

The Journal of Applied Instructional Design

A Systems Thinking Approach when Designing for Equity

August 2023

Beth R. Sockman, M. Aaron Bond, Samantha J. Blevins, Rebecca Clark-Stallkamp, Stephanie Moore

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The Journal of Applied Instructional Design



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About the journal

During the past 50 years, journals in the field of instructional design have been responsive to the changing needs of both scholars and to a lesser degree, the practitioner. We have seen an evolution of AVCR to ECTJ, the emergence of JID, and finally the merging of ECTJ and JID to form ETR&D. ETR&D is a widely recognized, scholarly journal in our field that maintains rigorous standards for publications.

During the past 50 years, we have also witnessed a change in the field due in part to the success of instructional design in business and other nonschool environments. The number of instructional designers working outside the university has dramatically increased. Of particular importance is the rise in the number of instructional designers with doctorates who consider themselves practitioners, but not necessarily scholars. This growing group of designers might be best described as reflective practitioners who can make a significant contribution to the knowledge of our field.

This growth and success in the application of instructional design has also changed the field. From the early days of the field until the mid-1980's, the theory and practice of instructional design was almost exclusively influenced by the academic community. With the growth of instructional designers, the theory and practice of the field is now defined by both academics and practitioners. There is a need for greater communication between the scholars and the practitioners in a scholarly journal that will support innovation and growth of our knowledge base.

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Goals

The purpose of this journal is to bridge the gap between theory and practice by providing reflective practitioners a means for publishing articles related to the field. The journal establishes and maintains a scholarly standard with the appropriate rigor for articles based on design and development projects. Articles include evaluation reports (summative and formative), lessons learned, design and development approaches, as well as applied research. The articles are based on design and development projects as opposed to pure research projects and focus on lessons learned and how to improve the instructional design process. Rigor is established through articles grounded in research and theory.

A secondary goal of this journal is to encourage and nurture the development of the reflective practitioner in the field of instructional design. This journal encourages the practitioner as well as collaborations between academics and practitioners as a means of disseminating and developing new ideas in instructional design. The resulting articles inform both the study and practice of instructional design.

Philosophy

This journal will provide a peer-reviewed format for the publication of scholarly articles in the field of applied instructional design. The journal recognizes the role of the practitioner in the work environment and realizes that outside constraints may limit the data collection and analysis process in applied settings. The limitations of real-world instructional design of the practitioner can still provide valuable knowledge for the field.

Sponsoring Organization

JAID is a publication of the [Association for Educational Communications and Technology](#) (AECT).

JAID is an online open-access journal and is offered without cost to users.

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About AECT



The [Association for Educational Communications and Technology](#) (AECT) is a professional association of instructional designers, educators and professionals who provide leadership and advise policy makers in order to sustain a continuous effort to enrich teaching and learning. Seizing opportunities to raise awareness and leverage technology, our members may be found around the world in colleges and universities, in the Armed Forces and industry, in museums, libraries, and hospitals, and in the many places where educational change is underway. Our research and scholarly activity contribute to the knowledge base in the field of Learning. We are on the cutting edge of new developments and innovations in research and application.

AECT is the premier organization for those actively involved in the design of instruction and a systematic approach to learning. We provide an international forum for the exchange and dissemination of ideas for our members and for target audiences. We are the national and international voice for improvement of instruction and the most recognized association of information concerning a wide range of instructional and educational technology. We have 24 state and six International Affiliates all passionate about finding better ways to help people learn.

Since 1923, AECT has been the professional home for this field of interest and has continuously maintained a central position in the field, promoting high standards, in both scholarship and practice with nine Divisions and a Graduate Student Assembly that represent the breadth and depth of the field. Other journals sponsored by AECT include [Educational Technology Research and Development](#) and [TechTrends](#).

The Journal of Applied Instructional Design (JAID) is a refereed online journal designed for the publication of scholarly articles in the field of applied Instructional Design. The purpose of JAID is to provide the reflective ID scholar-practitioners and researchers a means for publishing articles on the nature and practice of ID that will support the innovation and growth of our knowledge base. The journal is for practitioners, instructors, students, and researchers of instructional design.

Call for Submissions

JAID is for reflective scholar-practitioners, who through documentation of their practice in ID, make significant contributions to the knowledge of our field. Authors are invited to submit articles documenting new or revised approaches to ID; the processes of ID including in-depth documentation of analysis, design, and development, implementation and evaluation; design-based research; as well as applied research. Articles must be based on instructional design projects as opposed to pure research projects and focus on documented processes, lessons learned, and how to improve the overall process of ID. Articles must be grounded in research and theory connecting the intellectual foundations of the ID field and how these foundations shape its practice.

The journal will establish and maintain a scholarly standard with the appropriate rigor for articles based on design and development projects. A secondary goal of this journal is to encourage and nurture the development of the reflective practitioner in the field of ID. This journal encourages the practitioner as well as collaborations between academics and practitioners as a means of disseminating and developing new ideas in ID. The resulting articles should inform both the study and practice of ID.

[Submit an Article](#)

Article Types

JAID currently accepts submissions of three article types.

Instructional Design Practice

This is an applied journal serving a practicing community. Our focus is on what practitioners are doing in authentic contexts and their observed results. These articles cover topics of broad concern to instructional design practitioners. The articles should represent issues of practical importance to working designers.

Research Studies on Applied Instructional Design

JAID is interested in publishing empirical studies exploring the application of instructional design principles in applied settings. Quantitative and qualitative studies are welcome.

Instructional Design/Performance Design Position Papers

JAID also accepts position papers that attempt to bridge theory and practice. Examples may include conceptual frameworks and new ideas facing the instructional design community. The paper must also provide enough information to allow the replication of the innovation or continuation of the research in other settings. Position papers must be based in the context of a theoretical framework. Efficacy data is strongly preferred, but not always required, contingent upon the potential generalizability or value of the innovation.

Submission Guidelines

The journal will focus on in-depth applications of the ID process and publish a variety of articles including case studies of the ID process; application articles that go beyond a mere how-to approach that provide implementation insights, guidance and evaluation of a process; evaluation articles that focus on the viability of a product or process; applied research resulting from evaluation of materials, studies of project implementation, articles on ways to improve the ID process from the perspective of the practitioner, and short essays that provide a scholarly debate of relevant issues related to the application of ID and relevant book reviews. When applicable, articles should include supplementary materials including examples of ID products, evaluation instruments, media files, and design artifacts.

The articles in the journal will be from the perspective of the scholar-practitioner rather than from the researcher. However, the manuscripts must demonstrate scholarly rigor appropriate to applied manuscripts.

Articles, including tables or figures, must follow APA 7th edition formatting and be submitted in a word or doc format using at least 12-point New Times Roman font. Each article must have an abstract (75-100 words) and a list of keywords. While there is some flexibility in the length of an article, 4,000 to 5,000 words is a best-guess estimate. If in doubt, contact the editor prior to submitting the article. Identifying information must only be located on the cover page including contact information for the first author.

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Introduction to the Special Issue

Beth Rajan Sockman, M. Aaron Bond, Samantha J. Blevins, Rebecca Clark-Stallkamp, & Stephanie L. Moore

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As facilitators of the learning experience, instructional designers possess the power to create equitable learning environments through their design processes and decisions. However, it is crucial to recognize that instructional designers do not operate in isolation (Bichelmeyer, 2020; Stefaniak, 2015). The decisions they make regarding design are not independent of the context or the surrounding environment. Instructional designers function as integral parts of a larger system (Bond, et al., 2021). From a macro-level systems thinking perspective, instructional designers design learning experiences and operate within interconnected systems that extend beyond themselves. It is within the interconnections of these systems and their collective components that designers have the ability to shape or be shaped by the prevailing cultural and organizational paradigms.

