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The Power of Choice: Comparing Asynchronous and Synchronous Learning

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Abstract

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Keywords

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Significance to the Public:

As online education becomes more prevalent, understanding the strengths and challenges of asynchronous and synchronous learning can inform the design of more effective and supportive educational experiences. The findings from this study highlight the importance of addressing student anxiety, engagement, and time management, which are issues that extend beyond counselor education to other fields of online learning. Helping meet the educational needs of all students will foster their learning and development, which will ultimately benefit the public.

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The global pandemic resulting from COVID-19 forced higher education to go completely remote (Gallagher & Palmer, 2020). Faculty who only taught face-to-face prior to the pandemic were required to completely shift their teaching modality and style to accommodate online learners. Faculty chose a variety of online instructional approaches, including switching completely to asynchronous instruction where students reviewed lectures and completed readings, discussions, and assignments on their own time; whereas, some faculty chose to hold synchronous lectures during the scheduled course time. For those who have been teaching online prior to the pandemic, asynchronous (delayed interactions) and synchronous (in real time) instruction have both been utilized and found to have successful outcomes in learning (Paul & Jefferson, 2019).

The pandemic resulted in changes to online andragogy and also to the number of online CACREP-accredited counseling programs. In the past few years, there has been a drastic increase in the number of online CACREP-accredited programs. As of October 1, 2020, at the time Li and Su (2021) authored their article, there were 98 CACREP-accredited online programs, and as of November 1, 2024, there were 173 CACREP-accredited online programs (CACREP, 2024). That is approximately a 77% increase in four years. In their study, Li and Su (2021) reviewed 48 articles from 1998 to 2020 to analyze the nature of online learning in counselor education. Of the research studies reviewed, only seven articles were comparative studies, analyzing outcomes of different training modalities. These studies compared online versus face-to-face instruction and flipped to non-flipped classroom instruction. No studies comparing online only instructional modalities were reviewed.

Benshoff and Gibbons (2011) published a conceptual piece providing an example of how to use both asynchronous instruction (Blackboard discussion boards) and synchronous discussion (use of MOO to facilitate synchronous text-based discussion between faculty and students while viewing PowerPoint slides) in an online course. Northey et al. (2015) studied the use of face-to-face instruction alongside asynchronous interactions in the same course. They found students who engaged in both face-to-face instruction and asynchronous learning were more engaged and significantly impacted learning outcomes compared to students who only attended face-to-face classes. Snow and Coker (2020) examined the history of online counselor education. They emphasized that current online counselor education practices include synchronous, synchronous, blended, hybrid, and fully online modalities, and, “specific experiences of online counseling students across the wide variety of delivery methods has not, to these authors’ knowledge, been conducted” (p. 51). This further strengthens the rationale for our current study. The purpose of this study is to compare the learning outcomes of students who chose asynchronous versus synchronous instruction in an online human growth and development counseling course, as well as exploring the opinions and attitudes of students who chose asynchronous versus synchronous instruction.

Online Adult Learning

When designing online courses and instruction modalities, it is important to consider foundational ideas from adult learning theory and online learning. Malcom Knowles (1980) is coined with the idea of andragogy, which is the theory and practice of adult learning. Foundational to adult learning includes the principles of self-direction, collaboration, integrating life experiences, and ongoing assessment to improve the learning experience (Knowles et al., 1984). Self-Directed Learning Theory, primarily developed by Knowles (1975), suggests that adult learners are capable of taking primary responsibility for planning, implementing, and

evaluating their own learning experiences. This theory emphasizes learner autonomy, intrinsic motivation, and the ability of adults to identify their learning needs, set goals, choose appropriate strategies, and assess their own progress. These principles mirror essential elements in counselor training, because we teach students how to self-evaluate and self-supervise (Bernard & Goodyear, 2018), collaborate with clients and other counselors (Gladding & Newsome, 2018), integrate who they are and their life experiences to personalize their counselor identity and approach (Watts, 1993), and assess their work with clients to ensure effectiveness (Gladding & Newsome, 2018). Integrating these andragogical principles into counselor training can help create a more effective and learner-centered educational experience for counseling students.

Transformative Learning Theory is another foundational theory of adult education and is of particular relevance to counselor education. Transformative Learning Theory, developed by Jack Mezirow (1978) with origins in humanism, hypothesizes that adult learning involves a fundamental change in perspective or frame of reference through critical reflection, rational discourse, and reflective action. The theory outlines stages of transformation beginning with a disorienting dilemma and progressing through stages of self-examination, critical assessment of assumptions, and exploration of new roles and perspectives. This theory's emphasis on perspective transformation aligns closely with the personal growth and self-awareness required in counselor training. Counselor educators facilitate the examination and potential transformation of counseling students' own perspectives and assumptions to become effective counselors.

Regarding online learning, there are key components to consider, such as transactional distance, presence in a community of inquiry, and the facilitation of independent learning (Rhim & Han, 2020). Transactional distance refers to the controllable social, psychological, and relational gap between instructors and students that can be minimized with structure, quality dialogue, and meaningful instructor-student interactions (Moore, 1993). Presence in a community of inquiry includes cognitive, social, and teaching presence (Anderson, 2008). Cognitive presence refers to co-constructing meaning through thought exchange with others. This may include questioning, brainstorming, discussing, and problem-solving (Anderson, 2008), all of which can be included in both asynchronous and synchronous online counselor education; however, Rhim and Han (2020) argue that online programs with limited ongoing instructor-student dialogue result in minimal consideration of students' needs, increased transactional distance, and are unappealing and potentially ineffective. Social presence refers to the extent to which students and instructors perceive and experience a sense of connection and social engagement, and this can occur through the sharing of personal feelings, emotions, and questions (Anderson, 2008). Increasing social presence helps decrease feelings of isolation, psychosocial tension, uncertainty, and encourages open discussion and collaboration (Rhim & Han, 2020); therefore, online counseling courses should provide opportunities for ongoing instructor-to-student and student-to-student thought exchange and opportunities to share feelings, emotions, and questions. This can occur through asynchronous discussion boards or synchronous discussions.

