ADDRESSING THE ELEPHANT IN THE ROOM: WHAT ONE GRADUATE PROGRAM DID TO PRESERVE PROGRAM QUALITY WHEN CONVERTING A FACE-TO-FACE PROGRAM TO AN ONLINE, ASYNCHRONOUS DEGREE PROGRAM

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ABSTRACT

This study examines whether applying purposeful course design that includes a standardized, easy-to-navigate learning management system (LMS), a focus on creating teacher presence, and the establishment of an environment that provides a feeling of community and inclusion among students can foster retention when a degree program shifts from face-to-face (FTF) to fully online. Using Rovai's Classroom Community Scale (CCS), this study examined student perceptions of the rigor of learning and the presence of community in a fully online asynchronous degree program. The results were mixed in the study. The study could not detect a significant presence of community among students in the program, but it confirmed students' perception that learning was rigorous. Findings highlight the challenges in building community online and the importance of deliberate, research-based online course design.

Keywords: *online graduate program, community of inquiry, community of learning, online presence, instructor presence, classroom community*

The rising popularity and availability of online education, while desirable to many students, has been met with faculty, student, and administrator concerns about the quality of online courses and programs, specifically as it relates to student learning and retention (Bawa, 2016; Chiyaka et al., 2016; Rovai, 2002b; Tallent-Runnels et al., 2006). Yang et al. (2017) investigated persistence factors that aided in students' abilities to successfully complete online programs. Their findings indicated that individual students' investment in time and effort based on interest in career goals was a main attribute of student success. Program attributes, relevance to professional needs, and overall satisfaction with the program, courses, and learning outcomes were also major contributors to program completion. Meta-analyses of the effectiveness of online education courses have shown that student learning is equivalent to or exceeds learning in face-to-face (FTF) courses (Bekele & Menchaca, 2008; Bernard et al., 2004; Slover & Mandernach, 2018; Tallent-Runnels et al., 2006; Zhao et al., 2005). However, a study by Turner and Turner (2017) revealed that students in online

courses had significantly lower levels of learning and permanency of learned information than their FTF counterparts.

While online programs are a growing trend, there is also concern about low student retention and graduation rates. Garrett (2018) described how online programs are now more accessible to a wide variety of students, but it is not without the cost of lowering the odds of program completion. Dropout rates in online courses are up to 20% higher than those in traditional classrooms (Carr, 2000). Poulin's (2013) key findings indicated that completion rates for traditional courses were 3% higher than online courses when all respondents were compared. When he analyzed institutions that provided both on-campus and online courses, on-campus course completion was 5% greater than online course completion. The dropout rate in online learning can be attributed to many factors, but Yuan and Kim (2014) and others (Carr, 2000; Rovai, 2002a; Rovai & Wighting, 2005) identified the lack of a learning community as one of the main variables that contribute to the problem.

The criticism of online learning suggests that reduced learning outcomes and students' feelings of isolation are notable limitations that point to the importance of research-based design in degree programs and courses. Based on the literature reviewed, this research sought to redesign a program, and it strove to address criticism and shortcomings of asynchronous online programs by fostering a community of inquiry among students and focusing on research-based course (instructional) design. In part, the purpose of this study was to determine the degree to which classroom community was fostered. This study draws on Wenger's theory of community of practice (1998) and Garrison's et al. (2000) theory of community of inquiry, which assert that a community of practice is a group of people with a shared concern or passion for something they do and how they learn to do it better as they interact regularly. The researchers wanted to leverage community to improve retention and graduation rates for the fully online program. Furthermore, it examined the impact of a fully online degree program on student learning and sense of connectedness. Specifically, this study sought to answer the following research questions:

R1: To what degree and in what ways does course redesign as well as pedagogical decisions foster community and deliver high levels of learning in a fully online degree program?

R.1.1: Do these changes impact student satisfaction, retention, and completion?

This case study is significant because it can provide insight into designing effective and high-quality online programs. Redesigning online programs necessitates a shift away from thinking about how to translate the content of a FTF course to an online environment. Instead, it focuses on answering the question of how to maximize the opportunities in the digital landscape that support and foster student learning. Purposeful course design is key and must include instructional strategies that promote a sense of belonging and collaboration to elevate student engagement and satisfaction. The course redesign process examined in this study is then outlined, followed by the methodology and presentation of the findings. Finally, the discussion and conclusions are provided.

