective development of shared knowledge. According to Wenger (1998), a CoP does not exist in the abstract, but rather in the engagement of people in actions, where the meanings of those actions are negotiated through each other. The essence of practice is essential to meaning making as an experience of students' everyday lives.

Wenger's (1998) community of practice model is greatly influenced by traditional frameworks from Jerome Bruner's (1966, 1986, 1990, 1996) constructivist theory and Albert Bandura's (1977) social learning theory. As stated by Wenger (1998):

> Constructivist theories focus on the process by which learners build their own mental structures when interacting with an environment. Their pedagogical focus is task-oriented. They favor hands-on, self-directed activities oriented toward design and discovery. They are useful for structuring learning environments, such as simulated worlds, so as to afford the construction of certain conceptual structures through engagement in self-directed tasks. [Whereas] social learning theories take social interactions into account…They place the emphasis on interpersonal relations involving imitation and modeling, and thus focus on the study of cognitive processes by which observation can become a source of learning (p.279-280).

As discussed in the literature on CoPs in higher education, such frameworks can successfully engage students through social settings that not only encourage the joint enterprise of knowledge, but may also act as a means of enhancing problem solving and transferable skills that are necessary for the workplace (Fearon, Mclaughlin, & Yoke Eng, 2012). In Clarke's (2009) professional online district (POD) model, student teachers are engaged in an online community-based learning group that provides them with opportunities to work together in a CoP. They can construct their own curriculum through the sharing of their experiences and engage in continued self-guided professional development. In Naude and Bezuidenhout's (2015) student support program (SSP), which is another type of CoP, greater emphasis is placed on learning through participation in the social world. Fearon et al.'s (2012) group project study has focused on student-centered communities of practice including elements such as connectiveness, conversations, context, content, and purpose, all which are elements of an effective CoP. Borges et al. (2017) have conducted a study on student organizations that make

connections between values and practices associated with CoPs such as individuals' beliefs, passions, and shared values. The studies discussed above substantiate the evidence that the process of learning is not linear and does not consist purely of the transmission of knowledge, but, rather, is a process of understanding through one's participation and joint activity.

An important function of educational design is to maximize, rather than avoid, the interactions amongst students that encourage them to become more engaged in the learning process. Most well-functioning communities of practice seek to explore radically new insights resulting in cutting edge learning with a strong bond of communal competence and deep respect for the particularity of each member's shared experiences (Wenger, 1998). Put differently, it is imperative that educators "represent" communities of practice within the scope of their students' learning environment.

Learning as participation takes place through the actions and interactions of its members. For educators to embrace their ability to apply an alternative and more flexible learning design affords students the opportunity to become more involved and engaged in the collective development of a shared practice amongst their peers. As affirmed by Wenger (1998), learning is fundamentally experiential and social, involving our experiences, participation, and reification of competence defined in our communities. Within such communities participants must contribute their knowledge, independently and collectively, in varied ways that help to build their identity, contribute to the enterprise, and engage with others in unique ways. Designing for engaged learning requires educators to have an inherent knowledgeability of engagement in practice and to

provide opportunities that support authentic collaboration and discussion amongst students in the educational setting (Herrington, Oliver, & Reeves, 2003). These findings indicate that it is important for online course facilitators to be knowledgeable about how to effectively and authentically create learning environments that support authentic engagement for their students online. The innovation used in this study sought to create such as an environment through the implementation of an online learning community.

Theoretical Framework for Fostering Student Engagement in Online Courses

This project draws on a conceptual framework that encompasses the elements indicated by the theories, data, and models described above. This framework consists of four key elements (see fig. B): an overview of the demographic and particular context of this study, which is the undergraduate online student population in post-secondary education; three elements embodying Astin's (1984) theory of involvement, Khan's (2014) theory of engagement, and Wenger's (1998) community of practice. As previously discussed, in this chapter, each element is accompanied by a series of questions that synthesize the inquiry process of the initial online course development phase. The innovation at the center of this project assumes that Astin's concept of involvement, Khan's notion of engagement, and Wenger's communities of practice serve as the driving agents that must be in place in order to achieve a true community of online learners.

Under the engagement, involvement, and community of practice headings in figure B are the questions that course facilitators must address as they determine means for online learners to engage, be involved, and practice engagement with their peers.

These are all elements that are critical to the development of an online learning environment. Figure C shows the physical elements used to create the online learning community presented in this study. The first listed element is the foundational tenets used to guide the engagement of students within the learning community. The second element is the roles of the student and course facilitator within the learning community. The third element is the discussion platform used to house the learning community. It is important to note that the elements within both figures B and C are intended to work in tandem with each other and are necessary to successfully implement the online learning community.

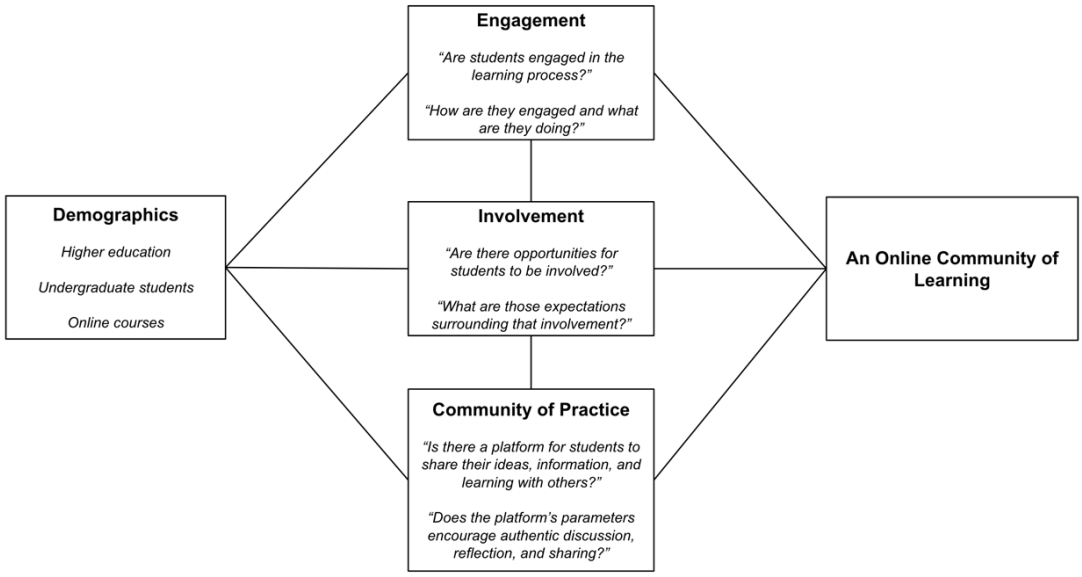


Figure B. Theoretical Framework: Online Community of Learning (Inquiry Process)

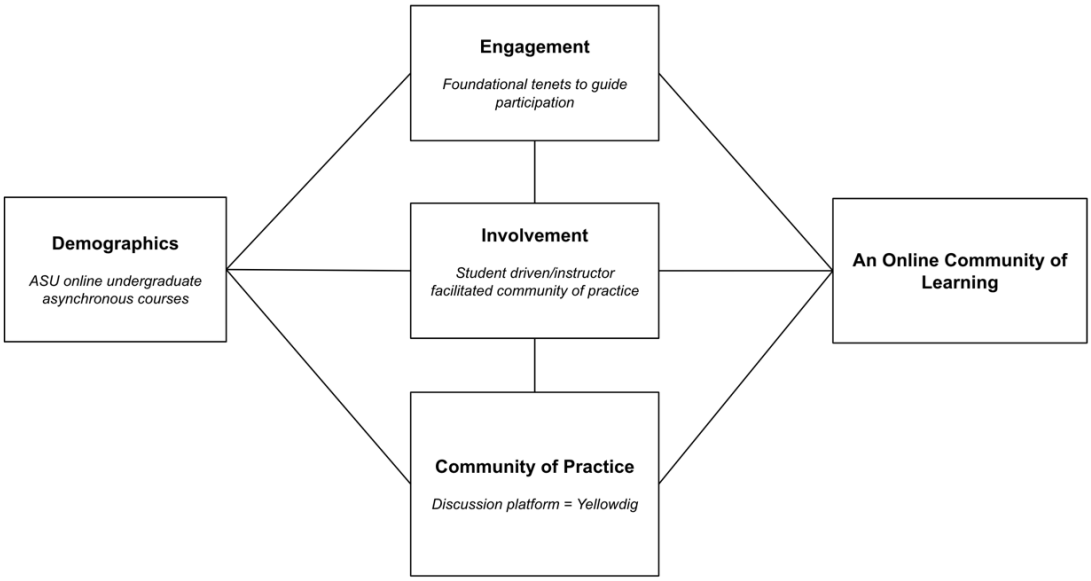


Figure C. Theoretical Framework: Online Learning Community (OLC)

CHAPTER 3

Research Methodology

Methods should not be a fixed track to a fixed destination, but rather a conversation about everything that could be made to happen.

~ J.C. Jones

This chapter presents the study's design and research methods. To recap, the purpose of this study is to examine how the use of collaborative opportunities, such as the implementation of an online learning community, can influence college student engagement in online courses. Instructors are faced with the ongoing challenge to provide engaging educational opportunities for students. This challenge generates a need for improved practices at both the institutional and pedagogical level. Student engagement is an essential element for creating enriching learning experiences in the online learning environment. The aim of this study is to bridge from the authentic experiences students may share as they engage with their peers in person to their experiences of the online world (Herrington, Oliver, & Reeves, 2003). The chapter begins with a discussion of previous cycles, specifically cycle 1, of action research. I then describe the setting and demographics relevant to the present cycle of research. This is followed by a discussion of the study's innovation, including its function and design. I then explain the data collection methods and analysis procedures used to study the impact of the innovation. The chapter concludes with a discussion of the study's validity and reliability.

Previous Cycles of Action Research

As mentioned in chapter 1, in cycle 1 of action research I interviewed three online course instructors to better understand their experiences of teaching online. Each interviewee was asked a total of five semi-structured questions and our conversation lasted between 45–60 minutes. The questions asked during each interview are provided in table 7.

Table 7

Faculty Interview Questions

	Questions
Q1	What are some areas you have seen students struggle with when taking an online course and why do you feel those areas were difficult for them?
Q2	What are some of the biggest challenges you have faced when teaching an online course including challenges during the development phase of the course as well as the course facilitation?
Q3	What are your thoughts on student engagement and how it relates to the delivery mode of the online course meaning whether the course was delivered synchronously or asynchronously?
Q4	Technology has officially become a staple within our society today. How might technology influence student engagement within an online course and in what ways have you incorporated technology to meet the needs of your learners?
Q5	What are some best instructional practices that you would deem to be essential in order to foster opportunities for student engagement within an online course?

After compiling and analyzing the data, I formulated the following conclusions: 1) the incorporation of learning technologies can help to realize desired learner outcomes for online courses, 2) it is important to provide opportunities for students to engage with peers to critically assess course themes and analogies from course readings, 3) the presentation of learner activities and assessments is important to meet the needs of diverse learners, and 4) technology should not be the driving force, but rather act as a

means of creating opportunities for learning that support engagement. The insights gleaned from the data gave me a better understanding of elements that are important to course facilitators and beneficial to student learning and success. These insights also served as an indicator that the incorporation of a learning technology may act as a means to enhance student engagement within online learning environments and should be considered within the innovation of the study.

In cycle 1 I also administered a 6-point Likert scale survey to ASU online undergraduate students to better understand their perceptions of online courses. The survey included a total of 10 questions with an option for students to submit additional comments. A total of 49 survey responses were received and SPSS (Statistical Package for the Social Sciences) was used to analyze the survey results with frequency distributions and descriptive statistics. Table 8 summarizes the distribution of students' perceptions of engagement in their online courses.

Table 8

Student Perceptions of Engagement in Online Courses

Questions	Likert Scale					
	Strongly Agree	Agree	Slightly Agree	Slightly Disagree	Disagree	Strongly Disagree
Q1 - I view online activities in an online course as engaging.	32.7%	26.5%	22.4%	14.3%	4.1%	0%
Q2 - The more engaging an activity is the better I learn.	44.9%	36.7%	12.2%	4.1%	0%	2%
Q3 - Engagement activities motivate me to want to learn more about the course content.	42.9%	38.8%	10.2%	4.1%	2%	2%

Q4 - Engagement activities improve my overall learning experience in the course.	44.9%	38.8%	12.2%	2%	0%	2%
Q5 - Engagement activities help me be a better student and obtain better grades.	38.8%	38.8%	16.3%	4.1%	0%	2%
Q6 - I love using new technologies (in courses) to engage with my peers and dive deeper into the course material.	22.4%	42.9%	14.3%	12.2%	4.1%	4.1%
Q7 - Courses are better when they use a variety of technologies to engage learners.	22.4%	32.7%	20.4%	14.3%	6.1%	4.1%
Q8 - I prefer to engage in synchronous (real time) activities versus asynchronous (not real time) activities.	8.2%	12.2%	18.4%	26.5%	8.2%	26.5%
Q9 - I prefer to engage in asynchronous (not real time) activities versus synchronous (real time) activities.	36.7%	20.4%	16.3%	14.3%	8.2%	4.1%
Q10 - I feel confident using new technologies within an online course to help strengthen my understanding of the course material.	36.7%	28.6%	20.4%	10.2%	2%	2%

The results of the survey analysis indicated that 32.7% of respondents “strongly agreed” that when engagement activities are implemented within an online course, they felt that their overall learning experience was improved. More than half either “agreed” or “strongly agreed” that the quality of an online course was better when a variety of technologies were employed to engage learners. A total of 32.7% of participants “agreed” and 22.4% “strongly agreed” that they embraced the use of new technologies to engage with peers and dive deeper into the course material. This may indicate that students positively receive the use of technologies to enhance learning.

Well over half of the survey respondents (85.7%) “slightly” to “strongly” agreed that they felt confident using new technologies to help strengthen their understanding of the course materials. However, in the qualitative portion of the survey, one respondent suggested that the use of new technologies could be a distraction if the learning curve was quite steep. Another student suggested that the KISS (keep it super simple) design principle should be considered when determining the type and number of technologies to be employed. Ensuring students feel comfortable therefore may be an important consideration for online course facilitators to account for prior to the implementation of a new technology.

