

Promoting Diversity, Equity, and Inclusion: An Examination of Diversity-Infused Faculty Professional Development Programs

Hyunjin Jinna Kim
Stony Brook University

Yiren Kong
Stony Brook University

Rose Tirotta-Esposito
Stony Brook University

Given the national and global demographic trends, diversity, equity, and inclusion (DEI) are topics of discussion in U.S. higher education institutions. Most post-secondary institutions include DEI initiatives and mission statements, including implementing inclusive frameworks and approaches. These approaches include universal design for learning (UDL), inclusive pedagogy, or multicultural education. The UDL approach and inclusive teaching practices allow university faculty and staff to teach with a structural design that could accommodate diverse learning needs and provide the additional support or differentiation needed for vulnerable or marginalized students. In this study, we infused DEI-focused inclusive pedagogy into faculty professional development (PD) programs such as workshops, events, courses, and additional resources. Qualitative data from the follow-up survey demonstrated the instructors' positive attitudes and adoption of inclusive teaching practices reflecting UDL principles. The findings of this study indicate practical implications for instructional design and the development of faculty PD programs in higher education.

Keywords: higher education, diversity, inclusive pedagogy, universal design for learning, faculty development

INTRODUCTION

Students in U.S. higher education institutions (HEIs) are more diverse than ever, with different ages, races, ethnicity, nationalities, cultural/linguistic backgrounds, and sexual orientations (Moriña et al., 2015). A diverse and inclusive campus environment can empower students and faculty, inspire new ideas, raise all students' sense of belonging and overall achievement, and promote social justice and advancement in higher education (Barnett, 2020; Walton et al., 2012). Responding to student diversity and the call for inclusivity in higher education, many institutions began to require mandatory multicultural or diversity training and professional development (PD) opportunities in place (Booker et al., 2016; Mayo & Larke, 2010). Despite institutional efforts, previous research reveals challenges in creating an inclusive climate, including but not

limited to implicit biases and stereotypes, abdicating responsibilities, confusion and resistance to accommodations for accessibility, and reluctance to participate in DEI initiatives (Johnson, 2019; Killpack & Melón, 2016; Singleton et al., 2019). Furthermore, studies continue pointing out the low retention and graduation rate of students from underrepresented backgrounds (Shapiro et al., 2017).

Many HEIs in the U.S. include mission statements related to diversity, equity and inclusion (DEI) to demonstrate the institutions' beliefs, values, and expectations of inclusivity for all people from diverse backgrounds (Jansen et al., 2015; Taylor et al., 2019). The U.S. HEIs' commitment to DEI is criticized due to the negative experiences students report (Boysen, 2012; Glass et al., 2016). Although more than 75% of U.S. HEIs include the term "diversity" in their mission statements, the DEI initiatives and efforts are perceived as inauthentic and superficial (Engstrom & Tinto, 2010; Robertson et al., 2014). Amid the intense discussions surrounding inequity in HEIs, the global COVID-19 pandemic added constraints and responsibilities to faculty and instructors. Furthermore, limited research is conducted to prove the effectiveness of a wide array of DEI-related training and PD programs offered to faculty and instructional staff (Devine & Ash, 2022).

In the scholarship of higher education instruction, methods and instructional approaches to communicate and promote DEI values and beliefs have been emphasized. Previous research examined DEI-related commitments at the student, curricular, and faculty PD levels. Surveying students from underrepresented backgrounds revealed negative experiences due to microaggressions (e.g., Boysen, 2012; Glass et al., 2016) as well as disparities in educational outcomes (e.g., Martin, 2014; Roksa et al., 2017). These studies continue reporting students' negative experiences in HEIs, resulting in lower educational outcomes. At the curricular level, studies generally focused on effectively incorporating social justice issues in courses and curricula (e.g., Holsapple, 2012; Kilgo, 2015; Krings et al., 2015). Studies report positive impacts on students' knowledge and orientation, albeit limited to studies focused on credit-bearing service learning (activities that combine course learning objectives with community support) courses with potential self-selection biases based on the type of courses studied. In other words, integrating DEI-related issues and content is not measured in courses other than courses designed for multicultural or social justice education.

At the level of faculty PD, the scope and depth vary based on institutional policies, missions, and values. Regardless of the content, format, or duration of the PD programs, studies reveal the challenges of establishing an evidence-based, comprehensive, and effective PD framework that incorporates DEI (e.g., Aragón et al., 2017; Kennedy et al., 2022) due to time constraints, lack of motivation, and limited sustainability (Aragón et al., 2017; Macdonald et al., 2019; Manduca, 2017). Although many well-intended DEI-focused PD programs are available for higher education faculty and instructional staff provided by HEIs as well as private companies, more evidence is needed to demonstrate the effectiveness of such programs and training (Devine & Ash, 2022). An examination of DEI-related research studies in U.S. HEIs urges institutions to go beyond paying lip service to DEI issues and show whole-hearted commitment by listening to students, faculty, staff, and other relevant stakeholders (Barnett, 2020).

HEIs are increasingly paying attention to instructional methods and approaches that recognize students' embodied learning, holistic practices, and multidimensional learning (Cranton & Taylor, 2012). The principles of inclusive pedagogy and universal design for learning (UDL) highlight critical aspects of transformative and engagement learning theories, which benefit all learners, including traditionally marginalized or underrepresented students. This study intends to examine faculty PD programs infused with DEI-related knowledge, beliefs, and practices to understand the impact and effectiveness of DEI-related institutional commitment. Specifically, the study focused on the following questions: (a) How did faculty and instructional staff perceive the PD programs and training infused with principles of UDL and inclusive pedagogy? (b) What aspects or principles of UDL and inclusive teaching practices were adopted by faculty and instructional staff after participating in PD programs and training?