Teaching presence refers to instructional design and course facilitation. This can include the organization and presentation of course content, learning activities, chosen assessments, and facilitation of the material (Anderson, 2008). Online counselor education programs present both unique opportunities and challenges regarding instructional design and course facilitation. In some programs, courses are pre-designed, and because of CACREP constraints for addressing standards and assessing Key Performance Indicators (KPIs), instructors lack the freedom to make major adjustments to courses (Abbott et al., 2018). This can lead to instructors feeling less

ownership of their course, feeling like their primary role is focused on grading, and negatively impact their perceptions of creativity and innovation. Conversely, having pre-designed courses helps promote consistency in the educational material received by counseling students and reduces the amount of time for course preparation (Abbott et al., 2018). An additional benefit to pre-designed courses is consulting with instructional design experts to ensure they are built upon adult learning principles that promote collaboration and self-directed learning (Stephens et al., 2022). Effective online counselor educators recognize that adult learners are active and capable learners, and online counselor educators can design learning activities that promote learner autonomy (Rhim & Han, 2020).

Online Counselor Education

There are a number of conceptual pieces written in counselor education regarding best practices, history, and methods of online counselor education. Snow and Coker (2020) reviewed the past, present, and future of technological influence in counselor education. They suggest the future might include the use of avatar, simulations, and gaming to deliver instruction. Wasik et al. (2019) outlined best practices in online counselor education, which include using frameworks like Quality Matters (QN) to standardize course design, including overview, learning objectives, assessment, materials, activities, support, and accessibility. Additionally, they suggest using learning activities that are culturally responsive and appealing to different learning styles. Providing timely and frequent feedback to students with transparent standards and methods of evaluation and building online learning communities are also suggested as best practices in online counselor education.

Numerous studies have been conducted in counselor education demonstrating the effectiveness of online education. Online instruction has been shown to produce positive learning outcomes in clinical skills (Chen et al., 2021), grief counseling (Branco & Scherer, 2023), research (Holmes & Reid, 2017), assessment and diagnosis (Holmes et al., 2020). Branco and Scherer (2023) shared one counselor education program's residency structure that focused on teaching grief counseling skills via online roleplays. Students reported being able to demonstrate empathy and correctly implement a theoretically-driven grief technique.

Koo (2019) studied 15 graduate counseling students' experiences and the effectiveness of synchronous learning, including synchronous chats, video conferencing, and virtual office hours. They found six emerging themes, including that all synchronous learning (i.e., chats, video conferencing, and office hours) were effective in facilitating learning and engagement. The exception to this is that participants reported that synchronous learning methods were ineffective for group counseling and supervision, and they suggested that video conferencing was inept at capturing group dynamics.

Comparative studies in counselor education focus on comparing online to face-to-face instruction, but the research is minimal comparing online only instruction, i.e., asynchronous to synchronous modalities. Holmes et al. (2020) compared learning outcomes and social presence among face-to-face versus asynchronous courses. The courses involved in the study were the same classes (i.e., Introduction to Mental Health Counseling, Introduction to Rehabilitation Counseling, Assessment in Counseling, and Diagnosis and Treatment of Mental Health Disorders) at the same university, but students chose to take the course either face-to-face or online. They found no significant differences in learning outcomes of pre- and post-test scores between face-to-face and online students; however, it is worth noting there was a difference in social presence with the face-to-face group reporting a higher total social presence score than

online students. Holmes and Reid (2017) used a pre-test, post-test design to compare the performance of students in an online versus face-to-face counselor education research methods course taught by the same instructor at the same university and found no significant differences in learning, nor were there any significant differences in mean course ratings on summative course evaluations.

Rhim and Han (2020) suggest that to decrease transactional distance, facilitate independent learning, and to promote cognitive, social, and instructional presence, online educators should use a combination of both synchronous and asynchronous instructional experiences. Vargas and Zandarski (2023) used a flipped course design where students completed readings, quizzes, and the final exam asynchronously. Then then used synchronous meetings to allow students to work together in groups on a major project (i.e., building a comprehensive school counseling program with guidance lessons) and present a guidance lesson. Students reported the flipped classroom design was helpful, allowed for more time for discussion, was a good use of time, and having the lectures pre-recorded provided the opportunity for students to re-watch and relearn any concepts they found difficult. Benshoff and Gibbons (2011) used Blackboard to facilitate asynchronous discussions, while using MOO software to facilitate in real-time PowerPoint presentations and synchronous text discussion. They reported that using synchronous chatting allowed for more consistent, ongoing participation from a greater number of students than face-to-face teaching and also allowed students to have more input into the pacing and depth of the material presented because of their ongoing input. Chen et al. (2021) used asynchronous instruction (i.e., readings, recorded lectures, skills demonstrations, and weekly reflections) in conjunction with synchronous 2-hour daily Zoom meetings to demonstrate skills, conduct roleplays, and facilitate triadic skills practice groups while providing feedback. They found by the end of the 8-week semester students on average performed at the required level clinically needed to pass the course (i.e., $M = 3.62$, $SD = 1.53$ on the CCS-R).

Online instruction can produce similar learning outcomes in a variety of areas in counselor education, and it is beneficial to offer both synchronous and asynchronous learning; however, some students, such as nontraditional students, prefer to forego synchronous offerings because of their busy schedules and inability to meet at a set time. In other words, asynchronous learning is more flexible and amenable to diverse individuals with many competing demands (St. Amour, 2020). Offering a choice between asynchronous and synchronous learning in counselor education can better accommodate diverse adult learners who are trying to fit their educational goals around their busy lives; however, it is important to examine whether those students who participate in synchronous learning experience advantages to students who participate in asynchronous learning, as well as other student opinions and attitudes towards asynchronous versus synchronous learning.