In terms of more specific design considerations, over half of the survey respondents (61.2%) indicated that they did *not* prefer to engage in synchronous activities when taking an online course. Important to note, however, is that the survey was implemented in only asynchronous online courses which might have introduced a bias in the participant responses. Conversely, the highest number of students (73.4%) indicated that they preferred to engage in asynchronous course activities. A number of students indicated that their work schedules prevented them from enrolling in synchronous course formats, which is why they chose to enroll within an asynchronous course. Another important design-related finding came from the qualitative data. A number of respondents suggested that the discussion format associated with the course’s learning management system (LMS) was difficult to navigate and that they would prefer their peer interactions to take place in the form of a chat.

Study Setting

This study was conducted at Arizona State University (ASU). The University is a comprehensive, accredited, public research university that offers over 400 undergraduate and graduate degree programs through 17 academic colleges and across five physical campuses. Of these programs, 150 are offered through ASU Online serving over 30,000 students nationally and internationally. In August 2009, ASU Online was officially established (asuonline.asu.edu).

At the time of this study, all courses offered through ASU Online ranged between 2–4 credit hours per course and the University used two separate types of online course designations. The first designation is as an "i-course," meaning that the course is open to all ASU students regardless of whether the students are enrolled in an on-campus or an ASU Online degree program. The second designation is an "o-course," meaning only students enrolled on an ASU Online degree programs are eligible to enroll on an ASU Online course. A total of 14 course sections were included in the current cycle of the study, and all were designated as o-courses. None were "i-courses."

As ASU, each online course is offered over a seven and a half-week timeframe during either the fall and spring terms, or during one of two six-week summer terms. More specifically, any for-credit ASU Online course may be taught up to six times throughout each academic calendar year (i.e., fall A: first seven and half weeks of fall, fall B: second seven and half weeks of fall, spring A: first seven and a half weeks of spring, spring B: second seven and a half weeks of spring, summer A: first six weeks of

summer, and summer B: second six weeks of summer). The courses that were the focus of this study were taught during the fall A and fall B terms during 2018.

According to *U.S. News & World Report* (www.usnews.com), ASU Online reported a total enrollment of 29,621 students at the beginning of the 2018 spring semester. In terms of their sociodemographic, 57% identified as female and 43% identified as male. The average online student was aged 28; most (64%) were between the ages of 23–39, just over a quarter (27%) were younger than the age of 22, and 9% were older than 40.

Study Participants

The participants in this research study were recruited during the fall term of 2018. At that time, undergraduate students enrolled on an ASU Online course during the fall A and B academic sessions were eligible to participate. Participants were recruited via the instructors of their online courses. Some online faculty voluntarily offered an extra-credit incentive to students who chose to participate in the study while other faculty provided no incentive. A $20 Starbucks gift card incentive was offered to students who participated in the study's synchronous online focus group, which is further discussed in chapter 4. However, the use of an extra-credit incentive to recruit online students to participate in the study was not required nor suggested to faculty who participated in this study. This was a decision that they could chose to make on an individual basis.

A total of 47 faculty who were scheduled to facilitate an online course during this timeframe were identified and individually recruited to support the study (see appendix A-I). From these 47 faculty recruited across both the fall A and B sessions, 11 agreed to

participate in the study. These faculty and the online courses they taught were associated with three academic colleges at ASU: the School of Politics and Global Studies, the School of Social Transformation, and the School of Sustainability. The direct role that online course facilitators themselves played in the study was minimal. The eleven faculty who supported the project did the following: 1) granted the researcher permission to recruit student participants enrolled on their online course, and 2) posted a pre-written participant recruitment announcement during the first or second week of their online course (see appendix A-I).

The online courses from which students were recruited consisted of a total of 14 sections across the fall A and B sessions. Students enrolled in the participating courses were asked to anonymously complete a 22-question Likert scale pre-survey and participate in the study's innovation, an online learning community housed on the Yellowdig discussion platform (see appendix A-I). A total of 69 anonymous pre-surveys were submitted and received. From those surveys, 84% were submitted as complete while 16% were submitted as partially complete. A total of 30 students agreed to participate in the study's innovation. From those who submitted their intent to participate, 66.6% physically accessed the innovation's discussion platform (n=20) while 33.3% (n=10) were active participants during the innovation's implementation phase.

The participant demographics collected from the pre- and post-study surveys are presented in table 9. Almost half of the online students who responded to the pre-survey and 39% of post-survey participants were between the ages 18-24. Participants were distributed across all academic levels, the most common class year represented was the

Junior level (i.e., 33% of pre-survey; 52% of post-survey). More than half of respondents to both pre- and post- identified themselves as female. The most commonly identified race/ethnicity was as Caucasian/White.

Table 9

Study Participant Demographics: Pre- and Post-surveys

Characteristic	Percentage	
	Pre (n=69)	Post (n=23)
Age		
18–24	49.3	39.1
25–34	26.1	34.8
35–44	8.7	4.3
45–54	2.9	4.3
Gender		
Male	38.3	42.1
Female	58.3	57.9
Another Gender	3.3	--
Ethnicity		
African American or Black	8.7	4.3
African American or Black, Asian	--	4.3
Asian	5.8	--
Caucasian or White	52.2	34.8
Caucasian or White, Asian	1.4	4.3
Caucasian or White, Hispanic or Latino	--	4.3
Hispanic or Latino	11.6	21.7
Native Hawaiian or Other Pacific Islander	1.4	4.3
Other	5.8	4.3
Class Year		
Freshman (first year)	5.8	4.3
Sophomore	20.3	21.7

Junior	33.3	52.2
Senior	24.6	4.3
Unclassified/Other	2.8	--

At the completion of the study's innovation phase, I also administered a synchronous online focus group. Students who had indicated their intent to engage in the learning community were invited to participate in the focus group. A total of 5 student consents were submitted in which 2 participated in the focus group session. Although the number of students who participated in the focus group were low and do not account for a total representation of the study population, the insights that they have provided are valuable to further understanding the data collected from the pre- and post-surveys. Of the two students who participated in the synchronous online focus group, one participant identified as female while the other identified as male. Both participants were enlisted in one of the branches of the military and although neither participant indicated their exact age, they both appeared to fall between the 25-34 age range.

Innovation

As a result of the data, theories, and models examined in the extensive research literature, the innovation developed for this study was an online learning community to engage learners in online courses. It is important to note that during the timeframe in which the study was conducted, ASU was in the process of migrating away from its current LMS, Blackboard, to a new system, Canvas. Although the focus of this study was not on the LMS itself, in order to better understand some of the limitations presented by the current discussion platforms, a closer look at their limitations are presented as

follows: restriction on learner access to outside discussion forums, static user interface, limited availability of engagement options such as pins, and navigation challenges when sorting through posts. The presence of these limitations necessitated the use of an alternative discussion platform, Yellowdig, which was used in this study.

Some ASU Online courses that participated in the study were offered and being run simultaneously on both LMS platforms (Canvas and Blackboard). Although the number of courses offered on each platform is unknown, this was an option made available to online course instructors by their departments. The type of LMS used had no impact on the implementation of the study for the study researcher and online learning community facilitator,. In my observations working with ASU faculty, traditionally, they use online discussion board functions within the default LMS to create asynchronous discussion activities for students to respond to. I believe this method often falls short of fostering authentic opportunities for students to engage in a fluid and responsive manner.

When selecting the specific discussion platform for the innovation, I aimed to choose one that was both accessible and widely supported by ASU. Data collected from a survey of six ASU Online courses during initial research cycles indicated that the discussion format within the default LMS was difficult to navigate and that students would prefer that their peer to peer interactions take place in the form of a chat. Other data suggested that the use of new technologies can sometimes be a distraction if the learning curve is quite steep. This feedback was considered to be of significance when reviewing different types of online discussion platforms including their functionality, navigation, and overall ease of use. The options that I was able to use for this study were

limited due to the number of technologies made available and approved for use through the university. Other options outside of the LMS included VoiceThread, Google + communities, and Wikispaces.

The discussion platform I chose to implement the study's innovation is an online learning community called Yellowdig. Yellowdig is a collaborative and social online learning platform where users are able to engage in conversations, exchange ideas, and share digital content amongst both selective and larger communities within the platform. This platform resembles the user interface of Facebook, a social media platform widely used at the time of the study. The Yellowdig platform enables users within a community to create pins to share their thoughts, comments, and content with their peers. Students are granted access via an email invitation sent by the Yellowdig administrator in order to access private communities created on the Yellowdig platform. Other communities that are categorized as public are openly accessible by all learners within an invitation.

Participants within this study were granted access to the Yellowdig platform through an online invitation sent directly to the email addresses provided at the time of their submitted intent. All participants were simultaneously granted access to the Yellowdig platform. Participants were free to engage within the platform at any time during the implementation phase but were encouraged to post as often as possible. The innovation's implementation phase lasted for a combined total of 16 weeks split between the fall 2018 A and B sessions. A total of 20 study participants accessed the online learning community housed on the Yellowdig discussion platform at least once.

When the innovation was live, I instructed participants to collaborate with their peers in Yellowdig based upon the foundational tenets aligned with the framework of this study (see table 8). I encouraged participation in the learning community to happen as often as possible, and, at a minimum, on a weekly basis. No grades were assigned related to participation, although some course instructors voluntarily chose to grant students enrolled in their course extra credit for participating in the study. Student participation was monitored and measured, based on the number of pins contributed during the innovation's implementation phase. From those participants who accessed the Yellowdig platform, 50% actively participated by engaging in discussions within the community through the submission of pins. On average, students posted at least two pins on a weekly basis.

As outlined in chapter 2, table 10 represents the foundational tenets used to guide student engagement within the online learning community. Each of the prescribed tenets are not meant to function as requirements for students, but, rather, were used to ignite the engagement of community members in authentic discussion of knowledge through learning.

Table 10

Online Learning Community: Foundational Tenets

Online Learning Community	
Objective	To create a community of learners through the engagement of authentic conversations with community members on topics relevant to this course and individual fields of study.
Foundational Tenets	
Description	As part of your practice of collaboration and discourse, the following tenets are devised as a guide to ignite the engagement of community

	members in authentic conversations, contribution of shared knowledge, and advancement of learning through a collective communal understanding of knowledge shared.
Tenet 1: Reflection	Reflecting on daily experiences is an important aspect of learning. Think of something that you found to be intriguing throughout the day or by end of the week, which might be useful to share with others.
Tenet 2: Ponder	As a result of reflection often comes knowledge gained that may NOT be completely understood. Think of any knowledge you may still be pondering where you might want to ask for clarification from others.
Tenet 3: Aha Moment	The epitome of learning is when a mental light bulb is ignited, and you experience an "aha moment." Think of an "aha moment" you may have experienced as a result of new knowledge gained that might be beneficial to share with others.

I used the tenets to ignite the engagement of community members in authentic conversations, contributions of shared knowledge, and the advancement of their learning through a collective, communal understanding of the knowledge shared. This approach created an environment in which participants would feel compelled to participate in the construction of knowledge and meaning making with their peers (Herrington, Oliver, & Reeves, 2003) as well as empowered to embrace their roles as producers of knowledge (Hoadley, 2012; Jonassen & Rohrer-Murphy,1999).

My role as the study researcher as well as a participant and member of the learning community was to moderate all discussions and encourage participants to engage in an active and professional manner. By taking on the role of a facilitator whose sole purpose was to support student discussions as an active member and contributor rather than one who directs knowledge to a body of passive learners (King, 1993) helped to ensure that authentic discussions occurred. Figure D presents screenshots of the Yellowdig user interface detailing the options available to users when generating a post.

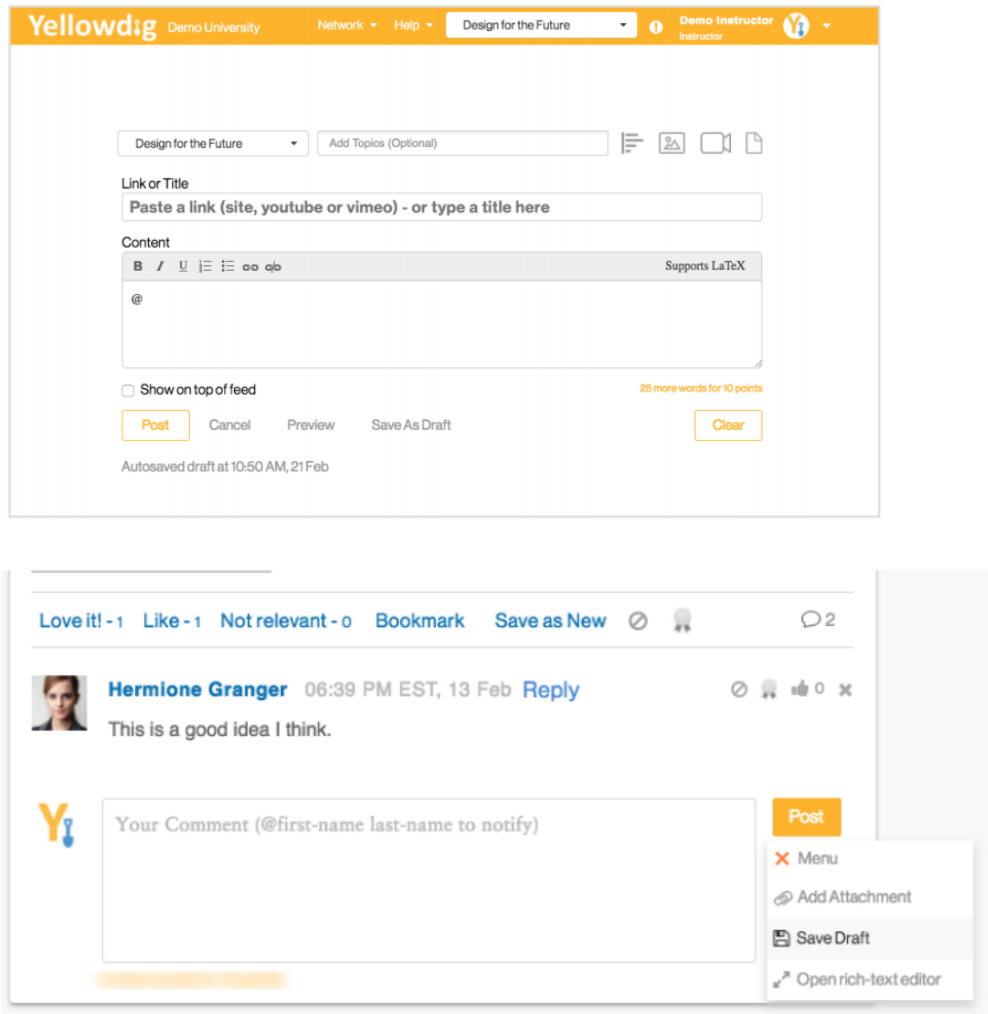
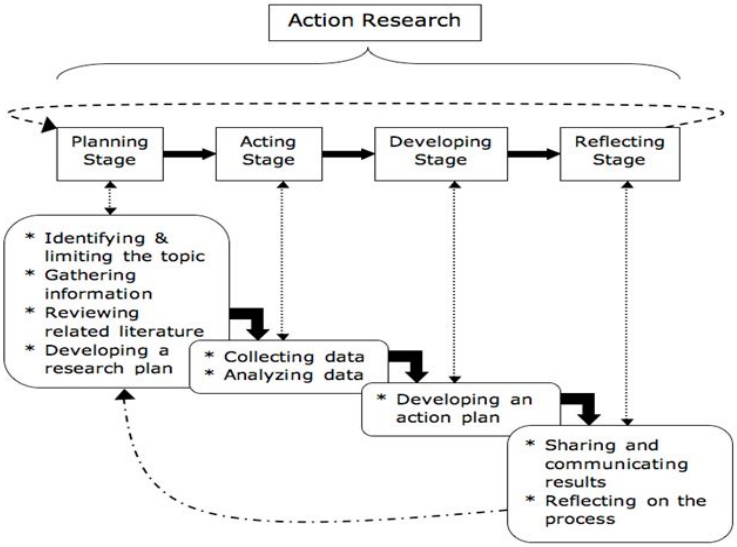