LITERATURE REVIEW

More than two decades of research (Allen & Seaman, 2016; Baldwin et al., 2018; Caskurlu et al., 2021; McGahan et al., 2015) have attempted to define quality in online education and apply various means for assessing the quality of online courses and programs. Existing measures of the quality of online education have considered quantitative or qualitative approaches and can be viewed within four broad categories (Mitchell, 2010): (a) stakeholder perceptions (i.e., administration, students, instructors), (b) quantifiable elements (i.e., grades, retention rates, graduation rates), (c) course design elements, and (d) external standards (i.e., developed by various external groups and organizations including accrediting agencies, lawmakers, colleges, and groups such as Quality Matters, Online Learning Consortium/the Sloan Consortium). These attempts to define quality have resulted in a significant amount of research-based evidence that provides foundational instructional design principles for high-quality online programs and courses (Baldwin et al., 2018; Casey et al., 2021; Dondlinger, 2021; Gunder et al., 2021; Martin, Ritzhaupt, Kumar, et al., 2019; Wang, 2021).

COMMUNITY OF INQUIRY/LEARNING

Classroom community—or students' sense of connectedness and cooperative learning—can strongly influence success, whereas its absence can

lead to increased dropout rates, especially in online courses. The ineffective use of learning communities can contribute to students feeling isolated due to the lack of interactions between students and instructors (Dover & Kelman, 2018). Sun and Chen (2016) agreed that effective online learning is dependent on motivated interaction between instructor and students as well as the "creation of sense of [an] online learning community" (p. 157), but also concluded that well-designed course content, well-prepared instructors, and engaging course technology also positively impact academic learning.

Of importance in the design of this study, the communities of inquiry (COI) framework (Garrison et al., 2000) offers a theoretical framework for the design of online learning environments to support critical thinking, critical inquiry, and discourse among students and teachers. The COI framework posits that certain essential elements within an online course can facilitate successful online learning environments. It contended that higher-order learning is facilitated by a "community of inquiry" composed of teachers and learners (Arbaugh et al., 2008). The framework allows instructional designers and instructors to examine online programs through the lens of student and instructor behaviors. The foundation of the COI framework is to create meaningful learning experiences through the use of social, cognitive, and teaching presence, and that collaborative learning can only be achieved when all three components are utilized in online courses (Garrison, 2000).

The literature provides complex definitions of the characteristics that constitute an online learning community. Yuan and Kim (2014) identified an online community as one where "members work with one another via technology to construct knowledge and attain common goals" (p. 222). This definition aligns with the work of Rovai (2002c), where he defined spirit, trust, interaction, and commonality of expectations and goals as dimensions of both the physical and virtual classroom community. In addition, classroom community describes not only the social environment of a class but also collaborative and peer-supported learning where students feel responsible for each other's learning and depend on one another to learn more together than they could alone (Rovai, 2002c). The lack of these dimensions in a virtual classroom has serious consequences that can leave students feeling disengaged and isolated. Achieving a sense of belonging for students in an online community takes purposeful planning of interpersonal practices that cultivate connectedness among students with peers and faculty.

INTENTIONAL COURSE DESIGN

After the review of the literature on building community in asynchronous learning, the researchers conducted a self-assessment of online courses using the Online Learning Consortium's Quality Course Teaching and Instructional Practice Scorecard. Based on the results of that self-assessment and the themes found in the literature review, faculty set two primary goals in course redesign: (a) purposeful interaction between the instructor and learners would facilitate deeper learning, and (b) the creation of a sense of online learning community would enhance the quality of a fully online program and foster greater retention and completion. It is important to note that this course design was developed immediately preceding the global COVID-19 pandemic, which prompted shelter-in-place orders across the country and the swift move to remote course delivery in most higher education institutions. While we have all learned much about online programs and course delivery at the hands of COVID-19, this program was designed prior to that experience.

METHOD

This study utilized a design-based research (DBR) approach to conduct a case study. The purpose was to determine whether program and course design decisions could promote community among learners in an otherwise asynchronous online graduate program. Reeves (2006) has advocated for DBR as a tool for applied education research because it asks researchers to see a learning design through until it meets the needs of students, and it focuses on examining the relationship between the theoretical framework of course design and its impact on students.

SETTING & PARTICIPANTS

This study was conducted at a small public university in a rural area. Participants were admitted to a fully online Master of Science program that also offered them the opportunity to earn their initial teaching license. The courses were designed and delivered asynchronously over three semesters

in 2020-2021 via the LMS, Canvas. The course instructor-to-student ratio was between 1:15 and 1:25. All courses in the program were taught by tenured/tenure track faculty. Participants of this study consisted of 25 students enrolled in the first cohort of the fully online program. Males represented 70% of participants, while 30% were female. Seventy percent of participants worked full-time in a business career during the first two semesters of the three-semester program; another 20% worked full-time in education; and 10% did not work during their enrollment in the program. Sixty percent of participants indicated they had at least part-time responsibilities in caring for parents/family/children while they were enrolled in the program.