UDL, INCLUSIVE PEDAGOGY, AND DIVERSITY-INFUSION

The definition of inclusive pedagogy is debatable due to the evolving conceptualization and application of inclusive pedagogy. In this study, we adapt the recent definitions of inclusive pedagogy, defined as the orientation, approaches, and strategies to provide a rich learning environment that increases the learning opportunities and achievement of all students while safeguarding the inclusion of students who are vulnerable to exclusion or marginalization (Black-Hawkins et al., 2007; Florian, 2010; Florian & Black-Hawkins, 2011). Within the concept of inclusivity, various approaches are suggested in higher education instruction to promote equitable education, such as UDL, multicultural education, culturally responsive education, and culturally relevant education. In this study, we incorporate principles of inclusive teaching practices and UDL as a conceptual lens to analyze the data.

Previous scholarship states the challenge of distinguishing inclusive pedagogy, inclusive education, and inclusive teaching practices. While it is critical to distinguish these terms and conceptualizations, unclear definitions and general principles prevail due to their evolving and context-dependent nature (Florian & Black-Hawkins, 2011). In this study, we focus on inclusive teaching practices in higher education settings as a frame of reference to analyze the impact of faculty PD programs. Informed by previous research (Addy et al., 2021; Appert et al., 2020; Aragón et al., 2017; Handelsman et al., 2007), this study paid specific attention to the following principles of inclusive teaching practices: (a) inclusivity within curriculum content; (b) use of diverse teaching methods; (c) class climate that fosters belonging; (d) setting explicit student expectations, and (e) reflection on one's beliefs about teaching.

Inclusivity within curriculum content includes diverse representation in the lecture, slides, examples, readings, tests, or other materials, and an effort to include diverse races, backgrounds, and genders as well as role models in the course curriculum. The principle of diverse teaching methods refers to the effective use of diverse instructional methods, including but not limited to lectures, problem-solving approaches, and other diverse modes of participation. A class climate that fosters belonging indicates considerations in the physical space, modes of interaction, and discourses that convey acceptance and inclusion. Setting explicit expectations and aligning with an inclusive climate refers to presenting information and course expectations in various alternatives to increase access. Lastly, reflection on one's beliefs involves self-awareness of biases or discriminatory preferential behaviors and commitment to inclusion.

UDL was coined by the concept of the architectural universal design approach, defined as “the design of products to the greatest extent possible by people of all ages and abilities, without the need for customization of specialized design” (Burgstahler, 2012). Under the UDL principles, classrooms are intended for all learners by design without the need for additional alterations or modifications. Three guiding principles for UDL in education are (a) representation principle, (b) action and expression principle, and (c) engagement principle. The IRIS Center™ (2022) provides useful guidelines and training modules to understand and practice these UDL principles. The representation principle outlines the presentation of information and content through multiple formats. The action and expression principle indicates alternative methods for students to express and demonstrate their learning. Lastly, the engagement principle refers to providing various options to draw students' interests and motivate them to learn. Guided and inspired by these UDL principles, we infused inclusive pedagogy into the faculty development programs that will allow university faculty and instructors to design their courses for all learners.

Infusing inclusive pedagogy and DEI principles in regular content area courses is frequently implemented by faculty and teacher educators in higher education (e.g., Hussey et al., 2010; Loreman, 2022; Tabron et al., 2021). Previous research infusing inclusive pedagogy in teacher education found the infusion model to be more time efficient, effective in incorporating other subject areas if needed, and beneficial to promote collaborations (Loreman, 2022; Sharma et al., 2008). There is rich knowledge and research on the diversity-infusion approach in regular post-secondary level courses as well (e.g., Hussey et al., 2010; Tabron et al., 2021). These studies suggest positive changes in students' attitudes and increased awareness toward issues related to diversity and multiculturalism.

In programs and courses unrelated to DEI, the infusion approach allowed the opportunity to reach a larger population. Past research has emphasized how DEI-related training or courses are strongly influenced

by implicit prejudice and positions because individuals who are more open to DEI issues seek out information and opportunities to learn more about it, while certain individuals rarely do (Kennedy et al., 2022; Kernahan & Davis, 2007). By infusing the knowledge and information about inclusive pedagogy aligning with the UDL principles, there are opportunities to promote inclusive teaching practices while facilitating faculty PD in other core content (i.e., effective pedagogy, student engagement, or online instruction).

RESEARCH METHODOLOGY

Data Collection

The study was conducted by the Center for Excellence in Learning and Teaching (CELT), a faculty and staff PD center at Stony Brook University, State University of New York. Recognizing the fact that most faculty and instructional staff encounter scheduling conflicts to partake in PD opportunities, CELT has provided a wide array of resources, including individual consultations, graduate teaching assistant training programs and workshops, panel discussions, short workshops, long-term asynchronous workshops, department-specific workshops, and just-in-time resources. Under the mission of promoting inclusive, student-centered, and evidence-based learning and teaching practices, CELT also established a DEI Committee in 2021. Shortly after the murder of George Floyd, CELT began an Inclusive Pedagogy Panel Discussion Series in the summer of 2020. Other DEI-related efforts were also made, including revamping the Online Teaching Course to infuse inclusive teaching strategies and celebrating the teaching success of faculty that promote inclusive teaching through the annual Celebration of Teaching awards and Thank-a-Teacher initiatives.

There was a greater focus on embedding general UDL principles and inclusive teaching in all applicable workshops and programs offered by CELT, with the intention to promote best teaching practices in higher education. A survey was distributed to the faculty and staff who participated in any CELT-provided services to assess the work and services provided by CELT. At the end of the Fall 2020 and Spring 2022 semesters, the feedback survey was distributed to a total of 923 faculty and staff. Due to the COVID-19 pandemic, the campus transitioned into emergency remote learning in March 2020. While there are generally five to eight workshops and programs per month offered, the higher demands since the campus closure tripled the number of services and programs provided by CELT, resulting in nearly 40 workshops and programs in March 2020. During the spring of 2020, a total of 72 workshops or PD opportunities were provided. On average, about 15 participants attended each workshop or training session. During the fall of 2020, including the summer, CELT provided a total of 86 workshops or training opportunities to faculty and staff. On average, approximately 22 participants attended each workshop or training session.

