Currents

In Teaching and Learning

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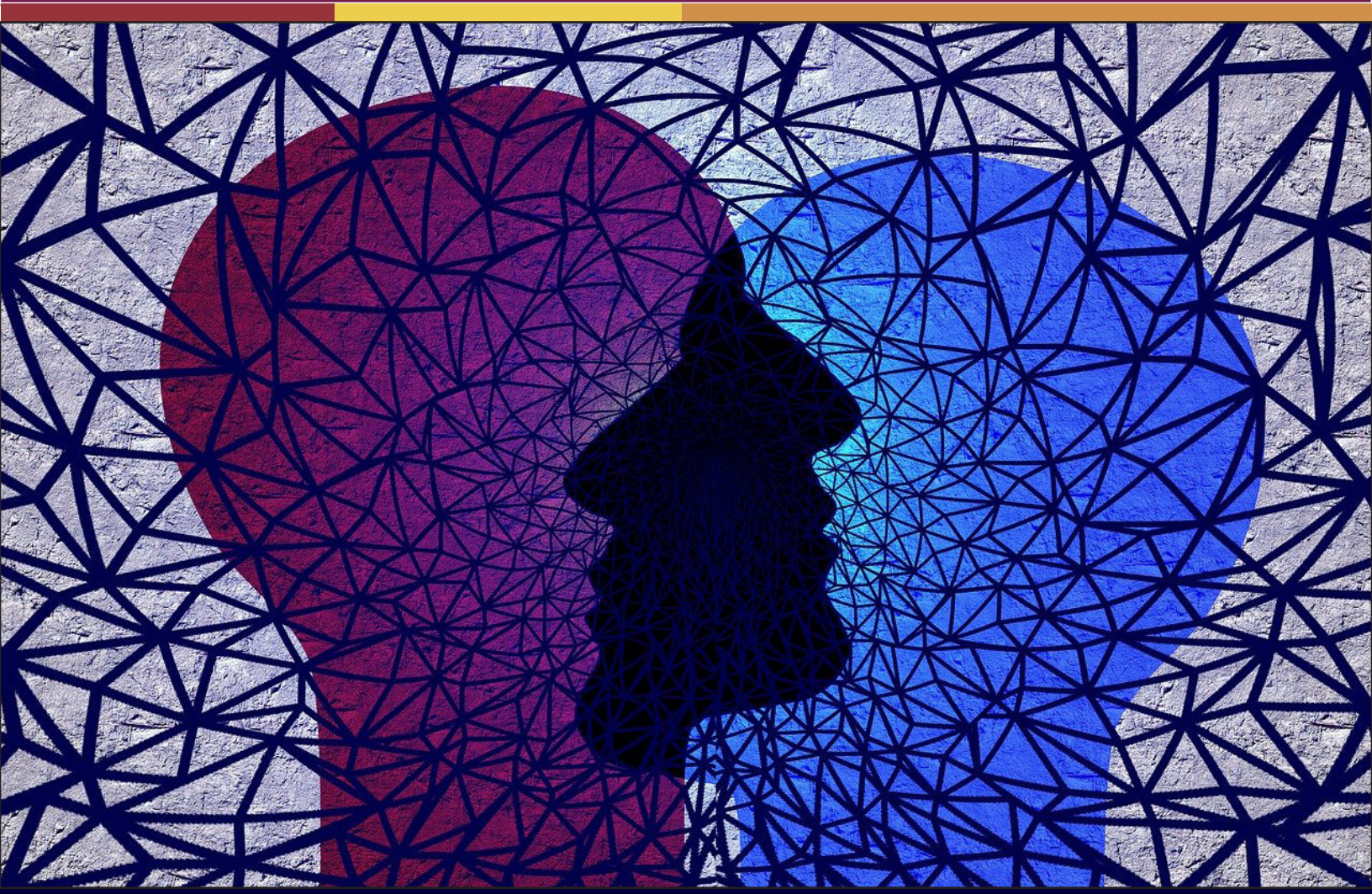

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About Us

Currents in Teaching and Learning is a peer-reviewed electronic journal that fosters exchanges among reflective teacher-scholars across the disciplines. Published twice a year, *Currents* seeks to improve teaching and learning in higher education with short reports on classroom practices as well as longer research, theoretical, or conceptual articles and explorations of issues and challenges facing teachers today. Non-specialist and jargon-free, *Currents* is addressed to both faculty and graduate students in higher education, teaching in all academic disciplines.

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EDITORIAL

"From Campus to Screen: The Online Shift in Higher Education"

Dear readers of *Currents in Teaching and Learning*,

For those of us on a semester schedule, the upcoming school year is just around the corner (or just beginning!). This is always a busy time–full of anticipation, contemplation and new beginnings. As I finalize my syllabi for the fall, I have been reflecting on the many changes to higher education since the pandemic, and their impact on overall course design. One of the more noticeable shifts has been an increase in online course offerings, driven by both student interest and institutional demand to increase enrollment.

According to the National Center for Education Statistics (2023), 53% of undergraduate students took at least one online course in 2022 compared to only 36% in 2019. Additionally, nearly 26% of undergraduates exclusively took online classes (up from 17% in 2019). While more than half of all undergraduate students are taking classes online, it is important to note that these numbers have decreased slightly since 2021. What does this mean for the role of online classes in higher education? Do students want a return to more traditional in-person learning environments? Or is this merely the stabilizing of the online course trend since its rapid growth during the pandemic lockdowns? Regardless of the answer, it is clear that online classes are becoming an important part of the higher education landscape, and that they offer students a different perspective to the undergraduate experience.

For instance, online classes–especially those that are completely asynchronous–have several advantages (Kennette & Lin, 2021). From my perspective, one of the most important benefits is the flexibility for students to access course materials and complete assignments at their own pace. This flexibility is particularly beneficial for non-traditional students, including those working full-time, dealing with disabilities, caring for family, or living in different time zones. Along these lines, online courses can also foster a more inclusive learning environment by providing opportunities for students who might not succeed in traditional classrooms, such as by allowing them to engage with material in other ways (such as through written assignments and posts). This flexibility could also enhance student's understanding and retention of the course material, as students can revisit pre-recorded lectures and other resources.

Conversely, asynchronous online courses also have the potential for decreased student engagement and accountability due to a change in the learning community. Students may struggle with time management or procrastination, and may feel isolated or detached from the course due to lack of real-time interaction. Furthermore, without face-to-face communication, it may be harder to develop a robust learning community that can foster spontaneous discussion and enrich the educational experience. This can similarly impact instructors, as it may be more difficult to gauge student comprehension and provide support in a timely manner. Balancing the flexibility of online learning with strategies to maintain engagement and support is key to maximizing the benefits of this educational approach.

The present issue of *Currents* features several insightful and stimulating pieces that offer suggestions for how to improve teaching and learning both online and face-to-face. In the article, "Our Need for Noddings-inspired Classrooms: A Vision for Higher Education Faculty", Kimberly Rombach encourages us to consider the ways in which we, as educators, can support our student's mental well-being. She reflects on the work of late philosopher and educator Nel Noddings to offer five different visioning statements for how to build relational care into our classroom communities. Similarly, the article "Student Communication Motives and Perceived Effectiveness of the Course between Online and Hybrid Classes" by Heeman Kim and Shelbee NguyenVoges explores how course modalities can impact classroom community and student communication. They found that while students perceive both online and hybrid

EDITORIAL

classes as effective, there were differences in how and why students communicated with their instructors between these types of courses.

Several articles in this issue of *Currents* also report on different assessment strategies in undergraduate courses. For example, in "Reintroducing the Oral Exam: Finding Out What Your Students Really Know in the Age of ChatGPT", Gina Mariano, Debra Allwardt, Paul Raptis, and Kristine Stilwell outline the benefits and drawbacks of oral assessments in the college classroom, especially in light of the rise of artificial intelligence. They highlight the best practices for how to implement oral exams successfully into courses, including tips for how to reduce student testing anxiety and instructor bias. Further, in the article "Faculty Practice in Designing and Implementing Purposeful Assessments of Learning: A Multidisciplinary Collaborative Autoethnography", Yvette Clifton, Pamela Ey, Melissa Gamez, Heidi Giffin, Laura Lohman, Varvara Pasiali, and Linda Pastryk detail how instructors across multiple disciplines designed, modified and executed purposeful assessments in response to the pandemic. They discuss a range of factors that shaped instructor responses, including student mastery of skills, student engagement and instructor awareness of available technologies, among others. Finally, Tunde Szecsi, Debra Giambo and Charles (billY) Gunnels showcase the impact of course-based undergraduate research experiences (CUREs) on bilingual learners. In their article, "The Impact of Courses With Undergraduate Research Experiences: Development of Knowledge and Transferrable Skills for Teaching Bilingual Learners", they found that students who participated in CUREs had higher performances in a number of transferrable skills, such as critical thinking and information literacy, compared to students in non-CURE classes.

As my time as guest editor for *Currents* draws to a close, I want to thank the authors for their valuable contributions and to the reviewers who generously shared their expertise and time. I also wish to acknowledge our editorial advisory board and Dr. Henry Theriault, the executive director of *Currents*, whose efforts ensure the journal runs smoothly. Lastly, I am thrilled to introduce our new editor, Dr. Riley McGuire. Dr. McGuire, a passionate teacher and scholar, specializes in nineteenth-century British literature, queer theory, and disability studies. I eagerly anticipate seeing *Currents* thrive and evolve under his leadership.

Sincerely,

Brittany Jeye

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TEACHING REPORT

The Impact of Courses With Undergraduate Research Experiences: Development of Knowledge and Transferrable Skills for Teaching Bilingual Learners

—Tunde Szecsi, Debra Giambo and Charles (billY) Gunnels

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Abstract

This study examined the impact that a three-course series with course-based undergraduate research experiences (CURE) had on the development of knowledge, skills, and dispositions for teaching bilingual learners. In these teacher education courses, students conducted empirical research related to bilingual learners and their teachers. To understand the impact of this pedagogical approach teacher candidates' learning gains for becoming prepared for teaching bilingual learners, we assessed and analyzed their research projects and their reflection papers. The findings of this mixed-method study indicated that students in CUREs demonstrated higher performance in transferrable skills, such as critical thinking, informational literacy and communication, as demonstrated in their research projects compared with in non-CUREs. This learning gain was maintained throughout semesters, as their Capstone project performance indicated. In addition, their reflections indicated an increasing confidence in their research skills, knowledge, and competence for teaching bilingual learners. These findings support the systematic infusion of course-based empirical research experiences in a series of courses as learning opportunities to foster undergraduate students' readiness for the profession.

Keywords:

course-based undergraduate research experience (CURE), transferrable skills, teacher preparation, bilingual learners

Introduction

Teachers are often unprepared for teaching culturally and linguistically diverse students (Gomez & Diarrassouba, 2014). To become knowledgeable about bilingual learners, who are learning English as a new language in schools, teacher candidates (TCs) should be given the opportunity to apply critical thinking in their pedagogical decision-making and to use culturally responsive communication skills in their instruction and interactions with bilingual learners and families (Aronson & Laughter, 2016; de Jong & Gao, 2022). Therefore, teacher education programs use several of the high impact educational practices, including collaborative assignments, projects, internships, service learning, capstone projects, and undergraduate research (Chamberlain & Mendoza, 2017; McDaniel & Van Jura, 2022). However, undergraduate research experiences appear to be underutilized in teacher preparation (Manak & Young, 2014; Meyers et al., 2018).

Engaging in undergraduate research and scholarly opportunities significantly contributes to student success across disciplines by providing real-world experiences that enhance self-efficacy and improve critical thinking skills (Bender 2012; Holden et al., 2004; Holden et al., 2004; Lopatto, 2003, 2004; Russell et al., 2007, Craney et al., 2011). These experiences also increase student success in terms of retention rates and GPA (Nagda et al., 1998: Chastain et al., 2023). Although the benefits and learning outcomes from undergraduate research, especially in the field of STEM, have been thoroughly documented (Brooks et.al., 2019; Brownell et al., 2015; Stanford et al., 2017), descriptive and empirical studies about undergraduate research in teacher education are

less common, which likely indicates its less frequent occurrence (Schmitz & Havholm, 2015). Most studies report on action research during internship teaching (Capobianco & Ní Ríordáin, 2015), on stand-alone research methodology courses (Harris et al., 2018), and those dedicated for honors students (Dassa & Nichols, 2020). However, Schneider (2017) calls attention to the importance of including each student, regardless of their major, because the skills students develop in research are essential in every field and graduate study.

To promote, model, and teach "the kind of mindset required for complex decision-making" (Schneider, 2017, p. 45), we designed and implemented course-based undergraduate research experiences (CUREs) in three different English for Speakers of Other Languages (ESOL) courses which TCs sequentially took in their program. In these courses, they completed empirical educational research to develop transferable skills. With this curriculum design, our goal was to prepare TCs for the teaching profession where they would collect and analyze data to understand their students' progress, evaluate resources, and make instructional decisions by selecting evidence-based strategies and approaches (Dassa & Nichols, 2020; Harris et al., 2018). Through these research experiences and interactions with bilingual learners and their teachers, TCs expanded their knowledge, skills, and dispositions.

In this study, we examined the impact of a series of three CUREs on (1) TCs' development of transferable skills: critical thinking, informational literacy, and written communication, and (2) their self-perception as teachers and researchers. Although this study took place in a teacher education program, its focus on transferrable skills makes the findings and recommendations relevant for other disciples as well.

Literature Review

Theoretical Background: Transferable Skills

Employers in different fields indicated that the most essential skills for both entry and advanced level professionals include oral communication, critical thinking, ethical judgment, working effectively in teams, working independently, self-motivation, written communication, and real-world application of skills (Fulfilling the American Dream, 2018). Teachers are expected to develop transferable skills along with child development and subject area content knowledge so that they are best suited to meet the needs of their students. For example, Costa and Cogan-Drew (2009) proposed six essential skills for teachers: informational literacy, collaboration, communication, innovation/creativity, problem-solving, and responsible citizenship.

Critical thinking, a logical, reflective process that defines how decisions are made (Ennis, 1996), is a skill necessary for effective teaching. This process, involving analysis, synthesis, and evaluation, contributes to problem-solving (Shieh & Chang, 2014), and is often infused in teacher education courses (Magiera & Zambak, 2020). For example, TCs appreciated their growth in using and evaluating diverse perspectives for creating solutions through posing questions and making inferences (Aycicek, 2021).

Information literacy skill development has also been infused in teacher education because of its importance both during teacher preparation and in the profession. These skills are essential, because teachers demonstrate and teach informational literacy skills to their students (August & Shanahan, 2017). Although studies show that TCs have high self-efficacy regarding their information literacy skills (Demirel & Akkoyunlu, 2017), novice teachers often feel unprepared in this area without intentional infusion (Lee et al., 2012). Because of the importance of information literacy, initiatives and models of skill development have been implemented (Klebansky & Fraser, 2013), and the effectiveness has been measured (Godbey, 2018).

The development of written and oral communication skills is an essential process in preparing effective teachers (Weinberger, 2018), because they must communicate effectively with students, parents, and colleagues, and use language as a tool and resource (Coady et al., 2011; Catalano & Hamann, 2016). Although teacher preparation programs attempt to prepare TCs for the multilingual classrooms (de Jong & Gao, 2022), teachers often feel unprepared for communication with bilingual learners during instruction and beyond (Hansen-Thomas, et al., 2016). Therefore, systematic instruction and assessment with rubrics are recommended to improve these skills (de Jong & Gao, 2022; Jia et al., 2016).

Course-embedded Undergraduate Research Experiences

CUREs began in the sciences as a way to ensure that all undergraduate students had access to research opportunities by including the experiences within the classroom beyond those offered through independent faculty-research mentorship, which can be limited due to factors such as awareness, perceived barriers, and inequity in student selection for opportunities (Bangera et al., 2014). By integrating authentic research experiences into class, students can benefit from the research without being required to take extra time and/or volunteer their labor for free (Dolan 2017). Student ideas about, and their practice of thinking scientifically, can be developed by CUREs (Brownell et al., 2015), and student perceptions of the benefits of such experiences in social sciences are similar to those in the natural sciences (Crowe & Boe, 2019; Ruth et al., 2021; Ruth et al., 2023a). CUREs are typically offered in one stand-alone course, rather than in a course series, and teacher education students often lack these opportunities (Manak & Young, 2014).

Course-Based Undergraduate Research in Teacher Education Programs

Undergraduate education majors rarely participate in CURE (Manak & Young, 2014; Shanahan et al., 2015). TCs can and do participate in activities that can promote systematic inquiry, such as conducting action research, analyzing published research, conducting research-based analysis of classrooms observations, conducting case studies in field experience, developing and implementing curriculum units, and systematically analyzing and improving lessons to advance pedagogical skills, and analyzing innovative pedagogy and interventions (Arseven, 2018; Groth et al., 2016; Manak & Young, 2014). On a limited basis, some teacher education programs provide opportunities for students to develop some research skills, building research into one or more courses that culminate in a research project and offering the potential to improve instructional effectiveness, yet scholarly experiences seem to be more common only in the final practicum (Diezmann, 2005). For example, an inquiry approach in action research can support TCs' deeper reflection and improved instruction after considering students' unique needs (Dassa & Nichols, 2020; Val Madina & Swantob, 2019). When TCs engage as scholars, research skill development and competency may vary based on the nature of the scholarly work, with the strongest results when engaged in complete research processes (Szecsi et al., 2019).

The literature primarily focuses on benefits from research experiences outside of content courses (Dassa & Nichols, 2020; Kotsopoulos et al., 2012) or within field placements (Kotsopoulos et al., 2012; Val Madina & Swantob, 2019). However, a gap exists in regard to benefits in content knowledge and skill development that college students might derive from research experiences that are delivered within a series of content-based courses. The CURE model for undergraduate research, as implemented in this study, can be a practical means to provide students with enriched experiences within teacher education programs and can inform programs in other disciplines.

Research Questions

In this study, we pursued the following questions:

1. What was the impact of CUREs on TCs' knowledge and transferrable skill development?
2. What is the difference in the mastery level of transferable skills (critical thinking, informational literacy, and written communication) between TCs enrolled in CUREs and those enrolled in the traditional course with no CURE?
3. How did TCs perceive the impact of CUREs on their competencies, including knowledge and transferrable skills?