COURSE REDESIGN BASED ON SELF-REVIEW

The Online Learning Consortium's Quality Course Teaching and Instructional Practice Scorecard prompts faculty to evaluate the comprehensive overview of the online learning environment in 10 key areas: course design; accessibility, ADA compliance, and universal design; course learning outcomes; course content; assignments; instructor role; class discussion and engagement; community building; communication; and continuous course improvement. Faculty collectively examined the results of the self-review of courses in the program after applying the checklist to four benchmark courses in the program. The self-review rating tool asked faculty to rate their achievement of various standards on a 4-point scale (complete, in progress, not started, or not applicable). Faculty identified strengths in their current practices related to the quality of the course introduction and overview provided to students, technology tool accessibility and utilization, the quality and organization of content delivered, and the quality and nature of student feedback provided.

The self-review checklist results prompted faculty to set shared goals for course redesign to address the following areas where they considered their execution in progress or not started:

- a focus on the learning, not the teaching
  - use of backward design to ensure alignment of the three major components of instruction: learning objectives, assessments, and instructional activities
  - use of Universal Design for Learning principles to enhance accessibility and differentiation
- incorporating active learning and other evidence-based practices into course design to further enhance learning and to improve the role of assessments and learning activities in building community and deepening student learning
- devising plans, procedures, and routines for communication—teacher-to-student, student-to-student—in order to enhance interactions in online courses
- Integrating planned routines and activities that foster community and reflection.

A Focus on Learning, Not Teaching

Knowing that student learning is dependent on interaction with the content, instructor, and peers, program faculty focused on three main goals to remove learning barriers: easy-to-navigate LMS design for every course, the use of small-group/collaborative activities in every class, and the inclusion of best practices and evidence-based teaching strategies. Based on the principles of Universal Design for Learning (UDL), faculty focused on the barriers in the design of the environment, including how to change the design of the virtual classroom, curricular goals, assessments, methods, and materials.

Backward Design

Wiggins and McTighe (1998) were instrumental in developing a curriculum design strategy known as backward design. Today, the backward design framework is a well-established design strategy that first requires identifying the student learning outcomes, second, determining the acceptable evidence of student learning, and third, developing the learning experiences and instruction. This design strategy is student-centered and lends itself to focus on the goals of learning rather than the teaching process. The benefits of using the backward design include an enhanced ability for instructors to prioritize instruction and improve in- and out-of-class time management, it better engages students in the learning process, and it allows the instructor the ability to provide more feedback regarding student comprehension (Reynolds & Kearns, 2017).

Instructors collaborated on developing the student learning outcomes and categorized them

in terms of knowledge, application/practice, and research. A summative assessment was then developed for each learning outcome, including comprehensive grading rubrics. A careful sequencing of these learning outcomes was then defined for each program course, along with formative assessments that provided students feedback on progress toward mastery of the learning outcome. Finally, best practices, active learning strategies, and activities were identified in each course to deepen content understanding. This process, better known as instructional scaffolding, strengthens students' engagement in the learning process and enhances learning outcomes (Belland et al., 2017) by using students' previous experiences and knowledge as a foundation on which to build as they learn new content. Under this model, the researchers implemented specific evidence-based active learning strategies to enhance student learning further.

The Inclusion of Best Practice Teaching Strategies

A common teaching model where teachers lecture, students take notes, test, and repeat is considered one of the least effective teaching strategies for student engagement. There is a place for lecture in the learning process because when it is used sparingly and combined with active learning, it can improve student engagement, retention, and success. Active learning, however, is a student-centered approach that requires students to be involved in the learning process. This approach places greater responsibility on the student for their learning. The researchers made a purposeful effort to design courses with instructional activities that provided opportunities for student engagement. Applying the principles identified by the Chickering and Gamson (1987) framework, active learning strategies were incorporated into course design.

There were several high-impact active learning activities, such as participating in a learning community, writing-intensive courses, collaborative assignments, research, experiential learning, capstone course, and diversity, inclusive, and global learning. These high-impact learning activities are research-based and increase student retention and engagement (Kuh & Schneider, 2008). Not all active learning activities are high impact. For example, learning activities such as partner or group discussions, self-evaluation, peer review, and self-reflection, while not considered high impact, have substantial benefits to the learner. Online discussions, for example, provide opportunities for an inclusive active learning experience in which all students can participate. These discussions can further develop deeper and more reflective responses, flexible time management, and student-to-student and student-to-instructor interactions (Jung & Gilson, 2014). The use of student self-assessment activities develops meta-cognitive and critical reviewing skills, provides students the opportunity to manage their learning more independently, and provides intrinsic motivation to improve performance (McMillan & Hearn, 2009). Student-to-student interactions, such as peer review activities, are another valuable meta-cognition tool. When used, they help students develop self-management, judgment, and subject knowledge, as well as strengthening their capacity for self-assessment (Liu & Carless, 2006). Another active learning strategy that increases the depth of knowledge, the personalizing and contextualizing of knowledge, is self-reflection. Self-reflection activities also contribute to identifying areas of improvement, providing comparative references in the learning process, making structural connections in knowledge, and creating social connections (Chang, 2019).