The end-of-semester survey contained 17 questions, including seven multiple-choice questions, three matrix or Likert-scale questions, and seven open-ended questions. The feedback survey questions asked about the services, activities, or programs participants utilized between the spring-fall 2020 semesters, evaluation of these services, and feedback on the effectiveness or usefulness of the strategies or tools introduced in these PD sessions. A total of 272 participants responded to the survey. In this study, we focused on two qualitative questions and responses to gain an in-depth understanding of the effectiveness of the faculty PD programs with a focus on DEI-related content. The following two survey questions were the focus of our analysis: (a) Please list any strategies or tools that you have already implemented in teaching and/or addressing in your courses. Please describe how you have implemented it along with any successes or challenges you may have had in implementation, and (b) Please list any strategies or tools you plan to use in teaching and/or addressing in your courses. Please describe how you will implement it, along with any challenges you may anticipate.

Data Analysis

Excluding samples with no responses to the open-ended questions, the first survey question collected 158 comments, and the second question collected 117 comments. The qualitative written feedback was analyzed using theory-led thematic analysis (Hayes, 1997). Employing Maguire and Delahunt's (2017)

step-by-step guide for theoretical thematic analysis, the data were analyzed in the following six phases: (1) becoming familiar with the data; (2) generating initial theory-based codes; (3) searching for themes; (4) reviewing themes; (5) defining themes; and (6) writing-up.

Inclusive pedagogy was an apt theoretical lens to guide data analysis and coding processes. Inclusive teaching practices that are found in inclusive pedagogy provide the analytical framework to explore the written feedback data. The following principles of inclusive teaching practices from previous research provided a general framework for the initial coding: (a) inclusivity within curriculum content; (b) use of diverse teaching methods; (c) class climate that fosters belonging; (d) setting explicit student expectations, and (e) reflection on one's beliefs about teaching.

After the initial theory-based coding, we aggregated data based on three focal emerging themes with 2-3 sub-themes. Some example sub-themes include: (a) rethinking syllabi, (b) redesigning assessments and assignments, (c) multimedia tools and cooperative learning, (d) various modes to demonstrate knowledge, (d) facilitating interaction, and (e) learning community expectations and norms. Once the themes and sub-themes were reviewed and defined, four themes emerged to be presented in the findings section.

FINDINGS

Qualitative analysis of the end-of-semester survey focused on the two focal questions: (a) Please list any strategies or tools that you have already implemented in teaching and/or addressing in your courses. Please describe how you have implemented it along with any successes or challenges you may have had in implementation, and (b) Please list any strategies or tools you plan to use in teaching and/or addressing in your courses. Please describe how you will implement it, along with any challenges you may anticipate. Four major themes emerged from data analysis: (a) inclusive curricula, (b) diverse learning and teaching approaches, (c) universal design for accessibility, and (d) reflection and self-awareness.

Inclusive Curricula

Faculty and staff responded positively to the PD opportunities that allowed them to rethink their course curricula, design, and syllabi. In particular, many participants identified the syllabus design template and related training sessions very helpful. Furthermore, as faculty and staff were required to redesign and reformat their assessments and assignments due to the emergency remote learning environment, they began to break down summative assessments into smaller formative assessments to make them manageable to the instructor and the students.

Rethinking Course Syllabi

The PD workshop and training opportunities, in addition to the emergency remote learning setting, provided instructors with opportunities to rethink the course organization, structure, and syllabi. Many faculty and staff participants made similar remarks regarding the online course design based on course modules. Some instructors preferred content-based module structures, while others preferred time-based modules. Regardless, many instructors found it helpful to place their course content in learning modules.

Modules: completely redesigned 2 courses and a material shell using a module format. I found that organizing modules by adding items rather than Learning Modules delivers more efficient access to course content and a more attractive layout for students.
(Participant 119, Q1)

Prior to the pandemic, most faculty and staff needed to utilize learning management systems and constructively organize their courses using learning modules. As the learning space transitioned to an online learning space, instructors learned and recognized the benefits of well-organized course modules with clear learning objectives and goals.

Another positive aspect of the PD programs was the implementation of UDL principles in syllabus designs. In particular, participants discussed the effectiveness of the online syllabus template and the module in the online teaching course that introduced UDL.

I implemented universal design elements into my course materials/syllabi. Updated language to be more learner centered, adjusted materials for better accessibility, etc. Modified assessments to allow more flexibility for time management, provide a variety of options for assignment end products. Amended grading policies to provide additional opportunities for students. (Participant 15, Q1)

Similar to this comment, many faculty and staff expressed their shift in perspective in terms of eliminating language in their course syllabi that carried negative connotations or punitive tones.

I also appreciated some of the advice about how explicitly one needed to be to teach a course online and the kind of language that was more inviting rather than punitive-sounding. (Participant 250, Q1)

As illustrated in these feedback comments, participants took the transition as an opportunity to redesign their course syllabi and sometimes even make extended changes, such as redesigning course assignments and materials.

The PD workshop and training opportunities, with an infusion of UDL principles and inclusive pedagogy, had a rather immediate impact on instructors' online course structure and syllabus design. Incorporating learning modules and tweaking the language in course syllabi were actionable items for instructors to adapt quickly. Furthermore, the transition from in-person to online learning allowed the opportunity to rethink and redesign the course to be accessible for all learners.

Redesigning Assessments

In addition to curricular or syllabus overhaul, participants explained that the PD programs inspired them to redesign assessments in their courses. As the emergency remote learning added more stress and constraints to students, faculty and staff expressed their inclination to provide more formative assessments instead of the high-stakes summative assessments they usually provided. For instance, one participant described how the PD programs offered new perspectives to both online and in-person teaching, including a shift in orientation, more discussions, and trying to create a community in the online class.

I incorporated more discussion boards and VoiceThreads and eliminated large-point exams for my online course. Makes the learning experience more engaging and democratic. (Participant 60, Q1)

Specifically in assessments, the participant utilized VoiceThread (VT), a media-integrated collaboration tool, to implement more interactive and democratic discussion activities rather than the typical high-stakes exams. Similarly, many faculty and staff mentioned incorporating formative assessment tools such as discussion boards, project-based assessments, or frequent low-stakes online quizzes instead of exams.