Methodology

Context

A CURE series was developed within a teacher education program, which provided the Florida English for Speakers of Other Languages (ESOL) Endorsement, a required add-on to certification that prepares TCs to work with emerging bilingual learners. The required three ESOL courses were part of the teacher preparation for all TCs to meet the ESOL Endorsement requirements. The empirical research experience was infused in each of these ESOL courses as a partial application of the content of the course: (1) TSL 3080: Foundations of ESOL, (2) TSL 4520: Second language acquisition, communication,

The Impact of Courses *continued*

and culture, and (3) TSL 4340: Methods, curriculum, and instructional effectiveness in ESOL. As structured in the education curriculum, these courses represent the Gateway (i.e., the course that introduce students to the major (e.g., TSL 3080) and the Second Courses in the Major (i.e., courses that further develop TCs content knowledge and skill development (e.g., TSL 4520 and 4340)). Finally, all TCs completed a capstone course, in which they demonstrated mastery of their content and skill development as a graduation requirement.

Development of Course Series with CURE: Preparation and Implementation

The three CUREs took place from August 2019 to December 2021. During this time, two cohorts of TCs took the three courses in sequence. The first and second authors co-taught the first course (TSL 3080) and individually taught subsequent courses (TSL 4520 and TSL 4340). Co-planning and co-teaching ensured consistency across the series. Preparation involved significant revamping of course materials to both meet original ESOL course objectives and scaffold research skill development. In addition, the research project decisions were finalized prior to the semester, and the Institutional Review Board protocol process was completed. After the semester started, TCs completed the Collaborative Institutional Training Initiative (CITI) research training to be certified for conducting research. All research projects focused on bilingual learners and their teachers in southwest Florida to promote a deeper understanding of course content through research application. Weekly course sessions built both ESOL competencies as well as research related skills, which included: (1) understanding qualitative research, (2) locating literature and organizing a literature review (i.e., analyzing and synthesizing research results in the literature), (3) collecting data, (4) analyzing qualitative data, (5) drawing conclusions, and (6) writing a research paper.

The products of the research projects in the CUREs were different. For example, students in the first course (TSL 3080, the Gateway Course) produced a research paper interpreting interviews with bilingual students and their classroom teachers. In the second course (TSL 4520, a Second Course in the Major), students conducted research projects within their semester-long field experience with elementary bilingual learners and produced scholarly presentations based on the data analysis. In the final course (TSL 4340, an additional Second Course in the Major), TCs completed action research during their internship about teaching practices with bilingual learners and reported the findings in a research paper. Each of these research products required similar steps and depth in research: reviewing literature, collecting, organizing, analyzing data, and interpreting the findings in the context of literature. In addition, research findings were disseminated beyond the classroom via presentations at university- and state-level conferences, papers submitted for writing awards, and communication with local community agencies involved in the research.

Participants

In the two cohorts, a total of 36 students registered, out of which 10 TCs enrolled in all three CUREs, 8 TCs enrolled in 2 CUREs, and 18 enrolled in one CURE. Registration requirements included a GPA of 3.0 and interest in culture, language, and research skill development. TCs were majoring in elementary, special, or secondary education, and all took these courses before their final internship, which served as part of the student's capstone course. TCs were between 21 and 24 years old. Five males and 31 females completed these courses, out of which five were Black (four Haitian-American and one African-American), five were Hispanic, and 21 were white, non-Hispanic students. Nine students were bilingual (four in Haitian Creole and English, and five in Spanish and English), and 22 students were monolingual English speakers.

For the comparative analysis, we included the course assignments from 40 students who completed traditional sections of the Gateway and Second Courses in the Major without a CURE. No specific demographic information was collected on these students. Students in the traditional sections were at the same level of their preparation, also majoring in elementary, special, or secondary education, and all took these courses before their final internship.

The Impact of Courses *continued*

Research Design: Data Collection and Data Sets

We used a concurrent triangulation mixed-method design. This design was appropriate, because the qualitative and quantitative data were collected at the same stage, and both data sets were used to more accurately define relationships among variables and to more accurately describe the phenomena of impact of CURE series (Creswell et al., 2003).

To understand the students' mastery level of transferable skills in terms of written communication, critical thinking, and information literacy, we collected all research projects in every CURE (Table 1). The data sets were organized in the following way: (a) TSL 3080, the Gateway Course; (b) TSL 4520 and TSL 4340, the Second Courses in the Major. For comparative purposes, we used course projects from traditional, non-CUREs: (1) TSL 3080, a Gateway Course with no CURE, as well as (2) RED 4350 Literacy Content & Processes and (3) SSE 4153 Social Studies Methods, which were Second Courses in the Major without a CURE. The data collection from these sequential courses allowed us to gain insights in the gradually emerging impact of CURE. In addition, we assessed the project from the capstone course. In this capstone course, all TCs received the same instruction with no additional CURE components. These projects were collected from both TCs who had completed CURE in previous semesters and also from TCs who had not taken a CURE previously. The comparison was meaningful, because all TCs in the teacher education program were expected to develop the same transferrable skills in the traditional courses with no CURE. In addition, this comparison had the potential to indicate the sustained impact on students who completed the CURE series.

Table 1

Courses and Course Assignments

Course title	Course format	Semesters assessed	Course assignment	Artifacts assessed
Gateway Courses				
Foundations of ESOL (TSL 3080)	Traditional	Fall 2019 & Fall 2020	Academic paper with case-study interpretation	16
	CURE	Fall 2019 & Fall 2020	Research paper with empirical interview research	16
Second Courses in the Major				
Literacy Content & Processes (RED 4350)	Traditional	Spring 2020 & Spring 2021	Academic paper with literature review	7
Second Language Acquisition Communication & Culture (TSL 4520)	CURE	Spring 2020 & Spring 2021	Research PowerPoint presentation on empirical, field-based research	8
Social Science Methods (SSE 4153)	Traditional	Spring 2021	Academic paper with instructional plans	7
Methods, Curriculum, and Instructional Effect (TSL 4340)	CURE	Fall 2020	Research paper on field-based action research	8
Capstone Course				
Senior Seminar-Initial Teacher Preparation (EDG 4937)	Traditional[a]	Spring 2021	Capstone project with critical reflection on action research	10
Senior Seminar-Initial Teacher Preparation (EDG 4937)	Cure	Spring 2021	Capstone project with critical reflection on action research	6

*Significance level is 0.05

The Impact of Courses *continued*

In addition, we used end-of-semester reflection papers, which we collected only in the CUREs, because we aimed to explore TCs' views about their content and skill development in CUREs. All TCs in CUREs received the same four open-ended questions as prompts, such as, "Considering the research work you have done this semester, please describe how these may or may not have benefitted your knowledge about bilingual learners' language development in both their heritage language and in English." These reflection papers were submitted via the Canvas Learning Management System, which we used to support course work and instruction.

Data Analysis

Before the assessment of projects and reflection papers and the data analysis, all names and identifiers were removed, and each project and reflection paper were coded with numbers to maintain objectivity and confidentiality.

Research Projects

The research projects in CUREs and selected course assignments in traditional courses were assessed at the end of every semester with the same rubric (Table 1). To avoid any bias, education faculty who did not teach the assessed courses, evaluated students' projects of Gateway Courses and Second Courses in the Major (Author, et al., 2019), while a team of faculty from different disciplines across the university assessed the capstone project. For both sets of evaluation, we used the rubric, which was modified from AACU VALUE rubrics (2010) to assess seven criteria representing critical thinking, informational literacy, and written communication (Szecsi, et al., 2019).

Assessment of student learning began with a norming session where participating faculty examined and agreed on the language described in the rubric and discussed a sample of practice artifacts to improve conformity among assessors. After norming, two assessors scored the projects. If the difference in overall score between the two assessors was less than 85% agreement, then a third assessor scored the student project. The inter-reliability improved (Intraclass Correlation Coefficient: Before Norming = 0.325 and Assessment = 0.874) as a result of the norming sessions (Koo & Li, 2016). These scores indicated TCs' level of mastery of transferrable skills, where high scores showed more mastery than low scores. All quantitative analyses were conducted in R (R Core Team, 2021). Permutated ANOVA tests were run to compare the quantitative assessment of written artifacts using the package lmPerm (Wheeler & Torchiano, 2016). Permutated tests were run with a maximum of 5000 iterations or until a p-value was resolved. As permutation tests calculate the p-values by comparing the observed data to randomized redistributions of the data (Wheeler & Torchiano, 2016), F-values were not reported. Significance was described based on an alpha-value of 0.05.

End-Semester Reflection Papers

The end-semester reflection papers in CUREs were analyzed qualitatively by five researchers, including three researchers outside of the course, to maintain trustworthiness (Novell et al., 2017). First, we used a data analysis spiral, including organizing the data, taking notes on emerging ideas, classifying codes into themes, developing and assessing the interpretation of themes, and representing the themes (Creswell & Poth, 2018). We used deductive coding and started with an initial set of codes, such as ESOL content knowledge, ESOL pedagogical skills, transferable skills including critical thinking, informational literacy and communication skills, challenges and benefits. The five researchers read the data through and independently assigned excepts to these codes. Then, we compared our analysis and codebook and identified patterns and connections among themes (Denzin & Lincoln, 2005; Williams & Moser, 2019). The analysis resulted in three major themes: (1) knowledge and dispositions about bilingual learners, (2) instructional skills, and (3) professional communication skills, which responded to the question about teacher candidates' perception on the impact of CUREs.

Results

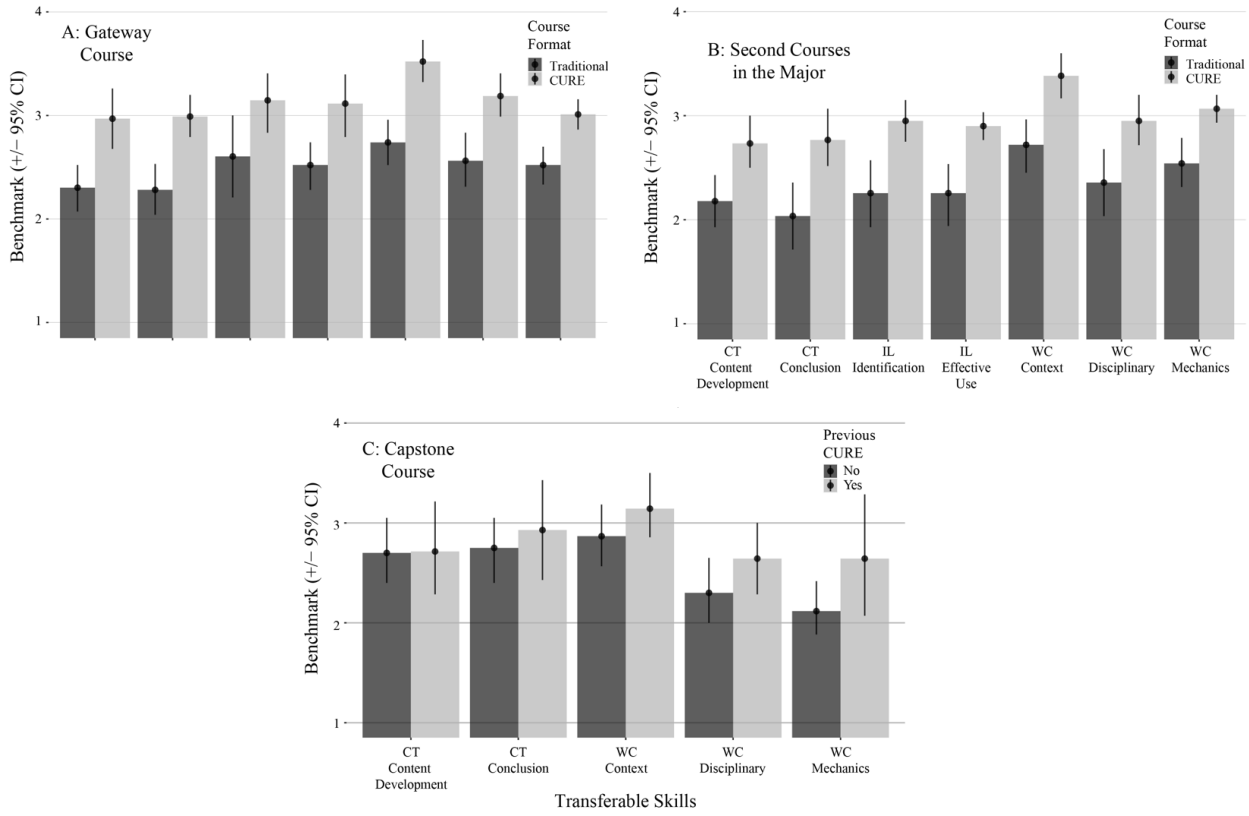
Mastery of Transferrable Skills in Teacher Candidates' Research Projects

TCs who participated in CUREs showed higher learning gains across all seven assessed criteria (Figure 1). In all cases, students who completed the CURE Gateway courses showed further development of transferable skills than students who completed traditional sections (Figure 1A: df = 1, 210; iterations = 5000; $p < .001$). The greatest percent differences were observed in critical

The Impact of Courses *continued*

Figure 1

Development of Transferable Skills among Teacher Candidates in Traditional versus CURE Courses



The bar graph shows results of student learning gains. The assessed scores of seven criteria of critical thinking (CT), information literacy (IL), and written communication (WC) were assessed using modified AACU VALUE rubrics. Students were assessed on a 4-point scale (1-4). Bars represent means (error bars show 95%CI). Figure compares students that completed CUREs (A: Gateway and B: Second Courses in the Major) or participated in a CURE in an earlier class (C: Capstone) with those who took courses that were taught in a traditional format.

thinking (CT - Content Development = 31.1% and CT - Conclusion = 29.1%) and the smallest differences were observed in the student's ability to identify appropriate literature (IL – Identification = 21.2%) and the use of appropriate writing mechanics and syntax (WC – Mechanics = 19.4%). A similar pattern was observed between the type of classes that teacher candidates took for their Second Courses in the Major (Figure 1B: df = 1, 189; iterations = 5000; $p < .001$). TCs enrolled in CUREs showed more developed transferable skills than other students, with the greatest percent difference in developing a conclusion and synthesizing ideas (CT – Conclusion = 35.8%) and the smallest percent difference in the use of proper grammar and syntax (WC – Mechanics = 20.9%).

The learning benefits of CUREs on the development of transferable skills may have been retained as TCs continued in their major. Students who had participated in two CUREs previously appeared to show higher learning gains than students who did not have this experience before their capstone (Figure 1C: df = 4, 75; iterations = 3117, $p = 0.031$). The written communication skills of TCs appeared to be most impacted by prior research experiences. Students who had participated in a CURE showed better understanding of their audience (WC – Context = 9.4%), use of disciplinary conventions (WC – Disciplinary = 14.8%), and use of standard grammar and syntax (WC – Mechanics = 24.5%). In contrast, previous CURE experience had a small to no effect on a student's critical thinking in the capstone. TCs who had

The Impact of Courses *continued*

taken a CURE previously were better able to synthesize and make conclusions (CT – Conclusion = 6.5%), but no difference in their ability to develop an argument (CT – Contend Development = 0.4%). The assessed assignment did not require students to use primary and secondary literature preventing the opportunity to evaluate information literacy.

Perceptions about Competency and Transferable Skill Development in CUREs

The analysis of TCs' reflections on their competency development in CUREs as related to teaching bilingual learners and to conducting research resulted in the following three themes: (1) knowledge and dispositions about bilingual learners, (2) instructional skills, and (3) professional communication skills.

Knowledge and Dispositions about Bilingual Learners: Upon entering the first CURE course, most TCs acknowledged their limited knowledge and experience with bilingual learners. To promote knowledge development, they were systematically exposed to quality literature on second language acquisition and culturally responsive pedagogy. In particular, they practiced informational literacy skills by locating, reading, and interpreting educational research articles on bilingualism. Some felt overwhelmed with these tasks, though later most TCs acknowledged new skill development: "I grew in my understanding of how to read and interpret educational research", and "I feel I can understand the difference between a good and bad source." Using informational literacy skills, TCs developed knowledge and new perspectives about bilingual learners.

Teacher candidates also recognized their new, deeper understanding about bilingual learners' cultural, linguistic and experiential background, teachers' role in heritage language maintenance, instructional programs for bilingual learners, and benefits of bilingualism on overall human development. For example, one TC noted, "I have learned that heritage language is not only [an] important cultural, social and occupational skill, it is beneficial to the cognitive development of English learners." TCs also noted that interviewing and tutoring bilingual learners supplemented their understanding of bilingual learners' background and experiences. As one stated, "being able to learn directly from [an] English learner was extremely beneficial, because it allowed [me] to hear from a direct source." Therefore, the use of informational literacy and the data collection seemed to contribute to their knowledge about bilingual learners in an authentic way.

Teacher candidates expressed that their attitudes about bilingual learners changed during CUREs. Interactions with bilingual learners in the interviews were perceived as an opportunity to access bilingual learners' "real life," which generated empathy and understanding. One student described: "It [the interview] made me think about my future as a teacher and how I want to be accommodating and compassionate to English learners, because they are facing so many different struggles." Another student noted that "data collection and data analysis helped me remove any bias." While progressing through CUREs, and conducting their research, TCs seemed to utilize their newly gained knowledge and dispositions about bilingual learners.

Instructional Skills: TCs recognized that conducting empirical research in these CUREs expanded their repertoire of effective instructional strategies. For example, those who completed a study focusing on the Funds of Knowledge (Moll et.al.,2006), which acknowledges the importance and educational benefits of diverse students' background knowledge, felt that the critical analysis of observation notes allowed them to develop ideas for the incorporation of bilingual learners' cultural and linguistic backgrounds in their teaching. In the second (TSL 4520) and third (TSL 4340) courses, students tutored bilingual learners and recorded their observations s and reflections on their developing teaching skills. While collecting these data, their analytical skills for planning and teaching sharpened. For example, one student stated, "The one-on-one teaching of phonological awareness and the analysis of my teaching…allowed me to analyze and strengthen my ability to teach English learners and learn what kind of academic support they need."

Although TCs appreciated this growth and recognized the transferability of the research skills to their future teaching, many also noted challenges. Being new to research in the first course (TSL 3080), most TCs felt anxious and found research difficult. The most frequently mentioned struggle was utilizing critical thinking in data

analysis and interpretation, which is a fundamental skill for excellent teaching. As they progressed through the course sequence, and after we, the instructors, made modifications (e.g., more streamlined research processes and increased scaffolding in the first course), most TCs expressed appreciation about the research experience as it contributed to their preparation for teaching bilingual learners. As one noted, "I became a better teacher for ELs [English Learners]." This impact of CURE became particularly evident by the third course in the sequence, when TCs recognized their learning gains and awareness in the connection between teaching and research.