Figure D. Yellowdig Screenshots

Research Design

This study used action research as the primary design framework. Action research is a disciplined process of inquiry where local problems are solved through evidence-based decision making focused around efforts to improve the quality of an organization and its performance (Mertler, 2014). In an educational setting, action research is a process in which practitioners examine their own practices through techniques associated with traditional research, examine problems identified in their workplace, and develop an

innovation to further examine its effects. Cycles of action research are comprised of four iterative stages that guide the data collection and analysis process of the study. These stages include a planning, acting, developing and observation, and reflecting stage (see fig. E). Within a mixed methods approach there may also be a reconnaissance or evaluation phase, which often occurs during the initial cycle of research (Ivankova, 2015). For this study, the benefits of an action research approach included exploring how student engagement opportunities can best be optimized for collaboration, discussion, sharing of knowledge, and learning in online course environments through iterative cycles of research.



Mertler, C. A. (2014). *Action Research: Improving schools and empowering educators* (4th ed.). Thousand Oaks, CA: Sage. p. 37.

Figure E. Action Research Process

A mixed methods sequential triangulation design was used to collect both quantitative and qualitative data during the action research study. A triangulation design is defined as the combination of multiple data sources to enhance the credibility of research findings and results (Ivankova, 2015). The use of this design helped to exemplify the importance of collecting both quantitative and qualitative data and how each data source might act to substantiate the study's overall findings. As figure F illustrates, pre- and post-survey quantitative data were collected first, at two time points in fall 2018 for the pre-survey and two subsequent time points for the post-survey. The data were analyzed at the end of the study's innovation phase. The qualitative data were collected from a focus group conducted two weeks after the innovation phase, then analyzed at the end of both data collection periods.

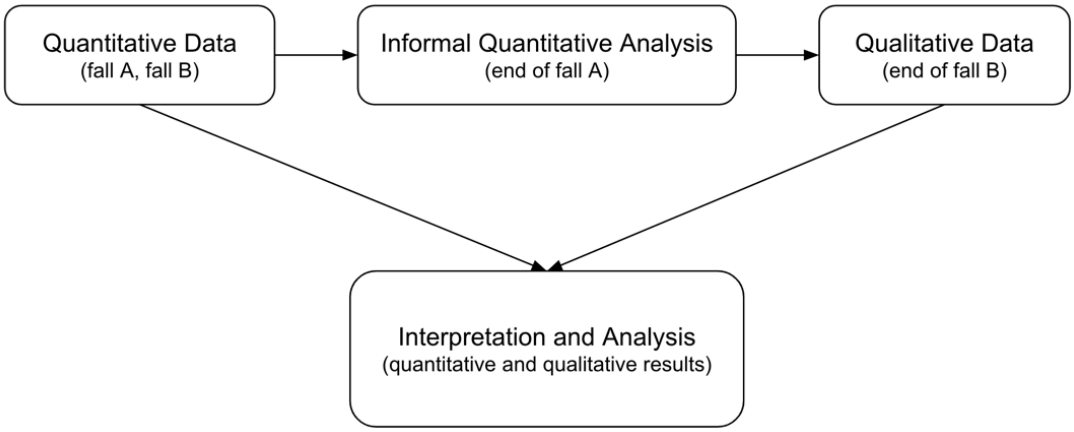


Figure F. Sequential Triangulation Design

Data Analysis and Instruments

Quantitative Data. The purpose of the quantitative pre- and post-surveys administered in the study were to better understand student experiences surrounding engagement before and after the implementation of the study's innovation, an online learning community. The pre- and post-surveys included items to capture two primary sub-constructs: 1. student perceptions of online learner engagement and 2. student experiences that are critical to online learner engagement. Both sub-constructs were intended to proxy dimensions of the survey's primary construct: student engagement in online course environments. I designed both surveys drawing from the benchmarks found within the NSSE longitudinal survey, especially, measures for active, collaborative learning and enriching educational experiences. The survey instruments of the study included a total of 22 questions on the pre-survey and 23 questions on the post-survey. Each survey was organized into three sections: perceptions, experiences, and demographics. Survey items 1–7 represented the perceptions construct, survey items 8–14 represented the experiences construct. On the post-survey, an open-ended question was also included (item 15), giving respondents an opportunity to provide suggestions for improvement of the study's innovation. The remaining items on the pre-survey (items 15–22) and the post-survey (items 16–23) consisted of demographic questions, which are detailed in chapter 4. All the survey instrument questions, with the exception of item 15 on the post-survey, were identical.

A 4-point Likert scale was used in the survey to measure online student engagement. The Likert scale, which is based on the Sigma method, assumes that

attitudes are normally distributed, which presents the most effective scale to capture the perceptions and experiences of online students (Edmondson & Edwards, 2012). Care was taken to ensure that, according to Likert, all survey items were expressions of desired behaviors; statements were clear, concise, and straightforward; and the wording of each elicited modal reaction (Edmondson & Edwards, 2012). The categories in the Likert scale were rank ordered from 1 to 4. Survey items 1–6 represented: 1 = strongly disagree, 2 = disagree, 3 = agree, and 4 = strongly agree. Survey items 7–14 represented: 1 = never, 2 = sometimes, 3 = often, and 4 = very often. However, the intervals between each value could not be presumed to be equal (Jamieson, 2004).

Prior to the implementation of the pre- and post-survey instruments, each was reviewed by colleagues at ASU and the dissertation committee in an effort to receive feedback on the instrument's overall flow and design. Feedback that was shared included: the retooling of specific questions for clarity, the omission of loaded words, and the rearrangement of Likert scale values. All recommendations were taken into consideration and each recommended revision was made.

The SPSS Statistics software was used to analyze all pre- and post-survey data. A series of statistical tests were run including Cronbach alpha, correlation matrix of sub-constructs, a paired-sample t-test, a Wilcoxon signed-rank analysis, descriptive statistics, and survey item frequencies. Although not all analysis results were found to be beneficial to answering the study's research question, all results were analyzed and reviewed for their significance to the study.

Qualitative Data. A synchronous semi-structured online focus group was conducted with two students during the final phase of the study's innovation. Study recruits who submitted an intent to participate in the study's innovation phase were invited to engage in the synchronous online focus group session. The purpose of the focus group was to align individual student perceptions and experiences with the quantitative data previously collected from the pre- and post-survey responses. In other words, the use of a qualitative approach allowed for the unfolding of insights derived from the unique stories, perceptions, and observations of participants that the quantitative data collected may have failed to capture. The focus group consisted of asking five questions and lasted for approximately 30 minutes (see appendix A-I). Open coding and gerund line by line analysis was conducted by hand and used to interpret all focus group participant responses. The process and procedures involved within the analysis of qualitative data is discussed in detail in chapter 4.

Validity and Reliability

The validity of a research study is defined as the appropriateness, meaningfulness, and usefulness of inferences made by the researcher based upon the data (Fraenkel & Wallen, 2005; Thayer-Hart & et al., 2010). A key issue for the validity of this study was the number of students who agreed to participate in the study. In an effort to make generalizations on the overall online student population at ASU, a larger sample size would need to be collected. In the present study, a total of 60 pre-surveys and 20 post-surveys were collected, which represents a small percentage of online students who were enrolled on online courses during the fall 2018 term. (There were approximately 40,000

enrolled online students during the fall 2018 term according to *U.S. News and World Report* (2019)). Undergraduate online students enrolled in the fall A and B academic sessions across multiple disciplines were sampled and invited to participate in order to ensure consistency across all data collection measures.

The reliability of a research study is defined as the extent to which something is measured repeatedly and consistently produces the same results time and time again (Diem, 2004; Fraenkel & Wallen, 2005; Thayer-Hart & et al., 2010). It was critical that all survey items used in this study demonstrated internal consistency amongst all items and accurately measured on the elements which they were intended to measure. As discussed in chapter 2, NSSE is a national longitudinal survey used to measure student engagement outcomes in higher education institutions throughout the United States and Canada. The NSSE measures of reliability are validated through the evidence of internal consistency amongst groups of survey items, temporal stability amongst results of repeated administration of the survey instrument, and equivalence of result measures on similar populations (nsse.indiana.edu). The measures of validity used by the NSSE are supported through its responsive process of question comprehension, content measures representative of all facets of the survey construct, construct correlation with theories that reflect the underlying phenomenon of the study, and the concurrent degree to which its constructs simultaneously correlate with similar measures (Campbell & Cabrera, 2011; Carle, Jaffee, Vaughan, & Eder, 2009). As a highly trustworthy student engagement survey instrument that has consistently performed well, NSSE's survey instruments have produced consistent and stable results over a long period of time (Campbell & Cabrera,

2011; Carle, Jaffee, Vaughan, & Eder, 2009). The pre- and post-survey items developed for this study were derived from the NSSE survey instrument.

Great care was also taken during the development of the survey instrument's sub-constructs. According to the literature, the sample size (n) of a study and the total number of items within a sub-construct can have an effect on the internal validity of a survey instrument (Norma, 2010). Also, as suggested in the literature, a demarcation of at least five items per sub-construct should be considered as the gold standard (Norma, 2010). In addition to incorporating these principles into the design of the survey instrument, I conducted statistical reliability analyses on the pre- and post-surveys, which are reported in chapter 4.

Procedures and Timeline

The collection of data, quantitative and qualitative, was conducted during the fall A and B sessions of the 2018 academic year. Online courses at ASU are administered for a total seven and a half-week academic session. Collectively, all sessions observed served as one complete cycle of action research for the study.

During the first week of the academic session an email invitation was sent to 47 faculty who were scheduled to facilitate a course online. A total of 11 course facilitators agreed to participate in the study and were provided with a pre-written announcement to post within their course for the recruitment of student participants. Online course facilitators who were recruited consisted of those scheduled to teach a course online during the fall 2018 term. Instructors whom I had previously worked with on the development of their online courses were identified as well as others whom I had never

worked with before, but who were also scheduled to teach a course online. Student participants who gave their consent to the study and indicated their intent to participate in the study's innovation, an online learning community, were also asked to anonymously complete a pre-survey. Student participants who indicated their intent to participate in the study's innovation were granted access to the online learning community housed on the Yellowdig platform during week 2 of the study's implementation phase.

During the final week of each seven and a half-week course, a post-survey was sent to all study participants for that session. At the completion of the fall A and B academic sessions, study recruits who submitted an intent to participate in the study's innovation phase were invited to engage in the synchronous online focus group session. A recruitment email was sent to all study recruits including a link for participants to indicate their focus group consent. Figure G represents the timeline of activities associated with the study including the recruitment phrase of course facilitators and study participants, the innovation phase, the collection of pre- and post-surveys and the synchronous focus group session.

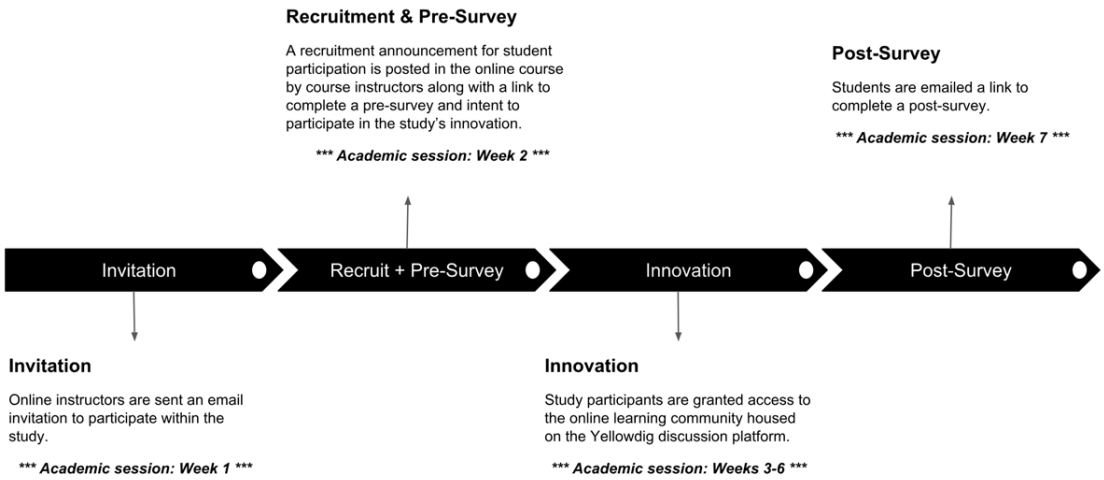


Figure G. Innovation Timeline: Online Learning Community (fall A and fall B 2018)

CHAPTER 4

Results

It always seems impossible until it's done.