Applying Universal Design for Learning Principles to LMS Design

The Universal Design for Learning (UDL) framework is based upon the most widely replicated finding in educational research: learners are highly variable in their response to instruction. The UDL guidelines were used by faculty to redesign aspects of all courses in the program during the course redesign process. These guidelines offer a set of concrete suggestions that can be applied to any discipline or domain to ensure all learners can access and participate in meaningful, challenging learning opportunities.

Within the LMS, faculty applied several key principles from the guidelines to improve accessibility and address areas where the self-review checklist ratings were below the desired level of performance. First, a logical, consistent, and uncluttered layout was established within the LMS for each class in the program, assuring that the course was easier for students to navigate. Large

blocks of information posted within the LMS were divided into manageable sections with ample white space, and attention was paid to visual contrast between text and background. The content was separated into chronological modules with clear and descriptive headings. Every module included a page labeled "Start here" that featured an instructor welcome and an overview of elements within the week's module. Link validation was completed within Canvas whenever the instructor provided links within the content. The Universal Design Online Content Inspection Tool (UDOIT) was utilized within Canvas to improve accessibility.

Instructors also focused on revising detailed instructions and used peer review to ensure they were well written. Attention to accessibility was paid regarding instructor-created content. Lectures were provided as recorded videos with closed captioning and as downloadable audio podcasts to provide more options for student access. Instructor slides, notes, and transcripts were provided for lectures.

Communication Plan

To foster a culture of clarity, many communication routines were utilized in every course in the program. Knowing the course syllabus is the initial place where class culture begins. To cultivate this early, faculty included several messages about inclusion and a statement about communication preferences and procedures. Instructors committed to routines in classes where course content modules opened on the same day/time each week for the following week. Next, the faculty learned to operationalize several automated features within the LMS, making routine communication easier. These included, for instance, sending automated notifications of assignments added, assignment requirements, and due dates, along with the use of LMS course announcements thoughtfully timed to the launch of a new weekly module or the upcoming due dates for an assignment.

Beyond using weekly course announcements to notify students of new content or due dates, announcements also included standard content, including instructor acknowledgment of student engagement and collaboration from the prior week (i.e., "Hey, loved the lively discussion on last week's topic…"); a recap of key takeaways from the previous week; acknowledgment of student ideas from discussion board (i.e., "I appreciated the different perspectives Jess and Miles raised in last week's discussion because…"); teacher observations of the work turned in (praise and shortcomings); introductions to "what's ahead this week" and advice on how to get started; an invitation to connect with questions; and a reminder of weekly optional class meeting time. Attention was given to not just posting announcements in long-narrative paragraph format, but also to apply design principles that would make them easier to read and skim.

Another communication routine that was enacted in several courses was timely feedback and grading (including enabling the Celebration feature in LMS assignments that displays celebratory graphic animations and gifs when work is submitted). Beyond ensuring timely feedback, faculty committed to offering thorough and detailed feedback to students. They routinely used peer feedback routines where students engaged in a review of each other's work, using standard peer feedback protocols.

Even though the courses were designed to be delivered asynchronously, instructors planned and held optional synchronous class meetings weekly. Student questions were addressed, clarification was offered on the week's content, live discussion focused on the application of content, and team-building and small-group activities were conducted. While optional, many of the students in a course attended these meetings as their schedules allowed.

With a goal of fostering retention, instructors also engaged in targeted communication with individual students whose engagement with course content and completion of assignments was off pace. Using an engaged-advising model (frequent check-ins, early warning criteria, etc.), faculty sought to re-engage students and assist them in troubleshooting barriers to engagement. Often, when students fell off pace with the class, faculty found that these students still wanted to be held to high expectations and goals but needed flexible paths to achieve them.

Pedagogical Decisions that Supported the Fostering of Community & Reflection

Redesigning the pedagogy of the courses in the program focused on three key dimensions: the fostering and facilitation of community within

the courses, considerations related to creating an inclusive environment, and fostering instructor and student presence (Dieterich & Hamsher, 2020). The facilitation decisions faculty made in courses were another pedagogical contribution to fostering community in the program. Faculty members teaching courses in the program knew they needed to create opportunities for students to engage with each other and the instructor using various means. Faculty members in the program paid thoughtful attention to the three forms of presence defined by Garrison et al. (2000) to foster a community of practice or inquiry in the program.