At the micro level of systems thinking, instructional design decisions are based on assumptions and cultural norms (Sockman & Kieselbach, 2022). These well-informed decisions still stem from personal and collective experiences within the prevailing dominant rules and norms of the larger macro-level system. For instance, consider an employee who is expecting to have dinner with a distinguished person. To ensure they make a favorable impression, the employee conducts research on accepted meal etiquette. In this scenario, the employee identifies the dominant expectations of the larger system, as their main concern is to create a positive impact. Those eating habits and all our creations reflect cultural norms. The innumerable norms that are rarely questioned (Wilkerson, 2020), ingrain themselves the way that brains are mapped and then express themselves in attitudes, activities, and designs in overt and covert proclamations of what “should be” (Nosek, et al., 2007).

Instructional designers are immersed in these cultural norms on a daily basis, and they influence design decisions. Awareness starts as a member of the supra, macro, meso cultures that influence a person and their identity (Kendi, 2019). When designers become immersed in a particular organization or culture, they employ some or all of the cultural nuances of that system. Over time, a designer is enculturated to the norms and behaviors of the dominant system. Designers pass the knowledge of the dominant system on in their designs, to their fellow designers, to their trainees, and the system continues to perpetuate the same assumptions, values, and norms. The system is easily viewed as normal, monolithic, or as Berger and Luckman (1966) refer, ‘the way it has always been’. Therefore, when a learning environment is created, it too reflects the dominant cultural norms in society, the organization, and the individual designers. The learning environment becomes part of perpetuating the dominant narrative.

As individuals, norms are initially established during early stages of development and then adjusted within each system we engage in (Bradshaw, 2017; brown, 2017; Nosek, et al., 2007). We undergo socialization through normalization into these systems, shaping our perception of how the world is supposed to function in our lived reality (Cabrera & Cabrera, 2015; Stroh, 2015). As a result, norms unconsciously influence every aspect of our lives which by nature have biases that either encourage or discourage equity when instructional designers create instruction (Hutmacher, et.al, 2001). Instructional designs dedicated toward equity critically question norms to push past them.

An instructional designer dedicated toward equity ensures “that everyone has what they need in order to be successful” (Chardin & Novak, 2021, p.14). Equity has been theorized and examined from practical application and even operationalized in instructional design tools such as Universal Design for Learning (CAST, 2013). Also, designers pursue understanding beyond single methods or strategies since there are a myriad of ways to design for different purposes (Bichelmeyer, 2020; Spector, et al., 2014), and to pursue equity means to question norms within each design process and each creation (Bradshaw, 2017; brown, 2017; Chardin & Novak, 2022).

In this special issue of Systems Thinking Designing for Equity, authors share ways that they conceptualize or implement designing for equity with their position papers, proposed models, design cases, and empirical studies. In “A Model for Culturally Sustaining Instructional Design” Colleen M. Smith and K. Bret Staudt Willet use systems to understand the higher education landscape and the way to design in diverse culturally sustaining ways when engaging with content and media. Arpita Pal proposes “Liberatory Design Thinking for Equity-Centered Instructional Design: A Systems Thinking Analysis” to provide a model that centers the Liberatory Thinking Framework for a learner-centered perspective. In a position paper Jennifer D. Moses, Hannah B. Bayne, Robert L. Moore contribute research on trauma-informed pedagogies in online spaces to enhance student safety, engagement, and learning outcomes within asynchronous learning environments in their article “Guiding Course Development: Trauma-Informed Rubrics for Asynchronous Online Learning Environments.” These conceptual papers emphasize the nature, extent, or key conceptualizations of systems thinking and/or change theory and knowledge, examining the current, historical, or possible future status of systems thinking’s role in promoting social justice in instructional and performance design.

Designing for equity means the dominant culture does not determine all design decisions but rather designers focus on the diversity of learners. The next group of articles focuses on what practitioners are doing in authentic contexts. Using observed results, these studies intentionally disrupt dominant systems overshadowing the learning process and learner’s needs. Daniela Gachago, Maha Bali and Nicola Pallitt use their positionality and experience to draw on understandings of women who support equity-oriented learning design across the world in “Changing from Within - Narratives of Resistance from Equity-Oriented Learning Designers.” The paper highlights the strategies learning designers use to navigate clashes between their own values and those held by their institutions. Rita Fennelly-Atkinson and Kimberly LaPrairie report on a quantitative study with 62 global participants in “Analysis of Associated Factors that Influence the Accessibility of Online Higher Education.” The findings indicate growth in the implementation of accessible course design practices that are based on institutional accessibility support.

The final two articles focus on equity in course designs. The first “Designing systems with care: Responding to inequality in an online course in South Africa,” Shanali Govender, Christine Immenga, and Daniela Gachago use Bronfenbrenner’s ecological systems theory and trauma-informed pedagogies to guide design and then, conduct participant interviews to investigate how caring learning design facilitated students’ experiences. The article “From Nature to Pen: Designing an Inclusive Writing Course for Educators” was written by a design team of educators, park rangers and professors who utilized instructional design processes with Levels of Culture to open nature spaces and writing practices to create an asynchronous course for educators. Both articles candidly discuss the challenges and opportunities faced within the system when intentionally designing and implementing an inclusive course design.

Instructional designers may act in accordance with the dominant system to the detriment of other learning needs as part of a perpetuating cycle or work to change the system. Therefore, doing ‘good work’ or ethical work means considering the influence of the systems designers are a part of (Chardin & Novak, 2021). Designers are called by ethical and professional responsibility to develop and design more equitable systems - to understand, engage, and dismantle the harmful aspects of dominant power systems which influence instructional design (Bradshaw, 2017; Moore, 2014). This special issue offers practical examples that demonstrate how systems thinking and instructional design can advance towards creating more equitable learning environments, catering to diverse learners and striving for improved systems. With gratitude to all the authors for their commitment, we are confident that together, we will persist in our efforts to foster a more equitable world.

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A Model for Culturally Sustaining Instructional Design

Colleen M. Smith & K. Bret Staudt Willet

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Equity

Instructional Design

Higher Education

Bias

Inclusion

Culture

Culturally Responsive

Community

Culturally Sustaining

Justice

Learning Systems

Online Learning Environment

A student's culture plays a role in learning, and research suggests instructional designers may be able to enhance the online learning experiences for diverse students. Because there is not one prevailing model or framework for adapting learning systems to be inclusive of cultural diversity, we propose a new model, Culturally Sustaining Instructional Design (CSID), that modifies and synthesizes the Integrated Multicultural Instructional Design model and Culturally Sustaining Pedagogy principles. The CSID model will help instructional designers reflect on the higher education system and how their own cultures and biases shape their design decisions for socially just online learning environments.

Introduction

Higher education has seen tremendous growth in recent years, with global enrollment rates doubling in the past two decades, according to a United Nations Education Scientific and Cultural Organization (UNESCO) report (Vieira et al., 2020). As part of this expansion, students from increasingly diverse backgrounds have been enrolling in higher education institutions. However, key performance indicators such as retention and graduation rates continue to show significant advantages for the dominant, traditionally represented populations in higher education within the United States, such as White students and students from higher-income families who are not pell grant recipients (National Center for Education Statistics, 2022; National Student Clearinghouse Research Center, 2021).

Many higher education institutions are challenged by retaining and graduating historically underserved students. These students are often students of color, first-generation college students who are the first in their families to attend college, and students from low-income households. Research has documented that historically underserved students do not share the same level of success as their White and higher-income counterparts (Green, 2006); this performance difference has been characterized as a "success gap" (Buchan et al., 2020; Green & Wright, 2017). The success gap has increased over time, even as historically underserved students, such as first-generation college students, underserved racial minorities (URM) students, and students from low-income backgrounds, have increased enrollment in higher education and the popularity of online courses has grown (Cataldi, et al., 2018; Engle & Tinto, 2008; National Center for Education Statistics, 2019; National Student Clearinghouse Research Center, 2021; Utuk, 2018).