~ Nelson Mandela

To recap, the purpose of this study was to examine how the use of collaborative opportunities, such as the implementation of an online learning community, could influence student engagement in online courses. A pre- and a post-survey was administered before and after the implementation of the study's innovation, an online learning community housed on the Yellowdig discussion platform. A synchronous online focus group was also conducted at the conclusion of the study. The data collected during the study address the overarching research question*: How and to what extent does the implementation of an online learning community influence undergraduate student engagement in online courses?* This chapter presents the results, beginning with the quantitative findings from the pre- and post-surveys, followed by a discussion of the qualitative findings that emerged from the focus group.

Quantitative Results

Quantitative: Pre-survey Overview. During the fall 2018 academic sessions A and B, a pre-survey was administered to a total of (n) 60 undergraduate online students at ASU enrolled on 11 online courses. The pre-survey instrument included a total of 22 questions where items 1–6 focused on students' current perceptions and items 7–14 focused on students' current experiences of engagement in online courses. The remaining survey items, 15–22, included a series of demographic items asking participants to report

their age, gender, race, and grade level (freshman, sophomore, junior, senior). All participant responses were submitted anonymously.

Quantitative: Pre-survey Items Measure of Internal Consistency. When items within a survey are combined to form a scale, it is important that they have internal consistency. In other words, all survey items aligned with a specific construct should measure the same thing and be correlated with one another (Bland & Altman, 1997). For this study the Cronbach alpha coefficient was used to assess the internal consistency of all survey items. Table 11 presents the reliability analysis results for the survey's overall primary construct, student engagement in online courses, as well as the two sub-constructs, student perceptions of and experiences in their online courses. There has been much debate in the literature of what constitutes an acceptable size for Cronbach's alpha (Bland & Altman, 1997; Bonett & Wright, 2015; Vaske, Beaman, & Sponarski, 2017). By convention, an alpha between .65 ≤ .80 is often considered "adequate" or "satisfactory" for a scale used in human dimensions research (Vaske, Beaman, & Sponarski, 2017), and that is the alpha used in this study. All three coefficient alpha constructs were identified within the "adequate" or "satisfactory" (.679, .805, .806) range.

Table 11

Cronbach Alpha Results and Relation to Survey Instrument (Pre-survey)

Construct	Within Construct Items	Coefficient Alpha Estimate of Reliability
Perceptions	Items 1 – 6	.679
Experiences	Items 7 – 14	.805
Overall Alpha	Items 1 – 14	.806

Quantitative: Pre-survey Item Analysis of Frequency Tables. The results displayed in table 12 represent the total average of survey responses for items 1–6 under the sub-construct of students' perceptions of dimensions of engagement in online courses prior to their participation in the Yellowdig innovation. Each of these items were used to inform the "perceptions" construct measured in the survey. The response scale consisted of a four-point Likert scale with strongly agree, agree, disagree, and strongly disagree options. The results indicate that 53.1% of respondents "strongly agreed" that the inclusion of diverse perspectives in online course discussions are important. Similarly, 56.3% "strongly agreed" that they value opportunities in an online course that allow them to examine the strengths and weaknesses of their personal views on a topic or issue. The data also show that 60.3% of respondents "strongly agreed" that it is important to understand someone else's views by imagining how an issue looks from his or her perspective, while 53.1% "agreed" that participating in online discussions with other students can help them to learn something new. Half of all survey respondents both "strongly agreed" or "agreed" with all six items analyzed under the perceptions construct, which presents some valuable insights into the ways in which participants perceive engaging activities online. The results of these findings, as it relates to student engagement, are beneficial to understanding how students best interact with peers online as well as further understanding the intersection between learning and engagement.

Table 12

Pre-survey Response Frequencies (Student Engagement in Online Courses: Perceptions)

n = 64	Response Frequency Percent			
Item	Strongly Agree	Agree	Disagree	Strongly Disagree
To what extent do you value the following:				
Q1 - *The inclusion of diverse perspectives in online course discussions is important to me.*	53.1%	43.8%	1.6%	1.6%
Q2 - *I value opportunities in an online course that allow me to examine the strengths and weaknesses of my own views on a topic or issue.*	56.3%	37.5%	4.7%	1.6%
Q3 - *It is important to understand someone else's views by imagining how an issue looks from his or her perspective.*	60.3%	34.9%	3.2%	1.6%
Q4 - *Participating in online discussions with other students can help me to learn something new.*	32.8%	53.1%	10.9%	3.1%
Q5 - *Participating in online discussions with other students can change the way I understand an issue or concept.*	32.8%	50%	14.1%	3.1%
Q6 - *I only participate in online discussions when professors include participation in how they assign grades.*	31.3%	37.5%	25%	6.3%

Table 13 summarizes the frequency distributions of survey responses for items 7–14 under the sub-construct of experiences in online courses, prior to their participation in the Yellowdig innovation. These items captured the "experiences" construct of the survey. The response scale consisted of a four-point Likert scale with very often, often, sometimes, and never options. A total of 50% of respondents indicated that they "never"

asked another student to help them to better understand online course materials and 41.9% only "sometimes" explained online course materials to one or more of their peers. An overwhelming 67.7% of respondents stated they "never" prepared for an exam by discussing content online with peers and only 38.7% used ideas from online course discussions to complete class assignments. A little under half of all participants indicated that they "often" connected their learning to societal problems or issues (40.3%) as well as to their prior experiences and knowledge (37.1%).The results also demonstrated that 56.1% have "never" considered participating in a future online learning community that is created by students while 33.9% "sometimes" have participated in an online learning community that was created by a course instructor. The results of these findings indicate that respondent experiences with engagement in online courses are varied and opportunities of ways in which they can effectively and efficiently engage with peers are needed.

Table 13

Pre-survey Response Frequencies (Student Engagement in Online Courses: Experiences)

n = 62	Response Frequency Percent			
Item	Very Often	Often	Sometimes	Never
About how often have you done the following:				
Q7 - *Asked another student to help you better understand online course materials.*	0%	6.5%	43.5%	50%
Q8 - *Explained online course materials to one or more peers.*	3.2%	16.1%	41.9%	38.7%
Q9 - *Prepared for an exam by discussing content online with peers.*	3.2%	11.3%	17.7%	67.7%

Q10 - *Used ideas from online course discussions with peers to complete class assignments.*	12.9%	16.1%	38.7%	32.3%
Q11 - *Connected your learning to societal problems or issues.*	30.6%	40.3%	19.4%	9.7%
Q12 - *Connected ideas from online course discussions to your prior experiences and knowledge.*	35.5%	37.1%	14.5%	12.9%
Q13 - *Participated in a future online learning community that is created by students to share their ideas, knowledge, and experiences related to an ASU Online course.*	16.1%	9.7%	22.6%	51.6%
Q14 - *Participated in an online learning community that is created by a course instructor to share ideas, knowledge, and experiences related to an ASU Online course.*	25.8%	16.1%	33.9%	24.2%

Quantitative: Pre-survey Sub-construct Analysis of Mean Scores. Table 14 presents the mean scores of survey items 1–14. The mean score is comprised of the sum of all responses divided by the total number of respondents (n=64). Each calculated mean score presented in table 14 is directly aligned with the data in tables 13 and 12. Item 3 on the pre-survey asked respondents if they valued understanding someone else's views by imagining how an issue looks from his or her perspective, which produced a mean score of 3.54 ("agree"). This may indicate that learners are interested and open to understanding other viewpoints. Items 7, 9, and 13 provided the lowest mean scores respectively of 1.56 ("never"), 1.50 ("never"), and 1.90 ("never"). This affirms that the responses presented in table 11 accurately illustrate that respondents have never asked other students to help them understand course content, prepare for an exam, or explained online course materials to others. On average, across the perceptions sub-construct, respondents chose an average mean score of 3.29 ("agree"), and across the experiences

sub-construct, an average mean score of 2.15. ("sometimes"). Overall, as a result of the analysis of all sub-construct mean scores, these findings may denote a disconnect between respondents' participation in engaging activities online and the impact such activities can have on their overall learning and growth.

Table 14

Pre-survey Response Frequencies (Student Engagement in Online Courses)

n = 64		
Question	Mean	Standard Deviation
Perceptions - *To what extent do you value the following:*		
Q1 - *The inclusion of diverse perspectives in online course discussions is important to me.*	3.48	.617
Q2 - *I value opportunities in an online course that allow me to examine the strengths and weaknesses of my own views on a topic or issue.*	3.48	.666
Q3 - *It is important to understand someone else's views by imagining how an issue looks from his or her perspective.*	3.54	.643
Q4 - *Participating in online discussions with other students can help me to learn something new.*	3.16	.739
Q5 - *Participating in online discussions with other students can change the way I understand an issue or concept.*	3.13	.766
Q6 - *I only participate in online discussions when professors include participation in how they assign grades.*	2.94	.906
Experiences - *About how often have you done the following:*		
Q7 - *Asked another student to help you better understand online course materials.*	1.56	.617
Q8 - *Explained online course materials to one or more peers.*	1.84	.814
Q9 - *Prepared for an exam by discussing content online with peers.*	1.50	.825
Q10 - *Used ideas from online course discussions with peers to complete class assignments.*	2.10	1.003
Q11 - *Connected your learning to societal problems or issues.*	2.92	.946
Q12 - *Connected ideas from online course discussions to your prior experiences and knowledge.*	2.95	1.015

Q13 - *Participated in a future online learning community that is created by students to share their ideas, knowledge, and experiences related to an ASU Online course.*	1.90	1.127
Q14 - *Participated in an online learning community that is created by a course instructor to share ideas, knowledge, and experiences related to an ASU Online course.*	2.44	1.125

Quantitative: Post-survey Overview. At the conclusion of the study's innovation phase, a post-survey was distributed to participants of the study. The items presented within the post-survey mirrored those that were presented in the pre-survey, including the anonymous submission of participant responses. The purpose of this survey was to measure how respondent perceptions and experiences had changed after their participation in the study's innovation, an online learning community housed on the Yellowdig discussion platform. The intention of the post-survey results was to determine whether being provided with the opportunity to effectively engage with peers through an online learning community had any influence on participant's overall perceptions and experiences of engagement in online course environments.

Quantitative: Post-survey Items Measure of Internal Consistency. Table 15 presents the coefficient report based on the post-survey data. Similar to the Cronbach alpha coefficient data outputs found in the pre-survey, all three post-survey coefficient alphas were identified within the "adequate" or "satisfactory" (.65 ≤ .80) range (.704, .867, .873).

Table 15

Cronbach Alpha Results and Relation to Survey Instrument (Post-survey)

Construct	Within Construct Items	Coefficient Alpha Estimate of Reliability
Perceptions	Items 1 - 6	.704

Experiences	Items 7 - 14	.867
Overall Alpha	Items 1 - 14	.873

Quantitative: Post-survey Item Analysis of Frequency Tables. Table 16 represents the total average of post-survey responses for items 1–6 under the sub-construct of perceptions. The results of data indicate that, in the post-survey, 55% of respondents "agreed" that the inclusion of diverse perspectives in online course discussions are important in comparison to the 53.1% who "strongly agreed" in the pre-survey. In the post-survey, 50% of respondents "agreed" that they value opportunities in an online course that allow them to examine the strengths and weaknesses of their personal views on a topic or issue, whereas in the pre-survey 56.3% of participants "strongly agreed". Again, 55% of respondents in the post-survey "agreed" that it is important to understand someone else's views by imagining how an issue looks from his or her perspective in comparison to the 60.3% who "strongly agreed" in the pre-survey. Similar to the pre-survey results, more than half of all post-survey respondents "strongly agreed" or "agreed" with all six items under the perceptions construct. There was a noticeable difference within the category percentages between the pre- and post-surveys. When compared, the post-survey demonstrated an 8.6% decrease of participants who chose the "strongly agree" category and a 9.7% increase in participants who chose the "agree" category.

Overall, many of the participant responses moved from the "strongly agree" to the "agree" category after the study's innovation. In particular, agreement with items 1, 2, 3, and 5 especially diminished after the study's innovation. This indicates that the inclusion

of diverse perspectives, opportunities to examine personal views on a topic or issue, understanding others views and perspectives, and participation in online discussions to understand an issue or concept may have felt slightly less valuable once students participated in the study's innovation. But even so, by far more than half of all participants indicated a favorable positive response at the conclusion of the study versus those who indicated a less favorable or negative response within the "disagree" or "strongly disagree" categories. In all, it can be deduced from the post-survey findings that respondent participation in the study's innovation did have an influence on participant's perceptions as noted within the change of category percentages.

Table 16

Post-survey Response Frequencies (Student Engagement in Online Courses: Perceptions)

n = 20	Response Frequency Percent			
Item	Strongly Agree	Agree	Disagree	Strongly Disagree
To what extent do you value the following:				
Q1 - *The inclusion of diverse perspectives in online course discussions is important to me.*	35%	55%	10%	0%
Q2 - *I value opportunities in an online course that allow me to examine the strengths and weaknesses of my own views on a topic or issue.*	35%	50%	15%	0%
Q3 - *It is important to understand someone else's views by imagining how an issue looks from his or her perspective.*	45%	55%	0%	0%
Q4 - *Participating in online discussions with other students can help me to learn something new.*	35%	50%	10%	5%
Q5 - *Participating in online discussions with other students can change the way I understand an issue or concept.*	25%	70%	0%	5%

Q6 - *I only participate in online discussions when professors include participation in how they assign grades.*	40%	35%	20%	5%

Table 17 represents the post-survey responses for items 7–14 under the sub-construct of experiences. In the post-survey, 45% of respondents indicated that they "never" asked another student to help them to better understand online course materials. This was a 5% decrease from respondent pre-survey choices. Also, 35% of respondents indicated that they "sometimes" explained online course materials to one or more of their peers, which when compared to the pre-survey is a 6.9% decrease. In the post-survey, 60% of respondents stated that they "never" prepared for an exam by discussing content online with peers while 40% "sometimes" used ideas from online course discussions to complete class assignments, each representing a 7.7% and 1.3% decrease from pre-survey responses. For post-survey items 11–14 participant responses were mixed. A total of 35% indicated that they "often" connected their learning to societal problems or issues, while 30% stated that they "sometimes" and "often" connected their learning to prior experiences and knowledge. Surprisingly 35% of respondents indicated that they have "never" considered participating in a future online learning community that is created by students, which, when compared to the pre-survey, is a 16.6% decrease. This may indicate that more respondents may be interested in participating in future online learning community offerings. In terms of participation in an instructor-led online learning community, 30% of respondents indicated they "sometimes" and "often" have previously participated. When compared to the pre-survey data, the post-survey results indicate that participation within the study's innovation has provided some participants with an

engaging experience with peers and has influenced their future decisions to participate in an online learning community. There is a noticeable increase in almost all of the categories post the study's innovation. Again, to highlight the change in participant responses that increased post the study's innovation the greatest change in scores occurred in the "often" and "sometimes" categories for all survey items (items 7, 9, 10, and 11). This indicates that participant experiences such as asking peers to better understand course material, discussing content with peers to prepare for an exam, the use of ideas from online discussions to complete course assignments, and connecting learning to societal problems or issues were all areas in which may have been influenced due to the study's innovation. The results also suggest that participation also influenced their understanding of how an online learning community may benefit their learning.