Methodology

In this study, we used an explanatory sequential mixed-methods design (QUAN to QUAL; Sheperis et al., 2024). During Phase 1, we collected data of the number of synchronous learning activities completed, the number of asynchronous learning activities completed, and scores on a comprehensive final project. During Phase 2, we collected and analyzed data from open-ended surveys to recognize patterns across students' attitudes between asynchronous and synchronous instruction. We chose explanatory sequential mixed-methods design to allow for a detailed exploration of both the quantitative outcomes (such as the number of learning activities

completed and final project scores) and the qualitative insights (students' attitudes towards asynchronous and synchronous learning). This approach enabled us to first quantify student performance and then follow up with open-ended surveys to better understand the underlying reasons for the patterns observed in the data, providing a more comprehensive and nuanced understanding of the research question (Wester & McKibben, 2019). The study was approved by the institutional review board.

Participants

We used Cohen's (1992) power analysis table to calculate the necessary sample size for a large effect size at an alpha level of .05 at 80% power for a one-way ANOVA: N = 54. Prior to finding out our data violated assumptions of normality, we planned to use an ANOVA to compare groups and chose a large effect size for two reasons: 1) we measured outcomes immediately after students completed the course, and 2) the sample represented a specific population (Regional Educational Laboratory West, 2021). We attempted to recruit at least 60 participants to account for attrition, but our final participants consisted of 53 Master's level counseling students enrolled in Advanced Human Growth and Development courses across two semesters. Table 1 includes participant demographic data. Regardless of whether students volunteered for the study, they had to complete the required course's weekly activities and final project; however, only the data of those who consented to participate were included in the study.

Table 1

Participant Demographic Information (N = 53)

Demographic Category	Total (*n*)	Percentage
Gender		
Female	40	75.5
Male	12	22.6
Transgender	1	1.9
Race/Ethnicity		
American Indian or Alaskan Native	2	3.8
Asian	1	1.9
Black or African American	4	7.5
Hispanic or Latinx	3	5.7
White	42	79.2
Biracial or Multiracial	1	1.9

Phase 1

Data Collection

We used nonprobability convenience sampling to recruit participants. The PI, who was also an instructor for the course, posted an announcement in the course informing students of the study. An informed consent document was posted in the course for students to complete if they wished to participate in the study. Each week participants chose to attend either a synchronous class via Zoom or complete an asynchronous discussion board. The research question guiding

Phase 1 was: Is there a difference among asynchronous and synchronous groups on Final Project Scores? The number of asynchronous discussions was tracked in the course's learning management system, Moodle, and consisted of students completing discussion boards of a case study where they applied the developmental theories and content from that week to the assigned case study. Attendance of synchronous class meetings was tracked in Moodle and consisted of students attending class and participating in breakout rooms to apply developmental theories and content from that week to the assigned case study. The discussion questions in the asynchronous discussion boards were identical to those used to guide discussion in the synchronous breakout rooms. Students completed a final project, i.e., Developmental Case Study, where they applied all of the developmental theories from the class to a chosen character from a movie, television, books, or popular culture. The case studies were downloaded from Moodle. The PI and instructor of the course assigned pseudonyms to all participants to track asynchronous activities, synchronous activities, and final project scores. Both the instructor and a graduate assistant scored all final projects according to a rubric, and the PI de-identified all projects before scoring.

Statistical Analyses

We assessed assumptions prior to data analysis. Group 1 violated the assumption of normality and groups 4 and 6 contained identical values, so there was no variation in the data. Due to the violations of normality and small group size, we elected to use a nonparametric Kruskal-Wallis H test (Corder & Foreman, 2014). Before data analysis, a visual representation of data was examined from a box and whisker plot to determine outliers, and those cases were deleted. Because there were two raters for the final project, we calculated an intraclass correlation coefficient (ICC) of .694, which is an acceptable score for rater agreement (Cicchetti, 1994); therefore, we averaged the scores from both raters creating a Mean Final Project Score. We created seven groups based on the number of asynchronous and synchronous activities completed. One group had only one case so it was deleted, resulting in six groups.

Data were imported into SPSS for analysis. A Kruskal-Wallis H test was conducted to compare synchronous and asynchronous groups on Mean Final Project Scores. The results of the Kruskal-Wallis H test indicated that there were no significant differences between the groups, $H(5) = 4.86$, $p = 0.434$, with a mean rank score of 32.20 for Group 1, 21.5 for Group 2, 27.89 for Group 3, 23.75 for Group 4, 25.5 for Group 5, and 10.25 for Group 6. To provide additional context regarding the general distribution and variability of scores in each group, the means and standard deviations for groups are provided in Table 2.

Table 2

Groups Means and Standard Deviations

Groups	# of Async	# of Sync	M	SD
1	1	4	92.000	6.481
2	2	3	89.267	5.895
3	5	0	91.278	5.585
4	3	2	91.750	1.061
5	4	1	91.200	4.604
6	1	3	90.000	4.243

Phase 2

All students who participated in Phase I were invited to participate in Phase II of the research study using convenience sampling, and they all accepted. All students were invited in order to allow for a comprehensive understanding of the research questions to determine how the quantitative results are reflected in the qualitative themes (Wester & McKibben, 2019). Including all participants also strengthened the complementarity of clarifying the quantitative results with the qualitative findings. The research question guiding Phase 2 of the study was: What are the opinions and attitudes of online counseling students towards synchronous and asynchronous learning?

Data Collection

Six open-ended survey questions were created based on relevant literature and the preliminary results from Phase I. The literature review helped identify key themes and concepts related to students' attitudes towards asynchronous and synchronous instruction to ensure the questions were grounded in existing research. The Phase I results informed the specific areas of inquiry, with the intent that the answers to these questions would provide deeper insight into the patterns observed in students' preferences and attitudes towards different learning formats. After students had completed all of their work for the course, including their final project, students were asked to complete the Qualtrics survey by following a link in their Moodle course. The data were exported from Qualtrics into Microsoft Word tables, and a copy was provided to each member of the coding team.

Qualitative Data Analysis

The three authors comprised the qualitative coding team. One team member was a counselor educator who taught the course and the other were graduate assistants who had both already completed the course. Prior to engaging in the coding process, all team members reviewed journal articles and instructional videos related to thematic analysis to ensure a consistent understanding of methodology. The team met prior to analysis to review and discuss the thematic analysis process that would be used in this study.