In courses that typically do not require exams, instructors broke down assignments into smaller tasks or redesigned assignments to be small group projects instead of high-stakes individual assignments. One participant who enrolled in the CELT Boot Camp, a two-and-a-half-week-long, asynchronous, intensive PD course, appreciated learning how to manage her large class while providing meaningful assignments.

To me the most important aspect of the course was the integration of practical content (like the tools) with pedagogical aspects (like Bloom's Taxonomy). I have become a much better teacher overall because of this...I was able to adopt teaching tools such as VT for both lecture delivery and online asynchronous discussions among small groups. The latter

helped the students interact with each other. The CELT Boot Camp also gave me the courage to split my 70-student class into small groups and meet with them regularly and make a group assignment. (Participant 109, Q1)

The participant discussed balancing tools and pedagogy and providing students with more authentic and meaningful learning experiences by assigning small group work instead of a summative assessment. The participant recognized how students found the group assignment helpful in staying connected with their classmates during the pandemic.

Furthermore, the remote teaching experience and the opportunity to rethink assessments shifted instructors' perspectives about exams and strict deadlines in their courses. One participant discussed plans to make significant changes in the assessments.

I plan to eliminate exams completely in one of my courses and rely on weekly assignments...Apply a hard and a soft deadline. This will afford students more flexibility and avoid arbitrariness on my side. (Participant 28, Q2)

Similarly, many participants explained their attempts to break down assignments and assessments into smaller tasks or even eliminate high-stakes assessments. Instructors also acknowledged the challenges and difficulties of remote learning and expressed their intentions to be more flexible for students by offering flexible deadlines or alternative assignments. They also planned to continue putting these efforts into future classes, regardless of the course delivery mode.

Diverse Learning and Teaching Approaches

Another emerging theme from faculty and staff feedback was the adoption of various learning and teaching approaches. Participants utilized multimedia tools to encourage the use of multimodalities in their courses and began to promote diverse modes of learning after participating in the PD programs.

Multimodality Through Multimedia Tools

To a majority of faculty and staff, emergency remote learning was a challenging transition because the online teaching platform had numerous limitations in replicating their in-person course curriculum and interactions. One mediating tool introduced in PD workshops and training was VoiceThread (VT). Participants appreciated the wide array of applications VT offered to communicate with the students in their large courses.

We made extensive use of VoiceThread in our large lecture course...We got a lot of help from CELT with doing crazy things with breaking our course into groups and subgroups to make it possible for students to interact with one another and the instructors in a smaller, friendly forum. (Participant 111, Q1)

Particularly in courses that had over 100 students enrolled, the emergency remote teaching limited student-student and instructor-student interactions. Thus, VT provided a tool to record lectures and receive student comments in multimedia, even if the course was asynchronous.

Breaking down a large class into smaller groups using the learning management system (LMS), Zoom platform, or Google apps also afforded instructors an opportunity to manage their classes using multimedia tools.

I attended a CELT event to help facilitate group work through Zoom. The CELT staff had great insight, and I was able to implement breakout rooms using a Google Doc/Slides/Jamboard that did help students engage in small groups while allowing me to see their progress. (Participant 12, Q1)

Participants mentioned utilizing Zoom breakout rooms and various Google apps to maintain a similar level of interactions as they would if it was an in-person class. Moreover, these multimedia tools opened doors for many instructors to monitor student progress and offered flexible communications with the students.

Participants expressed willingness to apply certain multimedia tools, such as Zoom or VT, in the future once they resumed in-person teaching.

Practically, I plan to reuse all the methods...Even if we return to “normal” face-to-face, I do not see any reason for not carrying exam reviews through synchronous (with hand-writing) Zoom meetings...I think I prefer students working on problem-solving as groups in Zoom breakout rooms instead of working in fixed amphitheater-like classroom. I also intend to continue posting recordings and making students explain “on the fly” topics through VoiceThreads or Zoom meetings. (Participant 49, Q2)

The PD programs inspired instructors to incorporate active learning strategies, including small group work, which was effective in their courses. The breakout rooms on Zoom offered virtual spaces to encourage small group work that many in-person lecture halls could not accommodate because of the restrictive space design and structure. Multimedia tools, such as VT, also made it possible for instructors to engage in meaningful interactions with the students, which in many cases, was not possible in the large lecture halls with over 200 students.

Learning and applying various multimedia tools encouraged instructors to teach beyond the traditional lecture model and incorporate multimodal learning. As participants witnessed the benefits of multimodal instruction, they were motivated to continue applying these tools and strategies to their courses.

Diverse Modes of Expression and Interaction

Infusing inclusive teaching principles in faculty PD while introducing multimedia tools also encouraged instructors to promote diverse modes of learning in their classrooms. For instance, instructors utilized online tools such as Google apps and other collaborative tools to engage students in an online learning environment.

I used breakout sessions in conjunction with having groups write down responses, etc. in Google Slides...I will use it again...I also did Polling, for which I needed a short consult here and there. (Participant 117, Q1)

Given the emergency remote learning circumstances, instructors were more open to finding ways to engage students by incorporating collaborative group work and interactive activities. These include but are not limited to, small group discussions, collaborative projects, and interactive icebreaker activities.

Beyond classroom activities, instructors also facilitated diverse modes of expression for students to demonstrate their knowledge and learning. Aligning with redesigning the assessments, instructors promoted project-based and collaborative learning throughout their course curricula. One participant elaborated on the various strategies implemented in the course, such as peer review, multimodal learning and assignments, and diverse modes of interaction among students and with the instructor.

Collaborative learning through shared annotations, group discussion moderation and peer feedback; differentiated learning through a combination of audio, video and written formats, as well as a variety of assignments, extra credit and alternative exercises that allow students to choose the methods/formats that work best for them; consistent and continuous communication with students through regular emails, Zoom office hours, one-on-one conferencing and extensive written feedback; one-on-one work with non-traditional and straggling students to ensure they stay on track. (Participant 104, Q1)

As illustrated in the participant's feedback comment, the PD activities served as an impetus to implement diverse modes of learning strategies and interaction. Extended modes of interaction with the instructor also provided opportunities for some students to receive the one-on-one support they needed.