Table 17

Post-survey Response Frequencies (Student Engagement in Online Courses: Experiences)

n = 20	Response Frequency Percent			
Item	Very Often	Often	Sometimes	Never
About how often have you done the following?				
Q7 - *Asked another student to help you better understand online course materials.*	0%	10%	45%	45%
Q8 - *Explained online course materials to one or more peers.*	5%	25%	35%	35%
Q9 - *Prepared for an exam by discussing content online with peers.*	0%	5%	35%	60%
Q10 - *Used ideas from online course discussions with peers to complete class assignments.*	5%	30%	40%	25%
Q11 - *Connected your learning to societal problems or issues.*	20%	25%	35%	20%

Q12 - *Connected ideas from online course discussions to your prior experiences and knowledge.*	25%	30%	30%	15%
Q13 - *Participated in a future online learning community that is created by students to share their ideas, knowledge, and experiences related to an ASU Online course.*	25%	10%	30%	35%
Q14 - *Participated in an online learning community that is created by a course instructor to share ideas, knowledge, and experiences related to an ASU Online course.*	30%	25%	30%	15%

Quantitative: Post-survey Sub-construct Analysis of Mean Scores. Table 18 presents the mean scores of post-survey items 1–14. Item 3, which represented the highest mean score, asked respondents if they valued understanding someone else's views by imagining how an issue looks from his or her perspective, produced a mean score of 3.45 ("agree") which is a 0.09-point decrease when compared to the pre-survey results. This change in point value may have been affected by the decrease in overall survey responses received (n=20) but continues to align with the choice (3 = "agree") made by most respondents. In the post-survey items 7 and 9 continued to provide the lowest mean scores respectively of 1.65 ("never") and 1.45 ("never"). Once again, these results accurately align with the data presented in table 4.8b, demonstrating that respondents have "never" asked other students to help them understand course content or prepare for an exam. On average, across the perceptions sub-construct, respondents chose an average mean score of 3.22 ("agree"), and across the experiences sub-construct, an average mean score of 2.16 ("sometimes"), which is a 0.07-point decrease and a 0.01-point increase when compared to the pre-survey results. Since there was not much

fluctuation in the overall change in mean score averages, these minor changes may have also been a result of decreased survey responses received (n=20) and have no major implications for the overall post-survey mean score averages.

Table 18

Post-survey Response Frequencies (Student Engagement in Online Courses)

n = 20		
Question	Mean	Standard Deviation
Perceptions - *To what extent do you value the following:*		
Q1 - *The inclusion of diverse perspectives in online course discussions is important to me.*	3.25	.639
Q2 - *I value opportunities in an online course that allow me to examine the strengths and weaknesses of my own views on a topic or issue.*	3.20	.696
Q3 - *It is important to understand someone else's views by imagining how an issue looks from his or her perspective.*	3.45	.510
Q4 - *Participating in online discussions with other students can help me to learn something new.*	3.15	.813
Q5 - *Participating in online discussions with other students can change the way I understand an issue or concept.*	3.15	.671
Q6 - *I only participate in online discussions when professors include participation in how they assign grades.*	3.10	.912
Experiences - *About how often have you done the following:*		
Q7 - *Asked another student to help you better understand online course materials.*	1.65	.671
Q8 - *Explained online course materials to one or more peers.*	2.00	.918
Q9 - *Prepared for an exam by discussing content online with peers.*	1.45	.605
Q10 - *Used ideas from online course discussions with peers to complete class assignments.*	2.15	.875
Q11 - *Connected your learning to societal problems or issues.*	2.45	1.050
Q12 - *Connected ideas from online course discussions to your prior experiences and knowledge.*	2.65	1.040

Q13 - *Participated in a future online learning community that is created by students to share their ideas, knowledge, and experiences related to an ASU Online course.*	2.25	1.209
Q14 - *Participated in an online learning community that is created by a course instructor to share ideas, knowledge, and experiences related to an ASU Online course.*	2.70	1.081

Quantitative Results: Differences between Pre- and Post-responses. The following tables represent the Wilcoxon signed-rank test analysis of the pre- and post-surveys. The Wilcoxon signed-rank test is an inferential nonparametric test used when comparing sets of paired data values to assess whether the distributions of data observed are systematically different from one another (Couch et al., 2018; Pratt, 2010). This test is particularly appropriate for analyzing the data collected in this study rather than other types of mean comparisons such as t-tests, since the Wilcoxon test is robust for small samples as well as non-normal or skewed distributions. The goal of this test is to measure whether or not to reject the null hypothesis of the study, which states that there is no difference between the pre- and post-survey constructs (perceptions, experiences). If the null hypothesis were rejected, the alternative hypothesis, which states that there is a statistically significant difference between the pre- and post-study constructs should be accepted.

Table 19 represents the Wilcoxon mean comparison of survey constructs. Survey items 1–6 of the perceptions construct combined to produce an overall mean score of 3.286, which is slightly higher than the post-survey mean score of 3.216. This result indicates that the direction of the post-survey mean score is lower than that of the pre-survey mean score. This may further indicate that after the implementation of the study's

innovation, respondents perceived student engagement in online courses less favorably. Survey items 7–14 combine to represent the experiences construct. For the pre-survey, the mean score was 2.151, which is slightly lower than the post-survey mean score of 2.162. This result indicates that the direction of the post-survey mean score is higher than that of the pre-survey mean score and that respondent experiences of engagement in online courses increased after the implementation of the study's innovation.

Table 19

Wilcoxon Signed-rank Test Mean Comparison of Survey Constructs

	Pre-survey	Post-survey	Mean Rank			
Construct	Mean	Mean	Positive	Negative	Z-score	Significant (2-tailed)
Perceptions	3.286	3.216	10.70	8.29	-1.094	.274
Experiences	2.151	2.162	9.15	13.00	-.524	.601

The purpose of the mean rank scores are to compare all respondent Likert scale ratings indicated on the study's pre- and post-surveys. When reviewing the table 1 mean rank scores of each survey construct, the perceptions construct produced a positive score of 10.70 and a negative score of 8.29. This demonstrates that more participants selected higher Likert scale ratings (4=strongly agree, 3=agree, 2=disagree, 1=strongly disagree) on the study's survey. On the other hand, the experiences construct produced a positive mean rank score of 9.15 and a negative mean rank score of 13.00, indicating that more participants selected lower Likert scale ratings (4=very often, 3=often, 2=sometimes, 1=never) on the study's survey.

Important to note, however, is that the pre- and post-mean differences are not statistically significant. For this study, I used a critical value of $p<0.05$ for the observed p-value, which is represented as the significant 2-tailed score on table 19. The mean difference for the perceptions construct (items 1–6) resulted in a z-score of (-1.094) and a p-value of (.274). The mean difference for the experiences construct (items 7–14) resulted in a z-score of (-.524) and a p-value of (.601). The p-values of each construct produced a result that was higher than the critical value of ($p<.05$). Based upon the Wilcoxon rank test analysis and the data represented in table 19, the results indicate that there is no significant difference between the perceptions construct and the experiences construct of the pre- and post-surveys, therefore, it is safe to retain the null hypothesis and reject the alternative hypothesis.

Table 20 represents the Wilcoxon signed-rank analysis of individual survey items. The Wilcoxon test indicated whether the pre-survey mean response significantly differed from the post-survey mean response for each item. The null hypothesis was that the pre- and post means did not differ at the critical value of $p<0.05$, and the alternative hypothesis was that the difference was significant. The majority of comparisons, items 3 through 14, were not significant (i.e., they produced a p-value greater than 0.05. The null hypothesis was rejected only for items 1 and 2. In other words, no statistically significant differences existed between the average pre-survey and post-survey responses for items 3 through 14, but the pre- and post- means did differ for item 1, the inclusion of diverse perspectives, and for item 2, opportunities to examine views on a topic or issue. In both cases, the pre-survey mean was higher than the post-survey mean.

Table 20

Wilcoxon Signed-rank Test Mean Comparison of Survey Items

	Pre-survey	Post-survey	Mean Rank			
Items	Mean	Mean	Positive	Negative	Z-score	Significant (2-tailed)
Q1 – Diverse perspectives	3.48	3.25	.00	4.50	-2.828	.005
Q2 – Views on a topic	3.48	3.20	5.50	6.11	-2.138	.003
Q3 – Other's perspectives	3.54	3.45	6.00	6.00	-.905	.366
Q4 – Learn new information	3.16	3.15	8.50	7.75	-1.076	.282
Q5 – Understand new concepts	3.12	3.15	7.50	8.44	-.471	.637
Q6 – Participation based on grades	2.94	3.10	8.95	7.75	-1.138	.255
Q7 – Ask others for help	1.56	1.65	6.25	5.00	-.277	.782
Q8 – Explain course material to others	1.84	2.00	8.50	6.50	-.453	.651
Q9 – Prepare for an exam with peers	1.50	1.45	6.42	6.58	-.042	.967
Q10 – Use ideas to complete course assignments	2.10	2.15	7.33	9.00	-.351	.726
Q11 – Connect learning to societal problems	2.92	2.45	6.38	10.63	-.906	.356
Q12 – Connect ideas to prior knowledge	2.95	2.65	8.50	11.35	-.764	.445
Q13 – Participate in a future student created online learning community	1.90	2.25	7.36	9.75	-1.212	.225
Q14 – Have participated in an instructor created online learning community	2.44	2.70	8.10	7.80	-1.251	.211

Qualitative Results

Qualitative: Overview. At the completion of the study's innovation phase and the collection of quantitative data in the form of pre- and post-surveys, an analysis of results was conducted. Based upon the quantitative data findings, it was clear that a more in-depth understanding was needed to bridge the gaps presented between the participant pre- and post-survey responses. More directly stated, it was necessary to use an alternative method to better understand the depth rather than breadth of participant responses from a smaller representative sample of the study's larger population (Ambert et al., 1995). The use of a qualitative approach allowed for the unfolding of insights derived from the unique stories, perceptions, and observations of participants that the quantitative data collected may have failed to capture. A synchronous online focus group was conducted after the study's innovation phase. The data collected during the synchronous focus group session are presented in the next section of this chapter.

Process and Procedures. Study recruits who submitted an intent to participate in the study's innovation phase were invited to engage in the synchronous online focus group session. A recruitment email was sent to all study recruits including a link for participants to indicate their focus group consent. As an incentive, participants were given a $20 Starbucks gift card for their participation and input. A total of n = 5 participant consents was submitted and received, in which n = 2 participated in the study's focus group session. The session was conducted virtually and recorded using a video conferencing software called Vidyo. The duration of the session was a total of 15 minutes. During the focus group, participants were asked five questions concerning their

personal experiences of engagement in online courses. Additional questions that were asked included participants' views on the use of an online learning community and the discussion platform used to implement the study's innovation. Presented in table 21 are the list of questions asked during the focus group session.

Table 21

Student Engagement in Online Courses – Synchronous Focus Group Questions

Topic	Question
Introduction	Let's start with brief introductions. I ask that each of you identify yourself briefly and share with us anything about your general experiences of taking an online course.
Expectations	Thinking about the first time you have taken an online course, what were some of your initial expectations?
Personal Experiences	According to research, engagement in a course, whether the course is conducted in person or online, is an essential component to a student's academic success as well as their overall course experience. Thinking about your personal experiences, what type of engagement activities have you participated in within an online course and which were effective or ineffective methods of engagement?
Challenges	Once again reflecting on your student engagement experiences in an online course, the use of a discussion platform is often used as a mechanism to encourage engagement amongst learners. Thinking about the discussion platforms you have participated in, please share if there were any challenges that you encountered, and if so, what were they and how did they influence your expectations?
Online Community of Learning	For this study a discussion platform called Yellowdig was used to create a Community of Learners consisting of undergraduate students enrolled in ASU Online courses. The purpose of this community was to provide a space for learners to more fully engage and share aspects of their learning, as well as, to obtain new knowledge from others. What are your thoughts on this type of an approach to shared learning amongst online students?

Qualitative: Explanation of Data Analysis, Findings, and Results. The analysis of insights derived from the focus group session provided an opportunity to dive deeper into the study's data. The overall goal of the focus group was to explore the depth

rather than the breath of online student experiences in order to better understand the types of engagement and perceptions they may hold. The recorded, synchronous online focus group session was transcribed and for privacy purposes participant names were replaced with pseudonyms (participant A, participant B). Once transcribed, open coding was used to emphasize key words or phrases stated by each participant, followed by gerund line by line coding, and the identification of meaning units. Once completed, a final examination of all thematic codes were reviewed for consistency. The thematic codes and meaning units identified are organized in tables 22 and 23 and are compared across question topics and participant responses.