Professional Communication Skills: TCs found the different opportunities for professional communication in the research process beneficial. They perceived that the various learning opportunities, such as using professional communication skills (both written and oral) with their peers and with research participants were instrumental. In particular, TCs found the research collaboration with peers and research participants valuable, because it created opportunities for negotiation, clarification, and meaning making. One TC noted, "I have found a sense of team. I developed skills in collaborating, brainstorming, dividing up work fairly, and how to communicate my ideas with others." Specifically, the power of questioning, which is a vital skill for teachers, was expressed as a tool for finding better answers and solutions. Even a student in the first course realized this iterative process and stated the importance of, "…trying to get into the habit of constantly asking questions to myself and possibly other peers about this topic to further my potential investigations." In addition, they found the interactions with bilingual learners, both in interviews and tutoring situations, vital for improving their skills for communication with those who speak another language than English. TCs identified the development of the research paper as the most challenging task, because, for many, it was the first comprehensive academic paper to complete. Regarding the paper, they pointed out the challenge of using critical thinking in the interpretation and reporting of the findings, and then making meaningful conclusions. They perceived their gradual growth in discipline-specific writing, including the flow and organization of ideas, vocabulary, and properly formatted citations. Overall, it seemed that the process of writing also strengthened their critical thinking and understanding. One student noted, "After writing my own research [paper], I understand it much more. Writing my own [paper] gave me new perspectives." By the conclusion of the course series, their responses indicated that they felt more prepared in all areas, such as content knowledge and pedagogical and communication skills for teaching bilingual learners.

Discussion

Although there have been attempts to include undergraduate research in teacher education courses (Dassa & Nicols, 2020; Groth et al., 2016; Harris et al., 2018; Zambo & Zambo, 2007), we believe that this is the first study that examines the impact of a series of CUREs. The main goal of this CURE initiative was to allow the TCs to develop and practice professional competencies (content knowledge, pedagogical skills, and disposition) through conducting empirical research throughout several semesters. Overall, results indicated that TCs' knowledge and skill development for teaching bilingual learners increased, and they expressed positive views related to their professional preparation for an equitable and culturally responsive environment. The ongoing assessment of their skills in CUREs during the three semesters indicated an increased growth in competence compared to peers in non-CUREs. This growth was sustained even in the final years of their preparation, as their performance on capstone projects indicated. This finding, which highlights the value of systematic infusion of empirical research experience in course series, might be relevant for other disciplines which consider CURE series for increased and sustained outcomes. Overall, these findings have contributed to the current knowledge about the impact of research experiences when they are implemented in a series of courses in which research skills and content build progressively across the series.

Transferrable Skills and CURE in Preparation for Teaching Bilingual Learners

This CURE course series contributed to TCs' development of transferable skills, such as critical thinking, information literacy, and communication with which they seemed to become more prepared to support bilingual learners. TCs' assessed performance in their research projects and reflection on these skills showed growth. This curricular approach to structured and multi-semester-long CUREs aligns with previous studies' recommendations for systematic integration of these skills in the curriculum (Slobodzian, & Pancsofar, 2014). Most importantly, students in this study recognized the link between the research projects and

their future professional responsibilities. For example, conducting action research on self-selected topics, which included planning, teaching, observing, and engaging in critical reflection of the instruction, was perceived as an effective way to improve instruction and communication with bilingual learners. Dassa and Nichols (2020) also found that action research boosted TCs' confidence about using data for instructional decisions. In addition, our study supported Nikolov's (2020) advice to allow TCs to develop a researching-reflective attitude about their teaching practices. Studies on the impact of CUREs in social sciences found similar recognition and appreciation of skills gained in CUREs. In particular, undergraduate students in social science pointed out that the collaborative research experiences in CUREs contributed to their transferrable skill development which would be essential in their careers as well (Ruth et al., 2023b).

Teacher candidates seemed to increase their understanding and skills about the importance of bilingual learners' culture, experiential background, and heritage language as a result of their research. The increased knowledge and skills in these areas are central for effective teaching in a multilingual setting as theories on second language learning and the results of empirical research have indicated (Aronson & Laughter, 2016; Cummins, 2021). The research projects in our CUREs allowed TCs to develop and maintain direct and authentic interaction with bilingual learners, which ultimately fostered their understanding of social issues and concepts which are essential in their profession. Park (2015) reported similar results in a research writing course in which students interacted with racially and ethnically diverse research participants. Teachers who are unaware of their students' cultural, experiential, and linguistic background can often consider bilingual learners as problems, rather than utilizing the richness of their prior experiences in instruction and interactions (Giambo, et al., 2023; Choi & Slaughter, 2021). On the contrary, understanding of bilingual learners' status, challenges, and their funds of knowledge as a result of their research experience can create a more equitable learning environment for their students (Moll, et al., 2006). As this study demonstrated, a CURE- series can strengthen the TC's professional preparation for socially just pedagogical practices.

Affective Ties to CURE

TCs gradually recognized the benefits of educational research and overcame their anxiety about research, resulting in appreciation for courses with undergraduate research components. Studies indicate that anxiety among undergraduate students taking research courses is common (Papanastasiou & Zembylas, 2008), especially during the COVID-19 pandemic (Grineski et al., 2020). This anxiety, which was present at the beginning, can be explained by several contextual factors. For instance, TCs are unfamiliar with educational research due to the lack of research method courses in their programs (Dassa & Nichols, 2020). In addition, most TCs in this study had limited interactions with bilingual individuals previously. Furthermore, TCs often have no experience with their own teachers in elementary or secondary schools being teacher-researchers (Dobozy, 2011), contributing to a lack of self-perception among TCs as student-researchers (Harris et al., 2018). Similar to this study, CUREs in education courses can mold TCs' perception of their role in research and the relevance of research in their future career (Nikolov et al., 2020). Although studies report on standalone CURE without implementing them sequentially (Brownell et al., 2015), our study found evidence for embedding CUREs across multiple courses might generate students' expanding appreciation for research as they recognize the connection between these transferrable skills and their future profession.

Conclusions

In this paper, we examined the impact of a CURE series in multiple semesters in a teacher education program in southwest Florida. There is no intention to generalize the findings; rather, this study provides insights into the development and implementation of a CURE series as well as information about its positive, and sustained impact on the preparation of TCs in the given context. We found that offering a series of CUREs with a targeted focus, in this case preparation for teaching bilingual learners, can solidify both content knowledge and transferable skills due to the cyclically recurring development and practice of these competencies during several semesters.

The Impact of Courses *continued*

Based on these findings, we recommend the infusion of CURE series in the curriculum. However, this type of course series with CURE involves significant time and energy from the part of the faculty. During the implementation of this CURE course series, it became clear that the sustained implementation of CUREs across the curriculum would require administrative and departmental support. A future study could follow the students in their first-year teaching to examine whether these emerging skills have been internalized in their pedagogical practices, and whether the impact of CUREs was long lasting.

The Impact of Courses *continued*

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TEACHING REPORT

Student Communication Motives and Perceived Effectiveness of the Course between Online and Hybrid Classes

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Abstract

This research attempted to explore differences in how students perceive effectiveness and communication motives between two online classroom settings: online classroom and hybrid classroom. The participants (N = 289; 169 females, 105 males, and 15 others) were recruited from communication courses covering 11 sections of 5 subject areas at a comprehensive state university. The result showed there was no significant differences on course effectiveness between online and hybrid classes. We found that students in hybrid classes (M = 3.94, SD = 1.12) were more likely to communicate with instructors for relational motives than ones in online classes (M = 3.37, SD = 1.21). Also, respondents in the hybrid classes (M = 4.01, SD = 1.21) engaged more in excuse-making motives than ones in online classes (M = 3.70, SD = 1.31). While respondents in hybrid classes regularly meet instructors in person, they easily recognize that instructors are available around them. However, on the other hand, some students in online classes are unable to find the instructor accessible virtually. We proposed instructors in online classes could spend more effort on acknowledging they are available virtually, employing virtual meeting spaces, online drop-in sessions, or timely and frequent announcements/reminders.

Keywords:

hybrid class, online class, communication motives, course effectiveness

Introduction

The number of universities offering online classes are rapidly increasing (Gimpel, 2022; Xu & Xu, 2019). Higher education utilizes a number of strategies to meet the needs of diverse learners in the 21st century including online courses, distance, and hybrid education. Due to flexibility and convenience (Gimpel, 2022; Jaggars, 2014; Vikas & Mathur, 2022), 43.1% of undergraduate students took at least one online class in 2015-16 academic year in the United States and 10.8% of them entirely online programs (National Center for Education Statistics, 2019). Higher education institutions have shifted towards policy and practices which view online courses, programs, and support technology as requisite resources towards flexible, affordable and accessible education (Mohandas et al., 2023; Vikas & Mathur, 2022). While educators are willing to develop and implement different class modalities to meet students where they are in 21st century contexts, research shows that communication is a key component of effective learning in online environments (Gimpel, 2022; Xu & Xu, 2019). Furthermore, COVID-19 has irrevocably transformed how learners learn in 2020 and beyond (Gimpel, 2022; Mohandas et al., 2023). The pervasiveness of technology and interconnectivity with knowledge construction drive the importance of understanding perceived communicative efficacy and motivations in different online learning formats. Thus, this research attempts to explore differences in how students perceive effectiveness and communication motives between two classroom settings: hybrid classroom and online classroom.

Student Communication Motives *continued*

A few research gaps exist in the current literature on communication motives. Much research to date focuses on communication motives in traditional classroom environments, such as the perceived instructor power use (Goodboy & Bolkan, 2011), instructor's interpersonal attraction (Weiss & Houser, 2007), and instructor self-disclosure (Cayanus et al., 2009). Little research extends and compares insight about differences in students' communication motives comparing hybrid classroom and online learning formats. Also, several studies comparatively analyze online and traditional classes in effectiveness, students' perception, instructor perception (Sims & Baker, 2021), as well as instructional design (Gimpel, 2022). While such studies offer salient information in improving learning environment, there are not enough scholarly efforts to address the differences between online and hybrid learning in post-COVID educative settings.

Literature Review

We start by reviewing relevant literature about what impacts the student experience across online and hybrid class modalities. We also explore students' perceived effectiveness, and communication motives. The method section then addresses the characteristics of participants, the process of selecting the participants for the survey, measurements, and data analysis. Next, the results section breaks down the findings from the survey with proposed research questions. Finally, the discussion section addresses the implication and the importance of findings, the limitations of the study, and future research that could add to this topic.

Factors Shaping the Student Experience

Astin (1984) and Tinto (1993) identify noncognitive factors shaping the student experience and communication in digital and face-to-face learning environments: 1) background (high school grades, first-generation college student/parents, and personality); 2) institutional variables (academic support resources, institutional type, facilities); and 3) individual circumstances (i.e., debt-to-income ratio, familial roles and responsibilities, or health related issues) (Koch & Gardner, 2014). Burkholder and Holland (2014) discuss complexities of student success in terms of internal and external influences looking at how "individual background variables, institutional factors, and situational factors influence student academic and institutional commitment [&] are critical to academic and social adjustment and college completion" (p. 33). Ultimately, research concerned with student success, and the student experience in general, point to the fact that there are many considerations to account for when thinking about communication efficacy and motives as these are integral parts of academic and social adjustment. Social and academic development are formative elements of communication motives and influence students' perceptions of communication efficacy in both hybrid and online learning formats (Gimpel, 2022; Kock & Gardner, 2014).

Educational research has recently looked further into students' perceived efficacy and motives for communication in terms of academic and social adjustment (Gimpel, 2022). In internally focused approaches, attention is placed on awareness, agency and uniquely explicating how social capital and social influences shape attitudes, perceptions, and motives towards communication and learning even before stepping into the classroom (Tinto, 1993). Higher education research concerned with communication motives and perceptions of efficacy in student success traditionally showcase curricular, co-curricular, and orientation programming, which points to a positive correlation between participation, adjustment, and ultimately progression towards graduation (U.S. Department of Education, 2016).

Two Instructional Formats in Online Classroom

As communication technology has advanced, many higher education institutions around the world now utilize a variety of communication technologies to prime and promote student learning and success. Primary goals include: to establish online classroom community, to promote social and cultural capital, and to scaffold active collaborative learning to build knowledge bases in digital learning environments (Mohandas et al., 2023). This promotes peer and problem-based learning whenever possible to optimize student interactions and enhance opportunities for real-time and/or real-world communication where learning is applied (Flock et al., 2021). Class modality is usually determined by the number, frequency, and responsibility of face-to-face participation. While online classes do not meet in person, hybrid classes provide lectures, reading

Student Communication Motives *continued*

assignments, and class activities both in person and virtual classroom. Further, online instructors provide a virtual space giving access to organized information and resources that students can use in order to improve their understanding of a given subject (Gimpel, 2022; Holtham & Courtney, 2005; Mohandas et al., 2023). Online courses are completed through synchronous and asynchronous communication technologies, employing real time video conferencing like Zoom, and Microsoft Teams, real time chat rooms, recorded lecture videos, audio/visual presentations, collaborative writing spaces, email, discussion boards, social media, peer work, and so on (Bettivia & Davis, 2023; Mohandas et al., 2023). Students get timely access to digitally medicated class materials, to-dos, assigned readings, grades, and assignments in divided weekly modules that are typically prepared prior to the start of the semester.

Fully asynchronous instruction is recommended to enhance and optimize student flexibility. Some instructors perceive that online classes are less effective than traditional classes because online classes hardly provide students with necessary oral communication skills, team-building skills, and interpersonal skills (Aly, 2013; Grossman & Johnson, 2015; Mohandas et al., 2023). Therefore, previous research proposed that online instructors must create interactive environments by intentionally building in opportunities for learners, through their coursework, and with other peers in class and their instructor, in order for students to have a sense of community and/or connectedness between classmates (Flock et al., 2021; Park & Koo, 2022). Flock et al., (2021) found that communication between students typically involves timely appropriately relevant feedback, assessment, and guidance in online instructional settings. Each of these speak to the important factors in establishing shared understanding of subject and co-creating new perspective transformations (Flock et al., 2021; Mohandas et al., 2023).

A hybrid classroom is a form of blended classrooms in which a varying proportion of scheduled class takes place online. Depending on instructional needs and learning environment, instructors adjust the proportion of face-to-face and online sessions. In addition to instruction in class, instructors prepare video lectures, readings, assignments, for students to work online so that students can complete assigned tasks and activities outside of classroom (Gimpel, 2022; Kintu et al., 2017: Mohandas et al., 2023). Students take advantage of both in-class instruction and various online course material. Face-to-face sessions are designed to meet students physically and encourage students to express opinions, observations, share experiences, and ask questions in a traditional class format. The instructor might use class materials and handouts to solicit discussions and students should use this time to clarify their understanding of concepts encountered in course materials (Gimpel, 2022). Instructors regularly upload readings, assignments, class exercises, group activities, and dates by which assignments must be posted online. To be in attendance each online session, students must complete and submit assignments, class exercises, and/or group activity reports by the due date/time in remote locations.

Perceived Course Effectiveness

Previous research examined the effectiveness of various courses in different contexts (Martin et al., 2015; Spencer & Temple, 2021). Perceived effectiveness in this study refers to students' evaluation about how they meet the course objectives, in-class instruction, in-class activities, class materials, or the textbook (Martin et al.,2015). Previous studies on effectiveness between online and traditional classes produced mixed findings. Even though students believed that the online activities and assignments promoted their learning in online classes, they are less likely to complete the course successfully in online classes compared to traditional classes (Gimpel, 2022; Spencer & Temple, 2021). This could be related to multiple factors with respect to the classroom community, competency in the subject, and sense of accountability that differs between face-to-face, hybrid and online learning environments.

As learners become more experienced with communication technology and the Internet, student responses indicate more favorable perception of the online learning activities and assignments (Gimpel, 2022; Muilenburg & Berge, 2005; Seok et al., 2010). This speaks to noncognitive factors like uncertainty or a lack of social or cultural capital when it comes to barriers towards online learners. These are not experienced across all learners in the same way. For example, nontraditional

Student Communication Motives *continued*

students are more successful in online classes compared to traditional classes because they are more mature, experienced, and motivated by intrinsic goals (Spencer & Temple, 2021). However, both students (Muilenburg & Berge, 2005) and instructors (Seok et al., 2010) perceived the online classes as less effective for creating interactive communication between students and faculty and for collaboration between peer learning. However, Sims & Baker (2021) found instructors believed that there are no significant differences on the quality of their classes when they converted the face-to-face class into online class. Seok et al. (2010) found that instructors have higher perception toward online course effectiveness than students. Generally, instructors' technology skills and teaching experiences are positively related to higher perceived effectiveness of online courses (Seok et al., 2010). Therefore, our first research question is to explore the perceived effectiveness of two class modalities.

RQ1: To what extent do students' perceived course effectiveness vary across two types of classrooms, including online and hybrid modalities.

Student Motives for Communicating with an Instructor

Rubin et al., (1988) found six primary interpersonal communication motives, including affection, escape, relaxation, and control. Considerable research examined the communication motives or the reason why people communicate with others in various contexts, including romantic relationships, friendships, etc. In classroom settings, Martin et al. (1999) indicated that student motives for communicating with an instructor are to establish interpersonal relationship with an instructor (relational), to obtain course/content information, to ask questions/comments in class (functional), to explain why something is lacking (excuse-making), to express interests and understanding in course contents (participatory), and to give a favorable impression (sycophancy).

For example, when an instructor was perceived as being competent, students were more like to communicate with an instructor about relational, functional, and participatory motives (Goodboy & Bolkan, 2011). Also, students who show higher academic concerns are likely to have relational, functional, excuse-making, participatory, and sycophantic motives for communicating with their instructors (Mansson, 2014). In cross-cultural analysis using an engineering class, Mansson and Lee (2014) found that students from collectivistic cultures are more likely to communicate with their instructors for relational purposes, while members of individualistic cultures communicate for participatory purposes.

Furthermore, research has shown that student motives for communicating with instructors are related to students' communication apprehension (Martin et al., 2002), instructor communication style (Myers et al., 2000; Vikas & Mathur, 2022), interpersonal attraction toward instructor (Weiss & Houser, 2007) and the course of a semester (Myers, 2017). Martin et al. (2002) found students who are not anxious about their oral communication reported communicating more with their instructors for relational, functional, and participation motives. There were no differences between low and high apprehensive on the motives of excuse making and sycophancy. According to Myers et al. (2000), when an instructor has friendly communication styles, students are communicating with them for functional reasons. Instructors with attentive and contentious styles make students use more excuse making and sycophantic motives (Gimpel, 2022; Myers et al., 2000; Vikas & Mathur, 2022). As instructors encourage students to express opinions, observations, share experiences, and ask questions in hybrid classroom, students engage in simultaneous, contentious, and attentive discussions.