Faculty made intentional choices to assign small group tasks, and they often mixed up the membership of the groups. Researchers hypothesized that various avenues for idea exchange and building knowledge together would enhance social and cognitive presence among class members (Wang & Liu, 2020). In addition, at the start of each course and several times during the semester, instructors deliberately used community-building strategies that focused on creating social cohesion and the opportunity for students to project their personalities as a way of fostering social presence.

After engaging in direct instruction that introduced key concepts, instructors sent students to discussion boards for whole-class and small-group discussions to construct their knowledge and deepen their understanding (Martin, Wang, & Sadaf, 2018). Instructors nurtured constructive discussion behaviors by explicitly teaching what constituted a high-quality discussion online and by coaching students to engage in those behaviors—both important forms of instructor presence. In addition, instructors supported the development of online discussion skills by using rubrics to assess student contributions to online discussions. In addition, many individual and small-group assignments in the courses gave students choice to explore and apply course content to topics of interest and personal relevance. When student engagement in an online discussion lagged, instructors stimulated discussions in various ways (i.e., course announcements in the LMS, emails, text messages, etc.). They also made a point of maintaining an intentional balance of task-oriented (helping students connect ideas) and social discussions (inviting personal stories).

Several strategies were employed in courses to ensure multiple forms of instructor presence. First, all courses in the program offered sustained (though optional) synchronous class meetings with the instructor. Team building activities were conducted, discussion occurred, current events related to content were discussed, student questions were answered in real-time, and social support was provided. In many courses, instructors also designated evening/weekend virtual drop-in office hours and continuously expressed a willingness to connect at times far outside the normal "teaching day." Weekly communication from instructor to students was delivered more than only announcements in LMS. Instructors routinely engaged in personal check-ins with students via email or text, scheduled progress checks, voice calls, etc. Lastly, timely feedback was paramount to instructor presence. Student work was graded, and detailed feedback was provided weekly. In some instances, students were given a chance to revise and resubmit assignments in order to achieve the desired learning outcomes.

MEASURING COMMUNITY AND STUDENT PERCEPTIONS OF RIGOR

This study design sought to measure student perceptions of the level or rigor of learning and students' reported feelings of connectedness/membership within a learning community. Rovai's Classroom Community Scale (CCS) (2002c) was used to measure both variables of interest. The CCS was designed to measure the connectedness and aggregate learning capacity of a graduate online class (Rovai, 2002c). The CCS consists of 20 items that participants rated on a 5-point scale, ranging from *strongly disagree (1)* to *strongly agree (5)*. The CCS is broken into two subscales, connectedness and learning, with each subscale being 10 items. The connectedness subscale reflects the sense of community/connectedness students feel as a member of the program. The learning subscale represents the perceptions community members have regarding their shared construction of understanding and the degree to which members feel their educational goals and expectations are being satisfied. Data in this study were collected from two sources: (a) an electronic survey using Rovai's CCS and several additional items was issued to all admitted students in the program in their student teaching/final semester of their enrollment; and

(b) instructor course evaluations were reviewed for additional qualitative themes. The university's institutional review board (IRB) reviewed and approved the study.

ANALYSIS

Descriptive analysis was conducted to examine respondent gender and students' nature of employment during program enrollment. A one-sample *t*-test was used on subscales to evaluate the hypothesis that classroom community and rigorous learning would improve the climate, retention, and completion of second-career teachers in a fully online teacher-education program. Effect size was determined by calculating Cohen's *d* when statistical significance was found. In addition, frequency counts were examined on additional items the researchers added to Rovai's (2002c) CCS that would allow them to explore the impact of the COVID-19 pandemic that students reported during their enrollment in the program. Course evaluation results were examined to determine a descriptive baseline for student satisfaction with the course design, instruction, and instructor presence. Institutional dashboards provide retention and completion data.

Finally, qualitative thematic analysis was conducted on open-ended responses resulting in a coding schema that included: (1) student behaviors that contributed to community; (2) student behaviors that detracted from community; (3) instructor behaviors that contributed to community; (4) instructor behaviors that detract from community; and (5) unexpected impacts of COVID-19 on community formation, program retention.

FINDINGS

Maintaining a quality program and fostering retention were the ultimate goals of this program redesign. Best practices that emerged from the literature review included meeting the needs of engagement, retention, and program completion with communication that facilitates deeper learning and building a learning community. Researched-based elements were included in program development, and a conscious effort was made to implement characteristics that preserved best practices from traditional courses to online courses. Program and course development decisions were made purposefully to assist in a program design that contained an easy-to-use and consistent navigation structure between courses in the LMS. Multiple and repetitive instructional strategies were incorporated to foster a sense of community. This included: (a) increased the contact between student and faculty; (b) opportunities for students to work in cooperation; (c) encouraging students to use active learning strategies; (d) providing timely feedback on students' academic progression; (e) requiring students to spend quality time on academic tasks (f) establishing high standards for acceptable academic work and (g) addressing different learner needs in the teaching process. In addition, communication strategies deepened the understanding of course content and also helped students feel a sense of belonging, increased motivation, and contributed to course and program completion.