We selected thematic analysis as our method of analyzing the data due to its inductive nature, which aligned to our exploratory goals of Phase 2 of the study. Because each participant provided a unique perspective regarding their opinions towards asynchronous and synchronous learning, thematic analysis allowed us to capture a wide range of insights while maintaining the complexity of individual voices (Braun & Clark, 2006). Participants included diverse characteristics, such as full-time workers, parents, full-time students, students who lived at home with their parents, etc. This diversity reinforced our choice of thematic analysis, as it enabled us to examine various dimensions of the data without imposing preconceived categories on the responses.

Step 1: Familiarization with the Data. The first step in the analysis was for the team to thoroughly familiarize ourselves with the dataset. Each team member independently read and re-read the responses multiple times to gain an in-depth understanding of the content. During this stage, we focused on the meanings and nuances conveyed by the participants, as well as any initial patterns or recurring ideas.

Step 2: Initial Coding and Categorization. We then proceeded with the open coding process, identifying and labeling significant segments of data. Open coding allowed us to stay close to the participants' words, which we referred to as in vivo codes. These descriptive codes were directly drawn from participants' responses and captured specific details about their experiences with asynchronous and synchronous learning. Once the open coding was complete,

we moved to axial coding to group the open codes into broader categories. Axial coding allowed us to look for relationships between the initial codes, identify emerging patterns, and begin organizing the data into higher-order concepts. We discussed these categories as a team, focusing on how the different codes related to one another and to the research questions.

Step 3: Development of Preliminary Themes. Each coding team member independently reviewed the dataset again, now focusing on grouping the initial codes into preliminary themes. These themes represented clusters of related codes that captured the essence of participants' experiences. We used constant comparative methods to refine the themes, comparing codes across the dataset and ensuring that the themes were consistently supported by the data. This iterative process helped ensure that the themes were grounded in the data and were not prematurely formed. We met regularly to compare our findings and discuss any discrepancies or differences in the themes we had developed. During these discussions, we refined the initial themes by merging related themes and splitting broader themes into smaller, more focused ones. This ensured that each theme accurately reflected the participants' perspectives.

Step 4: Defining and Labeling Themes. Once we reached consensus on the preliminary themes, we moved on to the next phase: defining and labeling each theme. This step was integral for clarifying the specific focus of each theme. We revisited the raw data, looking for representative quotes that captured the essence of each theme. These quotes, known as exemplars, served to illustrate the key ideas within each theme and ensured that the themes were consistently linked to the participants' own words. The process of defining and labeling the themes also involved refining our understanding of each theme's scope and its relevance to the overall research question. We sought to make each theme distinct and meaningful and that each one conveyed a clear aspect of students' attitudes and preferences toward the learning formats.

Step 5: Finalizing Themes and Writing the Narrative. After finalizing the definitions and labels for each theme, we mapped the themes to visualize how they related to one another. We created a thematic map that charted out the main themes and their corresponding subthemes. We also organized the supportive quotes for each theme to guarantee that we had sufficient evidence to support the narrative. Finally, we wrote the thematic narrative, integrating the themes into a coherent story that captured the full range of student experiences. We carefully aligned each theme with the data and the research questions, and we confirmed that the themes reflected the diversity of perspectives in the dataset.

Trustworthiness

We established trustworthiness through credibility, dependability, and confirmability (Lincoln & Guba, 1985). To ensure credibility, we used multiple coders who analyzed the data separately. Afterward, we met to compare and discuss our interpretations to guarantee a shared understanding and consensus. This process helped to mitigate individual biases and make sure that different perspectives were integrated into the final analysis. Additionally, we engaged in member checking, where findings were shared with participants to confirm that our interpretations were consistent with their experiences. Feedback provided from member checking revealed overwhelming consistent interpretations with participants' experiences.

Regarding dependability, the PI meticulously documented all steps, decisions, and procedures during the analysis process. This included recording any revisions, adjustments to the analysis framework, and changes made in response to new insights or feedback. We also kept an audit trail to provide a clear and traceable record of our decision-making processes, interpretations, and reflections. This also included any revisions to the coding structure and

thematic development. This level of detail ensured that the analysis could be replicated and verified by others.

To further guarantee confirmability, we also employed an external auditor that was not affiliated with the study nor institution to review our analysis process. This third-party reviewer provided an unbiased perspective on the rigor and integrity of the findings. The auditor reviewed the coding process, themes, and interpretations and offered feedback regarding how the process, themes, and interpretations aligned with raw data. One example of feedback provided included ambiguity around student motivation and student engagement. The auditor suggested clarifying the distinction between the two codes to make sure underlying concepts were considered when creating themes.

Additionally, we engaged in ongoing self-reflection in our meetings where we reported and discussed biases. One example is that the PI was the instructor for the course and had to work through analyzing data that might not be favorable regarding the course instruction and design. The PI worked to ensure that personal biases did not influence the interpretation of data by being transparent about any potential conflicts of interest. These reflections were documented in the audit trail to guarantee transparency and minimize the impact of any subjectivity on the findings.

Findings

Four themes emerged based on our data analysis: (a) better understanding; (b) advantages and barriers; (c) anxiety; and (d) priorities and time considerations with the subtheme of connection emerging in themes of (a) better understanding and (b) advantages and barriers.

Theme 1: Both asynchronous learning and synchronous activities facilitated increased learning but of different things and in different ways. When attending the Zoom classes and participating in the synchronous discussion, participants reported they learned more about the course material through interacting with other students, being able to see different perspectives, and adapt their thoughts about a subject in real-time. Participant 25 shared, “I think hearing different opinions and discussing in real time opens one's mind to aspects of the material that would not be considered otherwise,” and Participant 27 stated, “I believe that students do learn better in real time discussion because questions or concerns may come up in real time that can be answered immediately. I also think that hearing from our peers helps us to bounce ideas off of each other that may give us a new perspective that we did not think of before.” Additionally, participants expressed an increased understanding of the assignments for the class because they were able to ask the instructor questions in real-time and follow-up with questions until they gained clarity. They also mentioned they had a better understanding of their peers’ communication intentions through being able to read their tone and other nonverbals when they shared something, which led to better connection with peers.