One way to understand differences between students is in terms of culture, the unique combination of a learner's social identities, characteristics, histories, experiences, and values that influence their way of navigating systems, engaging with content and media, and demonstrating their learning (Hunt & Oyarzun, 2020; Yosso, 2005). Culture varies between different learners and influences learning experiences. To further complicate matters, the pushes and pulls of these influences can vary by context and over time. In other words, a learner's culture is not permanent, singular, fixed, or static (Heaster-Ekholm, 2020). Instead, culture is malleable and constantly evolving. Furthermore, multiple cultures may coexist and intersect to influence a learner's perspective of their learning environment, "including cultures based on demographic characteristics such as race, gender, ethnicity, nationality, and social class, as well as organizational cultures, group cultures, learning environment cultures, etc." (Benson, 2018, p. 329).

In addition to more—and more diverse—students entering higher education, the potential locations where learning can happen have continued to expand, beginning with the advent of the internet several decades ago and spreading further with social media platforms in the past decade. These changes have created locations for numerous different online learning environments, or spaces hosted through the internet that provide students access to learning resources, tools, and communication media (Green & Wright, 2017; Woodley et al., 2017).

Ideally, having more possibilities for where learning can occur would also mean more opportunities for culturally sustaining online learning environments. Culturally sustaining means acknowledging and supporting the cultures of increasingly diverse learners (Bhagat et al., 2018; Green & Wright, 2017; Woodley et al., 2017) to "perpetuate and foster—to sustain—linguistic, literate, and cultural pluralism" (Paris, 2012, p. 95). Research has shown the benefits of these spaces and calls for a systematic approach to address the success gap in higher education (Kerr et al., 2020; Simunich & Grincewicz, 2018). For example, graduation rates may be positively impacted for historically underserved students if online learning environments are intentionally designed to aid the persistence and success of diverse learners (Bhagat et al., 2018). However, despite the noted benefits of including and supporting all learners, much more research is needed to understand this phenomenon and develop action steps for those hoping to design culturally sustaining online learning environments (Fermín-González, 2019). To achieve such online learning environments, a culturally sustaining instructional design process would utilize pedagogy, learning activities, tools, and content that positively reflect, engage, and sustain learners' sociocultural perspectives, cognitive diversity, and communities in the teaching and learning process (Akinrinola et al., 2020).

The Role of Instructional Designers

Instructional designers play a key role in ensuring that diverse learners have opportunities and spaces for learning that are well suited to them (Yang et al., 2010). With their responsibility to plan and build online learning environments, instructional designers are uniquely positioned within the higher education system to attend to the needs of diverse learners and plan for spaces that are culturally sustaining. However, several challenges mean that this work does not always happen quickly or easily.

First, many instructional designers, especially those who have gone through traditional preparation programs, have not been trained or equipped to design online learning environments with diverse learners in mind (Simunich & Grincewicz, 2018). Although issues of equity in education have become more popular in research and practice, instructional design education and practice have lagged (Fermín-González, 2019). Research has found that although many online faculty believe designing online learning with cultural inclusivity in mind is important, they lack the knowledge of how to implement this belief in their educational practices (Kumi-Yeboah, 2018).

Second, instructional designers navigate competing priorities during the design and development process for online learning. These competing priorities follow the trends described at the outset of this article: today there are more students in higher education, more diverse students representing more cultures, more possibilities for learning environments, and an ever-expanding list of new educational technologies. Instructional designers navigate the tensions and emerging complications associated with each of these factors to imagine learning systems in new and equitable ways.

In the face of these challenges, instructional designers must take intentional action to develop and implement culturally sustaining online learning environments with the intention of both improving all students' learning experiences as well as minimizing the success gap (Kumi-Yeboah & Amponsah, 2023). First, they must take the time to understand the history and systems of higher education and seek to minimize the effects of the systemic inequalities higher education has perpetuated in the past (Denaro et al., 2022). Second, they need to reflect on their own biases—both conscious and unconscious prejudices—to design learning that is appropriate for diverse students, not just an assumed norm (Moore, 2021). Finally, instructional designers need to select and use instructional design models that will direct their attention to—rather than ignore or distract from—learners' individual backgrounds, experiences, and needs. We describe these three actions in the following paragraphs.

Understanding the Learning Systems of Higher Education

As a first intentional action, instructional designers must learn from the past to understand the systems of higher education (Denaro et al., 2022; Stroh, 2015). The historic foundations of higher education were created to serve only white and wealthy, male students, and these exclusionary practices can still be felt throughout the systems of higher education today (Denaro et al., 2022). Higher education is a system that can create, reinforce, and maintain social inequality and bias by promoting cultural practices from the dominant view (O'Shea, 2016). The unchallenged, default, dominant norms in higher education reinforce "patriarchal, cisheteronormative, English-monolingual, ableist, classist, xenophobic, Judeo-Christian" views (Alim & Paris, 2017, p. 2). The learning systems, courses, and instructors of higher education cannot move beyond their origins without consciously designing courses to be more inclusive (Denaro et al., 2022; Stroh, 2015).

However, designing culturally sustaining online learning environments is easier said than done, because the process is complicated by higher education's history of perpetuating numerous systemic issues (Denaro et al., 2022). For example, faculty members who teach and conduct research may also write textbooks that they use within their classes; in other cases, a foundational course may be passed down from instructor to instructor without reimagining its design or reconsidering the reading materials and learning resources. Against researchers' recommendations, this limits the number of perspectives shared in the online learning environment (Kumi-Yeboah & Amponsah, 2023). Instead, faculty and instructional designers should advocate for providing resources and textbooks from multiple perspectives, in addition to supporting students' crafting their own perspectives, to help students gain a greater understanding of power dynamics and develop respect for cultures different from their own (Kumi-Yeboah & Amponsah, 2023). Addressing social justice issues in the higher education system requires intentional design choices.

Reflecting on Their Own Biases

As a second intentional action, it is recommended that instructional designers identify and reflect on their own biases (Baker et al., 2018). To minimize the effects of higher education's historic, dominant norms, instructional designers must start with awareness of the broader system, but they must also look within to realize their personal biases being carried into and through the design and development process (Moore, 2021). This systems approach highlights the relationship between the core beliefs of the instructional designer, their actions through design, and the reality of how students experience those design decisions (Flood, 2010; Stroh, 2015). Only with this critical self-awareness can instructional designers think differently than the dominant norms and choose to consider both learners' diverse cultures and the increasing variety of distinct learning environments (Denaro et al., 2022; Kumi-Yeboah & Amponsah, 2023).

We define bias to include both inherent systematic processes and overt personal beliefs, opinions, attitudes, or tendencies to support and reinforce stereotypes (Denaro et al., 2022). In other words, sometimes instructional designers are aware of their biases, but often they are not. Sometimes design decisions are influenced by unconscious prejudices. These prejudices can inadvertently reinforce inequity in learning systems rather than ensuring that learners from many backgrounds and cultures have the best chance to learn (Baker et al., 2018). For example, an instructional designer's biases can lead to misinterpreting content and result in over-emphasizing voices from the majority culture at the exclusion of alternative views and explanations. Without reflection, instructional designers may end up creating content and learning systems that are only suited for learners who are already empowered, while making learning more difficult, or impossible, for others (Parrish & Linder-VanBerschoot, 2010). Many researchers have critiqued the field of

education for doing just this—reinforcing systemic inequalities by planning and designing for the majority culture, reflecting systems that have been passed down through the formal education of teachers and instructional designers (Bourdieu, 1986; Denaro et al., 2022; Moore, 2021; Yosso, 2005).

With a foundational understanding of their biases, instructional designers become further aware of their complexity as people. No one holds just a single identity; people navigate systems within themselves as their identities intersect and change across contexts and over time. These intersectional identities involve overlapping social understandings and positions that can be both empowering and oppressive (Nichols & Stahl, 2019). For example, workshop facilitators have used an intersectionality wheel to help faculty identify which of their own identities experience privilege and which identities experience oppression in academia (Kellam et al., 2021). Similarly, instructional designers need to practice looking at how their own intersectional identities impact the decisions they make when planning and developing learning spaces meant to include a wide variety of learners (Dukes, 2019; Qayyum, 2016).