In addition, PD activities made an impact on the departmental curriculum and assessments. One participant explained plans to continue utilizing multimodal project-based assessment for students and departmental assessments in the program.

I will use the VoiceThread Pecha Kucha again and I will learn to use Blackboard calendar. Our department will also start using an e-portfolio for departmental self-assessment purposes. (Participant 27, Q2)

As there is a stronger emphasis on holistic assessment, developing assessment methods beyond the course or a single semester can make lasting impacts on students' and instructors' development. Through PD opportunities, faculty and staff adopted new methods to motivate and engage students long-term.

In general, PD activities facilitated instructors to recognize various modes of learning and interaction within and beyond their classrooms. Furthermore, an array of multimedia and educational technology tools for instructors encouraged them to successfully implement strategies and creatively design curricula in their teaching contexts.

Universal Design for Accessibility

The emergency remote learning environment and added PD training supported the promotion of UDL principles and accessibility in course designs. Specifically, setting up courses on LMS and bridging communication through multimedia tools encouraged instructors to consider accessibility and a sense of belonging in their courses.

Increasing Findability and Access

One of the major changes instructors made from the PD activities is setting up their courses online using content-based modules and incorporating LMS features to make the online learning experience easier for students. Beyond implementing online multimedia tools and apps, instructors described applying active learning strategies and considering cognitive loads in their delivery of the course content.

Implementation of active learning techniques in online classes, particularly in the workshops, with the students working in groups in Zoom breakout rooms...; Preparation of videos using Zoom, VoiceThread, and Camtasia; Preparation of extensive notes, in the form of a book...; Extensive use of Blackboard (using folder trees) to make the course accessible. (Participant 49, Q1)

Instead of delivering an hour-long lecture that replicated in-person classes, many instructors chose to provide short, recorded lectures in addition to online discussions, small group work, and multimedia tools. Furthermore, instructors demonstrated a deeper understanding and consideration of accessibility to deliver communication and information more explicitly and effectively.

The PD activities also enhanced instructors' awareness of explicit communication, including outlining expectations to address accessibility in the online environment. Participants illustrated their efforts to provide learning objectives and summarize core information in their courses.

I have included the learning objectives to be attained in each assessment. Students tend to have a clearer view of what is expected and are more conscious of the work it involves. (Participant 28, Q1)

Instructors recognized the benefits of learning objectives to help students understand the expectations involved in the tasks or assessments assigned to them. Similarly, many participants provided explicit course information on LMS using announcements or calendar features to increase the findability of the course.

Redundancy of information, including on the syllabus, in emails, and on the “announcements” page of the course website; clear definition of class goals and modules ahead of every assignment’s pass-out date. (Participant 142, Q1)

In addition to setting up explicit learning objectives and course expectations, instructors ensured more straightforward access to find and locate critical course materials and information. These modifications, aligned with UDL principles, made the course accessible to all students and increased students’ opportunities to succeed in the course.

Furthermore, instructors attempted to provide clearer instructions and course information by developing organizational schemes, such as a shared document or an FAQ page on their online LMS course.

I plan to use what I have learned and be able to improve the group work. Some challenge had a place students could find clear instructions... going forward, I will have...Google Doc students can type a question they might have during the group work because the Zoom breakout room doesn’t allow them to come back into the main room until after. (Participant 12, Q2)

Recognizing the limitation of online learning environments, instructors sought alternative methods to clearly communicate course information and expectations. After learning the importance of communicating clear expectations and various methods to deliver the information, instructors demonstrated their willingness to increase the accessibility and findability of the course information.

Establishing a Community

As part of applying UDL principles and inclusive pedagogy, faculty PD activities afforded instructors the opportunity to recognize the importance of community building and a sense of belonging. Amid the challenges and hurdles of adjusting to emergency remote learning, instructors strived to establish a community in their courses. Many instructors elaborated on their efforts to connect with students and extend their care and understanding through these interactions.

Online classes are a challenge for students, regardless of whether they are a freshman or senior students...I tried to be more understanding and be involved in helping the student to succeed in the class. It is so easy to say that they are adults and that they should manage all the responsibilities on their own but...they need support and that connection that it is usually established in person. I made sure that the student knew that I was a real person who was there to help them. (Participant 104, Q1)

Similar to the above feedback comment, instructors mentioned their efforts to put more emphasis on students’ well-being and sense of belonging by taking the additional step to connect and extend their availability to talk to students. Many instructors also observed positive student feedback and responses from the one-on-one or small group interactions, which encouraged them to continue offering flexible online office hours or review sessions regardless of the mode of instruction post-pandemic.

Similarly, participants implemented strategies to form a sense of community in their courses by providing various opportunities for students to get to know each other and the instructor.

Asking students to introduce themselves on VoiceThread was a great way for them to meet each other and feel a sense of community. I sent an introduction of myself to students as an example... was an excellent way to create a teaching presence as well as social presence

for my classes...students had already learned interesting information about each other (and myself), and they were interested in learning the course content...students felt comfortable speaking up and asking questions. Students also shared their feelings...which also contributed to an overall positive educational experience. (Participant 49, Q1)

Understanding the Community of Inquiry framework that was introduced in the PD program, instructors sought ways to develop teaching, social, and cognitive presence in their classes. Developing social and teaching presence naturally developed cognitive presence, which provided an overall positive experience for the students and the instructor.

Another important aspect of communities was establishing community norms. While setting up explicit learning objectives and clearly communicating course expectations helped students from diverse backgrounds, additional hidden norms are difficult to navigate for many students. From faculty PD, instructors adopted ways to provide more explicit instruction in group work, which helped establish classroom norms.