Additionally, Myers et al., (2000) showed that instructor with friendly, impression leaving, and contentious communication styles facilitated students to communicate with them for relational motives. Similarly, Weiss and Houser (2007) found that the physical attraction toward instructor makes students communicate with their instructor for relational motives. Online classes offer the potential to provide very little information about physical appearances of the instructor where particular knowledge and information are obviously presented to the students in audio/visual/textual modes (Gimpel, 2022; Vikas & Mathur, 2022). While students for functional motives sought information through direct interaction with instructors to clarify the requirement for assignment and examinations, students who communicate for the

sycophantic, relational, and participatory motives use the indirect information seeking strategies (Weiss & Houser, 2007). Therefore, we explored students' communication motives between hybrid and online classrooms.

RQ2: To what extent do students' communication motives with their instructors vary across two types of classrooms, including hybrid and online modalities.

Methods

Participants

This research was determined to meet the criteria for Exemption (45 CFR 46. 104) by our Institutional Review Board. The participants (N = 289; 169 females, 105 males, and 15 others) were recruited from communication courses covering 11 sections of 5 subject areas at a comprehensive state university. Participants ranged in age from 18 to 35, with a mean of 21.25 years old (SD = 1.23). Participants by class year consisted of 5 first-year undergraduates, 45 second-year undergraduates, 137 third-year undergraduates, and 73 fourth-year undergraduates. 229 respondents (79.2%) had previous experience with online and/or hybrid courses. 70.9% respondents are considering enrolling online courses next semester. 255 (88.2%) respondents are expecting a B or higher in current classes. 217 (75.1%) respondents were taking the current course required.

Measures

An online survey was conducted for two research questions proposed in the previous section. Because the purpose of this study was to identify the perceived course effectiveness and examine the extent to which communication motives with their instructors vary, the participants were instructed to complete all items in the questionnaire in reference to the class they were being asked. Participants filled out pre-questionnaires that included an informed consent form, questions about their classes, and demographic information.

Perceived Effectiveness: To measure how respondents meet the course objectives, Martin et al. (2015)'s seven items were employed: My ability to meet the course objectives was due to: the in-class instruction, the in-class activities, my own commitment to learning/studying the material, the textbook, the ease/difficulty of the material, previous experience with the material, and some other factor(s). Martin et al. (2015) used the terms, the in-class instruction and in-class activities, to measure perceive course effectiveness in traditional classroom environment. Currently, the advanced and diversified instructional technology enabled instructors in hybrid and online classes to efficiently use many e-learning tools, including note-taking app, calendars, tutorials, chatrooms, forums, video conferencing, and collaborative writing, to have students successfully engage in class instruction and activities (Bettivia & Davis, 2023; Gimpel, 2022). In this study, the items, the class instruction and the class activities, were modified to be inclusive and suitable for both online and hybrid class environments, instead of being limited to in-person instruction and the in-class activities. Likert-type scales were used to assess perceptions about the effectiveness of courses: 1 strongly disagree; 2 disagree; 3 neutral; 4 agree; 5 strongly agree.

The Students Communication Motives: Communication motives were measured with 32 total items derived from Rubin et al. (2009) Communication Research Measures. Martin et al., (1999) tailored these items for class communication and reflected relevant communication in this context. They modified and used a thirty-item instrument for communication motives to measure the respondents' reasons to communicate with their instructors, including relational, functional, excuse-making, participatory, and sycophantic reasons, in face-to-face classes. In this study, in which we considered a diversified communication environment, wording needed to be lightly adjusted for the context of the online and hybrid classes. Martin et al., (1999) just considered "talk" in their measurement as a primary communication channel; for example, "I talk to my instructor to appear involved in class." In addition to "talk," email is the most pervasive communication tool for interacting with instructors outside of the classroom; subsequently, the emotional states of students are influenced by the frequency and quality of email communication from their instructors (Ledbetter & Finn, 2018). In this study, all items included email as a communication channel; for example, "I talk or email to my instructor to appear involved in class." All items used a 5-point Likert-type scale, ranging from 1 (least likely) to 5 (most likely).

Student Communication Motives *continued*

Data Analysis

For this study, IBM SPSS was used for data analysis. The analysis began with an exploratory factor analysis with a varimax rotation because factor analyses discover the underlying structure of a complicated data sets and determines the key variables to explain the relationships between items. Previous studies showed significant components on perceived course effectiveness and communication motives scales (Goldman & Martin, 2014; Martin et al., 2015). The authors wanted to validate those components with current data. With key variables identified through factor analysis, one-way ANOVA tests were conducted to determine differences in perceived course effectiveness and communication motives between the two class modalities (online and hybrid).

Results

In responding to RQ1 that asked about students' perceived course effectiveness between hybrid and online modalities, a principal component factor analysis with varimax rotation was used to sort variables into distinctive patterns in the perceived course effectiveness items. Table 1 displayed three factors, consisting of six items, which collectively accounted for a reported variance of 62.59%. These factors indicated perceived course effectiveness, as demonstrated by their corresponding factor loadings. The first factor, labeled "classroom engagement," was the major factor, explaining 29.97% of variance. While they were engaged in class instruction and class activities, respondents achieved course objectives. The mean score for the 2 items' class engagement was 3.91 (SD = 1.22), with 5-point Likert scales ranging from 1 (strongly disagree) to 5 (strongly agree); Chronbach's alpha reliability coefficients was 0.89. The second factor, named "learning readiness," was composed of 2 items (M = 4.11, SD = 1.32); Chronbach's alpha reliability coefficients was 0.87. Respondents reported that their commitment to the course and their previous experiences were major aspects to make them successful in class. The third factor labelled "class materials" reported a variance of 15.33%; Chronbach's alpha reliability coefficients was 0.92. Respondents believed they were able to achieve course objectives because they easily master class materials and textbooks.

The ANOVA test indicated there was no significant differences in online and hybrid classes on perceived course effectiveness, including classroom engagement ($F(1,249) = .401$, $p < .670$), learning readiness ($F(1,249) = .019$, $p < .981$), and class materials ($F(1,249) = .063$, $p < .939$). The result showed there was no significant differences on course effectiveness between hybrid and online classes. We found students meet the course objectives, in-class instruction, in-class activities, class material/textbook across online and hybrid classes in similar ways.

Table 1

Rotated Component Matrix: Perceived Course Effectiveness

Items (6)	Factor 1	Factor 2	Factor 3
My ability to meet the course objectives was due to:			
Classroom Engagement	.862		
the class activities.	.841		
Learning Readiness			
my own commitment to learning/studying the material.		.615	
previous experience with the material.		.583	
Class Materials			
the ease/difficulty of the material.			.815
the textbook.			.680

Note. Extraction method: Principal Component Analysis. Rotation method: Varimax with Kaiser Normalization.

Student Communication Motives *continued*

Table 2

Total Variance Explained: Perceived Course Effectiveness

Course Effectiveness	Total	% of Variance	Initial Eigenvalue Cumulative %
Classroom Engagement	2.14	30.66	30.66
Learning Readiness	1.16	16.60	47.26
Class Materials	1.07	.15.33	62.59

Note. Extraction method: Principal Component Analysis. Rotation method: Varimax with Kaiser Normalization.

Table 3

Rotated Component Matrix: Communication Motives

Items (15)	Factor 1	Factor 2	Factor 3	Factor 4
Participatory Motives				
I talk or email to my instructor to appear involved in class.	.721			
I talk or email to my instructor to demonstrate I understand the material.	.720			
I talk or email to my instructor because my instructor values class participation.	.690			
I talk or email to my instructor because my classmates value my contribution to class discussions.	.688			
Relational Motives				
I talk or email to my instructor so we can develop a friendship.		.796		
I talk or email to my instructor to learn more about the teacher personally.		.790		
I talk or email to my instructor because we share common interests.		.747		
I talk or email to my instructor because I find the instructor interesting.		.658		
Functional Motives				
I talk or email to my instructor to clarify the material.			.790	
I talk or email to my instructor to get more information on the requirements of the course.			.696	
I talk or email to my instructor to get assistance on assignments/exams.			.673	
I talk or email to my instructor to challenge a grade I received.			.733	
Excuse-making Motives				
I talk or email to my instructor to explain why my work is late.				.795
I talk or email to my instructor to explain why I do not have my work done.				.789
I talk or email to my instructor to explain my absences.				.656

Note. Extraction method: principal component analysis. Rotation method: Varimax with Kaiser normalization.

Student Communication Motives *continued*

Communication Motives

As shown in Table 3, a principal component factor analysis with varimax rotation was used to identify variables into underlying dimensions in the communication motives items. This analysis is set eigenvalues greater than 1. As only 16 items were sorted from 30 items, four communication motives were identified: Chronbach's alpha reliability coefficients relational (a = .88); functional (a = .86); participatory (a =. 89); excuse making (a = .88). Interestingly, sycophancy motives reported a variance explained of 4.32%. These items included "I talk or email to my instructor to pretend I'm interested in the course," "I talk or email to my instructor to get special permission/privileges not granted to all students," "I talk or email to my instructor to give the instructor the impression that I like him/her," etc. As shown in Table 4, the authors agreed that this was eliminated because it contributed a small reported variance.

The second research question asked if there are any differences in communication motives across the two class modalities. The ANOVA results indicated that significant effects were found for the relational motives, $F(1, 252) = 3.266$, $p < .04$, and the excuse-making motives, $F(1, 255) = 3.015$, $p < .05$. No significant effects were found for the functional motives, $F(1, 254) = .543$, $p < .58$, and the participatory motives, $F(1, 254) = 1.028$, $p < .35$. As shown in Table 5, when comparing means and standard deviations between online and hybrid classes, we found that students in hybrid classes ($M = 3.94$, SD = 1.12) were more likely to communicate with instructors for relational motives than ones in online classes ($M = 3.37$, $SD = 1.21$). Also, respondents in the hybrid classes ($M = 4.01$, $SD = 1.21$) engaged more in excuse-making motives than ones in online classes ($M = 3.70$, $SD = 1.31$). Across these two classroom modalities, students were likely to communicate with their instructors to obtain course information and to express interests and understanding in course contents in the same way. However, students in hybrid classroom were more willing to establish interpersonal relationships with an instructor and to make excuses than ones in online classroom.

Table 4

Total Variance Explained: Communication Motives

Component	Total	Initial Eigenvalue	
		% of Variance	Cumulative %
Participatory Motives	10.62	36.65	36.65
Relational Motives	2.92	10.08	46.73
Functional Motives	1.96	6.77	53.50
Excuse-making Motives	1.26	4.29	57.79

Table 5

Descriptive Statistics for Communication motives

	Online Class		Hybrid Class	
Communication Motives	**M**	**SD**	**M**	**SD**
Participatory Motives	3.59	1.18	3.64	.98
Relational Motives	3.37	1.21	3.94	1.12
Functional Motives	3.32	1.11	3.21	1.09
Excuse-making Motives	3.70	1.31	4.01	1.12

Note. * p < .05.

Student Communication Motives *continued*

Discussion

So often we assume that students come to the classroom with a static perception of learning—what it means, what it looks like, and what can be gained. 21st century learners, however, have unique stories, identities, and concerns they bring with them to the classroom, which impact their sense of efficacy and shape their communication motives. The purpose of this study was to examine perceived course effectiveness and communication motives between two class modalities: online and hybrid classes. First, we found there was no significant differences on course effectiveness between hybrid and online courses. However, the current research recommended that instructors in online and hybrid classes need to be competent in using various communication tools in addition to technical competences, subject knowledges, and pedagogical skills. This is helpful towards building community and establishing rapport between instructor and learners and between the learners themselves (Flock et al., 2021). With advancement of instructional technologies and instructors' experiences and commitments, students perceived online classes similarly to hybrid courses. Usually, instructors in hybrid classes are able to use the same instructional technologies and management as online classes.

The results indicated that students in hybrid classes are more likely to communicate with instructors for relational motives than ones in online classes. This is perhaps because they will undoubtedly be back in the formal face-to face settings at some point. In online classroom, the class information, such as assignments, feedback, and the gradebook, are explicitly presented to be more context-free and with no expectation for real-time communication and in-person unpacking or exchange. Since students regarded online classes as being impersonal with lack of access to instructors (Gimpel, 2022; Muilenburg & Berge, 2005), respondents hesitated to communicate with their instructors for relational motives. However, during face-to-face sessions in hybrid classes, students are easily able to have more information about the class environment and values of the instructors with more reliance upon rich communication. Therefore, more relational motives could be developed through the contextual information of communication (e.g. tones of voice, gestures, appearances, facial expressions, etc.) in hybrid classes. Relational motives of communicating with their instructors are positively related with instructor accessibility (Gimpel, 2022; Myers & Claus, 2012) and engagement (Park & Koo, 2021). While respondents in hybrid classes regularly meet their instructor in-person, they easily recognize that the instructors are available around them. On the other hand, some students in online classes are unable to find the instructor accessible virtually (Vikas & Mathur, 2022). We proposed instructors in online classes could spend more effort on acknowledging they are available virtually, employing virtual meeting spaces, online drop-in sessions, or timely and frequent announcements/reminders.

Also, respondents in the hybrid classes are more engaged in excuse-making motives than ones in online classes. Online classrooms can be characterized as low context communication environments where most of information and directions are conveyed through an on online learning platform to avoid any miscommunication and confusion about the assignment and requirements. However, hybrid classrooms might have more room for negotiation, in which some information and instructions are verbally delivered in-person. Therefore, students in hybrid classrooms can more easily and physically approach to establish rapport with their instructors, and, in this richer communication environment, they can ask for favors and explain about the reason for late work, tardiness, or incompleteness, and lack of effort, in a more flexible way. This finding is supported by previous research which showed that students who perceive their classroom to be interactive and supportive are more likely to communicate with their instructors for excuse-making motives (Gimpel, 2022; Mohandas et al., 2023; Myers & Claus, 2012; Vikas & Mathur, 2022). The excuse-making motives to communicate with their instructors is positively related with course related practices (Myers & Claus, 2012; Vikas & Mathur, 2022). These results suggest that instructors in online classes should make an effective virtual space to communicate with students through various communication technologies to increase students feeling of presence. Additionally, instructors in hybrid classes should establish an offline portion in a more flexible, supportive, and interactive manner so that students can easily establish a positive rapport and a high context communication environment.

Student Communication Motives *continued*

The current research addressed the research gap by exploring students' communication motives for interacting with instructors across two course modalities. However, due to the limited sample size, the current research is only a small part of the larger picture on the perceived course effectiveness of two class modalities. Also, the data only pertained to college students enrolled in social science classes and this self-report survey method is highly limited in interpreting quantitative data taken together to draw "a big picture of the population" (Keyton, 2023, pg. 163). Any qualitative focus group and in-depth interview method might be considered to contextually examine the responses of individual students or a group of students. Future research could investigate the long-term effect of student success and assessment in online and hybrid classes. Research has noted that student success is complex and affected by several factors, such as disparities in access and completion due to income, wealth, race/ethnicity and gender, which are exacerbated by digital access and equity in the time of COVID-19 (Burkholder & Holland, 2014; Cameron et al., 2019; Whittman, 2018). 21st century education must achieve greater diversity, equity, and inclusion on college campuses and in college completion, not just from an organizational perspective, but also from a societal perspective. In the crises felt in 2020 and beyond, Fain (2020) reports initial data revealing lower-income students and those from minority groups may leave higher education, perhaps forever. Exploring differences in how students perceive effectiveness and communication motives between hybrid and online classroom settings perhaps may reveal new insights to better meet 21st century learners where they are.

Student Communication Motives *continued*

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Student Communication Motives *continued*

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TEACHING REPORT

Faculty Practice in Designing and Implementing Purposeful Assessments of Learning: A Multidisciplinary Collaborative Autoethnography

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Abstract

As limited research has examined faculty practices in course design, faculty approaches to assessment constitute a critical area for further exploration. This article uses collaborative autoethnography to address the research question: "How do faculty design and implement purposeful assessments?" During two semesters, seven faculty members at a small university in the southeastern United States from different disciplines collected data regarding their experiences designing and implementing assessments in their courses. Researcher-participants used qualitative coding to analyze the data and identified catalysts for their designs and implementation. Coding revealed that student perspectives and faculty experiences were major catalysts for changes in assessments and that faculty made changes before and during course delivery, often utilizing new technologies. This study adds new findings to limited research on faculty design, offers faculty sound practices in constructing and implementing assessments in response to novel conditions, and provides insight into faculty assessment design capabilities and considerations.

Keywords:

assessment, autoethnography, design, faculty, purposeful

Introduction

The waning of the COVID-19 pandemic in the United States has revealed a new phase of instructional design. Learners have entered classes with novel skill sets and needs shaped by the pandemic's longer-term impacts (Hews et al., 2022; Kinsky et al., 2021; Kuhfeld et al., 2022). Following students' extended loss of face-to-face social interaction in educational settings, faculty members have reported students' discomfort and decreased engagement in physical classrooms, lower and erratic attendance, reduced engagement in the process of learning, weakened disciplinary and communication skills, and various forms of crisis (Greene, 2022; Miller, 2022). In response, faculty members have continued to adapt and modify their instruction. While much attention during the pandemic was paid to innovations in the delivery of instruction, most conspicuously the use of videoconferencing software and simultaneous or flexible delivery of instruction to learners inside and outside the designated classroom (Detyna et al., 2023; Kinsky et al., 2021), faculty members have also dedicated significant efforts to purposeful assessments of learning during and after the pandemic's most disruptive waves.

Faculty Practice *continued*

Complementing previous simulation, model-based, and emergency remote instruction studies, this empirical research article uses collaborative autoethnography to reveal important commonalities in faculty practice of purposeful assessments post-pandemic. Specifically, seven full-time and adjunct faculty members at a small university in the southeastern United States used collaborative autoethnography and qualitative coding to collect and analyze data from two semesters after the pandemic's height to answer the research question: How do faculty design and implement purposeful assessments shaped by lessons learned during the pandemic? Findings discussed include key factors that shaped faculty members' changes in their assessments, sources of information that shaped those changes, and processes they used to make those changes. Following a discussion of how these findings relate to relevant literature and a summary of sound practices in constructing and implementing purposeful assessments in response to novel conditions, the article shares recommendations for future research on faculty design and implementation of assessments.