Research Question 1

With the goal of leveraging community to improve retention and graduation rates for the fully online program, this study centered on research question one that asked "To what degree and in what ways does course redesign as well as pedagogical changes foster community and deliver high levels of learning in a fully online degree program?"

Connectedness

The results of the CCS Connectedness Subscale score was 30.4 out of 40. A one-sample *t*-test showed no statistical difference in students' reported feeling of connectedness ($M = 3.04$, $SD = 0.81$) over what was hypothesized. While statistically significant results were not found, practical significance can be found in items that students rated the highest:

1. I feel that students in this program care about each other (90% agreed or strongly agreed)
2. I feel that I can rely on others in this program (90% agreed or strongly agreed); and
3. I feel confident that others will support me (90% agreed or strongly agreed).

Pedagogical decisions made by faculty to maximize instructor presence appeared in a number of open-ended comments as well:

Table 1 Summary of Course Evaluation Results

		Course 1 summer	Course 2 fall	Course 3 fall	Course 4 summer
Course Evaluation Response Rate		25%	25%	42.86%	52.94%
Evaluation Criteria	Purpose in study design				
Global Index Course Evaluation	Aggregate measure of student satisfaction	5/5	4.79/5	3.78/5	4.68/5
Student self-reported reflection on the quality of their work: I have done High quality work	Student self-assessment of their engagement in learning processes	4.67/5	4.29/5	3.83/5	4.5/5
The stated outcomes of this course were consistently pursued.	Measure of student perception of learning	5/5	4.71/5	3.83/5	4.56/5
Instructor has an organized and well-designed course.	Measure of student satisfaction with course design	5/5	4.71/5	3.67/5	4.67/5
The instructor shows respect for students.	Measure of student perceptions of instructor role in establishing community	5/5	4.86/5	4/5	4.89/5
There are sufficient opportunities for questions and discussions.	Measure of Instructor Presence	5/5	4.86/5	3.67/5	4.44/5
I received meaningful feedback.	Measure of Instructor Presence	5/5	4.71/5	3.5/5	4.88/5

> "...Continue with personalized feedback on class work completed. Continue being readily available through email to answer questions—early mornings, late evening, even weekends."
>
> "[Faculty] did everything possible to make us feel like we belonged and make this program a little community. I feel very fortunate to have them as my professors."

Some of the responses to open-ended questions might highlight why, despite considerable effort to establish community, it was not detected with the CCS:

> "It is tough to create a feeling of community when everything is remote and asynchronous, and to be honest I wasn't looking for that sense of community from this program."
>
> "It is hard to do some of the projects with everyone going in different directions, but we made it work."

Learning

Did purposeful interaction between the instructor and learners facilitate deeper learning? To understand this, we examined the results of the learning subscale score from Rovai's (2002c) CCS (subscale score 35.4 out of 40). A one-sample *t*-test showed students acknowledged statistically significant higher levels of learning ($M = 3.54$, $SD = 0.68$) than hypothesized, $t(9) = 7.07$, $p = .007$ with a large effect size ($d = 10.76$). In particular, students noted highly favorable responses to the following:

1. I feel that I am encouraged to ask questions (100% agreed or strongly agreed); and
2. I feel that I received timely feedback (100% agreed or strongly agreed); and
3. I feel that I am given ample opportunities to learn (100% agreed or strongly agreed).

The open-ended responses highlighted many benefits of small-group assessments and a focus on community-building:

"Working in groups allowed me to gain even more knowledge."

"Hearing experiences of others in the program who are already teaching has been very valuable as a career changer."

"I personally went out of my way to connect with my classmates over texting and calls.

Generally, the discussion was based on [assignments]; however, I can say that I've built some quality relationships with my classmates."

RESEARCH QUESTION 1.1

To more thoroughly examine research question 1, research question 1.1 asked "Do course design and pedagogical changes impact student satisfaction, retention, and completion?" Findings to address this question come from institutional student data reports and course evaluation feedback provided by students.