Like the faculty workshop, instructional designers should reflect on their own intersectional identities and how they have experienced privilege and oppression within online learning environments (Nichols & Stahl, 2019). These past experiences inform their design decisions, such as how learning objectives are written and assessed, who is represented in selected media, and which scholarly perspectives are amplified within the learning environments (Baker et al., 2022; Kumi-Yeboah & Amponsah, 2023; Nichols & Stahl, 2019). This reflective work is necessary because, as McIntosh (1989) argued, people who are not taught to recognize their own privileges, such as being White and/or a man, will be unaware of what they do not know. This provides an opportunity for instructional designers to become more attentive to their assumptions and biases when designing and developing online learning environments for diverse students.

Selecting an Instructional Design Model

As a third intentional action, instructional designers must become familiar with, select, and use instructional design models (i.e., structured processes for designing effective and engaging learning experiences [Merrill, 2016]) that will direct their attention to—rather than ignore or distract from—learners' individual backgrounds, experiences, and needs. Once again, this is easier said than done. The job description of professionally trained instructional designers has become increasingly complex due to numerous frameworks and models put forward by instructional systems design researchers, with even more models to consider when aiming to design for culturally sustaining learning (Utuk, 2018). Instructional designers are directed to consider a myriad of factors, such as pedagogy, learning activities, tools, and content which positively reflect and engage students' sociocultural and cognitive diversity in the teaching and learning process (Akinrinola et al., 2020).

Many instructional design models and frameworks have been created by designers from the majority culture and, like the systems of higher education, preserve and reinforce historical, dominant norms that serve some learners at the exclusion of others (Moore, 2021). Although traditional instructional models are empirical, they are not neutral and always contain bias (Heaster-Ekholm, 2020). For example, the ADDIE process and the Dick and Carey model (1978) are two of the most widely used approaches to instructional design. Unfortunately, such traditional approaches were socially and culturally constructed without questioning their suitability for diverse online learners (Henderson, 1996).

ADDIE is one of the most widely used instructional design product development processes that stands for analyze, design, develop, implement, and evaluate (Branch, 2009). Heaster-Elkholm (2020) pointed out in their cultural critique that there is nothing explicitly addressed in ADDIE that addresses learner diversity or cultural differences. This creates space for the majority lens to be further perpetuated by not prompting the designer to rethink the decisions they make during each step of the ADDIE process (Moore, 2021).

The Dick and Carey model (1978) decentered learners, instead prioritizing the instructor or designer lens to write goals and designating the forms of knowledge that have been determined for the learning context (Heaster-Ekholm, 2020). This process removes the power from learners' experiences by giving full authority to the instructor and designer to decide on the learning process. In contrast, the development of a culturally sustaining model would require instructors

and designers to understand students' pressing needs—moving from a deficit approach to a strengths model and de-centering the dominant view in the learning system (Paris et al., 2017).

To remedy the gap between traditional instructional design models and the experiences of diverse learners, researchers have attempted to infuse cultural inclusiveness into traditional instructional design models (Heaster-Ekholm, 2020; Young, 2008). For example, Gómez-Rey et al. (2016) proposed that instructional designers should identify critical learning factors for each culture represented within a course and implement a wide range of learning activities to appeal to a variety of cultural backgrounds, instead of repeating the same activity. In addition, instructors could use culturally sustaining strategies such as modeling inclusive behaviors in learning activities and gaining awareness of their students' cultural backgrounds, values, assumptions, and patterns of behavior (Yang et al., 2010). Instructors should also be cognizant of how a student's cultural background may impact their coursework and build awareness of possible cultural biases in grading processes (Yang et al., 2010).

Infusing cultural inclusion to supplement traditional instructional design models has benefits, but this approach does not fully address equity concerns. Unfortunately, to date, inclusivity research has tended to focus on the accessibility of learning environments rather than the design of culturally sustaining approaches to meet the needs of diverse learners (Fermín-González, 2019). This means that many design and learning strategies may be labeled as “inclusive” while not actually serving the growing population of culturally diverse learners entering online education (National Center for Education Statistics, 2019). Much more work is needed to understand the needs of diverse learners and design culturally sustaining learning experiences that benefit all learners.

Culturally Sustaining Instructional Design Model

One inclusive instructional strategy in isolation is not sufficient to create an effective learning environment for diverse learners (Simunich & Grincewicz, 2018)—instead, a systemic model is key (Stroh, 2015). To develop such a model, instructional designers may select a set of instructional strategies, media, and tools to form a culturally sustaining system that reinforces a values-driven pedagogy throughout the learning environment to increase the effectiveness for diverse learners (Newman, 2015). These decisions should be made proactively ahead of time rather than as an afterthought (Grier-Reed & Williams-Wengerd, 2018).

Ideally, an instructional design model would help designers reflect on which set of instructional strategies, media, and tools to include while also planning how to align these with the cultures of their diverse learners (Utuk, 2018). However, a persistent issue remains in that there is not one prevailing instructional design model for adapting learning systems to be culturally sustaining and inclusive of various social identities, experiences, and histories.

With these considerations in mind, we propose a new way forward by introducing a Culturally Sustaining Instructional Design (CSID) model. The CSID model brings together two different sets of assumptions and perspectives: an objective domain—a system of knowledge, skills, and best practices—and a subjective domain consisting of values or norms that may differ by learners' cultures (Biesta & Miedemac, 2002). Integrating these two domains into a single CSID model applies systems thinking to highlight the interconnectedness of the objective and subjective perspectives—as well as learners' potentially many different cultures within the subjective domain—and how these different aspects influence each other (Meadows, 2008). Through systems thinking, the CSID model harnesses complexity to communicate a clear vision forward (Stroh, 2015) and shows learners how their actions connect them to the world (Flood, 2010).

In the following paragraphs, we describe how CSID combines objective and subjective domains in a new way. We first address limitations of previous models that focus separately on either the objective or subjective domain. Next, we synthesize the objective and subjective domains into the CSID model. We then address principles to guide instructional designers and applications through two scenarios that explain how the CSID principles may be put into practice.

Objective Domain

The objective domain of CSID is a systematic and structured way of outlining knowledge and skills for the learner, utilizing the Integrated Multicultural Instructional Design (IMID) model (Schultz & Higbee, 2011). IMID supports instructional designers by isolating decision-making for instructional strategies, such as assessment and content, and creating a process for reflection and promotion of strategies to integrate multicultural content.

The development of the IMID model included a long history of models that ran the gamut from open-ended processes to one-dimensional frameworks that focused on specific strategies to create a learning environment for diverse learners. Some of the most popular instructional design models, such as ADDIE, can address multiple variables of cultural complexity through open-ended interpretations of each section of the model (Göksu et al., 2017). Meanwhile, other models only address one specific design factor. For example, the Multiple Cultural Model (Henderson, 1996) focuses solely on culture-based design elements. Despite its narrow emphasis, the model is useful because it directs attention toward the multiple cultures and intersectionality that might influence a student's experience in an online learning environment.

Drawing on these different instructional design models, IMID was created to consider diverse learners' social identities when designing courses (Schultz & Higbee, 2011). IMID was visualized as an unfolded pyramid with four triangular sides surrounding a square base; each side includes a guiding principle for instructional designers to foreground the learner's perspective. For example, one side reminds designers to consider global perspectives and enhance access to academic support resources. The IMID model focuses attention on learners' identities while also providing a foundation upon which specific culturally sustaining considerations can be added (Higbee et al., 2012; Higbee et al., 2010).