Literature Review

While this study focuses on assessment, scholars have recognized that assessment and instruction are moored together so the learning process is as important as its products (Birnenbaum, 2003). Learning and assessment both aim to identify if a student has a specific competency, with assessment tools differing from learning tools in the assumption of whether the competency is fixed or dynamic (Arieli-Attali et al., 2019). Several scholars have argued that assessment should be for learning rather than of learning (Barrow, 2006; Black et al., 2003; Black, 2006; Nicol & Macfarlane-Dick, 2006; Sambell et al., 2012). Formative assessment (assessment for learning) is based on the idea that assessment shapes learning, while summative assessment (assessment of learning) can be seen as an endpoint rather than a way to measure learning progress (Birenbaum et al., 2005; MacLellan, 2001).

Scholars have used models, simulation, and research conducted during the emergency remote instruction phase of the pandemic to examine issues in faculty design and implementation of assessments, yet in-depth exploration of faculty members' processes remains rare. Among models, the Assessment Design Decision Framework (Bearman et al. 2014, 2016) has been used by several researchers (Boitshwarelo et al., 2017; Cranney et al., 2021; Jaam et al., 2021). This framework breaks decisions around the use of assessments into six parts: 1) purposes of assessment, 2) context of assessment, 3) learner outcomes, 4) tasks, 5) feedback processes, and 6) interactions. The Learning through Participation Assessment Design Framework has featured questions to guide faculty members through the assessment design process and offers a placement profile and guiding questions (Mackaway et al., 2011). Models are also integral to evidence-centered design, which uses a student (proficiency) model that specifies the knowledge, skills, and abilities (latent competencies) that are the outcome of the assessment; a task model that describes the task features that enable the latent competencies to be observed; and an evidence model that connects latent competencies and behavioral indicators from the task model (Arieli-Attali et al., 2019). Evidence-centered design strives to assess complex competencies (e.g., collaborative work, problem solving) and/or the performance of complex tasks (e.g., simulations, performance assessment) (Arieli-Attali, et al., 2019). These models provide useful frameworks but may not reflect contemporary faculty practice in assessment design.

Simulation research offers a creative way to explore faculty design of assessments. In Fernando Ruiz et al.'s (2021) qualitative study, faculty members from multiple disciplines explained their approach to designing assessment methods using a think-aloud simulation task, resulting in the identification of three faculty profiles. In the most common, classic profile, faculty focused on the assessment's feasibility, efficiency, logistics, and convenience. In the competence profile, faculty focused on the assessment's alignment with learning outcomes. The fewest faculty exhibited the coherence profile by focusing on the assessment's alignment with teaching methods. The authors noted that faculty practice differed from the simulation, confirming previously asserted dissonances between educators' aspirations for assessment design and assessment implementation (Bearman et al., 2017) and suggesting the value of additional research on faculty practices.

Faculty Practice *continued*

Some such research was conducted during pandemic era emergency remote instruction, when assessment design decisions' relationship to academic dishonesty was a concern for many instructors (Al-Maqbali & Raja Hussain, 2022; Khan et al., 2021). Scholars like Bjelobaba (2021) focused on how to deter cheating online with a complex assessment design that encourages academic integrity, student-centered learning, and collaboration. Jaam et al. (2021) sought to evaluate pandemic assessment design decisions and interviewed faculty and students and used the Assessment Design Decision Framework. Pandemic conditions stimulated intensified use of technology in instruction and provided important new opportunities to examine the role of technology in assessment (Khan et al., 2021), extending previous work (Osborne et al., 2013). Nevertheless, Dube et al.'s (2023) review of literature shows limited ongoing attention to faculty design of assessments. This state of the literature, coupled with findings of scholars such as Fernando Ruiz et al. (2021), call for a closer examination of faculty practice in assessment design and implementation as these conditions changed. Accordingly, the authors collected and analyzed data from two semesters after the pandemic's height to answer the research question: How do faculty design and implement purposeful assessments shaped by lessons learned during the pandemic?

Methods

Context and Methodology

In this research study, we sought to understand how a new phase of instructional innovation created by the COVID-19 pandemic prompted us as instructors to adapt and develop new assessments of learning. Our research team was comprised of seven faculty members at a small comprehensive, master's university in the Southeastern United States. Team members were from varied disciplines including humanities, arts, natural sciences, and business, and included both full time and adjunct instructors. One team member was both a course instructor and an educational developer with faculty rank.

Our methodology was collaborative autoethnography (CAE). Researchers conducting CAE engage in a mutual process of collecting, analyzing, and interpreting autobiographical data to understand social phenomena (Chang, 2013). Extending our previous collaborative autoethnographic research, we used group discussion and reflection to define our research question. We delved into our autobiographical experiences and shared lessons learned during the pandemic. Team members reported students reentering physical classrooms with reduced social interaction, completing subpar work immediately before deadlines rather than revising work based on feedback, and exhibiting lower performance levels on disciplinary, communication, and social skills. These collective experiences raised a fundamental question about the nature of purposeful assessment of learning during the pandemic. Consistent with CAE, these early collaborative reflective steps helped participants shape and transform their views and share multiple understandings of lived experience (Breault, 2016; Norris & Sawyer, 2016). One team member felt instruction was going backwards. Another framed colleagues' efforts to adapt assessments to students' changing needs and skill levels as intentional. The latter interpretation that emerged from the groups' sharing of their reflections on their experiences informed the team's approach to answering the research question by collecting data from team members' assessments.

In CAE, researchers are also research participants who contribute research data about their experiences for analysis and interpretation (Chang et al., 2013). Moreover, our methodological approach allowed us to engage in a process of exploring our perspectives on assessment in relation to our distinct professional identities as both individuals and coworkers in a shared educational setting (Breault, 2016; Norris & Sawyer, 2016). CAE has been used effectively in pandemic research in higher education settings (Authors, 2021; Roy & Uekusa, 2020).

Like Barkhuizen and Wette (2008), we used narrative frames to create a template to scaffold our collective responses to assessment. Narrative frames (see Warwick & Maloch, 2003) are "a data collection instrument comprising a series of sentence prompts that facilitate the elicitation of participant narratives by scaffolding the writing process" (Barkhuizen, 2011; p. 402 as cited in Barkhuizen, 2014). While narrative frames can restrict collaborators in creating their own individualized story regarding the phenomenon they are conceptualizing (in our case our responses to assessment), we believe

this limitation did not restrict the authors of this article for these reasons: (a) the conceptualization of our research questions was the result of collective discussion and (b) the data collection prompts functioned as an organizational tool to frame our responses in a way that was manageable for educators approaching assessment from discipline-specific lenses.

Data Collection

The research team met during Fall 2021 to identify courses with purposeful assessments and developed prompts to collect data from them (Appendix A). Most prompts addressed the types of assessments faculty members considered purposeful, changes made, factors contributing to that change or implementation, timing of changes, and implementation methods. Prompts 10 through 12 addressed results of implementation, possible causes, and intentions for future change. Across two semesters, team members contributed data from 13 courses in seven degree programs and the general education program. Courses spanned lower and upper division classes and ranged from first-year undergraduate courses to undergraduate capstone and master's courses. Classes were taught in face-to-face and asynchronous online modalities. Team members wrote responses to prompts 1 through 12 on Fall 2021 by December 31, answered prompts 1 through 9 about relevant classes they were teaching during Spring 2022, and uploaded responses for both semesters to the team's shared drive on January 31. This approach ensured trustworthiness of data by preventing early mutual influence on data collected across the two semesters.

In prioritizing trustworthiness, we paused before continuing with additional group discussion, reflection, and questioning consistent with CAE (Norris & Sawyer, 2016). Thus, a potential pitfall of our data collection could be a lack of "regenerative transformations" (Breault, 2016, p. 778) that can result from interactions and subsequent revisions of written narratives. Breault (2016, p. 782) noted the pitfalls of "parallel talk" in which participants tell their own story without interaction with other participants. Furthermore, some participants can fall into giving accounts that are simply like "theory confirmation" (Breault, 2016: 782) of their beliefs, i.e. they have no intention of really listening to others or transforming their narrative in any way.

Despite this potential limitation, we determined that our data collection phases were appropriate given that our disciplines were so different and cross-disciplinary discussion of raw data may have been challenging, particularly as faculty faced ongoing demands during the ongoing pandemic. This decision was also formed by deliberating initiating the data collection process through group discussion of our personal narratives regarding assessment and lessons learned during the pandemic. In other words, we determined our methodology and began the data collection through a shared process of building a common narrative and then splitting into individual introspection for data collection phases prior to further engagement with the data.

Data Analysis

Three team members coded the data without a priori codes. The coders first individually scanned and coded the data using exploratory techniques and a combination of descriptive, process, and in vivo codes in line-by-line coding (Saldaña, 2021). At this point, the coders engaged other team members in reviewing and discussing the data and determining the next steps for coding. Next, the coders began a second phase of coding applying closer scrutiny to preliminary codes. A summary code was assigned to each faculty member's response to each question, capturing what was relevant to the question regarding assessment. This holistic, conceptual coding captured basic ideas expressed by each member about their assessment strategies in a purposeful approach to assessment. Quotations from responses are used here with faculty consent and anonymized.

Findings

Responding to lessons learned during the pandemic, faculty members employed purposeful formative and summative assessments, and made changes in seven formative assessments and ten summative assessments, which included online games, polling software, demonstration videos, multimodal presentations, guided analysis, reflections, and blog and social media posts. Coding revealed types of assessments that faculty redesigned, catalysts for faculty members' modifications, key factors that shaped faculty members' changes in their assessments, sources of information that shaped those changes, and processes they used to make those changes (Table 1).

Faculty Practice *continued*

Table 1

Factors Affecting Refinement of Assessments

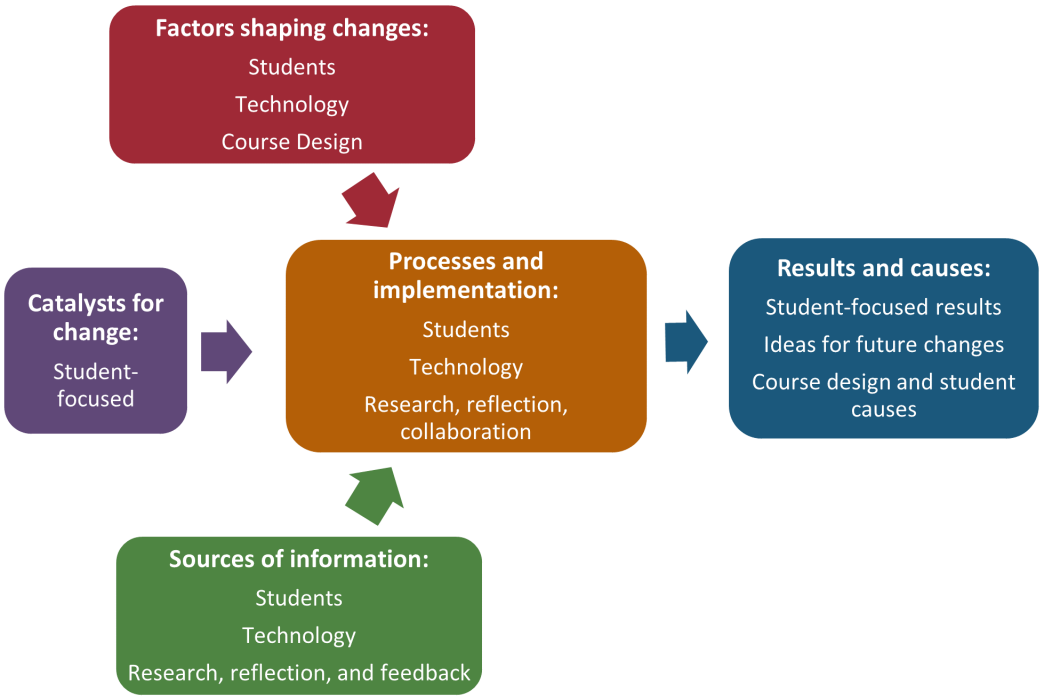
	Catalysts for change	Factors shaping changes	Sources of information	Processes and implementation	Results and Practices
Students	• Desire for student development of discipline-specific skills • Poor student engagement • Awareness of student perspectives, interests, and responsibilities	• Student performance during the pandemic • Desire to enhance student learning in changing and challenging conditions	• Past student performance • Student feedback	• Considering student perspectives	• Improved learning • Student confidence • Less student anxiousness • Student engagement • Attributed causes of dissatisfying results: • Student commitment • Student mental health and disabilities • Program-level deficits
Technology		• Opportunity to utilize new technologies during the pandemic	• Available technologies	• Use of new technologies before or during course delivery	
Research, reflection, feedback			• Discipline-specific research • Personal experience • Feedback from students, leaders, and faculty • University and personal resources	• Reflection on prior experience • Research • Collaborating with colleagues	• Ideas for future changes
Course design		• Changes to learning outcomes • Program changes • University initiatives		• Integration into course and program context • Sequencing and scaffolding • Modifying requirements • Modifying rubrics • New instructions • New artifacts	• Attributed causes of positive results: • Alignment with course design • Sharing models and examples in instructions • More engaging learning environment

Faculty Practice *continued*

The data shows how faculty members refined or modified existing assessments to better serve students. Instructors honed discipline-specific practices, modified requirements, clarified instructions, required a series of steps instead of one large product, or implemented new tools or strategies that better allowed students to demonstrate learning. Instructors also aligned assignments to workplace settings or new program learning outcomes and provided more variety for students. Figure 1 is a simplified graphic representation of the main findings. Below we discuss in detail each main category of our findings.

Figure 1

Visualization of Main Findings



Catalysts, Factors, and Information Sources

As faculty responded to the lessons learned during the pandemic, several catalysts prompted them to change their assessments, including student mastery (or lack thereof) of discipline-specific skills and practices, lack of student engagement, and instructor awareness of student perspectives, student interests, and student responsibilities. For example, one instructor responded to feedback that graduate business students were not workplace-ready and adjusted assessments to reflect real-life scenarios. Similarly, a first-year writing instructor redesigned a final assessment to align with digital literacy skills needed for the workplace. Other instructors responded to low student engagement, assignment fatigue, and "staleness" of assessments. One adopted a student perspective on assessments in the learning management system (LMS) for a master course taught by rotating instructors:

> When I looked at the assessments from the students' perspective (as I often do), I felt a sense of staleness and unnecessary repetitiveness. If I were a student, I would desire more variety as an incentive to participate (on deeper, richer levels) in assignments. This heightened perspective is the reason I was prompted to make changes to the formative assessment.

Faculty adjusted assessments based on specific pandemic-related factors, including the opportunity to utilize new technologies, the desire to enhance student

Faculty Practice *continued*

learning in changing and challenging conditions, student performance, and changes to learning outcomes. The instructor of an introductory lecture course for majors used affordable new technology that allowed more efficient use of class time. Similarly, an arts instructor discovered an online game that made a tedious assessment more engaging. This instructor also noted that assessment modifications made previously during pandemic learning were insufficient for long-term use and made further adjustments to emphasize strong foundational disciplinary skills required for upper-level courses. When faculty in arts, humanities, and business wanted to help students develop workplace readiness and digital skills, student work and feedback from alumni and employers factored into changing assessments. Faculty across disciplines responded to unsatisfactory student performance during the pandemic, which one trained in backward course design cited as a major factor. Finally, program changes and university initiatives begun during the pandemic also prompted new assessments that measured new outcomes.

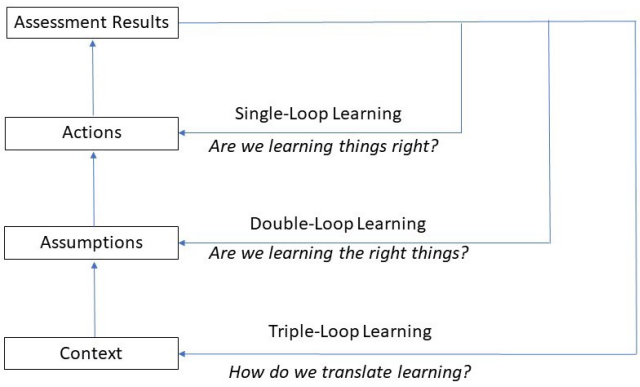
To inform these changes, faculty members used several similar sources of information. First, they used detailed, firsthand information about past student performance during the pandemic. In arts classes, an instructor relied on both positive and negative information about students' performance—their past lack of comprehension, growing comfort with online instruction, and enjoyment of interactive learning environments. Second, faculty members drew on past personal experience in multiple relevant roles, including reflection on their past teaching experience, experience with the scholarship of teaching and learning, and recent experiences in graduate school as learners. Third, faculty from varied disciplines pursued relevant feedback from multiple sources, including students, their program director, their program's board of advisors, and other faculty to inform their purposeful assessments. Finally, faculty members used information from university resources, personal resources, technologies, and discipline-specific research publications and conference presentations. Examples of such resources included information about the extent of library resources available to students, technology support for the LMS, the capabilities of other technologies that the university provided to students for free, and relevant scholarly literature in business and the arts.

Processes

Faculty made these changes before and during the semester of course delivery by using several distinct processes, including reflection, research, sequencing and scaffolding formative assessments, and implementing technologies, among others. Several faculty changed their assessments before course delivery. Advanced planning processes included researching resources, collaborating with colleagues, modifying project requirements, modifying rubrics to include corresponding criteria, considering the course design, considering student perspectives, and reflecting on prior teaching experience. For example, one faculty member mapped the assessment from the perspectives of students, program learning outcomes, and employers' skill and competency requirements by collaborating with recent graduates and members of the program's board of advisors. The faculty member used the triple-loop learning model (Argyris & Schön, 1996) to work from the assessment results or end-product backwards in three steps (Figure 2).

Figure 2

Triple-Loop Learning Model, Adapted from Argyris & Schön (1996) to Inform Assessment Design



In other courses, some of the same faculty deployed modified and new assessments mid-semester. Processes used included modifying project requirements, modifying rubrics, creating new assignment instructions, and implementing new technologies. In at least one course, the instructor waited to make these changes mid-semester because the pandemic had previously prompted changes in the course modality and the instructor wanted to be certain of the modality before making changes to assessments. While instructors' processes

Faculty Practice *continued*

varied, students' needs and instructors' desire to provide effective and meaningful feedback were major factors in assessment design. As one faculty member explained:

> I started the semester with a plan for students to compose a written argument without research based on a social justice issue topic of their choosing from a selected list of documentaries they could use as evidence in their argument. As the semester progressed and I gave more consideration to what the students are being asked to do vs. what is expected of them outside of a classroom, I decided to modify the final assessment during course delivery but before the assessment guidelines were distributed.