I have introduced “group contracts” in my group assignments. I have also added to the Peer Evaluation forms and have included self-assessment... grading becomes a bit more complex, but it is well worth it. Students reflect more on their experience. (Participant 28, Q1)

Aligned with UDL principles and inclusive pedagogy, it is critical to communicate the hidden curriculum clearly to all students. Effective group work and communicating expectations in specific course assignments could bridge the gap between students with more and less exposure to academic norms and culture. As peer interactions become more disconnected in online remote learning, instructors demonstrated efforts to outline classroom norms, contributing to establishing a community.

Reflection and Self-Awareness

While most faculty and staff have adopted effective instructional tools and approaches to engage students, some instructors also appreciated the opportunity to reflect and raise self-awareness through PD workshops and activities. For instance, one participant recognized the importance of learning and applying new instructional tools while also acknowledging the limitations of such practices.

I will continue to build on what I have done, but I really don't like to experiment in classes and use students for my learning curve. I think it comes off to them as unprofessional, unprepared, and disorganized. We should have more hands-on opportunities to experiment and see how the technologies interact—like using VoiceThread through BB—before we ask students to jump in. (Participant 36, Q2)

By implementing the strategies introduced in PD activities, participants also had an opportunity to reflect on and evaluate their teaching practices. This developed instructors' self-awareness toward their teaching practices and limitations, which helped them recognize the importance of continuous self- and professional development.

A few instructors also found PD opportunities focused on inclusive pedagogy helpful. In particular, the Inclusive Pedagogy Panel Discussion Series promoted instructors' critical consciousness and self-awareness to acknowledge biases in higher education curricula. One instructor included a lesson to discuss the history of math to bridge the gap between biased narratives in the curriculum and welcome diverse perspectives.

One week in my graduate course (math), I had students read a couple of articles on the history of the subject material and then do a VoiceThread on it...I got the idea from one of the sessions on Inclusive Pedagogy, where they mentioned talking about the history of the

subject can be one way to bring diversity discussions into the classroom. It went well actually...and we had interesting discussions about race, gender, and nationality, in the context of math culture. (Participant 113, Q1)

As part of promoting principles of inclusive pedagogy, the PD activities encouraged instructors' self-reflection on teaching, specifically concerning DEI-related issues about race, gender, or nationality. By engaging in discussions about the history of math, the participant critically reflected on the beliefs and practices of teaching mathematics.

Another participant recognized the importance of critical consciousness and self-awareness in practicing inclusive pedagogy. Through the PD activity focusing on diversity and syllabus development, the instructor developed critical consciousness to find the limited representation of certain populations in literature.

I attended a panel discussion about diversity and syllabi...I felt empowered afterward to be more honest with my students about my own unconscious complicity in furthering a White patriarchal literary agenda. With my writing students—who represent the diversity of our school at its best—I was better able to reach and widen our academic goals as a result of representing my own self honestly and being willing to discuss what we were reading in light of wanting a more diverse literary representation...it was the best class I've ever taught, and this panel was a direct influence on why. (Participant 101, Q1)

The critical reflection and PD opportunity empowered the instructor to be more honest and open in class. After developing self-awareness from the PD workshop, the instructor took action by intentionally including diverse literary representations in course materials.

Although the impact of diversity-infused PD programs on instructors' critical self-awareness was relatively small compared to their adoption and appreciation of technical tools and approaches, some participants took advantage of the opportunity to shift their perspectives. These impacts on several faculty and staff encouraged them to take more practical actions and efforts to create a more inclusive classroom.

DISCUSSION AND CONCLUSION

This study aimed to examine the impact and effectiveness of faculty PD programs infused with UDL and inclusive pedagogy principles. An analysis of qualitative feedback on the end-of-semester feedback survey suggests a few essential implications. First, the infusion model in faculty PD programs reached more participants and adoptions of inclusive teaching practices. As previous research indicates the self-selective nature of DEI-focused PD programs (Wynants & Dennis, 2018), the infusion model created an opportunity to deliver effective instructional strategies and practices while promoting principles of UDL and inclusive teaching practices. Confirming previous research, infusing DEI principles and practices allowed more efficient PD delivery without eliminating other essential contents or best practices faculty needed to know (Loreman, 2022; Sharma et al., 2008). Especially during the COVID-19 pandemic, the infusion model helped prevent overwhelming faculty with too much information while providing room for consideration of educational equity.

Second, applying UDL principles by creating inclusive PD programs and promoting UDL principles encouraged faculty and instructional staff to pay more attention to accessibility. As instructors' participation in PD programs increased due to emergency remote learning, many instructors in this study began creating online courses based on learning modules and established ways to easily access course information and materials. These efforts also led to providing clearer expectations, such as giving feedback promptly, sharing grading rubrics, setting learning objectives or outcomes, offering extended communication options, and communicating deadlines or announcements. Although considerations for student accessibility were limited to a few aspects, these new incorporations to increase findability and access indicate attempts to

make the learning environment more inclusive. Further research focusing on faculty PD and its impact on accessibility, particularly on accessibility for students with a physical disability, will be a crucial next step.

Third, the COVID-19 pandemic, albeit the disruptions and stresses it caused, contributed to increased participation in faculty PD programs and services available on campus for faculty. As the COVID-19 pandemic and the rapid transition to remote learning encouraged faculty and instructional staff to consider the challenges of remote learning and the necessary proficiency in digital literacy, these changes also shifted instructors' perspectives about teaching and learning in higher education. Instructors in this study explained the importance of showing kindness and flexibility to students encountering transitions, uncertainties, isolations, and losses. The willingness to act not only as a course instructor but also as a role model, mentor, and collaborator during the pandemic broadened instructors' perception of their roles and responsibilities (Neuwirth et al., 2021). By viewing students and the instructors' roles holistically, instructors expressed willingness to modify their courses and take diverse modes of learning and expression into consideration.