Table 22

Synchronous Online Focus Group – Thematic and Open Codes (Participant A)

Topic	Open Codes	Meaning Units/Themes
Introduction	Positive reaction	Positive Experience
	Previous experience taking online courses	Discipline
	Lack of discipline has had a negative effect	Flexibility
	Enlisted in the military so flexibility is necessary	
Expectations	Initial expectations = easy	Easy
	Procrastination = recipe for disaster	Procrastination
Personal Experiences	A lot of interaction with professors	Instructor Presence
	Lack of instructor presence	Active
	Lack of active and responsive instructors	Responsive
	Previous experience using Yellowdig	Yellowdig
	Video discussion / response with peers	Video Discussions
	Agrees	

Challenges	Agrees with another participant	Echo Chamber
	Refers to rote peer responses as an "echo chamber" meaning a lack of diverse points of view	
	Different due dates	
Online Community of Learning	Agrees that an online community of learning could be beneficial for online student engagement	Online Learning Community
	Loves using Yellowdig	Yellowdig
	Likes Yellowdig better that the traditional discussion board housed in the LMS	Connection to Larger Community
	Yellowdig pin feature	Pins
	Sharing posts and interacting with a larger community was beneficial	

Table 23

Synchronous Online Focus Group – Thematic and Open Codes (Participant B)

Topic	Open Codes	Meaning Units/Themes
Introduction	Enlisted in the military so flexibility is necessary	Discipline
	Flexibility is also a key benefit to online courses	Flexibility
Expectations	Engagement was lacking	Lack of Engagement
	Surprised	Low Expectations
Personal Experiences	Engagement through discussion posts	Discussion Posts
	Spoke, interacted, engaged through discussion posts	Email
	Professor engagement through email	Positive Experience
	Positive experience	Responsive
	Responsiveness and interaction	Diversity
	Diversity is important	
	Discussion through LMS	
Challenges	Engagement through discussion posts	Discussion Posts

	Traditional practice of post initial student response followed by two peer replies	Traditional Practice
	Early responders receive the highest number of replies	Diversity
	Lack in the diversity of engagement amongst peers	Engagement
	The traditional approach to engagement through discussion posts leads to a practice of rote response rather than organic engagement with peers	Rote Responses
	A different initial post and response post due dates	
Online Community of Learning	Recalls using Yellowdig in a previous course	Yellowdig
	Last semester had the experience using Yellowdig	Intriguing
	As a result of taking a large course load prevented a true in-depth experience of using the Yellowdig platform	
	The platform was intriguing	

This multi-layered approach to the analysis of the qualitative data allowed for a deeper dive into the participant responses enabling a closer, grounded, and more immersive examination. Based upon the focus group findings, participants expressed similar experiences of engagement in online course environments. Each participant indicated that they valued the flexibility and autonomy that online courses offer. They also expressed that when it came to engaging online through a discussion board, the diversity of comments made by their peers was important.

> "By being in the military gave me discipline and the flexibility that I have for online classes made taking online classes really great" (participant A).
>
> "So online classes really helped me work around my schedule so that I don't have to be in a physical place at a specific time to do my coursework" (participant B).

This finding aligned with the pre- and post-survey results indicating that participants "agreed" that the inclusion of diverse perspectives in online course discussions is

important. Both participants also expressed that their perceptions of engagement in online courses did not always match their expectations. One participant indicated that their initial expectations were that an online course would be easier than a traditional on-campus course and that they did not expect to engage online with their peers.

> "The first time I took online classes I thought it was going to be a lot easier. I thought I was going to be able to do all the classwork at the very end and still maintain a great grade, but I was wrong" (participant B).

The other participant's expectations were quite the opposite. They believed that an online course would be more rigorous in comparison to its on-campus counterpart and, therefore, that the expectation of a heavy workload and required engagement with peers was to be assumed.

Some of the challenges that both participants communicated during the focus group session included the lack of diversity often found within peer responses due to the approach many online course instructors have used to engage learners in discussion forums. As expressed by one of the focus group participants, the traditional approach to engagement through discussion posts often leads to a practice of rote response rather than organic engagement with their peers.

> "The biggest limitation I've seen is that [traditional discussion board assignments] would have a hard deadline and people would post right before the deadline. So, it's kind of hard to respond to them. Usually there is about half of the class that does everything really early and half the class that waits until the last minute. So, you kind of end up responding to the same people throughout the course" (participant B).

> "If the initial and response posts are due on the same date, usually you're responding to the same three or four people and the posts kind of become an echo chamber because you end up reading the same points of view" (participant A).

When it came to discussing the benefits of implementing an online learning community into a distance learning environment, participants were asked to share their thoughts on this type of an approach to shared learning amongst online students. Both participants believed that the implementation of an online learning community would be beneficial and that they liked the discussion platform, Yellowdig, used to implement the study's innovation. One participant specifically expressed their preference for the Yellowdig discussion platform because it provided additional opportunities for members to share their posts not only within the learning community, but also within other learning communities on the same platform.

> "I love using Yellowdig now that I've learned how to use it. I like Yellowdig better than the standard Blackboard discussion posts. I like how you can pick your topics that you're using on the pin board. I've had the experience where it's been people not even just in our class, but you can also share it outside of our class. You can get other perspectives from people that have already taken the class or on things you could do better. With Blackboard you can't get that" (participant A).

This aligned with the pre- and post-survey results to support the finding that most students "agreed" that participation in online discussions with peers helps them to learn something new. This may further signify that participants are interested in expanding their knowledge by engaging with learners online both in and beyond their learning environment.

Summary of findings

In summary, the overall results of the study's findings indicate that student engagement in online course environments can be influenced through the implementation on an online learning community. More than half of all study participants from the pre- and post-survey results indicated that they "strongly agreed" or "agreed" that the

inclusion of diverse perspectives, understanding other's perspectives and points of view, and opportunities to engage with peers are all valued and help them to expand their knowledge and understanding of others. Overall, this represented a 0.55 percent increase in participant responses who indicated they "strongly agreed" or "agreed" with survey items 1–6 (perceptions) post the implementation of the study's innovation. This indicates that an outcome to participants' engagement within the online learning community resulted in a positive influence on their overall perceptions of engagement in online course environments.

Participants also expressed that they "very often" and "often" have participated or are interested in continuing to participate in an online learning community. Overall, this represented a 0.66% decrease in participant responses within the "very often" or "often" categories of survey items 7–14 (experiences) after the study's innovation phase. This may indicate that although study participants found their engagement with peers within the online learning community to be beneficial, it is not something they would choose to engage in on a consistent basis.

Based on the Wilcoxon signed-rank test analysis results which measured whether or not to reject the null hypothesis of the study stating that there is no difference between the pre- and post-survey constructs (perceptions, experiences), the results of analysis of the data lead to the conclusion that is safe to retain the null hypothesis and reject the alternative hypothesis. In other words, the pre- and post-survey constructs were accurately measured and there may not have been enough evidence at the 5% critical

level to suggest that the median difference between participant scores were statistically significant, therefore reinforcing the decision to retain the null hypothesis.

CHAPTER 5

Discussion

The beginning is the most important part of the work.

~ Plato

Introduction

The goal of this dissertation was to explore opportunities in which online course faculty and instructors could support effective student engagement in distance learning environments. As stated by Meyer (2014), student engagement and the ability to provide opportunities for students to effectively collaborate through a variety of methods is a critical component of quality teaching and learning. From a post-secondary institutional standpoint, placing a greater emphasis on the production of quality online education programs necessitates a focus on the concept of student engagement. For online course facilitators, the design, development, and implementation of effective student engagement opportunities, which include effective online course curricular activities, has been a challenge. The research question developed for this study sought to specifically explore: How and to what extent does the implementation of an online learning community influence undergraduate student engagement in online courses. The following discussion presented in this final chapter focuses on the patterns, principles, and key relationships identified in the major findings of the study's results.

Discussion of Results

The results of this study on student engagement in online course environments, has provided some interesting insights into the perceptions and experiences of online

learners and how those perceptions and experiences were influenced by the study's innovation, an online learning community. The study's results made it clear that online students agree that the inclusion of diverse perspectives are important and they find value in having opportunities to share knowledge with their peers and having knowledge shared with them. These findings are directly supported by Wenger's concept of a CoP. As argued by Wenger, within a CoP, members are mutually engaged in a joint enterprise that brings the community together through the collective development of a shared practice. The online learning community provided participants within the study an opportunity to collectively engage with others, which allowed for a diversity of perspectives, information, and knowledge to be shared within the community.

It was also found that participants agree that an online learning community is beneficial to student engagement and that this type of model is one they would participate in the future. In Astin's theory of involvement, emphasis is placed on the amount of physical and psychological energy that the student devotes to the academic experience. This emphasis suggests that what individuals do and how they behave is more significant than what individuals think or feel (Astin, 1984). Participation in engagement opportunities, such as an online learning community, is often the most critical step for online learners to become engaged in their own learning development. In order for this engagement to occur, and as explicated in the literature by Astin (1984), online learners must, first, choose to be involved and, second, be active in the learning process.

The results of the Wilcoxon signed-rank test analysis measuring whether or not to reject the null hypothesis of the study also provided some interesting insights. The null

hypothesis of the study stated that there is no statistically significant difference between the pre- and post-survey constructs (perceptions, experiences). The analysis of results indicate that the null hypothesis should be accepted, and in turn the alternative hypothesis was rejected. Since there were no statistically significant differences between the pre- and post-survey constructs (perceptions and experiences), shows that the construct dimensions were accurately measured throughout the study. The Wilcoxon data results may also indicate that there is not enough evidence at the 5% level of significance to suggest that the median difference between the individual mean rank scores of participant responses were statistically significant, therefore reinforcing the decision to retain the null hypothesis of the study.

As a result of statements expressed within the synchronous online focus group setting, participants felt a disconnect with peers when engagement opportunities presented felt insincere often resulting in an echo chamber of rote responses posted within online discussion forums. There is a strong need for online learners to feel connected with the course facilitator and their peers. As stated by McClenney, Marti, and Adkins (2012), the more actively engaged that students are with instructors, peers, and their studies the more likely they are to learn, be engaged, and attain their academic goals. It is important for course facilitators to understand that designing an online course for engaged learning requires an inherent knowledge of engagement in practice that provides opportunities supporting authentic collaboration and discussion amongst students in the educational setting (Herrington, Oliver, & Reeves, 2003).

Although the study's innovation did not specifically focus on the Yellowdig discussion platform, I believe that a discussion on platform choice is necessary. During the platform selection process for this study, it was critical that the platform included elements that were conducive to authentic student interactions. As presented in chapter 1, during cycle 1 of action research course instructors indicated that technology should not be the driving force, but rather act as a means of creating opportunities for learning that support engagement. Khan (2014) suggests that the incorporation of a learning technology should be used as a means to enhance online engagement and more intensive forms of educational design can enable students to be engaged through their proximity and access to others. The design and function of the discussion platform is an important element for course instructors and designers to consider when creating learning environments for students online. Study participants also suggest that the number of technologies incorporated to enhance student learning should be minimal and the adoption of the KISS (keep it super simple) design principle should be considered when determining the type of technology to be employed. The Yellowdig platform has a simple user interface in which participants of the learning community found it easy to use. The level of difficulty in navigating the discussion platform and choosing a platform that promoted peer to peer interactions in the form of a chat, is important to online students. The Yellowdig discussion platform incorporates many of the elements as expressed by online instructors and students associated with this study, therefore the use of this platform serves as a viable option for online learning environments.

Implications for Practice

When implementing the study's innovation some areas that could be improved include the level of involvement of course instructors within the online learning community itself. Reflecting on my own positionality as the study's researcher, facilitator, and a co-participant in the online learning community, I found that participating in the co-construction of knowledge with study participants allowed for a more fully immersive engagement experience. I was able to better understand the diverse perspectives of the study participants and have the opportunity to understand how engagement works.

Additional ways in which course instructors can improve using this engagement model is by setting guidelines on the amount of participation expected of students including how engagement is assessed. Although the goal of the online learning community is for students to authentically engage in discussion, I found that students were slow to participate at the beginning of the innovation's phase. In the online focus group, respondents indicated having life and academic time commitments outside of their online courses. Although both participants found value in the online learning community, there was not an incentive to remain actively involved. Incentivizing students may motivate them to engage more in the online learning community and increase overall participation rates.

Thinking about the essence of a CoP, I was also able to personally experience the mutual engagement in the joint enterprise and collective development of a shared practice. I recommend that online course facilitators take on a more active role of shared

knowledge with their students and to participate in the co-construction of knowledge. Further, I suggest that online course designers recommend this model as best practice for course facilitators during the development phase of an online course. Equipping online course facilitators with a better understanding of how to realize student engagement opportunities has the capacity to help decrease uncertainty when identifying discussion activities were authentic engagement can be optimally supported in a distance learning environment.

Many participants in this study agreed with the statement, "I only participate in online discussions when professors include participation in how they assign grades.". This finding provides interesting insight for faculty and instructional designers into the motivations of students to engage in the learning community. It is often a challenge for students to find a balance between their work, life, and academic commitments (Hew & Cheung, 2012; Lehman & Conceição, 2013; Meyer & Ebrary, 2014), and they are faced with choices on how to prioritize their various obligations. Although the purpose of this research was to examine how the use of collaborative opportunities could support or influence student engagement in online courses, the finding that many are primarily motivated by grades or other extrinsic rewards to engage (or not) lends insight into the challenges I experienced recruiting student participants for this study. The absence of an incentive to motivate students could well explain the low numbers of study participants. This information is critical for both course instructors and designers to consider when identifying ways to increase student motivation and participation in the online learning community.

My experiences designing and implementing this project indicates several other recommendations for instructional designers. Only 11 faculty agreed to allow me to recruit their students to participate in the learning community. My struggles to gain faculty buy-in made me realize the importance of establishing a supportive network for online instructors to collaborate and explore engagement structures, pedagogical practices, and models used by others in and outside of their academic discipline. Other researchers have found that support and buy-in are two critical factors that course instructors have expressed as challenges to teaching online (Clark-Ibanez & Scott, 2008; Holly, Legg, Mueller, & Adelman, 2008). Creating a network of both faculty and instructional designers can produce a strong support system to encourages faculty buy-in of the use of an online learning community. This supportive network could also serve as a faculty driven professional learning community that replicates and extends the innovation for students to engage online implemented in this study. Additionally, I recommend that instructional designers consider implementing a faculty "showcase" model (Colbert, 2012; Lefoe & Parrish, 2007), to provide first person testimonies on how online learning communities have successfully been implemented throughout a variety of academic disciplines. These testimonies could be used as exemplars on how to best incorporate technology to promote student engagement in other online courses.

There are also some recommendations for faculty that emerged from this project. Tying back to the core principles of Wenger's (1998) communities of practice, for faculty to benefit from concepts such as a professional online learning community and a faculty showcase model, they themselves must first, as stated by Astin (1984), be willing to

participate in such learning opportunities. The expectation of online students to authentically engage amongst each other must also be authentically modeled by online course faculty. I encourage faculty to take advantage of opportunities that puts their knowledge of student engagement into practice allowing for the co-construction of new knowledge with their colleagues. I also recommend that faculty work with their departments to gain further support in their efforts to increase student engagement in virtual learning environments.