Subjective Domain

The subjective domain of CSID is a pedagogical lens through which values and norms are implemented in a learning environment (Biesta & Miedema, 2002), based on the Culturally Sustaining Pedagogy (CSP) model (Paris, 2012). CSP supports the value of a multiethnic and multilingual future in education by "sustaining the cultural and linguistic competence of [learners'] communities while simultaneously offering access to dominant cultural competence" (Paris, 2012, p. 95). CSP draws from an earlier model of Culturally Responsive Pedagogy (Gay, 2000) that was originally intended for K-12 students and later adapted for use in higher education (Larke, 2013). Some of the higher education strategies included revising syllabi and redefining assessments to engage students by connecting assignments to their lives. Woodley et al. (2017) then took the next step to adapt these strategies to online learning environments.

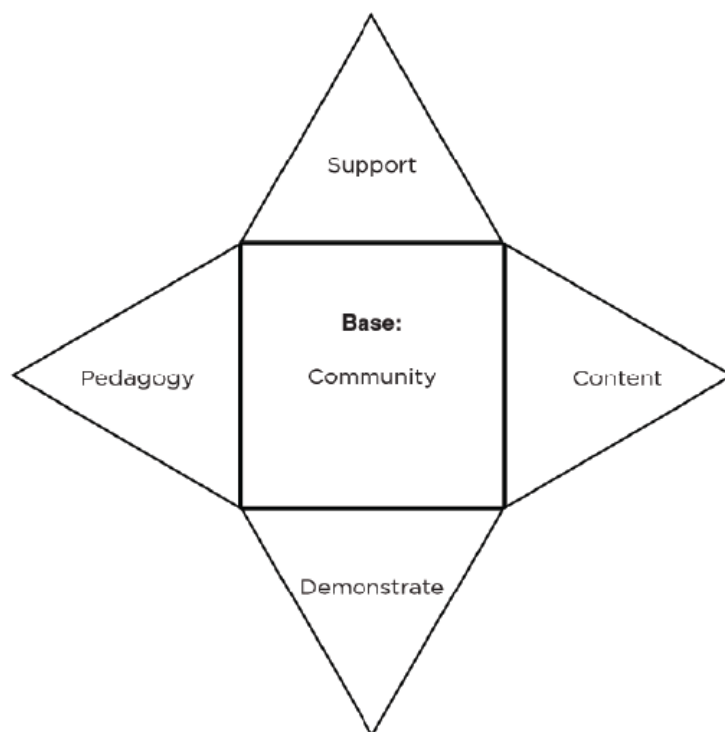
Building upon these earlier iterations, CSP moves beyond multicultural elements and cultural relevance to also affirm and sustain the cultural heritage and backgrounds of diverse students and their communities (Goin Kono & Taylor, 2021; Paris et al., 2017). Keeping in mind that people's relationships with their identities are fluid and ever-changing, CSP emphasizes maintaining cultural competency through the evolving ways contemporary language and culture are experienced (Paris, 2012). This means not over-generalizing instructional design strategies based on any specific identities held by some learners (Paris, 2012). CSP aims to move toward humanizing resource approaches to education and away from dehumanizing deficit perspectives.

Synthesizing the Objective and Subjective Domains

By infusing the objective IMID model with subjective CSP, the CSID model invites instructional designers to analyze each decision, instructional task, and content through distinct objective and subjective domains. Because CSP (Paris, 2012) was published after IMID (Higbee et al., 2010), IMID integrates a more antiquated view of multicultural instruction. Thus, the CSID model updates IMID's pedagogical lens, or subjective domain, with CSP to sustain and extend cultural practices in the online learning environment. We depict CSID as an unfolded four-sided pyramid (Figure 1), following the original IMID visualization (Higbee et al., 2012).

Figure 1

Culturally Sustaining Instructional Design Model



In our new model, we update the IMID model to integrate a CSP perspective into the base (i.e., the square at the center of the unfolded pyramid)—this directs attention to the community of postsecondary scholars, practitioners, learners, and their communities.

- **Community:** Who we learn with / Who we connect learning to

Adding the community base foregrounds various facets of students' identities and their communities of cultural wealth (Yosso, 2005; Higbee et al., 2012).

Each of the four unfolded sides of the pyramid (i.e., the triangles around each side of the square base) highlights the learner's perspective and their diverse human experiences. This centers learners in the process of designing and implementing instruction (Higbee et al., 2012). The four learner-centered prompts, which may be addressed in any order, include:

- **Content:** What we learn / What we teach
- **Pedagogy:** How we learn / How we teach
- **Demonstrate:** How we demonstrate what we have learned / How we assess learning
- **Support:** How we access academic support services / How we support learning

Principles for Culturally Sustaining Instructional Design

We incorporate additional CSP considerations into the IMID model through the guiding principles related to the four sides of the CSID pyramid. The guiding principles for the base and sides of the pyramid highlight relationships between the sides rather than utilizing a sole individual side of the model, such as implementing a stand-alone instructional strategy and expecting the online learning environment to become inclusive. Additionally, the guiding principles focus on the instructional designers' decision-making and the listed prompts provide a systematic approach for the

instructional designer to reflect upon while in the design and development process. We describe these guiding principles here and then further illustrate their applications through two possible scenarios in the next section.

Community: Who we learn with / Who we connect learning to

- Build trust within the learning environment with flexibility and accountability
- Share multiple perspectives on the content
- Create an open space for learners to craft their own perspectives and use their authentic voices
- Extend learning outside the classroom to learners' communities and current events that impact their communities
- Construct personal connections between learners, mentors, and scholars for continued learning and a network of support

Content: What we learn / What we teach

- Determine what content proficiency is essential for each class, program, and support service.
- Establish course objectives that reflect essential course components and do not exclude students based on gaps in prior knowledge.
- Meet or exceed professional standards of excellence in content proficiency within an environment of inclusion.
- Integrate multiple perspectives, cultures, linguistic histories, communities, and global examples from authors who are not traditional or mainstream academic voices.
- Connect content to historical trends, current events, and future directions of contributors with diverse social identities.

Pedagogy: How we learn / How we teach

- Promote understanding of how knowledge and personal experiences are shaped by the contexts, social identities, and histories that we embody.
- Work collaboratively to construct knowledge.
- Explain that learning is a complex process that involves many layers of reflection.
- Integrate skill development with the acquisition of content knowledge.
- Communicate clear expectations in terms of learning objectives, engagement in the teaching and learning process, and evaluation measures for teaching and learning.
- Apply strategies that sustain and value learners' culture, abilities, experiences, and ways of knowing.

Demonstrate: How we demonstrate what we have learned / How we assess learning

- Develop multiple ways for students to demonstrate knowledge.
- Encourage students to use creative, critical thinking, and problem-solving skills to demonstrate knowledge.
- Establish a clear link between course or program objectives and the content knowledge and skill acquisition being asked to demonstrate or assessed.
- Minimize bias in the assessment of student learning by reflecting on perspectives and biases held that may shape assessment output.
- Use both formative and summative assessment measures.

Support: How we access academic support services / How we support learning

- Maintain the delicate balance between challenge and support.
- Support skill development and content knowledge acquisition through cultural community and mentorship programs.
- Incorporate cognitive, affective, and emotional aspects of learning.
- Collaborate and partner with select institutional resources, faculty, speakers, and alumni.

Applications of Culturally Sustaining Instructional Design

In the following paragraphs, we outline two scenarios for applying the CSID model. The first scenario applies CSID to improve outcomes for students from low-income backgrounds and historically URM in higher education. The second scenario applies CSID to improve accessibility in online learning environments. In describing the first scenario we argue for the importance of using the CSID model; in the second scenario, we emphasize that CSID is meant to supplement, not compete with, other models.

Scenario One: Supporting Historically Underserved Students in Higher Education

Each side (i.e., triangle and square base) of the CSID model, prompts instructional designers to consider the learning environment in terms of each of CSID's five guiding principles, focusing on one side at a time but in any order. For example, the content section (i.e., What we learn, What we teach) prompts the instructional designer to reflect on how they will integrate multiple perspectives that are not the majority in traditional higher education. Following this prompt, the instructional designer may spend additional time seeking new learning resources and considering whose perspectives will be perpetuated in the course by selecting those resources. Similarly, the instructional designer may consider systematically reviewing all of the CSID prompts and incorporating these ideas before and during the development of the learning environment.