When completing asynchronous case study discussion boards, they expressed asynchronous learning improved their writing skills, research ability, and APA formatting, and they were also able to form more developed answers to the discussion questions. Participant 25 shared that completing asynchronous discussions required them “to explore the material more deeply and read and analyze additional sources,” while Participant 42 stated that asynchronous discussion “requires technical writing and citations of scholarly articles so it pushes you to work on those skills more.”

Theme 2: Both asynchronous and synchronous learning had advantages and barriers to learning. The term *barriers* was chosen over disadvantages because very few students reported disadvantages to synchronous learning, but they did report barriers that

kept them from participating. Participants expressed that advantages to synchronous learning included real-time learning through interacting with peers and the instructor, improved communication with both the instructor and peers, deeper connection and bonding with classmates that lasted beyond just this class, collaboration in small groups, receiving additional support from peers, and they found synchronous class meetings less time consuming than completing asynchronous discussions. Participant 14 stated, "When I attend synchronous classes, I make more friends and connections that continue after the class is over. Also, when it comes to dense subject matter, it is sometimes very helpful to hear the professor explain it live." Participants reported that advantages in asynchronous learning included an allowance for independent learning that was self-paced, and it provided flexibility for when students could complete their work. It was easier to complete on their own time for students who had competing obligations and busy schedules.

Participants pointed out that barriers to synchronous learning included access to internet, distractions at home or work, having time to prepare for the Zoom class, and finding a time everyone could meet during the week. To note, synchronous attendance is not required in this course, so there was no scheduled time to meet prior to signing up for the course. Additionally, feeling socially burnt out or physically drained and not wanting to exert the energy needed to participate in synchronous discussion was another barrier. For example, Participant 41 shared, "I am currently pregnant so sometimes I'm too exhausted from the day to log into Zoom, and Participant 14 stated, "When I come home from my job, where I have to be social and talkative all day, I do not really want to sit before the wall of faces on Zoom." Participants also identified barriers in asynchronous learning, which included a lack of collaboration and interaction with other students, boring, redundant, one-dimensional learning, more time consuming, being unsure of instructor and peer's tone in communication, and if they found the instructions confusing, then they could not ask questions.

Theme 3: Both asynchronous learning and synchronous learning produced anxiety for students, but it manifested differently. Participants mentioned they felt anxious about speaking up in class when attending synchronous classes, both in breakout rooms and in the whole-class meeting room. Participant 36 stated, "Breakout rooms give me anxiety" and Participant 56 shared, "I feel slight anxiety on large Zoom calls, more than that I would feel in a live classroom." However, for many participants, completing asynchronous discussions also produced anxiety. Participant 30 expressed, "I think sometimes I might have gotten in my own head about them and not been sure if what I was writing about really showed I understood the course material." Participant 43 shared, "It is hard to feel confident in submitting work because I never know if I am understanding the questions correctly." There was one dissenting voice, and Participant 5 specifically stated they found asynchronous discussion less anxiety provoking than synchronous discussions.

Theme 4: Priorities and time considerations seemed to mediate a student's choice for completing their learning asynchronously or synchronously with the preference being for synchronous learning when possible. Participant 16 shared completing asynchronous discussions enabled them "to work around childcare," and Participant 27 expressed, "The challenges are working around everyone's schedule. Although I do find it easier to learn this way, I would have been in a tough situation if all classes were mandatory since my work would not have allowed me to attend that specific time." Participants expressed they often chose synchronous learning because it was less time consuming compared to completing discussion boards; however, if they did not have the time to prepare before synchronous classes, by

reviewing class materials or finding additional literature for the discussion, then they would choose to complete the discussion boards.

Overwhelmingly, students preferred synchronous learning over asynchronous discussion, e.g., “I preferred the Zoom classes over the discussion boards” (Participant 22). Reasons for this preference included “I learn more by conversations rather than writing” (Participant 15), “I better understood course material when discussed in small groups rather alone” (Participant 17), and “it was more enjoyable for me to interact with my classmates live” (Participant 13). Whenever students could not attend live sessions because of their schedules, they expressed disappointment, e.g., “I wish I could have attended more zoom classes because it does help me to learn better” (Participant 27).