Lastly, while the findings demonstrated the positive impacts of the DEI infusion model in faculty PD programs, some limitations were identified in terms of transforming instructors' ideologies and beliefs. The majority of instructors' feedback in this study was concentrated on effective tools and strategies with very limited to no display of self-awareness or critical reflection. Previous research on DEI initiatives and PD programs discusses the challenges of transforming higher education classrooms due to preconceived notions and biases that affect instructors' engagement in PD programs and willingness to adopt inclusive teaching practices (Aragón et al., 2017; Johnson, 2019; Singleton et al., 2019). Although critical reflection on one's beliefs about teaching is one of the principles highlighted in inclusive pedagogy, transforming instructors' beliefs and perceptions is recognized as a major hurdle in advancing inclusive teaching practices. Furthermore, many instructors in this study revealed their inclination toward a one-size-fits-all approach and orientation in teaching. An overwhelming number of positive feedback comments from instructors were focused on specific online tools or resources that have seemingly solved all instructional problems. This indicates the importance of providing institutionally supported instructional tools and resources along with diverse instructional approaches, appropriate pedagogical orientations, and multiple opportunities to reflect critically on one's beliefs. The findings indicate a pressing need to incorporate opportunities for critical reflection and self-awareness in order to transform instructors' beliefs and orientations and, therefore, transform the higher education teaching and learning environment.

REFERENCES

- Addy, T.M., Dube, D., Mitchell, K.A., & SoRelle, M.E. (2021). *What do inclusive instructors do: Principles and practices for excellence in college teaching*. Stylus Publishing.
- Appert, L., Bean, C.S., Irvin, A., Jungels, A.M., Klaf, S., & Phillipson, M. (2020). *Guide for inclusive teaching at Columbia*. Center for Teaching and Learning, Columbia University. Retrieved from https://cpb-us-w2.wpmucdn.com/edblogs.columbia.edu/dist/8/1109/files/2020/02/Guide-for-Inclusive-Teaching-at-Columbia_Accessibility-Revisions_15-January-2020_FINAL.pdf
- Aragón, O.R., Dovidio, J.F., & Graham, M.J. (2017). Colorblind and multicultural ideologies are associated with faculty adoption of inclusive teaching practices. *Journal of Diversity in Higher Education, 10*(3), 201–215. <http://dx.doi.org/10.1037/dhe0000026>
- Barnett, R. (2020). Leading with meaning: Why diversity, equity, and inclusion matters in US higher education. *Perspectives in Education, 38*(2), 20–35. Retrieved from <https://hdl.handle.net/10520/ejc-persed-v38-n2-a3>
- Black-Hawkins, K., Florian, K., & Rouse, M. (2007). *Achievement and inclusion in schools*. Routledge.
- Booker, K.C., Merriweather, L., & Campbell-Whatley, G. (2016). The effects of diversity training on faculty and students' classroom experiences. *International Journal for the Scholarship of Teaching and Learning, 10*(1), Article 3. <https://doi.org/10.20429/ijstol.2016.100103>
- Boysen, G.A. (2012). Teacher and student perceptions of microaggressions in college classrooms. *College Teaching, 60*(3), 122–129. <https://doi.org/10.1080/87567555.2012.654831>
- Burgstahler, S. (2012). *Universal design in education: Principles and applications*. University of Washington. Retrieved from <https://www.washington.edu/doit/sites/default/files/atoms/files/Universal-Design-Education-Principles-Applications.pdf>
- Cranton, P., & Taylor, E.W. (2012). Transformative learning theory: Seeking a more unified theory. In E.W. Taylor, & P. Cranton (Eds.), *The handbook of transformative learning: Theory, research, and practice* (pp. 3–55). Jossey-Bass.
- Devine, P.G., & Ash, T.L. (2022). Diversity training goals, limitations, and promise: A review of the multidisciplinary literature. *Annual Review of Psychology, 73*, 403–429. <https://doi.org/10.1146/annurev-psych-060221-122215>
- Engstrom, C., & Tinto, V. (2010). Access without support is not opportunity. *Change: The Magazine of Higher Learning, 40*(1), 46–50. <https://doi.org/10.3200/CHNG.40.1.46-50>
- Florian, L. (2010). The concept of inclusive pedagogy. In F. Hallet, & G. Hallet (Eds.), *Transforming the role of the SENCO: Achieving the national award for SEN coordination* (pp. 61–72). McGraw-Hill Education.
- Florian, L., & Black-Hawkins, K. (2011). Exploring inclusive pedagogy. *British Educational Research Journal, 37*(5), 813–828. <https://doi.org/10.1080/01411926.2010.501096>
- Glass, K., Glass, C.R., & Lynch, R. (2016). Student engagement and affordances for interaction with diverse peers: A network analysis. *Journal of Diversity in Higher Education, 9*(2), 170–187. <https://doi.org/10.1037/a0039726>
- Handelsman, J., Miller, S., & Pfund, C. (2007). *Scientific Teaching*. Macmillan.
- Hayes, N. (1997). Theory-led thematic analysis: Social identification in small companies. In N. Hayes (Ed.), *Doing qualitative analysis in psychology* (pp. 93–114). Psychology Press/Erlbaum (UK) Taylor & Francis.
- Holsapple, M. A. (2012). Service-learning and student diversity outcomes: Existing evidence and directions for future research. *Michigan Journal of Community Service Learning, 18*(2), 5–18. Retrieved from <https://eric.ed.gov/?id=EJ988316>
- Hussey, H.D., Fleck, B.K.B., & Warner, R.M. (2010). Reducing student prejudice in diversity-infused core psychology classes. *College Teaching, 58*, 85–92. <http://doi.org/10.1080/87567550903418560>
- IRIS Center. (2022). *UDL Principles*. Retrieved from <https://iris.peabody.vanderbilt.edu/module/udl/cresource/q1/p02/#content>