Finally, I recommend that vendors for course learning management systems (LMS) work to enhance their traditional discussion platforms to incorporate user engagement functions similar to Yellowdig. As expressed by online students in the cycle 1 findings indicated that the discussion format that was associated with the course's LMS was difficult to navigate and that they would prefer their peer interactions to take place in the form of a chat. Currently most traditional discussion platforms that are associated with the LMS fail to function in such a manner. LMS changes that I recommend to vendors should include improvements in user accessibility, responsiveness across multiple platforms (examples: computer, tablet, and smart phone), sorting and tagging enhancements, and the sharing of content across multiple mediums (i.e. multimedia, audio, graphic, and text).

Implications for Research

To recap, the theories and perspectives found within the literature and selected to guide the framework of this study were based on Khan's theory of engagement, Astin's theory of involvement, and Wenger's CoP. The study's results suggest that as espoused

by Khan (2014), engagement does involve a learner's participation in practice (i.e., behaviors) as well as feelings around that practice in an attempt to make sense of the engagement activity around what students do and how they behave. The foundational tenets presented in the innovation of this study presents a way in which to foster online student engagement behaviors and motivate students to become more actively engaged. This finding is important to consider for researchers who choose to replicate this study in the future. I also encourage researchers to further explore other elements of Khan's theory of engagement, as presented in chapter 2, and to make additional connections that might serve as benefits to understanding engagement for students online.

Taking another look at the connections between Astin's (1984) theory of involvement and the results of this study, the actions of participants within the online learning community and how they behaved were critical factors for ensuring that the act of being engaged occurred. Astin has argued that, as it relates to education, course instructors should place a focus on what students do and how they behave. To be involved implies that the learner must physically and psychologically be doing something. For this study, it is important to note that the type of activity implemented within the online learning community engaged participants in ways where both physical and psychological functions were used to learn and learn from others. This indicates that a focus on this key element is a critical component to the involvement of learners as well as a key connection to the theory of involvement. In the future, researchers must consider spending ample time choosing activities that entice the behaviors of online learners with a focus on how the participants should engage with others in the learning community.

Revisiting Wenger's (1998) concept of communities or practice and how his theory is further connected to this study's results, the innovation of this study sought to emulate the core values and principles of a CoP into the online learning environment. Wenger believed that groups of individuals who share common interests and learn from one another through the sharing of knowledge and ideas is an essential function of a CoP. Communities of practice also involve a learner's mutual engagement around a joint enterprise that brings groups together through the collective development of shared knowledge. The online learning community implemented within this study sought to do just that, and based upon the analysis of the study's results, participants indicated that they valued the of sharing knowledge, learning new ideas from others, and engaging in discussions from diverse perspectives and views. It is important for researchers to understand the possibilities of implementing communities of practice within virtual learning environments and that by doing so learners will greatly benefit from their function, leading to more effective learner engagement. My recommendation is that for future iterations of this study researchers explore the use of additional community of practice structures that will also engage online learners more fully throughout their academic learning.

As a result of the mounting pressures of accountability that post-secondary institutions are faced with, engagement is a critical component to the overall college experience and academic success of undergraduate students. In the literature there are a number of studies that focus on institutional level indicators of engagement such as student retention, GPA, and graduation rates, but lack research on student engagement at

the individual course level, more specifically for online course environments. As discussed in chapter 2, viewed as "process indicators," student engagement data are used as proxies for learning outcomes and point to areas of improvement for both student and institutional performance (Kuh, 2009). With that said, student engagement in online course environments has been weakly theorized and supported by the literature. A more developed theoretical basis for student engagement is needed in order to identify the contributions and efforts of course facilitators and designers who have created authentic opportunities for students to engage online. These kinds of models may act as exemplars that offer insights towards a new form of educational practice that has the potential to engage students more fully, as well as add to the body of research on the topic of student engagement in online courses. Performance indicators at the course level that could be used to further measure different dimensions of student engagement include assignment grades, participation grades, and pre- and post- assessments for each module or unit based on the NSSE. More research is needed in this area to help course instructors to better realize engagement strategies and practices that lead to higher learner participation and knowledge attainment.

Scholars also might consider implementing and/or investigating several additional areas related to the Yellowdig platform that housed the online learning community at the center of this project. The first is the tagging feature within the discussion platform. In Yellowdig each pin provides users with the option to tag posts made within the platform. If used, the tagging feature can provide participants with the opportunity to sort and organize comments according to the stated tenets of the online

learning community (i.e., reflection, ponder, aha moment). From a researcher's perspective, this feature can be used to measure the type of pins made by study participants and provide additional insights into the type of topics that online students are most interested in exploring. The second Yellowdig-related opportunity for improvement would be establishing a minimal number of required number of pins for each study participant. Although the purpose of the online learning community was to support authentic student engagement, I found without a requirement, incentive, or reason to prioritize their contributions to the online learning community, many students chose not to do so. Requiring a minimum number of pins would encourage online students to take advantage and prioritize their engagement in future cycles of this study.

The previous cycles of action research played an important role in informing how future iterations can be improved, especially how the online learning community should best be incorporated into an instructor's current online course design. As stated in chapter 1, cycle 1 recommendations from course instructors indicated that providing opportunities to critically assess course themes, the presentation of activities and assessments to meet the needs of diverse learners, and the incorporation of technologies to realize desired learning outcomes are all areas that need to be incorporated when developing virtual environments for engaged learning. These recommendations were further supported by the present cycles's findings, which indicated that the inclusion of diverse perspectives, opportunities to examine personal views on a topic or issue, understanding others' views and perspectives, and participation in online discussions are valued by online students. As online instructors continue to seek ways to create authentic

opportunities for students to engage in their courses requires an investigation into approaches that merge both instructor and student desires to that of the online learning community. In future cycles, researchers should look for approaches that will holistically capture the insights stated by both course instructors and students, bridge those perspectives, and can be seamlessly incorporated is such a way to enhance the current online course activities, structure, and design.

Study Limitations

There were a number of challenges experienced during the recruitment and implementation phases of this study. The first was that of the time frame in which participants were recruited, which may have impacted on the number of students who completed the post-survey as well as those who chose to participate in the focus group session. The dissemination of post-study surveys and participant recruitment for the focus group was conducted at the end of the fall A (post-survey only) and end of fall B (post-survey and focus group). During this timeframe many students were preparing for final exams and for graduation. This may have caused a lack of interest around post-survey completion rates and student recruitment for the focus group.

The second limitation included the redundancy of participant responses within the focus group due to comments by other participants. This may have been caused as a result of participant social desirability bias during the focus group session (Albrecht, Johnson, & Walther, 1993; Fisher, 1993; Mcray, 2015). As defined by Mcray (2015), social desirability bias is the tendency of individuals to provide comments that they believe will be viewed favorably, even when there is “no wrong answer,” or responses

are anonymous. When asking questions of participants within a group setting, participant responses may have been influenced by other responses made within the group. This is often a common practice in focus groups when participants discuss a topic and offer a unified voice of their opinions to the researcher (Albrecht, Johnson, & Walther, 1993). I found that when one participant provided a response in a certain way, the other participant tended to agree and provide a similar response. One possible solution to mitigate the effects of social desirability bias is through the use of indirect questioning (Fisher, 1993). Through the use of this technique respondents are asked to answer indirect structured questions from the perspective of another person or group. This is thought to reduce the distortion and influence of opinions of respondents to report on the nature of the external world rather than about themselves. This is something to consider in the future during the facilitation of synchronous focus groups for additional iterations of this study.

The third limitation were that positive or negative experiences shared in the focus group setting may have dictated the tone of participant responses. I found that when one participant shared a negative experience or perception of their engagement within an online course, would automatically ignite a memory from the other participant to share a negative comment as well. Once again, the influence of participant responses on other members of the group can have positive or negative effects and is something to consider when determining ways to reduce bias amongst responses shared in a focus group setting.

The fourth limitation were the online course instructors who assisted with the recruitment of study participants would not grant me permission to include an additional activity within their online course. Therefore, implementation of the online learning community was conducted and facilitated outside of the online course environment in which study participants were enrolled. This revision to the study's original plans caused me as the study's researcher to assume the role of facilitator of the online learning community rather than the course instructors. In order to further explore the connection between student's learning and engagement, the implementation of the online learning community may need to be incorporated into the online course in which participants are enrolled.

The final limitation surrounded the extent to which course instructors had prior experience using Yellowdig in their online courses. Although I did not collect data on this particular question, it is important to note that based upon my former experiences working with the faculty associated with this study, some had previously used Yellowdig in their online courses. The online learning community used in this study was implemented outside of the courses in which participants were enrolled and facilitated by me, the researcher. Therefore, the collection of data indicating which type of course activities were being implemented including the use of Yellowdig was not necessary. For future iterations of this study it will be important to identify the activities used in each online course to determine, from an instructional design standpoint, how to best implement the online learning community into each online course.

Personal Lessons Learned

As I reflect upon the implementation of the study, student engagement in online course environments, including some of the challenges and barriers that I faced, one personal lesson learned included the external factors that may affect an online student's ability to fully engage within the online learning community. Some of those factors include a student's time availability, course load, instructor incentives or lack thereof, and family or life obligations. Finding a balance between other commitments and time to be actively involved, from a student perspective, is challenge. This needs to be taken into consideration when thinking about ways to motivate students to prioritize engagement opportunities in their online courses.

Another lesson learned from an instructional designer standpoint was that flexibility in being accommodating when working with faculty to find ways to best implement this engagement model is key. As I found, many of the online course facilitators who participated in the study and agreed to assist with the recruitment of study participants were not open to implementing the online learning community into their active courses. This led me to revise the implementation process of the study by creating a separate Yellowdig discussion platform housed outside of the online courses in which study participants were enrolled. Granting this accommodation to course facilitators did not present a significant impact on the study itself, but rather prevented additional connections to be made between the engagement of students and changes within their academic learning. In the future, a more tailored focus on instructors who are willing to implement an online learning community into their courses is needed in order

to more fully understand the effects of engagement on a student's overall academic success.

As an instructional designer, in the future when asked how to best design and develop authentic student engagement opportunities in online course environments, some of the changes that I would make towards my approach would include recommending that instructors consider the implementation of an online learning community as a means to achieving desired learner outcomes within their course. The development of course level and unit level learning objectives are an essential part of course design. Those objectives, particularly at the individual unit level, should act as drivers determining the types of learning activities to be employed. The incorporation of an online learning community is one solution towards meeting desired learner goals as measured by unit level objectives.

I would also provide examples on how other studies within the literature have used elements of engagement as espoused by Khan, Astin, and Wenger, to support student learning in other educational contexts and settings. Making this link between the literature and the innovation clear can demonstrate to instructors that the innovation of this study is supported by sound research and studies. And finally, I would create opportunities for course instructors to participate in a community of learning. This experience would provide course instructors with a better understanding of how the online learning community could function from a student's standpoint as well as how students are expected to engage with one another.

Conclusion

Revisiting the scenario of the faculty discussion presented at the beginning of chapter 1, if I were the instructional designer meeting with Jane, I would recommend that the incorporation of an online learning community is a perfect solution to creating authentic engagement opportunities for students in virtual learning environments and here are the data points that support this engagement model's success. The implementation of an online learning community is one possible solution to address the creation of authentic engagement opportunities for students in online courses. More research is needed in order to explore additional and alternative ways to engage students online. I encourage more online course facilitators as well as course designers to look to the literature to identify studies that may provide additional insights and models to replicate at their own post-secondary institutions. It is a significant challenge that many course facilitators face, especially those who are new to the world of online teaching and learning, to create enriching learning experiences that foster meaningful student engagement. That is why it is critical that more course facilitators, designers, and post-secondary institutions place a higher focus not only on student engagement at the institutional level but also at the course level in order to create effective engagement opportunities that are beneficial for all.

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APPENDIX A

PRE-WRITTEN PARTICIPANT RECRUITMENT ANNOUNCEMENT

Participants Needed!!! - Student Engagement in Online Courses: Research Study

Hello all!

A Doctoral student from the Mary Lou Fulton Teachers College is conducting a research study on Student Engagement in Online Courses and would like to invite you to participate their study. Your participation in this research study is voluntary. If you are interested, please feel free to click on the links below for more information and instructions on how to participate.

Click here to indicate your intent to participate:
Student Engagement in Online Courses - Research Study – [enter live link here]

Click here to complete the following survey:
Student Engagement in Online Courses (Pre-Study Survey) – [enter live link here]

APPENDIX B

STUDY PARTICIPANT: POST-SURVEY EMAIL

Hi [enter participant name],

Once again, I want to thank you for agreeing to participate in the research study: Student Engagement in Online Course Environments. The engagement phase of the research study is now closed. Please take a moment to complete the post online survey by detailing your participation and engagement in the study's Online Community of Learning housed in the Yellowdig discussion platform.

Click here to complete the following survey:

Student Engagement in Online Courses (Post-Study Survey) – [enter live link here]

APPENDIX C

ONLINE LEARNING COMMUNITY STUDENT ENGAGEMENT:

PRE-SURVEY

Dear Student Participant:

I am a Doctoral student in the Mary Lou Fulton Teachers College (MLFTC) at Arizona State University. I am working under the direction of Dr. Molly Ott who is a Professor with the MLFTC. We are conducting a research study to examine the engagement and participation of students in an Online Learning Community (OLC).

We are asking for your help, which will involve your participation in a brief survey about your online engagement in an OLC. We anticipate the survey will take approximately 5 minutes to complete.

You must be at least 18 years old in order to participate. Your participation in this study is voluntary. If you choose not to participate or to withdraw from the study there will be no penalty whatsoever. Your submitted responses are anonymous. Your choice to participate or not participate will have no effect on your grades or your standing at the university.

The benefits of participation in this study includes membership in an OLC, meaningful collaboration and impactful discussion with peers, enhanced knowledge development of course related topics, and self-reflection of personal experiences in an OLC. There are no foreseeable risks or discomforts to your participation.

Your responses are anonymous. There will be no personal identifiable data collected of survey participants. Results of this study may be used only in reports, presentations, or publications in which your identity will not be known.

Please read the following consent statement and if you agree, completing the survey will indicate your consent.