Community

Designers should build a foundational base of community and associated cultural wealth for learners before collaborative learning activities are assigned by providing time to build rapport with and between students. In this scenario, examples of the Community principle may include assigning an introductory video discussion, person-to-person meetings with faculty and/or peers, or another creative technology for students to connect their lives to the curriculum before any new content is presented to the learners.

Content

Designers should create access to diverse perspectives in the learning materials by consistently looking at the cultural backgrounds of the creators of the content shared in the learning environment. Examples of the Content principle may include reviewing the visual, audio, and text materials that are used as content to help learners demonstrate their knowledge. Designers should pay close attention to who shares whose narrative(s) in your selected content media. Search for and share content media from a variety of cultural perspectives.

Pedagogy

Designers should craft learning objectives and a variety of assessments that connect to diverse learners' experiences. Because learning objectives should align with learning activities and assignments, designers should consider a deep audience analysis to provide learning activities and clear expectations that align with your specific audience's cultural norms. Examples of the Pedagogy principle may include accepting a variety of formats from different students to achieve the same learning objective or changing the assignments with each new cohort.

Demonstrate

Designers should assign active learning activities to connect learners' current knowledge and social capital to the new content being presented. Designers should also pay close attention to how the examples used in the content and context of the learning activities are crafted to help learners from different cultures connect their previous knowledge to build new knowledge. Examples of the Demonstrate principle may include learners creating their own connections from their communities to the content presented, or a specifically curated list of examples and contextual parameters for a learning activity based on the audience analysis, such as coding solutions for hair braiding designs (Lachney et al., 2021). When assessing learning activities, design should re-evaluate how rubrics or grading measures were created and analyze whether they perpetuate the biases held by the instructor.

Support

Designers should support students through their learning journey by connecting them to student services and other networks on campus. Examples of the Support principle may include presenting a personal contact to the writing center or walking the student through how to set up an appointment with a peer writing coach when giving feedback on an assignment. Designers should be knowledgeable about the student, their learning journey, and how best to connect that individual to student support services.

Scenario Two: Improving Accessibility in Online Learning Environments

Ideally, higher education online learning environments would prompt equity by being inclusive and culturally sustaining spaces (Grier-Reed, 2018). However, equity and inclusivity issues pertain to not just culture but also ability. Diverse learners are distinct from each other—and some are potentially marginalized—not just in terms of cultural background but also because of physical or intellectual disabilities. Instructional designers should address both culture and ability to ensure learning environments are inclusive (Immenga, 2021; Westine et al., 2019). Past research has shown how various models can work together, such as combining Universal Instructional Design (UID), constructivism, and CSP (Grier-Reed et al., 2018).

The CSID model may pair well with accessibility models—such as Universal Design for Learning (UDL) principles—to help reinforce and strengthen both approaches. In the same way that CSID foregrounds culture, UDL emphasizes ability. Elevating one likely aids the other. For example, UDL suggests creating multiple opportunities for learning in several modalities of content and assessment as well as multiple means of action and expression. Similar to UDL's direction for multiple means of action and expression, the CSID model prompts designers to think about how students demonstrate what they have learned (i.e., How we demonstrate what we have learned / How we assess learning) when assessing assignments in multiple modalities.

In addition to these similarities with UDL, the CSID model also specifically guides instructional designers and instructors to reflect on unexamined assumptions and biases that they hold that may shape their assessment of students, in

contrast to UDL, which focuses on means of engagement by sustaining interest and effort. For example, the CSID model's demonstration principle suggests that designers and instructors reflect on—and potentially rethink—how their grading rubrics were developed and assess their own biases during the grading process. In addition, the CSID model's community principle prompts designers and instructors to consider additional perspectives that are not inherent when creating assessment measurements (e.g., rubrics).

Similarly, the CSID model focuses on how practitioners may help support students' learning processes, such as connecting students to institutional resources available to learners through and around the course. These resources may include a Student Disabilities Services office that supports students with differing abilities. This informed approach may involve co-creating community norms for interactions and cultivating a scientific attitude by encouraging openness, curiosity, humility, and skepticism (Grier-Reed & Williams-Wengerd, 2018). Applying a combination of models in this scenario—that is, UDL in combination with CSID—provides a systematic process to achieve desired results.

Conclusion

The CSID model complements approaches already taken by many trained instructional designers by offering an additional lens to build upon the knowledge and experiences of students with diverse backgrounds and experiences. CSID combines objective course design with a subjective pedagogical lens to offer a systematic process—through prompts and guiding principles—to improve inclusion and equity in learning.

The models used to design learning environments showcase the priorities of the designer; if addressing social justice issues in higher education is a central value, designers will need to make intentional choices to incorporate models that reflect their values. With this in mind, the CSID model can be used to prompt instructional designers and instructors to reflect on their own biases and how these biases may be reflected in their course design decisions. The CSID model—through its learner-centered, culturally sustaining approach to designing and developing learning environments—provides a systematic way to reconsider each angle of the student's experience when planning, designing, developing, and assessing learning. The model also encourages educators to search for and engage with institutional resources, such as diversity trainings, to help them create more equitable learning environments for diverse students. The numerous applications of CSID—from supporting historically underserved students in higher education (Denaro et al., 2022) to complementing UDL approaches (Immenga, 2021) to serve students with differing abilities—may appeal to a wide variety of stakeholders, including instructional designers, instructors, and academic support services.

Ultimately, the CSID model can be implemented to see more just outcomes by providing both objective and subjective guidance to help ensure that all students have the opportunity to succeed, regardless of their background. Because past research has shown that graduation rates may be positively impacted for underrepresented and minoritized students if online learning environments are intentionally designed for their inclusion (Bhagat et al., 2018; Green & Wright, 2017; Woodley et al., 2017), applying the CSID model would benefit higher education institutions that are strategically attempting to retain and graduate historically underserved students. That is, the CSID model provides a systematic approach to address the success gap of diverse students in higher education through more inclusive online learning design (Higbee et al., 2012; Kumi-Yeboah, 2018). Instructional designers play a key role in shaping and improving the experiences of diverse learners and achieving these outcomes; the CSID model may make this important work a little bit easier.

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I am an Assistant Professor of Instructional Systems & Learning Technologies at Florida State University. My preferred pronouns are he/him/his. My research investigates self-directed learning, a subset of informal and networked learning. I am fascinated by how people figure things out on their own. I'm most interested in what happens when students, learners, and trainees finish formal instruction, preparation, and training. What do they do after they walk out the door or log off? How do they continue to develop their knowledge, skills, and abilities? Where do they look for resources? Who do they talk to? I am interested in how self-directed learners navigate the affordances and constraints of social connections through the internet and exploration through games. I frequently investigate self-directed learning with the tools of educational data science, including learning analytics, social network analysis, discourse analysis, natural language processing, and educational data mining.



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Analysis of Associated Factors that Influence the Accessibility of Online Higher Education

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DOI:10.59668/722.13021

Accessibility

Higher Education

Exploratory Factor Analysis

Online Education

Distance Education

Online distance education is one of the fastest-growing sectors of postsecondary enrollment, and accessibility is becoming a more prominent issue. This study used a descriptive quantitative survey methodology to explore the characteristics of institutions and individuals who are responsible for implementing accessibility. Overall, the findings indicate growth in the implementation of accessible course design practices. The results revealed the association of several factors focused on institutional accessibility support and accessibility compliance support. Although no models or inferences can be made from these associations, they do suggest that institutional accessibility practices may have a key role in accessible online course design.

Introduction

Online distance education is one of the fastest-growing sectors of postsecondary enrollment. As more students take advantage of these opportunities, online course content has increasingly been found to be inaccessible to students with disabilities. As accessibility case law quickly changes the expectations for online course content, postsecondary institutions struggle to shift to a proactive and systemic approach to accessible design practices.