- Jansen, W.S., Otten, S., & van der Zee, K.I. (2015). Being part of diversity: The effects of an all-inclusive multicultural diversity approach on majority members' perceived inclusion and support for organizational diversity effort. *Group Processes & Intergroup Relations*, 18(6), 817–832. <https://doi.org/10.1177/1368430214566892>
- Johnson, K.M.S. (2019). Implementing inclusive practices in an active learning STEM classroom. *Advances in Physiology Education*, 43(2), 207–210. <https://doi.org/10.1152/advan.00045.2019>
- Kennedy, S., Balija, A.M., Bibeau, C., Fuhrer, T.J., Huston, L.A., Jackson, M.S., . . . Phelps-Durr, T. (2022). *Journal of Chemical Education*, 99, 291–300. <https://doi.org/10.1021/acs.jchemed.1c00414>
- Kernahan, C., & Davis, T. (2007). Changing perspective: How learning about racism influences student awareness and emotion. *Teaching of Psychology*, 34(1), 49–52. <https://doi.org/10.1080/00986280709336651>
- Kilgo, C.A. (2015). The estimated effects of service learning on students' intercultural effectiveness. *Journal of College Student Development*, 56(8), 867–871. <https://doi.org/10.1353/csd.2015.0086>
- Killpack, T.L., & Melón, L.C. (2016). Toward inclusive STEM classrooms: What personal role do faculty play? *CBE Life Science Education*, 15(3). <https://doi.org/10.1187/cbe.16-01-0020>
- Krings, A., Austic, E.A., Gutiérrez, L.M., & Dirksen, K.E. (2015). The comparative impacts of social justice educational methods on political participation, civic engagement, and multicultural activism. *Equity & Excellence in Education*, 48(3), 403–417. <https://doi.org/10.1080/10665684.2015.1057087>
- Loreman, T. (2022). A content-infused approach to pre-service teacher preparation for inclusive education. In C. Forlin (Ed.), *Teacher education for inclusion: Changing paradigms and innovative approaches* (pp. 56–64). Routledge.
- Macdonald, R.H., Beane, R.J., Baer, E.M.D., Eddy, P.L., Emerson, N.R., Hodder, J., . . . Ormand, C.J. (2019). Accelerating change: The power of faculty change agents to promote diversity and inclusive teaching practices. *Journal of Geoscience Education*, 67(4), 330–339. <https://doi.org/10.1080/10899995.2019.1624679>
- Maguire, M., & Delahunt, B. (2017). Doing a thematic analysis: A practical, step-by-step guide for learning and teaching scholars. *AISHE-J*, 8(3), 3351–3514. Retrieved from <http://ojs.aishe.org/index.php/aishe-/article/view/335>
- Manduca, C.A. (2017). Surveying the landscape of professional development research: Suggestions for new perspectives in design and research. *Journal of Geoscience Education*, 65(4), 416–422. <https://doi.org/10.5408/17-281.1>
- Martin, D. (2014). Good education for all? Student race and identity development in the multicultural classroom. *International Journal of Intercultural Relations*, 39, 110–123. <https://doi.org/10.1016/j.ijintrel.2013.10.005>
- Mayo, S., & Larke, P.J. (2010). Multicultural education transformation in higher education: Getting faculty to “buy in”. *Journal of Case Studies in Education*, 1, 1–9. Retrieved from <https://eric.ed.gov/?id=EJ1055514>
- Moriña, A., Cortés-Vega, M.D., & Molina, V.M. (2015). Faculty training: An unavoidable requirement for approaching more inclusive university classrooms. *Teaching in Higher Education*, 20(8), 795–806. <http://dx.doi.org/10.1080/13562517.2015.1085855>
- Neuwirth, L.S., Jović, S., & Mukherji, B.R. (2021). Reimagining higher education during and post-COVID-19: Challenges and opportunities. *Journal of Adult and Continuing Education*, 27(2), 141–156. <https://doi.org/10.1177/1477971420947738>
- Robertson, R.V., Bravo, A., & Chaney, C. (2014). Racism and the experiences of Latino/a college students at a PWI. *Critical Sociology*, 40(5), 1–21. <https://doi.org/10.1177/0896920514532664>
- Roksa, J., Trolian, T.L., Pascarella, E.T., Kilgo, C.A., Blaich, C., & Wise, K.S. (2017). Racial inequality in critical thinking skills: The role of academic and diversity experiences. *Research in Higher Education*, 58, 119–140. <https://doi.org/10.1007/s11162-016-9423-1>

- Shapiro, D., Dundar, A., Huie, F., Wakhungu, P., Yuan, X., Nathan, A., & Hwang, Y.A. (2017). *A national view of student attainment rates by race and ethnicity—Fall 2010 cohort* (Signature report no. 12b). National Student Clearinghouse Research Center. Retrieved from <https://eric.ed.gov/?id=ED580302>
- Sharma, U., Forlin, C., & Loreman, T. (2008). Impact of training on preservice teachers' attitudes and concerns about inclusive education and sentiments about persons with disabilities. *Disability & Society, 23*(7), 773–785. <https://doi.org/10.1080/09687590802469271>
- Singleton, K., Evmenova, A., Jerome, M.K., & Clark, K. (2019). Integrating UDL strategies into online course development process: Instructional designers' perspectives. *Online Learning, 23*(1), 206–235. Retrieved from <https://eric.ed.gov/?id=EJ1211170>
- Tabron, L.A., Hunt-Khabir, K., & Thomas, A.K. (2021). Disrupting Whiteness in introductory statistics course design: Implications for educational leadership. In C.A. Mullen (Ed.), *Handbook of social justice interventions in education* (pp. 1267–1291). Springer.
- Taylor, Z.W., Jones, A.C., & Hartman, C. (2019). Diversity mission statement inclusion as social capital: How the language of appeasement fails egalitarian goals in post-secondary institutions. In R.D. Bartee, & P. George (Eds.), *Contemporary perspectives on social capital in educational context* (pp. 79–102). Information Age Publishing.
- Walton, G.M., Cohen, G.L., Cwir, D., & Spencer, S.J. (2012). Mere belonging: The power of social connections. *Journal of Personality and Social Psychology, 102*, 513–532. <http://dx.doi.org/10.1037/a0025731>
- Wynants, S., & Dennis, J. (2018). Professional development in an online context: Opportunities and challenges from the voices of college faculty. *Journal of Educators Online, 15*(1). Retrieved from <https://eric.ed.gov/?id=EJ1168955>