Student Retention

This graduate program, formerly delivered in a FTF format initially, then more recently as a hybrid program, experienced a retention rate in the low-to-mid 80% range for the five years prior to program redesign. Mindful that retention in fully online programs is a considerable challenge in online education, the researchers hypothesized that by focusing on intentional course design and engaging in community building, they could maintain that same level of retention in the program and set a goal of 80% retention for the fully online program. Examining institutional student data, the retention rate of the first cohort of students in the fully online program was 88%, exceeding the goal for year one and exceeding the retention performance of the former FTF or hybrid programs.

Student Satisfaction

The researchers assessed student satisfaction using the overall mean score on standard course evaluations administered by the institution for the four redesigned courses using the self-review online course checklist. In addition, they further examined specific items on the course evaluations that related most directly to the course redesign decisions. The following table summarizes the student satisfaction results after the course redesign.

Overall, student satisfaction with courses in the program was high (mean = 4.56 on a 5-point scale). More specifically, students indicated a high level of satisfaction with course organization and design (mean = 4.51) based on responses to the item, "Instructor has an organized and well-designed course." Similarly, students rated the pursuit of stated course outcomes as high (mean = 4.52). These items served as important indicators of the instructor's success in focusing on learning, not teaching, which was embodied in the course redesign.

The researchers examined the results of three additional items from the course evaluations that aligned with the classroom community goals for the redesign, more specifically, perceptions of instructor presence, the climate for two-way communication, and the role of meaningful feedback in supporting learning and relationship-building. When examining the item "The instructor showed respect for students," the mean across the four courses was 4.68, showing students felt a high degree of respect from faculty in the program. This feeling of respect was an important component of fostering community among adult learners in the program. Despite the program being designed for asynchronous delivery, student satisfaction was high with regard to opportunities to ask questions and discuss course content, as illustrated by the item "There are sufficient opportunities for questions and discussions," with a mean of 4.49/5. Lastly, the role of feedback in fostering deeper learning and building relationships was measured in part by the item "I received meaningful feedback," and had a mean score of 4.52.

Additionally, student responses to several researcher-created survey items validated a number of the course redesign choices, with nearly all respondents indicating that the time flexibility offered by an asynchronous online program (90% favored), and the pace/duration of the program (80% favored) were aspects of the program they liked the most. A majority of the students (90%) stated that the course delivery and design made it possible for them to continue and complete their degree program despite the interruptions the COVID-19 pandemic brought about in their family/work lives. Open-ended responses addressing the impact of COVID-19 included:

> I have been pretty lucky. Only the cancelation of [face-to-face field experience during] summer school detracted, but we were able to work around that and since I am already in a full-time education position I could reflect on past experiences.

Similarly, another student mentioned, "Observing [during field studies] online was beneficial but being in the classroom would have been more impactful."

The findings of this study can serve as a model for college administrators seeking a research-based, best-practice format for online education.

This is important since public colleges and universities have increased online education to boost revenue (Ortagus & Yang, 2018) and meet the demands of students (Smith et al., 2019). As the findings indicated, developing curriculum using a design strategy that is student-centered and focused on student learning goals rather than the teaching process enhances the curriculum quality and effectiveness of learning (Wiggins & McTighe, 2011). Additionally, the findings of this study are important for university faculty. Faculty that are purposeful in using educational strategies that increase student engagement and build a sense of community provide students with a learning experience where they have a feeling of inclusiveness, thereby increasing the likelihood of program satisfaction and completion.

DISCUSSION & CONCLUSION

This study sought to examine the assertion that high-quality online learning experiences are thoughtfully designed, and that thoughtful design would contribute to important student outcomes. By using instructional design principles and evidence-based teaching strategies and purposefully aligning learning outcomes with learning activities and assessment practices, the researchers expected to create a supportive environment that maintained the rigor of the former face-to-face and hybrid delivery graduate programs. By focusing on the intersection of course design and program quality, the researchers hoped to provide robust learning experiences for students, not only through strategic design but also through the inclusion of intentional opportunities for community-building and interaction in the digital environment.

The design of this study utilized Rovai's (2002c) Classroom Community Scale (CCS) to measure the development of community using two subscales of connectedness and learning. While the literature is rich with studies that have successfully detected classroom community using Rovai's CCS, the sample size and duration of time for this study resulted in lackluster results compared to those found in the literature. The researchers believed facilitation of community would be enabled when attention was placed on designing a class for cognitive presence, social presence, and teaching presence. While the results from the connectedness subscale did not detect community at a significant level, several other promising indicators of progress toward that goal were seen in other data sources. Several important facets demonstrating instructor presence and instructor role in creating community were seen in course evaluation results. Students noted that instructors showed high levels of respect for students, offered ample opportunity to ask questions and get support, and provided valuable feedback to students during the learning process.