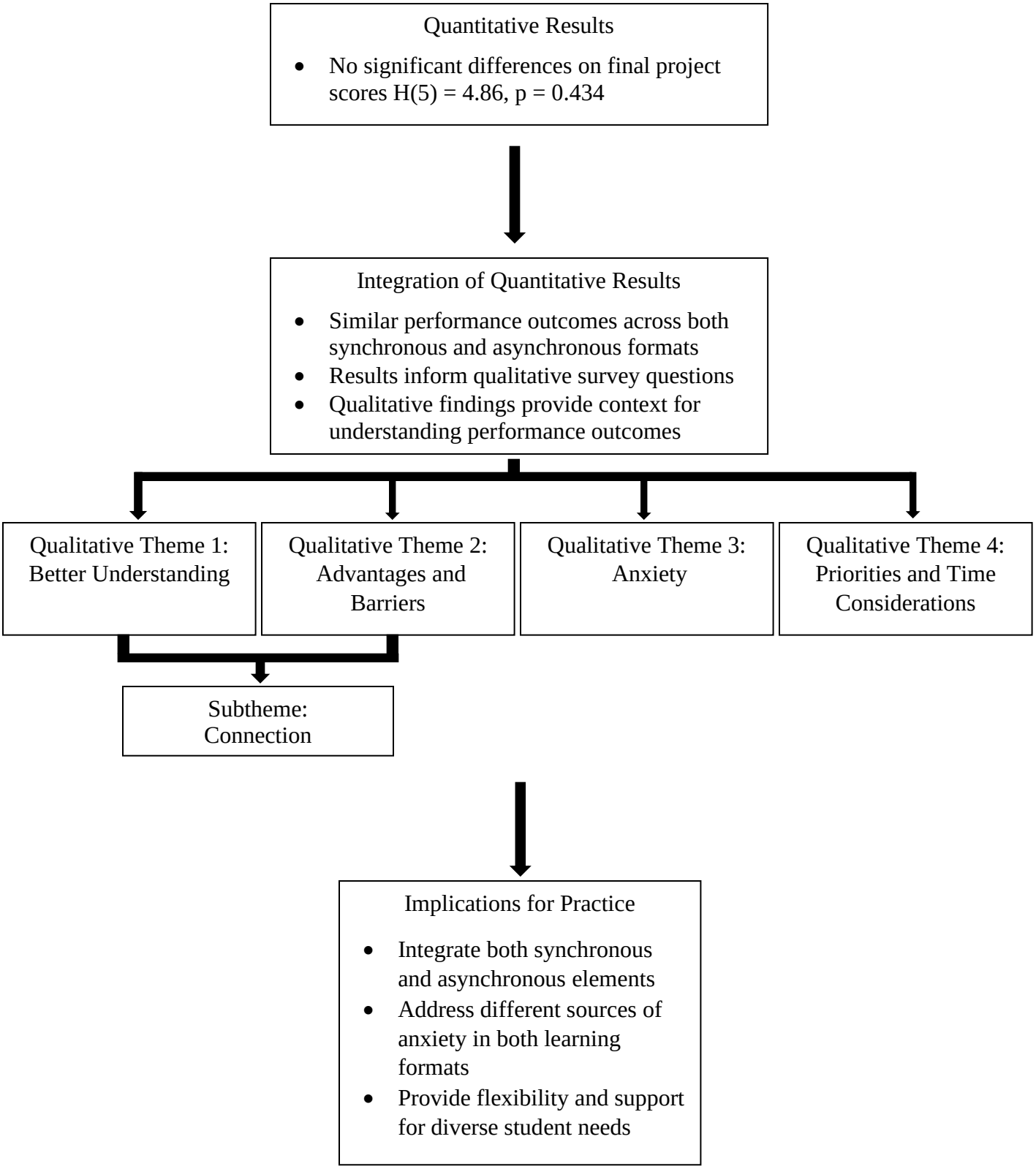
Mixed Methods Data Integration

The integration of quantitative and qualitative data from Phase I and Phase II offers a richer understanding of the research questions. Figure 1 provides a visual representation of the mixed methods data integration. Several data points of integration of quantitative and qualitative data were used to offer a deeper understanding of the research questions (Fetters, 2019). The quantitative data from Phase 1 was used to develop the open-ended survey questions for Phase 2. Regarding data analysis, the qualitative data provided context for the lack of significant differences found in the quantitative analysis. While the quantitative results indicated no substantial impact from the type of learning (asynchronous versus synchronous) on final project scores, the qualitative findings revealed nuanced preferences and experiences. For example, although students’ final project scores did not significantly differ, their qualitative responses highlighted a clear preference for synchronous learning due to its interactive and immediate nature.

The themes identified in Phase 2, such as the increased understanding and preference for synchronous learning, helped explain why the quantitative analysis did not reveal significant differences. Students reported better understanding and engagement in synchronous sessions, which may not have directly translated into higher project scores but it did highlight a preference for the synchronous learning experience. The qualitative data also identified areas of divergence, such as the anxiety associated with both learning modalities and the time constraints influencing students' choices. These insights provide a more comprehensive view of the factors impacting students' learning experiences beyond just their academic performance.

Figure 1

Explanatory Sequential Mixed Methods Data Integration



Discussion

The goals of this study included assessing whether asynchronous versus synchronous learning significantly impacted student outcomes and to evaluate students' attitudes towards asynchronous and synchronous learning. The quantitative results revealed that there was no significant difference in academic performance on final projects when comparing the number of asynchronous and synchronous activities completed, suggesting that both asynchronous and synchronous formats were equally effective in producing outcomes on the final project. Determining whether to use asynchronous discussions versus synchronous live classes could be more related to instructor preference and student preference (Boulden et al., 2022) than student outcomes. This idea was supported with qualitative findings when students expressed preference for synchronous over asynchronous learning. Instructors have preferred teaching styles, activities, methods, and assignments they believe are most effective in teaching counseling content, and their familiarity and comfortability with instructional media may influence their choice of asynchronous or synchronous learning. Students have preferences aligned with their individual learning styles and needs. Although one might assume that aligning an instructor's teaching style with student preferences would enhance learning outcomes, a study by Dziuban et al. (2018) suggests that effective instructional design for online courses may have a greater influence on student outcomes and course ratings than simply catering to student preferences regarding delivery mode.

Another explanation is that the lack of significant difference could be related to engagement rather than specific learning modality. Martin and Bolliger (2018) found that online graduate students reported that learner-instructor interactions were the most important in fostering course engagement. This suggests that student-instructor interaction, regardless of modality, could lead to stronger engagement, understanding, and overall performance on the comprehensive final project. Given that engagement, rather than modality, may play a larger role in student outcomes, it is important for instructors to intentionally design both synchronous and asynchronous learning environments to maximize student-instructor interaction. Implementing interactive activities such as virtual office hours, asynchronous video discussions, and real-time feedback during synchronous sessions can foster stronger engagement, regardless of the delivery method.

The majority of students preferred and chose synchronous learning if their schedules allowed it. Synchronous learning seemed to foster deeper engagement and connection among students and instructors. Factors contributing to increased engagement and connection included real-time interaction, peer collaboration, and immediate feedback. If counselor educators choose to use asynchronous learning as their primary strategy, then they will want to look for ways to promote similar levels of engagement as through synchronous learning, because social connection is integral to student comfortability working with others and their ability to give and receive feedback (Snow et al., 2018). Holmes et al. (2020) suggest using a Community of Inquiry framework to increase social presence, which could include integrating podcasts, websites, discussions, simulations, and asynchronous video applications such as YouTube and voice thread into the online, asynchronous classroom. Leveraging instructor video feedback and video discussion boards can also be helpful because students can read their peers' and instructor's tone and nonverbals, which participants reported that better understanding of their peers' and instructor's communication promoted better connection.