Implementation

Faculty members implemented modified and new assessments by having students produce new kinds of artifacts, implementing various technologies, carefully sequencing and scaffolding assessments, and integrating assessments into the instructional context. Given decreased student engagement during the pandemic, several instructors had students construct and submit new kinds of artifacts with greater relevance or meaning to students. In one course, students created a series of blog posts or social media posts to demonstrate topical content knowledge and effective use of rhetoric for specific genres and audiences; these artifacts replaced a traditional annotated bibliography and research paper. In another course, students were asked to submit a "guided reflection" as a formative assessment of their visual analysis skills. In contrast to more traditional assessments, this "Living with Meaning" reflection engaged students by selecting an object, structure, or site with personal meaning and asked them to "describe it in detail, and then articulate how those details of form, color, texture, etc. contribute personal meaning for the object, structure, site."

Many instructors implemented modified and new assessments through technology, deliberately shaping the increased use of technology required during the pandemic. Most integrated these new technology-reliant assessments with the LMS regardless of course modality. For example, a faculty member in the arts integrated an online typography game with the LMS as an assignment, while another used the LMS's integrated asynchronous video discussion tool to gauge students' ability to give constructive feedback. Meanwhile, other instructors deliberately used technology less. During a lower division course for majors, one instructor used classroom polling technology for formative assessment of students' mastery of terminology less as student learning improved.

Consistent with observations about students' submitting poor, last-minute work rather than engaging in revision, several instructors implemented their modified and new assessments by emphasizing careful scaffolding and sequencing of assessments. They focused much attention on formative assessments and giving students multiple opportunities to practice new skills and receive feedback prior to higher-stakes summative assessments. One faculty member used a weekly reflection assignment in the first half of a course prior to a group project "to give students consistent and frequent practice in perfecting skills," such as decoding information for comprehension, accurately using disciplinary terminology, and relating global challenges to their own experiences. One faculty member stressed the importance of repeated practice in an educational setting prior to a real-world setting:

> Last year I taught the class, I recognized how difficult it was for them to deliver effective and critical critiques. They wanted to simply say 'great' or 'it was amazing.' But in essence, they were not helping each other learn and grow that way. The detailed instructions on how to deliver that feedback, and then asking them to verbally practice through videos, is important because that way they can transfer it to giving and receiving feedback in [real-world] situations.

In several courses, faculty members relied on a series of different formative assessments, rather than a recurring formative assessment, to gauge and give feedback on students' skills prior to a summative assessment. For example, one business faculty member made extensive efforts prior to course delivery to sequence four formative assessments that met students at the skill and experiences they brought to the class and deliberately sequenced the formative assessments to progress from individual-focused to strategic-focused and from simple to complex.

Significantly, faculty did not approach these as isolated assessments but rather integrated them with

the immediate course context and the larger program context. This integration ranged from being flexible with dates to modifying the documentary infrastructure of the assessments by changing project requirements, altering rubrics, and communicating updated disciplinary practices, such as those in the arts, effectively to students. Faculty in business, humanities, and general education ensured that their new assessments supported program requirements. An instructor of the general education capstone course noted:

> want[ing] to reinforce assessment measures which would provide students with deeper opportunity to demonstrate how they apply their learned knowledge of key components of the [signature general education program]: reflection/metacognition, curiosity, and integrative thinking of global challenges as engaged global citizens.

Results and Sound Practices

Most faculty observed positive results from implementing these modified and new assessments. Several in the arts and sciences reported improvements in student learning during the Fall 2021 semester or on final exam results after implementing new formative assessments. Faculty members in the arts and humanities noted greater student confidence and competence in giving peer feedback, students' being less anxious demonstrating clinical skills in video recordings rather than live demonstration in front of peers, increased student engagement with their peers and course content, and the ability to create "more in-depth, relevant arguments because they had to visually and orally present them" instead of simply writing them. Faculty attributed these positive results to their having created a more engaging, positive learning environment through their changes to assessments, particularly through the incorporation of technology and fostering of positive peer influence, the sharing of models and examples in the revised instruction developed to support the assessments, and the alignment of the assessments with the rest of the course design.

At the same time, some instructors reported dissatisfying results. One faculty member reported fewer satisfying results with an annotated bibliography assessment, attributing this to students' commitment to work, issues faced by students with disabilities, and student mental health issues despite taking a carefully scaffolded approach. Another instructor cited deficits in the degree program as a contributing factor to unsatisfying results. Significantly, most instructors readily identified modifications that they planned to make in assessments and their relationship to the remainder of the course design in future iterations of their courses. For example, a faculty member in the arts planned to add pre- and post-assessments to clarify the previously mentioned typography game's impact on students' skills.

Through these approaches, faculty members applied several sound practices across wide-ranging disciplines. When creating or modifying purposeful assessments, faculty were open to making changes in assessments both before and during course delivery to form a coherent course design while also remaining responsive to unexpected student needs. Making changes before delivery helped integrate the assessments with the larger course context and course design, including their relationship to instructional materials, learning activities, and learning objectives. It also assisted in integrating the assessments with the larger program context, including the program learning outcomes and employers' needs relevant to the program. More effective use of technology in assessment did not necessarily require more use of technology, but rather technology that was carefully selected and implemented to solve a specific learning problem.

Discussion

This article's purpose was to explore how faculty design and implement purposeful assessments shaped by faculty experiences, including lessons learned during the pandemic. Consistent with previous findings during the COVID-19 pandemic (Authors, 2021), our study's faculty used reflective, iterative approaches to learning design in a continuous process of recognizing problems, devising design solutions, and dealing with emotions constructively to achieve positive learning outcomes. Many instructors modified and created new assessments relying on technology and provided accommodations for students, consistent with previous research on instructors' pandemic adaptations to student needs and learning design changes made while the courses were in progress and between course iterations based on factors such as scale and feasibility (Authors, 2021).

Faculty Practice *continued*

Our findings illustrate the two less common profiles from Fernando Ruiz et al.'s (2021) simulation study. Resembling the competence profile, several faculty members' approaches attended to cohesion between course content and assessed learning outcomes. Like the cohesion profile, several faculty members attended to assessments' relationship to the rest of the course and degree program. Faculty members did not illustrate the classic profile, which emphasizes efficiency and was most common in Fernando Ruiz et al.'s sample.

Faculty members' sequencing of formative and summative assessments reflects a top-down approach where the design starts with a broad framework, like Bennett et al.'s (2017) study. In their findings and ours, instructors iteratively considered the learning outcomes, the scope of the content to be covered, their general ideas for learning activities, and their assessment strategy. Our study indicates several influencers for the strategy including additional student mastery, discipline-specific skills and practices, student perspectives, interests, responsibilities, and engagement, workplace readiness, and opportunities for students to use innovative technology. With the framework and influencing elements in place, their participants and ours specified the detail, while checking against the broad framework and adjusting as needed. Like Stark (2000), Bennett et al. (2017) identified a non-systematic cyclic design process as seen in the accounts of our researcher-participants and variation in the steps taken depending on whether they were designing or revising an assessment.

The iterative nature of faculty members' approaches to assessment design and implementation in this study is consistent with Bennett et al.'s (2017) findings based on the 3P model (Biggs 1993). Based on these findings, the instructor reflects on the success of the design to identify future changes, feeding into another cycle of redesign, as our findings indicated with faculty members' efforts to increase scaffolding and sequencing. Scaffolding may include some gateways to learning, as our study found, such as incorporating information and data literacy, metacognition, and time management into the design of the formative assessments (Association of College and Research Libraries, 2016; Flavell, 1979; Van der Meer et al., 2010). This CAE study indicates instructors pursued this feedback from multiple sources including students, program directors, program outcomes, board of advisors and faculty with whom they were collaborating. Faculty members considered information from professional resources in the university, personal resources, technologies, and research publications. These activities contribute to developing instructor knowledge, which is continuous improvement for future teaching (Bennett et al., 2017).

While our data collection and coding were not influenced by Bearman et al.'s (2017) interview-based study of Australian university educators, this CAE study offers confirmation, in a different setting, of many of their findings and their descriptive model of the assessment design process. While faculty engaged in what Bearman et al. (2017) termed essential design activities, including designing rubrics and assessment tasks, they also directed much effort to Bearman et al.'s selective design activities, particularly promoting student engagement, and meta-design activities, including strategizing how to achieve change. Our data, drawn from a different cultural and educational context and from instructors of courses, rather than unit or subject coordinators as in the Australian study, suggest that basic features of Bearman et al.'s descriptive model of the assessment design process—impetus for change, followed by professional and environmental influences shaping educators' engagement in essential, selective, and meta-design activities—has been sustained rather than fundamentally altered by the pandemic. However, our study revealed a predominance of catalysts that Bearman et al. summarized as meeting student needs, both within the class setting and in the future workplace. This may be attributed to the researcher-participants being instructors seeing student responses and performance on a weekly basis, the teaching focus of the institution and culture of responsiveness to student needs, and the pandemic's sustained call on faculty to respond to those needs in challenging circumstances, which faculty report as an important factor in instructional practice several semesters after the height of the pandemic and common official returns to in-person instruction.

Some findings in this study also contradict previous literature. Significantly, our findings based on data collected in 2021 contrast with research on faculty assessment practices during the earliest phase of the pandemic, when faculty appeared to address assessment as an "afterthought" (Slade et al., 2021) and encountered frustrations with online assessments (Muna et al., 2024). While Fernando Ruiz et al. (2021) found that faculty

were reluctant to make changes to their assessment practices, the participants in this study not only made modifications to their assessments and/or created new assessments but also identified next rounds of improvements to make when reteaching the same courses. While existing research has highlighted a gap between faculty members' aspirations, practices, and intentions with assessments and students' perspectives (Delany et al., 2018; Fernando Ruiz et al., Forde-Leaves et al., 2023; 2021; Jessop, 2024), this research found the opposite: many faculty considered students' perspectives and used student performance and perspectives to inform the design and implementation of their new and revised assessments. Faculty decisions about how to modify their assessments were often driven by a goal of increasing student engagement, a psychosocial state that includes behavioral, emotional, and cognitive connection to learning and is a predictor of student satisfaction, retention, and success (Thomas, 2012). Such attention to student experiences when designing and implementing assessments is critical, as those experiences are key to high retention and completion rates (Arasaratnam-Smith et al., 2021). Please refer to Figure 1 for visualization of these processes.

In turn, such assessments can positively impact students' experiences. Faculty observations of increasing student confidence suggest that purposeful assessments can support student self-efficacy, an individual's belief they can achieve a goal or task (Bandura, 1977). Faculty efforts to modify formative assessments and carefully scaffold and sequence formative assessments can help students achieve subject matter mastery (Linnenbrink & Pintrich, 2003), and contradict a decline or underutilization of formative assessment previously observed in some higher education settings (Gibbs & Simpson, 2004; Quesada-Serra et al., 2016). Faculty efforts to promote a positive and enjoyable learning experience through formative assessments can support student success (Kahu & Nelson, 2018). Faculty attention to supporting program learning outcomes such as metacognition through their purposeful assessments supports skill development that extends well beyond one discipline and students' readiness to contribute effectively to society and the workforce (Evans & Rosenbaum, 2008; Flavell, 1979; Ibabe & Jauregizar, 2010; Kruger & Dunning, 1999).

Limitations and Recommendations for Future Research

While this study draws on the experiences of seven faculty members teaching 13 courses in seven degree programs and the general education program, limitations remain. First, this study was conducted at a small teaching-intensive university in the United States and findings may not be representative of other types of institutions and cultures. Second, only women joined the research team. Third, while the team includes white, African American, and international faculty, it does not represent the full ethnic and racial diversity of faculty at the university or other higher education institutions in the United States.

Future research can extend this study in several ways. First, researchers can incorporate student perspectives along with faculty perspectives to understand the impacts of these faculty processes in assessment design and implementation on student learning and student experiences in courses. Second, mixed methods research can enable the triangulation of data to examine the efficacy of purposeful assessments shaped by the pandemic on student learning. Artifacts of student learning, such as pre- and post-test data, can be collected and assessed by instructors in disciplines other than the instructor of record to gauge the impact of purposeful assessments on student learning.

Conclusion

Collaborative autoethnography reveals how faculty members across wide-ranging disciplines have continued to modify assessments of learning in response to lessons learned from the pandemic and other experiences. Prompted by catalysts including student mastery or struggle of discipline-specific skills, lack of student engagement, and instructor awareness of student perspectives, interests, and responsibilities, faculty members modified both formative and summative assessments. They revised and designed new assessments in response to specific factors related to the pandemic, including student performance, available technologies, a desire to enhance student learning in these challenging conditions, and changes to learning outcomes. They revised and designed new assessments both before and during course delivery by drawing on information about

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past student performance during the pandemic, past personal experience in multiple relevant roles, varied professional resources, and feedback from students, program directors and board of advisors, and other faculty. Reflection and research were integral to their processes. Faculty members implemented modified and new assessments of learning by asking students to produce new kinds of artifacts, using various technologies, sequencing, and scaffolding assessments, and integrating assessments into the instructional context. While some faculty observed mixed results, most faculty observed positive results, and overall, faculty members readily identified ways to continue modifying and improving their assessments when preparing future iterations of their courses.

While much attention to assessment during the pandemic focused on academic integrity and the use of exams in online environments, this study adds new, focused findings to limited prior research on faculty design, offers faculty across many disciplines sound practices in constructing and implementing purposeful assessments in response to novel conditions, and provides administrators and instructional designers who collaborate with faculty detailed insight into faculty assessment design capabilities and considerations. It highlights that while technology has a major role to play in purposeful assessments, more effective use of technology does not necessarily require more use of technology, but rather technology that is carefully selected and implemented to solve a specific learning problem, such as the use of technologies in formative assessment to engage students in practicing new skills, creating an enjoyable learning experience, and giving them timely feedback. In addition to confirming faculty members' efforts to continuously improve assessments both before and during course delivery, this study suggests the potential for strong and greater use of student experience and perspectives when designing and implementing assessments.

Ethics Declarations

Research Involving Human Participants and/or Animals

The procedures used in this study adhere to the tenets of the Declaration of Helsinki. The research protocol was reviewed by the university's Institutional Review Board (IRB) and was determined to satisfy the federal regulatory criteria for exemption from further IRB review.

Informed Consent

Researcher-participants consented to participate in this study and consented to the inclusion of quotations in the manuscript.

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Faculty Practice *continued*

Appendix A

Course (Prefix, Number, and Title):

Semester and Year:

Degree Program or Other Program That the Course is Part of:

1. What assessment of learning did you use this semester that you consider purposeful in some way?
2. Was this a summative assessment of learning or a formative assessment of learning?
3. What change(s) did you make in this assessment of learning compared with previous semesters teaching this course?
4. What prompted you to make those changes in this assessment of learning?
5. What more specific factors shaped the way you made those changes in this assessment of learning?
6. How did you weigh various factors when making changes in this assessment of learning?
7. What sources of information informed the changes that you made in this assessment of learning?
8. What process(es) did you use to make the changes in this assessment of learning? As part of your response, please indicate when you made design changes (before or during the course delivery)
9. How did you implement the changes in this assessment of learning? (For example, timing, technology, discussion with students, running the assessment more than one time, deviated from your plan, etc.)
10. What results did you see this semester from the changed assessment of learning?
11. Why do you think you saw those results?
12. What might you do differently with this assessment of learning the next time you teach this course?

ESSAYS

Our Need for Noddings-inspired Classrooms: A Vision for Higher Education Faculty

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Abstract

Students have a universal need to be known, to have others acknowledge them for who they are when at their best and to support them when struggling to overcome life's challenges that come their way. Recent research suggests college students are experiencing unprecedented levels of stress, anxiety, and depression. How might higher education faculty proactively respond to and support all students so they can thrive on college campuses? This paper argues for a need for creating Noddings-inspired classrooms and portrays how and why different forms of care are needed to promote students' well-being. Five visioning statements are offered as a starting place for higher education faculty to use to develop and enhance their own teaching practice.

Keywords:

higher education, relational care, higher education pedagogy

Introduction

Not long ago, a study out of Eastern Michigan University found the mental health of college students across the United States has become profoundly troubling, reporting a 135% increase in depression and 110% increase in anxiety from 2013 – 2021 (Colarossi, 2022). Just as troubling, the American Psychological Association recently reported, "By nearly every metric, student mental health is worsening. During the 2020-2021 school year, more than 60% of college students met the criteria for at least one mental health problem… and in another national survey, almost three-quarters of students reported moderate or severe psychological distress" (Abrams, 2022, para. 1). When students feel stress, anxiety, and depression, it can make it hard for them to concentrate on learning. It can cloud the clarity necessary for setting goals and reaching them. And, it can create internal barriers to interacting comfortably in social settings, including in college classrooms (Li et al., 2022). On-campus counseling centers are in high demand yet are often short on staffing and resources. Some believe that even if counselor staffing is increased, the challenges students face may need to be addressed by more than counseling alone (Abrams, 2022).

As I contemplated the reported downturn of our students' mental well-being, I ask: In what ways can I, and perhaps other higher ed faculty too, be responsive to students' needs? How might we work together to lessen the load for today's college students? In this article, I argue that we must do something – because the stakes have become far too high for our students -- and I offer a solution we might try.

Students have a universal need to be known, to have others acknowledge them for who they are when at their best and to support them when struggling to overcome life's challenges that will inevitably come their way.

Our Need for Noddings-inspired Classrooms *continued*

Students also have a universal need to care for others and to be cared for. In summer 2022, academia lost philosopher and educator Nel Noddings whose ideals about infusing care in education can be called upon to guide us to support students during this difficult time. Her work brought to light students' most basic yet often overlooked need: the need to be authentically known and to be unconditionally cared for by others in their lives, including their teachers. Decades ago, Noddings asked educators, "Does the student recognize that he or she is cared for? Is the teacher thought by the student to be a caring teacher?" (Noddings, 2005a). Noddings' insights into students' need for care can be used to guide higher education faculty today.

Relational Care as a Theoretical Framework

Noddings asserted that although we often hear, "All teachers care", the reality is that there are plenty of students who do not always experience it that way. She explained that there are many times when students report they have had teachers who were unkind and cruel to them, who were discouraging and unsupportive. She theorized that even if teachers do portray a sense of care, it may be a virtuous, rather than relational, sense of it.

Noddings offered this unique distinction – virtuous vs. relational care – by explaining that some teachers portray virtuous care which, while important, focuses primarily on a concern for students reaching outcomes while showing little interest in developing a relational sense of care for them. Contrastingly, teachers who portray relational care show genuine, personalized support of their students, not because they are learners in their classrooms, but because *they care* about and value who their students are as individuals (Noddings, 2005a).