Although there have been calls for institutions to take a holistic, coordinated, and collaborative approach to accessibility that is founded on pedagogical practices such as Universal Design for Learning, research on how institutional procedures may be associated with and to what extent they may contribute to the current state of accessibility practices has not been examined (Ascough, 2002; Galusha, 1998; Linder et al., 2015; Online Learning Consortium [OLC] & WICHE Cooperative for Educational Telecommunications [WCET], 2019; Rowland et al., 2014). Accessible online education is essential to supporting students with disabilities to ensure equity in the opportunity to benefit from higher education.

Literature Review

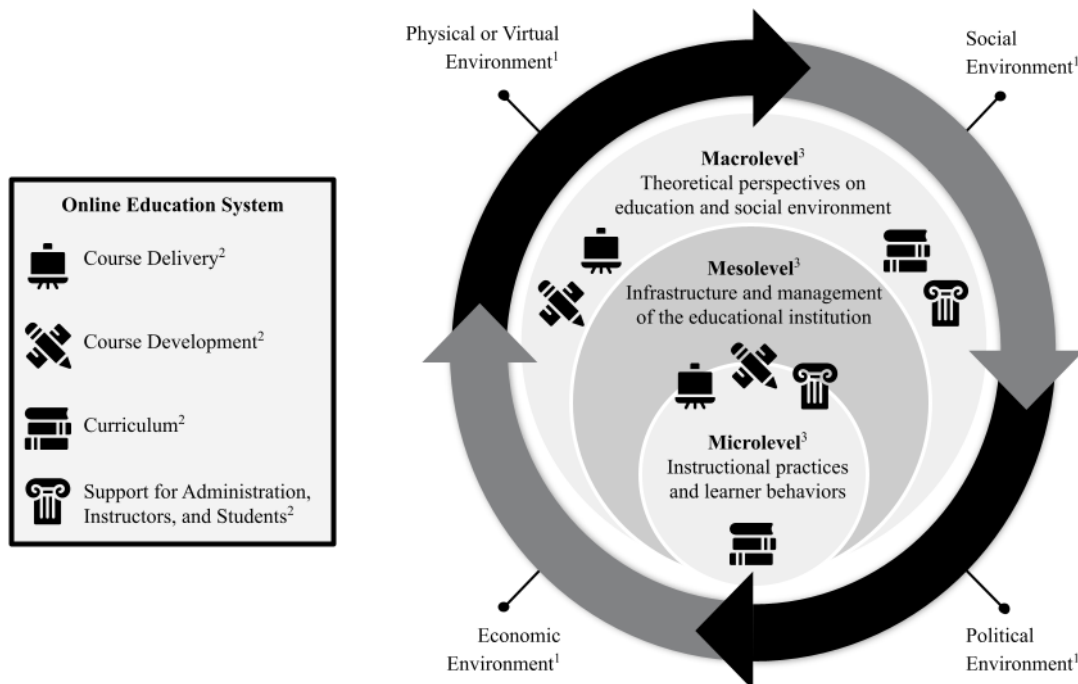
Often designated as a nontraditional pathway to instruction, distance education programs have experienced a steady increase in enrollments throughout the last 20 years (Allen et al., 2016; Seaman et al., 2018). Distance education is defined as instruction delivered through one or more technologies to students separated from their instructors, while online education is described as instruction facilitated in an online environment (Seaman et al., 2018). The internet has made online education the fastest-growing sector of and primary format for distance education (Carlsen et al., 2016; Scagnoli, 2001).

Online Education as a System

Systems consist of interconnected elements structured to achieve a specific goal (Meadows, 2008). Systems thinking is defined as an approach to determining the relationships between various factors by using a holistic rather than a component view (Reynolds & Holwell, 2010). By using systems thinking to understand the connections within a system, it is possible to engage in a process of assessing what the system was designed to do and how to make changes to reach a different outcome (Stroh, 2015). As a system, online education is an environment that can be organized into several subsystems and be affected by various large-scale forces (Moore & Kearsley, 2012; Tamim, 2020), as shown in Figure 1. As a system that can evolve with its environment (Reigeluth, 2019), online education can respond to conditions that can redefine educational processes (Trilling & Hood, 1999). Eliminating disadvantages is a key method for promoting equity and social justice (Robinson, 2008), which means that redesigning more accessible learning environments supports parity for learners.

Figure 1

Representation of Online Education as a System



Note. This figure depicts the conceptual elements of distance education systems, particularly online ones, and how they are related. From "Ableism Versus Inclusion: A Systems View of Accessibility Practices in Online Higher Education," by R. Fennelly-Atkinson, 2022, Toward Inclusive Learning Design: Social Justice, Equity, and Community, edited by B. Hokanson, M. Exter, M. Schmidt, and A. Tawfik. Copyright 2022 by Rita Fennelly-Atkinson. Used with permission.

¹ Concept from "Distance education: A systems view of online learning" by M. Moore, and G. Kearsley, 2012.

² Concepts from "Improving completion in online education systems: An application of systems thinking" by H. Hemphill, L. Hemphill, and R. Runquist, 2019, Learning, Design, and Technology, doi: 10.1007/978-3-319-17727-4_104-1.

³ Concepts from "Analyzing the complexities of online education systems: A systems thinking perspective" by S. Tamim, 2020, TechTrends, doi: 10.1007/s11528-020-00538-9.

Examining Accessibility within Online Education Systems

The historical roots of distance education and disability have led to the current state of accessibility within online higher education. Accessibility is defined as the ability to access and make use of websites, hardware, software, technology, and content that has been designed in a way that allows people to perceive, understand, navigate, interact with, and contribute to online content and environments (Culp et al., 2005; Huss & Eastep, 2016; Web Accessibility Initiative & World Wide Web Consortium, 2019). Currently, many U.S. students with disabilities receive accommodations to support their ability to access and make use of the instruction and educational environments (U.S. Government Accountability Office [U.S. GAO], 2009).

However, this practice is based on the medical model of disability and has posed various barriers at the institutional and individual levels (Andrews et al., 2019; Black et al., 2015; Bogart & Dunn, 2019; Cole & Cawthon, 2015; Grimes et al., 2017; Lindsay et al., 2018; Roberts et al., 2011; Sarrett, 2018; Siebers, 2013; Thompson-Ebanks & Jarman, 2018; Toutain, 2019; U.S. GAO, 2009). The field of disability studies has shifted from a medical to a social model which normalizes accessibility through universal design (Bogart & Dunn, 2019), which influences how society fundamentally views and treats disability in any environment.

Elements Affecting Accessibility Practices

Although physical access has long been established as a disability right, web accessibility emerged with the internet (Catalano, 2014). In 1999, the first draft of Web Content Accessibility Guidelines (WCAG) was published, and it has guided web development and accessibility practices since (Kingman, 2018), which became an enforceable component of disability legislation (Kingman, 2018; Kuykendall, 2017; U.S. GAO, 2017). Experts warn that postsecondary institutions should be concerned about accessibility, as most websites and online courses are reported as noncompliant with current guidelines (Carnevale, 2005; Roig-Vila et al., 2014). Despite conflicting case law, the general consensus is that postsecondary institutions are expected to ensure that their online content and learning environment are accessible (Burke et al., 2016; Cullipher, 2017; Iglesias et al., 2014; McAfee & Taft, 2019; OLC & WCET, 2019). Students also have a growing expectation that instruction should be designed to meet the diverse needs of learners with different abilities and learning preferences (Quinlan et al., 2012).