Related to cognitive presence, the significant results of the learning subscale analysis support the program design decisions and the pedagogical decisions faculty made in the design of collaborative learning using frequent small group work, along with the faculty commitment to provide detailed and timely feedback. We expected that student dissatisfaction with the nature or amount of learning would emerge in the survey, but it did not. The absence of that dissatisfaction suggests that students perceived the depth of knowledge and skills they obtained as sufficient.

In addition to utilizing the CCS tool, this study reviewed course evaluations. Findings showed students reported high ratings regarding their (a) progress toward learning outcomes, (b) satisfaction with course design, and (c) view of a positive instructor presence. Where students self-assessed their own level of engagement in the learning process, researchers noted that the evaluation items related to a student self-reported engagement cluster around the construct of cognitive engagement. Findings showed that student self-reported ratings indicated a higher level of engagement during the summer term than for the fall term. This finding might suggest fatigue as students progressed from one term to another in the program. It might also be explained by the prevailing crisis of our time—the COVID-19 pandemic and its effects on family, employment, mental health, and more. Course evaluation results overall showed student satisfaction with the course design as well as their engagement and the instructor's engagement; however, these results must be considered under the lens of a pandemic and the impact of the "COVID influences." It is also worth noting that in a separate program review process at the institution while considering the student feedback on course evaluations, the preliminary results of this study (and faculty-led peer review that occurs as a part of

institutional program review), administrators and campus leaders were satisfied that the transition to an asynchronous online program maintained or even exceeded the previous quality of the FTF program. This contradicts criticism found in recent literature, namely that academic leaders, employers, and the public continue to perceive online degrees less favorably than traditional degrees and are skeptical about the quality and value of online education, which they view as inferior to FTF education (Alpert et al., 2016).

This study is bound by a few additional limitations. An instructor's facilitation of community-building requires instructors to take on many roles in their interactions with students. These interactions influence student participation and engagement in the course, actual and perceived learning, course and instructor satisfaction, and program retention. As such, teaching presence was an important construct considered in this study. Given this study's design, it was not possible to understand the contribution of teaching presence to the results as we only qualitatively examined teacher behaviors using the results of the instructor/course evaluations. Certainly, skepticism about the value of student evaluations of teaching as a measurement tool is well documented (Esarey & Valdes, 2020; Hornstein, 2017), and study upon study note mounting evidence of bias in student reviews of instructors and the lack of correlation between student ratings and learning outcomes.

In addition, the absence of statistically significant results on the connectedness subscale of the survey suggests that more examination of the factors that contribute to teaching and social presence is needed. Linking those factors to course design and pedagogy decisions is an area these researchers will embark on next. The low response rate for this survey and the use of a single program in a pandemic year further limit these findings.

The very nature of design-based research, as an approach, is to persist with learning design until it meets the needs of students, and it has thoroughly examined the relationship between the theoretical framework(s) of course and pedagogical design and its impact on students. As such, this study serves as the launchpad for additional research that will continue the exploration of the factors, interactions, and dosage of strategies to foster community, as well as a closer look at teaching presence as a tool to foster community. In addition, future research might explore the rigor of learning measured in this study via other measurement approaches, as this study relied solely on student perception. Replication of this study might highlight how certain conditions unique to the COVID pandemic teaching context impacted the results, like student engagement in optional synchronous class meetings. During the time of this study, these meetings were well-attended, yet recent semesters, we have found that student attendance of these meetings has declined.

The researchers were satisfied that the findings confirmed students' perception that learning was rigorous and of high quality. Building community in online courses requires cognitive, social, and teaching presence. To meet the needs of students, course content must be planned with purposeful instructional strategies that encourage participation in these three areas. Doing so can contribute to student retention, sense of belonging, and program completion. The results of this study show promise that an online asynchronous program can preserve the rigor and program quality of traditional in-person programs and increase student satisfaction, retention, and completion.

Perhaps the most significant takeaway from this study is this: the efforts to enhance online course design and instructional practices helped the researchers embrace the future of online degree programs and delivered the added benefit of providing a sense of stability in the ever-changing world impacted by the COVID-19 pandemic. Beatty (2020) calls this principle "dynamic stability"—the ability to maintain a strategic direction relying on an approach that embraces and plans for potential disruption, necessitating that design and methods be strong and flexible. The course redesign, rooted in research-based instructional design, allowed faculty to nimbly respond to changing conditions and allowed students to learn of and respond to changes readily. Sound two-way communication routines facilitated the chance for instructors and students to co-create needed shifts during the semesters impacted by COVID-19. The embrace of fully asynchronous online courses made it possible for several students to persist in the program even when they shifted to working from home and their children started remote schooling. Many conditions could have contributed to even greater challenges

in fostering student retention in a program during this time, but these initial results exceeded goals set for student retention and contributed, in practical ways, to fostering student belongingness and connection in a time of uncertainty and isolation.

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