The findings of this study indicate that anxiety is a significant factor in both asynchronous and synchronous learning environments. Fear in online counselor education can be

greater than fear in face-to-face learning (Davis, 2019). Although anxiety is exacerbated for individuals experiencing social isolation (Wang, 2023), synchronous learning, which promoted more connection among students, also produced anxiety when it came to speaking up in class. To mitigate anxiety, instructors could implement low-stakes, asynchronous introductory activities that allow students to introduce themselves through video or written reflections. Additionally, providing clear guidelines and expectations for synchronous participation can help reduce anxiety by ensuring students feel more comfortable and prepared when speaking up in real-time.

Online education has historically been geared towards nontraditional students; however, it has become increasingly popular for all types of students, especially with changes resulting from COVID-19. Offering a choice between either synchronous or asynchronous activities when appropriate can accommodate the needs of diverse learners (St. Amour, 2020); however, the achievement gaps between white students and students of color not only seem to mirror those gaps present in face-to-face learning, but they are exacerbated in an online learning environment (Tate & Warschauer, 2022). Participants reported time constraints and social burnout as factors preventing them from wanting to engage synchronously in the class. If students had more external demands, such as work and caregiving responsibilities, they may face greater challenges in allocating time for synchronous learning. This could create inequities for students who are unable to attend synchronous sessions versus those who are able. Counselor educators can provide flexible learning options to address inequities, such as recorded lectures for asynchronous learning, flexible deadlines, and alternative ways to demonstrate understanding (e.g., written responses or video submissions). These flexible options can help accommodate students facing time constraints and social burnout.

Tate and Warschauer (2022) suggest looking beyond just physical constraints (e.g., internet access, working computer, etc.) and consider how social inclusion might contribute to inequity in online learning. Affluent, white students tend to have more social resources, which can contribute to higher levels of engagement (Tate & Warschauer, 2022). Counselor educators will want to be responsive, provide individual coaching to students, clear course organization, and empathy, as well as look for institutional resources to promote equity for students experiencing time constraints and social burnout (Tate & Warschauer, 2022). Ensuring that students have access to support services, such as counseling or peer support groups, can help alleviate the social challenges that contribute to engagement inequities.

Additionally, the type of content being learned might also dictate whether synchronous or asynchronous course delivery is warranted. For example, if students are practicing counseling skills or interventions, then synchronous courses could be more beneficial or at least preferred by students (Boulden et al., 2022). These simulated counseling sessions allow for immediate feedback and practicing the use of essential counseling skills, such as active listening, reflections, empathy, and rapport building. Instructors can observe these skills in a dynamic and interactive synchronous class.

Additionally, the qualitative findings from this study suggest that using synchronous learning to build connection (Singh et al., 2022) and foster empathy to see diverse perspectives (Vann, 2017) could be particularly effective for counseling students. However, asynchronous learning can foster greater development in research ability, text analysis, writing skills, APA formatting, and meta-cognitive processes requiring students to dive deeper into the material (Varkey et al., 2023). This suggests that both asynchronous and synchronous learning can be beneficial and serve a purpose in online counselor education. A combination of asynchronous and synchronous activities, or virtual flipped courses, might also be beneficial and lead to higher

rates of self-efficacy and engagement (Mason et al., 2022). To maximize the benefits of both asynchronous and synchronous learning, counselor educators could consider implementing a hybrid or flipped model where core content is delivered asynchronously (e.g., lectures or reading) and in-class synchronous sessions focus on active learning, case discussions, skill-building exercises, or peer feedback. This combination would allow for flexibility while ensuring that students can benefit from both modes of learning.

Limitations

There were several limitations in this study. One major limitation was that we did not study other factors contributing to success in learning outcomes, such as student and instructor factors and behaviors (e.g., level of engagement). For example, some students might put more effort into readings and reviewing course material than other students, and this could influence their academic achievement in the course beyond type of instruction. In other words, does a student's level of effort, priorities, or intellectual ability impact outcomes regardless of whether the learning is asynchronous or synchronous? We also did not analyze instructor behaviors and how they might influence learning and engagement, which are important considerations in online learning (Martin & Bolliger, 2018).

There were several limitations related to study design. The PI was both a researcher and the instructor for this course. This introduces potential bias in data collection and analysis. Additionally, there was sampling bias for both phases, because all participants came from one university across two semesters of the same course with the same instructor. The use of a single-institution sample was a considerable limitation. It limits the generalizability of our findings to other institutions. It is possible that student and instructor behaviors, institutional culture, resources, and policies vary among differing institutions. Additionally, the demographics and academic backgrounds of students at one institution may not represent the diversity of students across a broader range of universities, especially those in different regions or with varying institutional missions. While the sample allowed us to gather rich, context-specific data, this narrow scope may mean that the findings cannot be easily applied to other contexts, such as institutions with different student populations or educational models.

Although we accounted for these things by instituting a coding team and other trustworthiness procedures, quantitative results are limited in their generalizability and qualitative findings are limited in their transferability. The focus on a single institution means that the impact of asynchronous and synchronous learning formats on student outcomes might differ in institutions with distinct teaching methods, resources, or institutional priorities. For instance, a university with a stronger emphasis on student support services may see different results in terms of engagement and outcomes than one with fewer resources dedicated to student support.

Additionally, there was no control group for this study, which could have bolstered the support for the lack of differences in outcomes being directly related to asynchronous or synchronous learning. Without a control group, it is difficult to rule out other factors that might influence learning outcomes, including those related to institutional practices or variations in course delivery between different instructors.

All students who participated in this study chose to complete their education online. They may already prefer online learning and report more favorable findings and opinions towards both synchronous and asynchronous learning and could potentially bias the findings. Further, the choice of a single institution's online courses means that the characteristics and preferences of

students at that particular institution were likely overrepresented in the data. For example, students at one institution may have more access to online learning resources or may have had more experience with online learning, leading them to hold more positive views on the format than students at other institutions with less robust online infrastructures.