Noddings challenged us to contemplate our often oversimplification of care by offering, "caring is not just a warm fuzzy feeling that makes people kind and likeable. Caring implies a continuous search for competence…. To have as our educational goal the production of caring, competent, loving and loveable people is not anti-intellectual. Rather, it demonstrates the full range of human talents" (1995, p. 676). Noddings further argues that the "relational sense of caring forces us to look at the relation" (Noddings, 1984, p. 1). While we may focus on teachers' perspectives of their interactions and care of and for students, Noddings suggests such a narrow focus does us very little good because both the carer and the cared for need to be fully understood. Noddings insists that we could learn most by taking a phenomenological approach to framing the ideas of care as a relation, to make both perspectives of the carer and the cared for equally known and equally valued.

Noddings' theoretical stance argues for a reconstitution of education as one that centralizes relationships as pedagogy, because doing so promotes individual well-being, an underlying requisite that shapes academic success. What specific lessons might college faculty glean from Noddings' work? And what good may come from doing so?

Building Relational Care on College Campuses

Envisioning the future as we wish it would be requires creativity to imagine a world different from what we know. I invite you to join me in envisioning the following: What would college classrooms look like if ALL students felt and were individually known and cared for by their classmates and just as equally, by their college professors? What outcomes might come from students and faculty collaboratively creating caring classroom communities together? While the goal may seem lofty, perhaps if we can imagine it together, we can begin to collectively work toward it becoming our students' reality. To get us started, here are five visioning statements as a starting place to creating Noddings-inspired college classrooms.

Vision #1: Consider Your "Who" Before Your "What"

While it is common for college faculty to focus on their discipline, to perfect lectures and the craft of promoting critical thinking, what might happen if they pause initial content planning and shift the focus to answer: *Who* am I teaching? before answering *What* am I teaching? If we as college faculty focus on knowing our "Who" before our "What," it begins to place students at the heart of our work, which is right where they need to be. Noddings argued that it is essential that we know the identities of our students so they are fully seen as wonderfully complex and whole individuals. Perhaps a college freshman identifies as a female, Black, bisexual, Kenyan whose first language is Swahili. Knowing her intersectional identities can help the student to be understood and to know how to offer resources and support when needed. Would that be enough? Would

Our Need for Noddings-inspired Classrooms *continued*

Noddings suggest such an offering would be a start, yet fall short of providing relational care? What else could be made available to the student? Noddings provided responses such as, "Whoever she is at a given moment, whatever she is engaged in, she needs – as we all do – to be cared for" (Noddings, 2005b, p. 173).

How might we, as Noddings advocated, truly get to know about and care for our students? Here are three steps we might take to work toward this first vision:

- Before the semester begins, send out a student survey to gather information about who the incoming students are as individuals, to ask about their learning preferences and interests. Just as important, as the semester progresses, take time to look back at survey responses to learn about who students are and utilize the information to personalize student interactions.

- Implement community builders into the classroom so students can get to know each other personally. Work toward getting to know students' names quickly and provide plenty of opportunities for students to talk and share information about themselves in pairs and in small group settings and include yourself in that sharing, too. Doing so can begin to build a sense of trust, safety, and care while creating a sense of belonging among professors and classmates. In alignment with Noddings' assertions, recent research suggests that when college students experience a sense of belonging on their college campuses, it contributes to their academic success while also reducing the risk of mental health concerns (Kirby & Thomas, 2022).

- Offer personalized feedback to students both verbally and in written form. A lot of important teaching happens after class has ended, during the feedback cycle. Although all feedback can be useful, it is when feedback is personalized that it can make such a difference to students. Personalized acknowledgement of what went well and specific goals for the future, can provide students with motivation and encouragement to continue.

Having a student-first mindset is essential. Students can sense when they are valued by college faculty. In Noddings' words, "The student is infinitely more important than the subject matter" (1984).

Vision #2: Be a Time Giver

Noddings suggested getting to know who students are requires spending time conversing with them and, most especially, listening to them. Even the most well-intentioned college professors may be challenged to find time to individually connect with students. As mentioned previously, class sizes can be overwhelmingly large and working toward reappointment, promotion, and tenure can be incredibly time-consuming. How can college faculty give their time generously when they often feel there is so little of it? Where might they find the time? Noddings implies that it is not that we need *to find* the time, it is just that we need *to give it.* She argues that teachers must develop a relation of care and trust with their students; indeed, it takes time and attention to students to establish both. When we give our time to students, our focus and attention is on them, which can be a very validating experience. When students feel validated for who they are, they are individually acknowledged as being important and worthwhile and this experience is especially necessary for students who do not always perceive themselves that way.

How might college faculty be known as time givers among their students? Here are a couple steps to work toward this vision:

- Plan regular opportunities for students to talk to each other in class, to express themselves freely, to share what is on their minds. During these moments, college faculty can offer time to meet with small groups; lean in and listen in; they can take note of what is being said, of who is talking and who is not. Noddings illuminated the importance of affording students with opportunities to listen to their classmates and their teachers, so they can begin to be known personally. According to Noddings, "There is little more devastating to our self-esteem than the refusal or failure of others to listen to us" (2003, p. 23).

Our Need for Noddings-inspired Classrooms *continued*

- Make it a priority to give time generously. I have a colleague who meets with all her students in small groups outside of class multiple times throughout the semester. Doing so provides her with opportunities to get to know her students deeply. Yes, it is time-consuming and yes, she is known as a time giver. What positive outcomes might come from her doing so?

Students need to feel valued for who they are, and they need to feel individually worthwhile to their professors and their classmates. College faculty who strive to create Noddings-inspired classrooms would give their time to their students because according to Noddings, "Time spent on building a relation of care and trust is not time wasted" (Noddings, 2012, p. 774).

Vision #3: Take a Whole Student Approach

The social, emotional, and mental challenges our college students face may be lessened by college faculty who offer care and support both in and outside of the classroom. While some circumstances may make it difficult for faculty to get to know students personally, it is not impossible to do so. Current technology has provided many affordances for college faculty and students to digitally connect with each other outside of class in ways that did not exist for previous college-going generations. Emails, chats, texts, IMs and even phone calls have created opportunities for spontaneous and recurrent communication between college faculty and students. These connections have in many ways stretched class time beyond fixed course schedules. It is not uncommon for college faculty to have students reach out through email about personal situations that may have seemed uncomfortable or incongruous if shared during class time. While it goes without saying that college faculty often want to wave a magic wand to make students' troubles disappear, we know that is not possible. And, while faculty are not magicians, there is a lot they can do to show students they care while offering support and recommending resources and services that can help even after their class time ends.

Noddings advised that it is essential for teachers to recognize that "students are whole persons – not mere collections of attributes, some to be addressed in one place and others to be addressed elsewhere…. Schools must be concerned with the total development of children" (2013, p. 3). Might it be worthwhile for us to consider ways that colleges are also concerned with the total development of students in much the same way Noddings argued for?

How might colleges support the development of the *whole* student? Some colleges are already working to providing more holistic support for their students by intentionally weaving a culture of wellness throughout their college campuses. John Hopkins University's Vice Provost for Student Health and Well-being explained, "This increase in demand has challenged institutions to think holistically and take a multifaceted approach to supporting students…. It really has to be everyone's responsibility at the university to create a culture of well-being" (Abrams, 2022, p. 60). What might we do then to work toward taking a whole-student approach on college campuses?

- Authentically share ourselves with students. Students listen to their faculty members during each class yet much of "who" their instructors are can actually remain quite hidden from them. Instead, college faculty can work toward humanizing their teaching by letting their personality show through during instruction; doing so will help students see their instructors as relatable individuals who, just like them, have experiences that are easy and manageable and hard and challenging.

- Work toward connecting cognitive and affective domains. While the cognitive domain focuses on intellectual skills, the affective domain centers on feelings, attitudes and emotions and both are instrumental when learning. With so many college students struggling with mental health issues, it is important to contemplate ways students' cognition (i.e., their thinking) may be thwarted by emotional unrest. Faculty can proactively put supportive scaffolds in place *before* students begin course assignments and requirements. Predicting potential roadblocks and setting up solutions before problems arise can help students navigate their way to success.

Our colleges need to be places where students are known not just for their major, not just for their course

outcomes nor even for their academic successes. Each needs to be fully known as a whole person by their peers and by their college faculty. Their experiences and outcomes will be much more fulfilling because of it.

Vision #4: Use Strengths-based Language

In every interaction with students, an opportunity exists for college faculty to provide support and encouragement. If and when students explain their thinking about new theories or course topics that seems incorrect, how the college faculty member responds matters. One could sarcastically retort, "Now, where did you get that crazy idea?" while, in contrast, another might reply, "Could you please explain your answer in more detail so I can understand your thinking?" In every situation, college faculty members have choices about how they will respond to students; their choices can be experienced as supportive and encouraging or rather discouraging and unsupportive. Which response would promote learning? Which reply could foster students' inspiration?

Noddings (1999) regularly asserted that all students need to be treated with care and respect, and while it is likely we all concur, what might it look like to simultaneously cultivate care and academic rigor? Is there room in the college classroom for both? Noddings vehemently argued for the need for cognitive challenge in classrooms. She explained, "I believe that intellectually exciting topics and challenging problems can, and should arise in well taught classes … [and] My objection is to the virtual elimination of intellectual content in many of today's academic courses" (Noddings, 2007, p. 2). Noddings' focus was on *how* teachers teach. She asserted time and again that caring relations between teachers and students are the "foundation for pedagogical activity" (Noddings, 2005a). While we communicate when carrying out classroom activities, we may not often stop to realize the impact our words and expressions have on students. Our word choice matters. It creates the context our students learn within.

Strengths-based communication focuses on students' strengths, actions they are successful with, proficiencies they have and talents they possess. Focusing on students' strengths does not mean that incorrect answers or inaccurate understandings are ignored, sugar-coated, or glossed over. Instead, a strengths-based orientation shifts the focus of "what is wrong" or lacking to what is possible for the future. Noddings' ideals of building caring relations with students would call for college faculty to focus on and acknowledge students' strengths, capabilities, qualities, and assets. Such an approach can be very empowering to students which can lead to being open to engagement in class. How might college faculty use strengths-based language?

- While colleges are places that invite open inquiry and debate, they are also places where students can be inflexibly assessed on acquired knowledge and skills. Students can perceive sharing ideas aloud in a classroom as a very risky act. Some students worry that speaking in class may lead to their teachers' and classmates' unfavorable judgement and they may worry that saying the "wrong" thing can make them be seen as unintelligent in a space where intellectualism is highly valued. Students' worries can be lessened when college faculty work to create a classroom climate grounded in agreed-upon social/classroom norms such as "No put downs of self or others" and "Critique ideas not people" and "Be encouraging and supportive." Establishing classroom norms that promote strengths-based language helps to set a positive classroom climate and provides guidelines for supportive classroom communication.

- While it is customary that college assignments are often graded using numeric scores or letter grades, to empower students, college faculty can shift such grading by offering strengths-based feedback instead, focusing not on what was wrong but on what students did correctly and framing incorrect responses as goals for the future. Providing students with one or two specific goals can provide direction so they know what to focus on improving for the future. Doing so can help to foster students' motivation and confidence. In spring 2023, The College Post reported 12 colleges that are implementing many of the grading practices similar to Noddings' work including Hampshire College, Antioch College, and Brown University who offer their students alternatives to traditional grading and GPA scores to reduce the pressure students feel when graded while offering more student-centered assessment and feedback options (Casimiro, 2023).

Our Need for Noddings-inspired Classrooms *continued*

Our students deserve to learn on college campuses where their strengths are celebrated, where the focus is on their interests and talents, what they have done well and what they are good at doing. Focusing on students' assets can and will serve as a strong, empowering foundation for their future well beyond their college years.

Vision #5: Be a Carer and a Cared-for

Traditionally, academia is a place that values individualism. Our higher education culture customarily supports faculty independence, promoting freedom of individual thought and self-expression. While individualism can provide college faculty with time to develop their personal best, too much individualism can limit interactions among colleagues and lead to isolation. Individualism can become too much of a good thing. Too much individualism can result in faculty resisting asking for help when needed and as we know, even the best of us need help sometimes. Faculty need campus cultures that promote healthy interdependence – a place where it is comfortable to give and receive help, where its commonplace to give and receive care. I wonder, and perhaps you do, too: Why do we avoid talking about caring faculty relations and why does it often seem intrusive to ask about it?

While college faculty regularly work alongside each other, there are not often opportunities for getting to know each other personally. It is important to humanize the working environment, to express care for each other when things get hard and to pause to engage in self-care as well. Noddings portrays the importance of taking on roles as the carer and the cared for. College faculty can benefit from assuming both roles when interacting with each other. It is not always easy to ask for help because asking for help can, at times, make us feel incompetent but Noddings suggests, "A basic requirement in caring relations is dialogue. It is through dialogue that we come to know one another, and it is in dialogue that needs are expressed" (Noddings, 2008, p. 88-9). How might it look for college faculty to take on roles of the carer and the cared for?

- The concept of relational care may not seem important to think about or discuss in the workplace. Some may try to keep conversations focused on professional matters, avoiding asking about the personal but doing so can work against creating a warm, supportive and responsive campus climate. It is important to cultivate collegial connections. Doing so can create a sense of belonging as colleagues get to know about and support each other personally.

- Self-care can seem selfish sometimes especially when those around us need care, too. But it is essential that college faculty take time for themselves to promote their physical, mental and emotional well-being. Regular self-care can result in overall wellness which can, in turn, motivate and encourage students to be well, too. Zimmerman (2022) supports these ideas, suggesting that it is especially important for early-career faculty to develop a strong framework of self-care because doing so can help to cope with new job-related challenges.

Noddings-inspired college campuses would include college faculty readily taking on roles of both the carer and the cared for. Doing so will contribute to enhancing caring student relations which can and will support their success.

Closing (and an opening)

College students' well-being has always been important to their faculty. However, post-Covid 19 has heightened an awareness of students' mental wellness as recent reports reveal their increased stress, anxiety, and depression. What can college faculty and campuses do to support students as they navigate through these troubled times? While there is no one solution that will make students' mental health challenges go away, faculty can work together to help students experience a sense of relational care on their college campuses. Doing so may pave the way for students' experiences to be less stressful and less overwhelming which may make it easier for them to navigate through life's challenges.

Challenges provide us with new opportunities for growth and as I close, I ask that we envision students' challenges as an impetus for opening a dialogue about intentionally creating Noddings-inspired college classrooms. Will you join in? Our students are worth the effort.

Our Need for Noddings-inspired Classrooms *continued*

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ESSAYS

Reintroducing the Oral Exam: Finding Out What Your Students Really Know in the Age of ChatGPT

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Abstract

The advent of ChatGPT and other artificial intelligence chatbots will require adjustments by educators in their assessment strategies to prevent plagiarism and to accurately assess student learning. Through the practice of integrating oral assessments into their undergraduate courses, instructors can minimize academic dishonesty, observe and measure students' verbal communication skills, and assess their understanding of the material. Oral exams were found to increase student depth of knowledge and improve oral communication skills, but the time and effort oral examinations require means that this form of assessment is only a partial solution.

Keywords:

Assessment, oral exams, plagiarism, academic integrity, ChatGPT, generative AI, higher education, communication skills, critical thinking, workplace readiness

Introduction

On November 22, 2022, OpenAI, an artificial intelligence (AI) research laboratory, announced the introduction of ChatGPT, considered to be "the starter pistol for today's AI race" (Fiesler, 2023, para. 6). Shortly thereafter, those inside and outside higher education quickly recognized that AI and generative AI (GAI) applications have significant potential to disrupt the academy. Generative AI tools such as ChatGPT and Google Bard (now Google Gemini) allow individuals to interact through a conversational format with an AI chatbot, which when prompted creates novel text (Rospigliosi, 2023). Tools such as Bard and ChatGPT can answer study guide questions, write a term paper, produce a literature review, and do it more quickly than humans (Thomas, 2023) with almost no skill or effort required on the part of the student. Chatbots can translate languages, compute mathematical calculations, and edit text for grammar (Tamkin & Ganguli, 2023). Many early responses to the launch of ChatGPT expressed uncertainty, anxiety, and apprehension. During that first wave of reactions, Thomas (2023) suggested that, "Educators *fear* [emphasis ours] they may have to go back to oral exams to prevent cheating" (p. 141). Instructors should be aware of large language systems like chatbots and that some students, when given the opportunity, will rely on them to complete assignments in the least amount of time and with the least amount of effort.

Not quite a year later, astrophysicist Neil deGrasse Tyson appeared on *The Late Show with Stephen Colbert* (2023, October 3) in a segment titled "AI is

All around Us" to give his views on the new world of artificial intelligence and generative AI. He discussed the implications of AI for education and challenged educators to acknowledge that AI is deeply embedded in our daily lives and cannot be avoided. When asked by host Stephen Colbert to address students getting AI to write term papers, deGrasse Tyson exclaimed without missing a beat, "So maybe education includes an oral exam where you actually know whether someone has learned it!" (4:55).

Are oral examinations something educators should dread—or are they a solution to some of the problems posed by generative AI in higher education? The purpose of this article is not to promote or discourage the use of AI in higher education, but to consider alternatives for assessing student learning. Educators can *and should* consider strategies to incorporate new ways of critical thinking into their assessment and evaluation toolkit. Instructors who relied upon take-home written exams and essays to assess their students' proficiency or mastery of a topic or subject matter are going to have to pivot, as are university administrators who will have to deal with academic integrity issues (Keegin, 2023). Indeed, the traditional written essay has always had the limitation that students may access information for papers, essays, and assignments from external sources without fully understanding how to apply that information in a novel situation (Supiano, 2023). One partial solution is to create assessments that require students to demonstrate critical thinking, problem solving, and communication skills (Cotton et al., 2023).

While a thorough explanation of what generative AI is lies beyond the scope of this article, a basic explanation is provided here for context. Products such as ChatGPT and Google Bard allow individuals to interact in a conversational format with an AI chatbot. A user asks a chatbot a question, and based on the chatbot's response, the user may then ask subsequent questions if needed until a satisfactory answer is provided. Asking questions to an AI chatbot is different from a web query because the chatbot does not search the web for information. Instead, it generates novel text by predicting the next word as it creates content (Rospigliosi, 2023). This is a key issue in higher education as it creates new challenges for detecting student cheating via AI tools. Generative AI tools are able to develop answers to questions and engage in idea generation that up to this point is not consistently detected by plagiarism detection tools (Kan, 2023). Importantly, using generative AI requires little effort on the part of the student. Some students will eagerly trade actual learning for a shortcut to complete take-home assignments. Without taking steps to address the use of generative AI by students, the university risks "becoming a diploma mill" (Belkin, 2023, para. 10). It is unfair to assume that all students create essays and answer homework wholesale with AI tools, but many are using them in ways that limit critical thinking (Terry, 2023).