Consent Statement: I agree to participate in the survey being conducted. I understand the survey will take approximately 5 minutes to complete. I understand that neither my grade in this class nor my relationship with the university will be affected if I decide to opt out. I understand that if I choose to participate my submitted responses are anonymous. I am at least 18 years of age. Finally, I understand that completing the survey will indicate my consent to participate in the study.

Current Perceptions of Online Courses at ASU

The following items relate to your thoughts about participating in online courses or other types of Online Learning Communities (OLC) at ASU.

Please rate your level of agreement with the following statements.
To what extent do you value the following:

(1 - Strongly Disagree, 2 - Disagree, 3 - Agree, 4 - Strongly Agree)

1. The inclusion of diverse perspectives in online course discussions is important to me.

2. I value opportunities in an online course that allow me to examine the strengths and weaknesses of my own views on a topic or issue.

3. It is important to understand someone else's views by imagining how an issue looks from his or her perspective.

4. Participating in online discussions with other students can help me to learn something new.

5. Participating in online discussions with other students can change the way I understand an issue or concept.

6. I only participate in online discussions when professors include participation in how they assign grades.

Current Experiences with Online Courses at ASU

The following items relate to your current experiences participating in an online courses or other types of Online Learning Communities (OLC) at ASU.

Thinking about ASU Online courses you've taken in the past, about how often have you done the following?
(1-Never, 2-Sometimes, 3-Often, 4-Very Often)

7. Asked another student to help you better understand an online course's materials.

8. Explained an online course's material to one or more peers.

9. Prepared for an exam by discussing content online with peers.

10. Used ideas from online course discussions with peers to complete class assignments.

11. Connected your learning to societal problems or issues.

12. Connected ideas from online course discussions to your prior experiences and knowledge.

13. Participated in an online learning community that was created by students (e.g., a Facebook groups, a Slack channel) to share ideas, knowledge, and experiences related to an ASU online course.

14. Participated in an online learning community that was created by a course instructor (e.g., Blackboard discussion board, Yellowdig) to share ideas, knowledge, and experiences related to an ASU online course.

Demographics

15. What is your current major?

16. What is your current class level?
    - Freshman/first year
    - Sophomore
    - Junior
    - Senior
    - Unclassified
    - Other

17. Thinking about this current term, how many credits are you enrolled?
    - Less than 3 credits
    - credits
    - 6 credits
    - 9 credits
    - 12 credits
    - More than 12 credits

18. What types of courses have you taken so far during your time as a student at ASU? (check all that apply)
    - On-campus courses
    - Hybrid courses (i.e., partially online with some on-campus meetings)
    - Fully online courses (o-courses, i-courses)

19. What is your current GPA?

20. What is your gender identity?
    - Man
    - Woman
    - Another gender identity, please specify
    - I prefer not to respond

21. What is your age range?
    - 18-24
    - 25-34
    - 35-44
    - 45-54
    - 55-64
    - 65 or older

22. What is your race? (check all that apply)
    - Caucasian or White
    - African American or Black
    - Hispanic or Latino
    - Native Hawaiian or Other Pacific Islander
    - Asian
    - Other

Thank you!

I would like to thank you for your time and commitment to helping us better understand the engagement and participation of students in an Online Learning Community (OLC). Your responses are valuable, and we greatly appreciate your input.

If you have any questions concerning the research study, please contact the research team—Dr. Molly Ott at Molly.Ott@asu.edu, Obiageli Sneed at osneed@asu.edu.

If you have any questions about your rights as a participant in this research, or if you feel you have been placed at risk, you can contact the Chair of the Human Subjects Institutional Review Board through the ASU Office of Research Integrity and Assurance at (480) 965--6788.

Thank you,

Obiageli Sneed, Doctoral Student
Dr. Molly Ott, Assistant Professor

APPENDIX D

LEARNING COMMUNITY STUDENT ENGAGEMENT:

POST-SURVEY

Dear Student Participant:

I am a Doctoral student in the Mary Lou Fulton Teachers College (MLFTC) at Arizona State University. I am working under the direction of Dr. Molly Ott who is a Professor with the MLFTC. We are conducting a research study to examine the engagement and participation of students in an Online Learning Community (OLC).

We are asking for your help, which will involve your participation in a brief survey about your online engagement in an OLC. We anticipate the survey will take approximately 5 minutes to complete.

You must be at least 18 years old in order to participate. Your participation in this study is voluntary. If you choose not to participate or to withdraw from the study there will be no penalty whatsoever. Your submitted responses are anonymous. Your choice to participate or not participate will have no effect on your grades or your standing at the university.

The benefits of participation in this study includes membership in an OLC, meaningful collaboration and impactful discussion with peers, enhanced knowledge development of course related topics, and self-reflection of personal experiences in an OLC. There are no foreseeable risks or discomforts to your participation.

Your responses are anonymous. There will be no personal identifiable data collected of survey participants. Results of this study may be used only in reports, presentations, or publications in which your identity will not be known.

Please read the following consent statement and if you agree, completing the survey will indicate your consent.

Consent Statement: I agree to participate in the survey being conducted. I understand the survey will take approximately 5 minutes to complete. I understand that neither my grade in this class nor my relationship with the university will be affected if I decide to opt out. I understand that if I choose to participate my submitted responses are anonymous. I am at least 18 years of age. Finally, I understand that completing the survey will indicate my consent to participate in the study.

Post Perceptions of Online Courses at ASU

The following items relate to your thoughts after participating in an Online Learning Community (OLC) at ASU.

Please rate your level of agreement with the following statements.
To what extent do you value the following:

(1 - Strongly Disagree, 2 - Disagree, 3 - Agree, 4 - Strongly Agree)

1. The inclusion of diverse perspectives in online course discussions is important to me.

2. I value opportunities in an online course that allow me to examine the strengths and weaknesses of my own views on a topic or issues.

3. It is important to understand someone else's views by imagining how an issue looks from his or her perspective.

4. Participating in online discussions with other students can help me to learn something new.

5. Participating in online discussions with other students can change the way I understand an issue or concept.

6. I only participate in online discussions when professors include participation in how they assign grades.

Post Experiences with Online Courses at ASU

The following items relate to your experiences participating in an Online Learning Community (OLC) at ASU.

Thinking about your participation in an Online Learning Community, about how often did you do the following?
(1-Never, 2-Sometimes, 3-Often, 4-Very Often)

7. Asked another student to help you better understand an online course's materials.

8. Explained an online course's materials to one or more peers.

9. Prepared for an exam by discussing content online with peers.

10. Used ideas from online course discussions with peers to complete class assignments.

11. Connected your learning to societal problems or issues.

12. Connected ideas from online course discussions to your prior experiences and knowledge.

13. Participate in a future online learning community that is created by students (e.g., Facebook group, or a Slack channel) to share their ideas, knowledge, and experiences related to an ASU online course.

14. Participated in an online learning community that is created by a course instructor (e.g., Blackboard discussion board, Yellowdig) to share ideas, knowledge, and experiences related to an ASU online course.

15. The course you just completed included an online learning community using the Yellowdig platform. The intention was to improve students' opportunities to engage with one another and the instructor. If you have any feedback related to the learning community, particularly whether you felt it changed your learning experience or interactions with others, please explain below:

Demographics

16. What is your current major?

17. What is your current class level?
    - Freshman/first year
    - Sophomore
    - Junior
    - Senior
    - Unclassified
    - Other

18. Thinking about this current term, are you a full-time student?
    - Yes
    - No

19. What types of courses have you taken so far during your time as a student at ASU? (check all that apply)
    - On-campus courses
    - Hybrid courses (i.e., partially online with some on-campus meetings)
    - Fully online courses (o-courses, i-courses)

20. What is your current GPA?

21. What is your gender identity?
    - Man
    - Woman
    - Another gender identity, please specify
    - I prefer not to respond

22. What is your age range?
    - 18-24
    - 25-34
    - 35-44
    - 45-54
    - 55-64
    - 65 or older

23. What is your race? (check all that apply)
    - Caucasian or White
    - African American or Black
    - Hispanic or Latino
    - Native Hawaiian or Other Pacific Islander
    - Asian
    - Other

Thank you!

I would like to thank you for your time and commitment to helping us better understand the engagement and participation of students in an Online Learning Community (OLC). Your responses are valuable, and we greatly appreciate your input.

If you have any questions concerning the research study, please contact the research team—Dr. Molly Ott at Molly.Ott@asu.edu, Obiageli Sneed at osneed@asu.edu.

If you have any questions about your rights as a participant in this research, or if you feel you have been placed at risk, you can contact the Chair of the Human Subjects Institutional Review Board through the ASU Office of Research Integrity and Assurance at (480) 965--6788.

Thank you,

Obiageli Sneed, Doctoral Student
Dr. Molly Ott, Assistant Professor

APPENDIX E

SYNCHRONOUS ONLINE FOCUS GROUP:

RECRUITMENT EMAIL

Dear afternoon [enter participant's name],

My name is Obiageli Sneed and I am a Doctoral student in the Mary Lou Fulton Teachers College (MLFTC) at Arizona State University. I am working under the direction of Dr. Molly Ott who is a Professor with the MLFTC. I am conducting a research study to examine how the use of collaborative opportunities, such as a discussion platform, can support the increase of student engagement in online courses.

I am inviting you to participate in a 1-hour synchronous online focus group session regarding student experiences in an online discussion platform.

You will receive a $20 Starbucks eGift card as compensation for your participation in this study.

The online focus group session will take place on: [enter date & time].

You must be at least 18 years old to participate. Your participation is voluntary. If you choose not to participate or to withdraw from the study at any time, there will be no penalty whatsoever. Your choice to participate will not affect your position or standing at the university.

The benefit of participation in this study includes the self-reflection of personal experiences of engagement with peers in a discussion platform in an online course. There are no foreseeable risks or discomforts to your participation. Participant names will not be used in the results of this study but rather replaced with a pseudonym to protect participant confidentiality. Results of this study may be used in reports, presentations, or publications, but your name will not be known.

Click on the link below to consent to participate in the 1-hour online focus group session: [enter live link here]

[Enter Signature here]

APPENDIX F

SYNCHRONOUS ONLINE FOCUS GROUP: INSTRUCTIONS

Each participant of this focus group is provided with an opportunity to speak and share your thoughts and opinions on 5 guiding questions about your experiences as students who have participated in an online discussion platform in an online course.

- All participants within today's focus group session are perceived as experts.
- My role as a moderator is to listen while all participants engage in active discussion.
- I welcome a diversity of opinions - therefore all perspectives are valued and respected.
- Please respect and maintain confidentiality throughout this focus group session.

APPENDIX G

SYNCHRONOUS ONLINE FOCUS GROUP: DISCUSSION QUESTIONS

1. Introduction. Let's start with brief introductions. I ask that each of you identify yourself briefly and share with us anything about your general experience of taking an online course.

2. Expectations. Thinking about the first time you have taken an online course, what were some of your initial expectations?

3. Personal Experiences. According to research, engagement in a course whether the course is conducted in person or online is an essential component to a student's academic success as well as their overall course experience. Thinking about your personal experiences, what type of engagement activities have you participated in within an online course and which were effective or ineffective methods of engagement?

4. Challenges. Once again reflecting on your student engagement experiences in an online course, the use of a discussion platform is often used as a mechanism to encourage engagement amongst learners. Thinking about the discussion platforms you have participated in, please share if there were any challenges that you encountered, and if so what were they and how did they influence your expectations?

5. Online Community of Learners. For this study a discussion platform called Yellowdig was used to create a Community of Learners consisting of undergraduate students enrolled in ASU online courses. The purpose of this community was to provide a space for learners to more fully engage and share aspects of their learning, as well as, to obtain new knowledge from others. What are your thoughts on this type of an approach to shared learning amongst online students?

APPENDIX H

INSTITUTIONAL REVIEW BOARD APPROVAL:

ONLINE LEARNING COMMUNITY

EXEMPTION GRANTED

Molly Ott
Division of Educational Leadership and Innovation - Tempe
-
Molly.Ott@asu.edu

Dear Molly Ott:

On 4/26/2018 the ASU IRB reviewed the following protocol:

Type of Review:	Initial Study
Title:	Fostering Student Engagement through an Online Community of Learning
Investigator:	Molly Ott
IRB ID:	STUDY00008166
Funding:	None
Grant Title:	None
Grant ID:	None
Documents Reviewed:	• Pre-Online Survey Questions, Category: Measures (Survey questions/Interview questions /interview guides/focus group questions); • Explanation + Introduction + Closing, Category: Recruitment Materials; • Survey - Online Learning Community Student Engagement, Category: IRB Protocol; • Post Online Survey Questions, Category: Measures (Survey questions/Interview questions /interview guides/focus group questions); • Online Learning Community - Online Student Guide, Category: Participant materials (specific directions for them);

The IRB determined that the protocol is considered exempt pursuant to Federal Regulations 45CFR46 (2) Tests, surveys, interviews, or observation on 4/26/2018.

In conducting this protocol, you are required to follow the requirements listed in the INVESTIGATOR MANUAL (HRP-103).

Sincerely,

IRB Administrator

cc: Obiageli Sneed
Molly Ott

APPENDIX I

INSTITUTIONAL REVIEW BOARD APPROVAL:

SYNCHRONOUS ONLINE FOCUS GROUP

ASU Knowledge Enterprise Development

EXEMPTION GRANTED

Molly Ott
Division of Educational Leadership and Innovation - Tempe
-
Molly.Ott@asu.edu
Dear Molly Ott:

On 11/29/2018 the ASU IRB reviewed the following protocol:

Type of Review:	Initial Study
Title:	Online Learning Community - Focus Group
Investigator:	Molly Ott
IRB ID:	STUDY00009247
Funding:	None
Grant Title:	None
Grant ID:	None
Documents Reviewed:	• OS_HRP-502a - TEMPLATE CONSENT SOCIAL BEHAVIORAL.pdf, Category: Consent Form; • OS_Recruitment Email.pdf, Category: Recruitment Materials; • OS_Form-Social-Behavioral-Protocol.docx, Category: IRB Protocol; • Focus Group - Questions.pdf, Category: Other (to reflect anything not captured above);

The IRB determined that the protocol is considered exempt pursuant to Federal Regulations 45CFR46 (2) Tests, surveys, interviews, or observation on 11/29/2018.

In conducting this protocol, you are required to follow the requirements listed in the INVESTIGATOR MANUAL (HRP-103).

Sincerely,

IRB Administrator

cc: Obiageli Sneed
Molly Ott