Also, only one method, i.e., completing surveys, was used for gathering the qualitative data. This data was all through self-report, which could also have response bias. Considering alternative methods for gathering data, such as interviews or observations, could enhance the study design and contribute to a great understanding of student perceptions.

Implications and Future Research

There are several implications for counselor education and research. Adult learners are capable of independent, self-directed learning and making decisions about what is best for them regarding their education (Knowles & Associates, 1984). The results from this study indicate that students have clear opinions and preferences when it comes to online learning modalities, with most preferring synchronous learning; however, time constraints and competing demands did not always allow for students to attend synchronous classes. Offering choices and empowering adult learners in counseling programs can foster autonomy and self-evaluation. O'Halloran and Delaney (2011) suggest one way to do this is through the use of learning contracts, which are agreements between an adult learner and instructor outlining the nature of the relationship, learning objectives, assignments, and evaluation procedures. Learning contracts are empowering for adult learners because they encourage facilitation and support from the instructor rather than authoritarianism (O'Halloran & Delaney, 2011).

There were several studies comparing face-to-face instruction with online instruction (Li & Su, 2021), but the empirical research was lacking examining different strategies and andragogy within online counselor education instruction only. By further studying and comparing the outcomes of asynchronous, synchronous, or virtual flipped classrooms, counselor educators will gain a better understanding of how to intentionally use these formats to instruct and facilitate learning of specific counseling concepts and skills. The results from this study demonstrate that asynchronous activities might be better suited for facilitating research, writing, and analysis and synthesis of literature; whereas, synchronous activities produced greater understanding of the course material, increased perspective-taking, and promoted connection among students.

The results of this study suggest that anxiety plays a notable role in both asynchronous and synchronous learning. This anxiety could be exacerbated in larger class settings, which are common in online learning settings, and even further gaps for diverse students. First generation students in larger classes are less likely to talk with their instructors about class-related questions, and Black and Latinx students are less likely to talk to their instructors about career-related questions (Beattie & Thiele, 2016). Counselor educators can consider intentionally alleviating anxiety about speaking up in class through using interventions, such as an elaborated imagined contact intervention (Malott et al., 2022) or cognitive restructuring techniques (Fitch & Marshall, 2002).

There are many suggestions for future research based on the findings of this study. This study represented students' experiences from one university in one course with one instructor. Replicating this study across differing counselor education courses, universities, and instructors is one suggestion for future research. Potentially, the outcomes, opinions, attitudes could be influenced by the instructor's teaching style and course content, so replicating the study can help

increase transferability. Future research could investigate how different teaching approaches or instructor behaviors influence engagement and learning outcomes within these modalities. For instance, how might specific teaching behaviors, such as the frequency of feedback or the use of group work, impact student engagement in synchronous versus asynchronous formats? A better understanding of instructor behaviors could help counselors tailor their teaching to more effectively meet students' needs across different learning environments.

Another suggestion for study is to focus in on instructor behaviors in asynchronous versus synchronous courses and examine to what extent those behaviors rather than learning modality influence engagement and understanding. Research could explore the role of feedback frequency, interactivity, and instructor responsiveness in fostering engagement and student satisfaction in these two modalities. Understanding how different instructor behaviors may impact students' experiences would contribute to refining instructional strategies.

As technology continues to evolve, conducting longitudinal studies to assess changes over time in students' attitudes and experiences engaging in synchronous and asynchronous learning is another area for future research. The COVID-19 pandemic is an example of a historical event that greatly influenced the online education landscape, so future events or technological advances may also impact student preferences and attitudes. These longitudinal studies could explore how student preferences for online learning modalities change over the course of their academic careers or in response to societal shifts. For example, do preferences for synchronous or asynchronous learning evolve as students advance through more advanced stages of their education, or do life factors like employment or family influence these preferences over time?

Additionally, investigating the role of emerging technologies, such as artificial intelligence and virtual reality, and their use in online counselor education is another suggestion for future research. Counselor educators can explore innovative approaches to integrating technology in the online classroom and study to the extent these technologies address the diverse needs and preferences of online counselors-in-training. Researchers could examine the integration of virtual reality (VR) to simulate counseling practice and the use of artificial intelligence (AI) in providing personalized learning experiences. Exploring these innovations could open up new ways to enhance both synchronous and asynchronous learning experiences for counselor students, especially when it comes to practicing skills like active listening or empathy in a virtual setting.

Another area to be further explored is comparing the effectiveness of different instructional strategies on specific counseling knowledge and skills outcomes, as well as student engagement and satisfaction. For example, a counselor educator could compare asynchronous, synchronous, and virtual flipped modalities and how the instructional techniques and activities in these courses impact counselor skill development, treatment planning, theoretical conceptualization, and/or overall student engagement and satisfaction. The results can inform sound instructional design, while also increasing student engagement and satisfaction.

Conclusion

We conducted an explanatory sequential mixed-methods study to create a comprehensive understanding of student outcomes and attitudes towards asynchronous versus synchronous learning. Recognizing limitations in the number of participants and course homogeneity, we decided to incorporate qualitative data alongside quantitative measures to provide a more holistic view with mixed-method analysis. We used a multifactor research design in Phase 1, assessing

the impact of asynchronous and synchronous activities on final project scores among Master's counseling students. Despite the absence of significant differences between groups, the qualitative insights from Phase 2 revealed four prominent themes, including student's preference for synchronous learning, the advantages and barriers to asynchronous and synchronous learning, how asynchronous and synchronous discussion contribute to learning and anxiety, and the role of priorities and schedules on choice. The results suggest the choice between synchronous and asynchronous instruction might be more related to instructor and student preferences and behaviors than academic outcomes, emphasizing the need for flexibility and varied approaches to meet the diverse needs of counseling students. However, limitations in study design and failing to account for the influence of student factors beyond instructional type warrant further exploration.

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