The challenges posed by generative AI are mitigated by using oral exams because they directly address problems that an over-reliance on this type of technology poses. Oral examinations provide instructors with a method of assessment that all but eliminates academic cheating and plagiarism (Akimov & Malin, 2020; Baule & Baule, 2023; Belkin, 2023; Buehler & Schneider, 2009; Kifle & Jacobs, 2023). According to Buehler and Schneider (2009), oral exams are superior to written exams in that they provide opportunities for students to demonstrate higher levels of critical thinking involving analysis, synthesis, and evaluation. Moreover, instructors can design exam questions so that multiple cognitive levels are addressed at once (Nitko, 2004). In addition, Buehler and Schneider (2009) point out that oral exams enhance students' critical thinking and communication skills by allowing instructors to ask follow-up or clarifying questions. Asking clarifying and follow-up questions provides students with opportunities to further explain their ideas and for instructors to assess their thought processes and level of understanding. By actively engaging in one-on-one communication with their instructors, students also practice and develop verbal and nonverbal communication skills (Joughin, 1998). These are skills that will be quite useful in future job interviews, success in the workplace, and promoting the students' ability to engage in civic discourse.

The Rationale for Oral Examinations

The oral examination as an assessment of student learning has a long history. Socrates questioned his students in a back-and-forth exchange to probe his students' mastery (Martin, 2013). Medieval European universities employed oral exams, but by the early 1700s, oral examinations were beginning to be replaced

Reintroducing the Oral Exam *continued*

by written tests (Worthen, 2022). In the United States, American educator Horace Mann advocated using written examinations in 1845 because he believed it to be a fairer form of assessment (Gershon, 2015). Presently, oral exams in higher education are more common in countries other than the United States (Ehrlich, 2007). In the United States, the disciplines that utilize oral examinations most frequently include mathematics, engineering, science, business, and political science, and oral exams are usually taken by graduate students (Crecelius et al., 2021; Fitzgerald, 2016).

Yet instructors, regardless of discipline, generally rely on written exams to assess student learning. They default to in-class and take-home exams because written exams are thought to be easier to manage and grade, especially for large class sizes (Hazen, 2020). Despite the ease of administration of written exams, there are drawbacks. These exams may miss assessing the depth of learning students have achieved; this is especially true with multiple-choice questions. Students may not understand why a certain multiple-choice answer was correct or incorrect (Hazen, 2020). Rather than proof of learning, luck and a bit of logic may result in correct answers. More recently, concerns about student cheating in written assessments grew during the COVID-19 global pandemic (Belkin, 2023). Asking students to answer questions by providing oral responses using their own words in real time is a safeguard against plagiarism (Theobold, 2021).

Oral exams are not only a way to counter student cheating. They can also be used to develop critical thinking skills (Worthen, 2022). Explaining answers in an oral exam can be viewed as teaching the material to the instructor (Boedigheimer et al., 2015). To teach, a person must have a deep understanding of the material and be prepared to answer questions when asked. Sayre (2014) discusses how oral exams in physics courses can help instructors understand the differences between students who memorized steps and those with conceptual understanding because the instructors can ask students "why" questions. As Sayre (2014) explains, "The oral exam can thus be more kind than the written exam (because of nudging) and a more thorough assessment (because of questioning) than the written exam" (p. 30).

The oral examination provides the opportunity for insights into student thinking during the examination process. Boedigheimer et al. (2015) state that oral exams allow instructors to work around student misunderstandings in a way written exams do not. If students do not understand a question or give a wrong answer because they misunderstood the question, the instructor can provide an explanation, a better prompt, or another chance for students to explain and/or clarify their answers (Dobson, 2023). Once students see their grade on a written exam, there is no guarantee that they will read all the comments (Boedigheimer et al., 2015). During an oral exam, however, students will be present for the instructor's immediate feedback.

Rawls et al. (2015) found that not only did business students who took an oral exam increase their content knowledge, but they also improved their communication skills. The more practice students have with oral communication skills, the stronger these skills may become. Bridges (1999) notes the continuing importance of communication skills for new graduates seeking employment. Implementing oral exams in undergraduate courses can help students develop workplace readiness by improving their communication skills, learning to manage anxiety, engaging in problem-solving, organizing and expressing thoughts, and developing creative thinking skills (Dumbaugh, 2020; Plant et al., 2019). The format of oral exams provides a way to experience "real world" scenarios such as suddenly being put on the spot and talking with people face-to-face (Boedigheimer et al., 2015; Buehler & Schneider, 2009; Worthen, 2022). These experiences differ significantly from written exams, where there is no face-to-face contact and students can take more time when answering questions. Buehler & Schneider (2009) explain that oral exams help prepare students by providing one-on-one communication between student and instructor, which is somewhat similar to job interviews and workplace interactions. Often oral examinations are unscripted, and students cannot memorize answers for every possible response. Similarly, Burke-Smalley (2014) discusses the use of oral exams to develop the skills of explaining recommendations and justifications in cost-benefit scenarios. This can mimic employee–supervisor interactions and help prepare students for future workplace settings.

Reintroducing the Oral Exam *continued*

Burke-Smalley (2014) asserts that students perceive oral assessments as vocationally relevant to their professional development in terms of building confidence, enhancing communication skills, developing critical thinking skills, improving information-gathering skills, and fostering the ability to "think on their feet." Compared to written exams, oral assessments measure greater depth of students' understanding, ability to organize ideas, and use of language to express their ideas. Rawls et al. (2015) point out that students recognize that oral exams provide them with positive learning experiences, such as improving their content knowledge, communication skills, and overall learning. Students studying for oral exams developed a deeper understanding of the material because they were not just memorizing content and rereading notes (Hazen, 2020). As one undergraduate mechanical engineering student noted, "In some classes you can memorize a process and then on the written exam you can plug and chug, you don't have to understand what you're doing with those calculations…[b]ut on an oral exam you have to explain why you're doing what you're doing" (Belkin, 2023, para. 16).

Students report being more motivated to study harder for oral examinations and that the way they study for oral exams is different. Chemistry students reported believing oral examinations increased their knowledge and learning of the subject (Sweeder & Jeffery, 2013). Other students reported studying in more active ways such as practicing answers out loud and discussing ideas with other students (Belkin, 2023; Hazen, 2020). The oral exam format may encourage students to study more or harder (Boedigheimer et al., 2015) because they may develop deeper attachment to material (Gaudet, 2015). The students also spent *more* time studying the material (Burman et al., 2007; Guest & Murphy, 2000). There are students that prefer oral examinations to written forms of assessment because oral exams are more inclusive and better serve some students with certain disabilities, such as dyslexia (Huxham et al., 2012).

Finally, oral assessments may also improve student engagement. Worthen (2022) suggests that oral exams may decrease students' self-censorship in the classroom. Students may feel more comfortable speaking and asking clarifying questions to the instructor or examiners (Buehler & Schneider, 2009).

Best Practices for Implementing Oral Exams

Instructors can help students prepare for their oral exams by providing them with information about the structure and grading of the exam. For example, instructors should provide students with a clear sense of their expectations for the format of the exam and how they will follow up on student responses. Instructors should also be clear about whether they will provide students with exam questions in advance as well as how students should prepare their answers. Students should also know if they will be permitted to use notecards, formula sheets, or other references during the oral exam. Instructors can also encourage students to collaborate with their peers to practice their answers and obtain feedback when studying for their exams (Oral Communication Center, 2023).

Preparation is key to successful implementation of oral examinations. The structure of the assessment can take the form of a presentation, questioning or interrogation, and application (Akimov & Malin, 2020) or problem-solving. While the construction of oral exam questions is often discipline-specific, there are some helpful general guidelines. Oral exams are well suited to case-based or scenario-driven questions (Fitzgerald, 2016). There should be a clear connection between the question and class discussions and readings, so that students can demonstrate that connection. For shorter assessments, such as oral quizzes, Dumbaugh (2020) limits questions to one topic. Ohmann (2019) recommends three types of question designs: free-form discussion based on conversation prompts, demonstration or discussion of an example, and the "why" question in which students demonstrate their reasoning skills in defending a position, argument, or fact.

Instructors should prepare students for the type of oral exam they will encounter. Burke-Smalley (2014) suggests that instructors should explain evaluation criteria to students and provide them with a bank of exam questions beforehand so that they can prepare by studying individually or in groups. To further reduce student anxiety, instructors should also consider the weight assigned to the oral exam grade for each student. For example, the grade should count enough for students to take the exam seriously, but not be weighted so heavily that perceptions of unfairness result. By applying the structured approach as a pedagogical tool in the

oral exam process, instructors can significantly reduce student anxiety and increase learning (Rawls et al., 2015). Furthermore, while the students' lack of exposure to oral assessments may result in students feeling anxious about the prospect of taking oral exams, the anxiety they experience is not necessarily negative (Theobold, 2021). On the contrary, anxiety often motivates students to prepare more thoroughly for their oral exams than they otherwise would for standard written assessments. Interestingly, despite their anxiety, in one study students preferred oral exams because the exams focus more on gaining deeper understanding and learning rather than just memorizing facts (Boedigheimer et al., 2015). Worthen (2022) also contends that oral exams provide students with opportunities for managing modest amounts of stress, similar to that which they will face in their professional careers. Still, student anxiety is a serious issue in higher education and universities have been challenged to address student mental health issues on campus, especially since the COVID-19 pandemic. While some students may experience disabling levels of anxiety, Worthen (2022) maintains that dealing with some level of anxiety is a part of the college experience in that it moves students beyond their comfort zones and encourages them to grow. Much like building muscles, experiencing eustress or positive stress can factor significantly into the process of growth and development.

There are other steps that instructors can take to reduce student test anxiety. Luckie et al. (2013) reported giving an oral final exam that was graded as either pass/no pass and allowed students the option to retake the oral exam several times. If students still did not pass, they would take a written final exam. They deliberately structured the examination this way to decrease students' anxiety about the oral examination. Their students reported that not only did oral exams increase the amount of time they studied for the course, but they also changed the way they studied for the course and helped them learn the material.

Gharibyan (2005) discusses the importance of instructors being aware of this anxiety and being sensitive to it by helping the students feel comfortable. As stated by Fitzgerald (2016), "Another obstacle for the implementation of oral exams is that students and instructors prefer what they know" (p. 7) rather than change. Prior to administering the oral examination, instructors need to discuss the exam and what is expected (Bridges, 1999) to help students feel prepared. This increased transparency has the potential to decrease stress and anxiety among students. Gharibyan (2005) suggests using a friendly tone of voice and calming remarks to help decrease student anxiety. Akimov and Malin (2020) note that instructor tone and friendly conversational manner can reduce student anxiety and improve student performance on oral exams. In addition, instructors can encourage students to focus on their expertise on the topic and visualize successful outcomes. Some students fear oral exams because they worry that they will not be able to articulate a correct answer quickly enough in timed exams. To address this fear, Theobold (2021) provided students with exam questions and the grading rubric a week prior to the assessment. Also, oral examination anxiety may decrease if this type of assessment is given more often (Worthen, 2022).

Limitations and Weaknesses of Oral Examinations

The reliability of oral assessments can be an issue, with some of the low reliability issues attributed to factors such as the examiner's active participation in the examination, which can introduce bias (Davis & Karunathilake, 2005). Having assessors review oral exam questions and undergoing examiner training may reduce bias (Gardner & Giordano, 2023), but this takes time. Also, reliability can be threatened by examiner variation. This can occur because oral exams are often graded globally and without structure (Daelmans et al., 2001). For example, if there are multiple raters without a common rubric or expectations, reliability can be affected adversely.

To reduce bias, Fitzgerald (2016) and Worthen (2023) suggest that instructors video record oral exams. These recordings can then be viewed by multiple raters if more than one person is rating the oral exam. Grades can be given after a panel or multiple raters discuss the final grades and determine that the students were graded appropriately and without bias (Burchard et al., 1995; Dobson, 2023). Worthen (2022) recommends that instructors further engage students by asking them to use their own phones to video record their oral exams. Video recording oral exams can also reduce potential liability issues for instructors if grade complaints or challenges arise. In addition, students can engage in active learning and reflection by reviewing the video of their oral exam and writing a self-assessment afterward.

Bias can also occur in oral exams because raters know students' identities, and faculty can overemphasize test questions of personal interest on written exams (Burke-Smalley, 2014). Additionally, it may be difficult for instructors to be objective when grading oral exams because the tests are not taken anonymously (Westhoff & Hagemeister, 2014). Other factors that may influence oral exam scores include verbal style and dress (for example, professional or nonprofessional) (Burchard et al., 1995; Davis & Karunathilake, 2005). Implicit bias or outright prejudice on the part of the instructor will limit the effectiveness of oral examinations. Instructors may need training to help prevent discrimination in oral exams (Roberts et al., 2000).

Standardized rubrics are important for oral exams given by multiple instructors/raters, which helps prevent subjectivity or bias in grading (Fitzgerald, 2016). Rubrics can be used to provide feedback to the student after the oral exam and help explain what went well and what areas were challenging for the student. These should be developed in advance, and the instructor(s) should determine the level of prompting that will be permitted prior to administering the tests (Rawls et al., 2015). Rubrics are also beneficial in increasing test reliability. Care must be given on how to evaluate among multiple reviewers (Rawls et al., 2015). A consensus must be reached when building the rubric and scoring the oral exams. Theobold (2021) underscores the importance of instructors having a rubric from which they can grade during the oral exam. Likewise, rubrics should be developed early in the term to be the most beneficial to students. Instructors should also determine what types of feedback to include on the rubric. For example, instructors can provide students with only the rubric scores they receive for each question or they can also include a written justification for each score. Adding the justification can help students better understand their scores and offer further clarification of their scores. Another consideration when developing a rubric is to use objective language. Words such as "excellent," "good," "acceptable," and "needs improvement" can help distinguish performance levels (Center for Instructional Technology and Training, 2023).

An additional challenge to oral exams that instructors may encounter is student resistance. Fitzgerald (2016) commented on resistance to oral examinations, stating that, "Another obstacle for the implementation of oral exams is that students and instructors prefer what they know" (p. 7) and oppose change. Moreover, effective implementation of oral examinations requires forethought, preparation, and hard work on the part of the instructor—educators must put time and effort into this form of testing (Lourenco et al., 2023). Oral exams usually take more time to administer than written exams (although grading is generally much faster) and giving multiple oral exams in one day can be exhausting for instructors (Fitzgerald, 2016; Giordano & Christopher, 2020; Young, 2023). Conducting oral exams in larger classes, such as 35 students or more, can be difficult for faculty because of the time it takes to administer them (Fitzgerald, 2016). Therefore, some ways to support instructors include hiring more faculty, especially for larger classes (Guder et al., 2009). Also, the use of teaching assistants (Luckie et al., 2013) may help decrease time commitment and instructor workload. Both options would require training to help ensure raters are consistent with the grading and expectations of oral exams and may not be possible because of budgetary constraints.

Administering oral exams in groups may also help to decrease the time commitment for oral exams. Guest and Murphy (2000) used cooperative oral final examinations where students worked in groups of four and one grade was given to the group for the exam. The students were given a list of possible questions three days before the exam and were able to study and prepare for the exam together. They also watched a teaching video and were asked questions about theories and practices. During the actual exam, each group met with two instructors for 15 minutes.

Other time management strategies are to limit exams to only one day per week and set a cut-off date where no more final exams are permitted. This can help examiners build a schedule and decrease last minute changes (Luckie et al., 2013). Furthermore, using a timer (Bridges, 1999) may prevent exams from going over their allotted time.

Specific Recommendations for Online Education

For instructors teaching online classes, Giordano and Christopher (2020) state that the benefits of oral exams in identifying and addressing gaps in student knowledge and observing students' thought processes and problem-

solving strategies far outweigh any potential challenges in online learning contexts. In a case study by Akimov and Malin (2020), the authors find that the online oral examination is a "high-quality assessment tool" (p. 2018) in terms of validity, reliability, and fairness. Kifle and Jacobs (2023) encourage the adoption of oral exams in their undergraduate online courses to prevent cheating and overcome the potential limitations of online proctoring technologies, such as falsely flagging a student for cheating.

Instructors giving online oral exams may want to have an online waiting room. This can help prevent students from logging in during another student's exam (Theobold, 2021) and provide privacy for each student during the exam and when discussing rubric feedback. Instructors should also create a dedicated online exam room, so that they do not have to create separate meetings for each student (Theobold, 2021). Giordano and Christopher (2020) suggest using a virtual whiteboard so students can show their work. Instructors recording exams can also save the whiteboard work and discuss it when providing feedback to students.

Lang and Schlosser (2021) employ oral exams as an effective formative, low-stakes assessment in online classes because they provide quick feedback about student knowledge. Administering oral exams early in the semester allows for adaptation to student needs and should make up only a small portion of the course grade. Similar to in-person classes, instructors should provide students with grading rubrics in advance to reduce uncertainty and anxiety. Lang and Schlosser (2021) also recommend that instructors encourage their online students to practice discussing and explaining course concepts with other students in the class prior to the exam. Each chance students have to engage collaboratively with their classmates provides them with opportunities to not only explain their understanding of the material, but to also practice for the oral exam.

For online oral exams to be effective, Sun (2021) notes that asking shorter questions with specific answers promotes grading consistency. To reduce student anxiety, instructors can begin with easier questions that students should be able to answer and build up to more difficult questions. Instructors can also begin and end the oral exam session with casual conversation to engage students and encourage them to discuss their thoughts about the exam process. This may also serve to reduce "grade grubbing" or haggling with students over points on their grades (Sun, 2021, para. 5).

Conclusion

Oral exams can help instructors minimize cheating, protect academic integrity, identify knowledge gaps and misunderstandings, and develop deeper connections with students. This type of assessment allows instructors to probe the students' learning and parse out what knowledge is truly the students'. By incorporating oral assessments into their undergraduate courses, instructors can help students become more workplace ready, develop strategies for effectively adapting to the stressors they will face in their careers, and improve their communication and critical thinking skills. With this said, oral assessments do have drawbacks such as increased workload and time commitment for instructors and increased test anxiety for some students.

Generative artificial intelligence will not go away, and newer iterations are on the horizon. Instructors will have to adjust to this new educational environment. The traditional forms of assessment, such as asynchronous written assignments, will be discarded or come with "guard rails" to prevent cheating. Oral examinations are not a "one size fits all" solution to the challenges of artificial intelligence chatbots, but they also are not something to fear. The oral exam is simply an additional tool in the educator's toolbox—and in certain situations, it is precisely the tool that instructors *and* students need.

Reintroducing the Oral Exam *continued*

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