Previous research regarding online higher education has been limited to identifying how courses may be inaccessible, who is responsible for course accessibility, and whether practitioners have sufficient knowledge of compliance guidelines (Frey & King, 2011; K. C. Green, 2010a, 2010b, 2019; Huss & Eastep, 2016; OLC & WCET, 2019; WebAIM, 2014). These studies have collectively attributed inaccessibility to the general practices of institutions and designers, however attributing responsibility fluctuates due to the high variability in how accessibility is addressed. Although there have been calls for institutions to take a holistic, coordinated, and collaborative approach to accessibility that is founded in pedagogical practices such as Universal Design for Learning (UDL), research on how institutional practices may be associated with accessibility has not been undertaken to date (Ascough, 2002; Linder et al., 2015; OLC & WCET, 2019). While the literature has identified barriers such as cost, training, policies and procedures, time for the implementation of accessible design practices, and range of stakeholders involved, the association between these factors and to what extent they may contribute to the current state of accessibility practices has not been examined (Galusha, 1998; Linder et al., 2015; Rowland et al., 2014). Therefore, this study's primary significance was to collect current information about institutions' and designers' characteristics of delivering online higher education courses and their accessibility practices.

Research Questions

The purpose of this study was to explore the relationship between various characteristics that may contribute to accessibility knowledge, practices, and support in higher education online courses. Characteristics and practices pertaining to institutions refer to consistent and clearly defined organization-wide systems and processes, while those concerning designers denote the practices and routines undertaken by individuals. The research questions that were addressed in this study relate both to institutional and individual designer factors, and they are:

1. What are the characteristics of designers who are responsible for implementing accessibility in higher education online courses?
2. What are the accessibility practices used by designers in higher education online courses?
3. What are the characteristics of higher education institutions that offer online courses?
4. What are the accessibility practices of higher education institutions that offer online courses?
5. What are the associations (factor structure) amongst the surveyed characteristics and accessibility practices?
 1. To what extent do the practices of online course designers contribute to the identified factor structure?
 2. To what extent do the practices of the institution contribute to the identified factor structure?

Methods

This study used a descriptive quantitative survey research design. A descriptive research methodology is useful for exploring multiple variables and determining whether there are any correlations while using quantitative methods (Knupfer & McLellan, 2001). This section will describe the participants, instrumentation, data collection methods, data analysis procedures, and limitations.

Sample and Survey Distribution

Quantitative data were collected from designers who included professionals working as faculty and instructional designers, and those who provide accessibility support for online courses in U.S. higher education. These respondents reported on the practices and characteristics of themselves and their institutions. Survey responses were collected in two consecutive 30-day phases through the distribution of a link. Phase 1 targeted designers belonging to the Association for Educational Communications and Technology through internal calls for participation and 26 submissions were received. Phase 2 targeted designers in public social media spaces such as Facebook and Twitter using hashtags targeting instructional designers and accessibility, which resulted in 47 submissions. At the end of the 60-day window, a total of 73 surveys were received. A total of four submissions were deleted due to incompleteness. A total of seven submissions were deleted due to respondent ineligibility. This resulted in a sample of 62 ($N = 62$) for the study.

While this study aimed for a sample size of 300, there was an increased probability of survey fatigue due to decreased data collection methods during COVID-19 (United Nations High Commissioner for Refugees, 2020). Based on the literature, the smallest allowable sample size for this study was 58, based on an observation-to-variable ratio of 2:1. Using this method, ratios as low as 2:1 have been adequate in certain cases (de Winter et al., 2009; Guadagnoli & Velicer, 1988). While there are a host of considerations in determining an adequate sample size, Whitley (2002) suggested that sample sizes as small as 23 can detect large effects.

Research has found that many EFA sample size recommendations produce inconsistent results (Guadagnoli & Velicer, 1988). Moreover, Guadagnoli and Velicer (1988) reported that while any sample size choice can be supported in the literature, the adequacy of the sample is determined by the conditions used in the study. Because the sample size impacted key study parameters, all data analysis decisions were reported and aligned with recommendations from the literature.

Instrumentation

This study used a descriptive quantitative methodology using a web-based survey consisting of 41 closed-ended and write-in questions. A survey is an effective tool for measuring attitudes and perceptions that can be statistically analyzed (Cohen et al., 2011). Anonymous and self-administered, web-based surveys also increase the validity and level of factual reporting by respondents (Callegaro et al., 2015; Fowler, 2002).

The survey instrument used in this study was adapted from the Quality Matters™ Accessibility Survey by Frey and King (2011) and the survey measuring faculty awareness of accessibility used by Huss and Eastep (2016). The instrument was organized into seven sections which progressed from general descriptive information about the participant and institution to specific information about accessibility practices for each, as shown in Table 1.

Table 1

Distribution of Survey Questions by Thematic Section

Survey Section	Number of Questions
Background information (participant)	8
Information about the institution	3
Institutional practices (accessibility)	4
Institutional responsibility for online instructional content	9
Institutional training and support	5
Individual practices (accessibility)	8
Limitations	4
Total	41

Adaptation of Survey Instrument

There are many benefits of using an adapted instrument based on existing surveys. According to Fowler (2002), adopting survey questions used in previous studies provides the opportunity to collect comparable data across different samples, which can aid in generalizing results. Because the instruments have already been tested, there is a higher level of confidence in the validity of the questions and quality of data even when these questions are adapted (Hyman et al., 2006).

The question format and wording were modified to ensure unidimensionality and presented in a standardized format (Cohen et al., 2011; Fowler, 2002). To achieve this, questions were reviewed to ensure clarity and that only one variable was addressed at a time (Cohen et al., 2011; Fowler, 2002; Friedman & Amoo, 1999). Question response formats were also adapted to a 5-point Likert-scale format or write-in format as appropriate. The unipolar, ratio-data, Likert-scale response format that was used in the survey was designed to increase the consistency of respondents' interpretation of meaning, eliminate forced-choice responses, use an equal scale that excluded extreme language, and align scale labels to a numerical scale (Cohen et al., 2011; Fowler, 2002; Friedman & Amoo, 1999; Schwarz et al., 1991).

The survey instrument was pretested in the form of expert reviews and field testing. This instrument review also provided the opportunity to identify potential areas of bias (Fowler, 2002; Groves et al., 2009; Ornstein, 2013). Any issues of concern were addressed prior to the dissemination of the instrument to the target population.

Instrument Validity and Reliability Analysis

Validity refers to an instrument's ability to represent what it was designed to measure (Cohen et al., 2011; Kimberlin & Winterstein, 2008). Internal, content, face, construct, and external validity was established using methods described in the literature (Cohen et al., 2011). Validity was primarily established through survey design format which included, ensuring anonymity, question adaptation and presentation, clear instruction and language, and configuration of the Likert scale (Chyung et al., 2018; Fowler, 2002; Hyman et al., 2006; Menold & Bogner, 2016; Nardi, 2014).

Reliability is established when an instrument achieves consistent results over time (Cohen et al., 2011; Taherdoost, 2016). Various survey design measures were also used to ensure reliability and included question design, clear instructions and language, and Likert scale construction (Bastos et al., 2014; Chyung et al., 2017, 2018; Cohen et al., 2011; Fowler, 2002; Krosnick & Berent, 1993; Menold & Bogner, 2016; Nardi, 2014; Schwarz et al., 1991). It ensures that an instrument has obtained internal consistency (Kimberlin & Winterstein, 2008). Reliability is established through Cronbach's alpha, α (Cohen et al., 2011; Field, 2013; Kimberlin & Winterstein, 2008). Further, Cronbach's α is considered to be particularly appropriate for Likert scales (Whitley, 2002). While the minimum coefficient is usually .70 or higher, a Cronbach's α of .60 or above is allowable for exploratory studies (Straub et al., 2004). As reported in Table 2, an α coefficient of .78 was established for all Likert-scale items.

Table 2

Instrument Reliability Established Via Cronbach's Alpha

Likert scale items	α	n/items	n/valid cases
All	.78	29	20
Institutional practices	.63	4	45

Likert scale items	α	n/items	n/valid cases
Institutional responsibility for online instructional content	.71	5	38
Institutional responsibility for accessibility review	.63	3	45
Institutional training and support	.84	5	41
Individual practices	.80	8	55
Limitations	.78	4	56

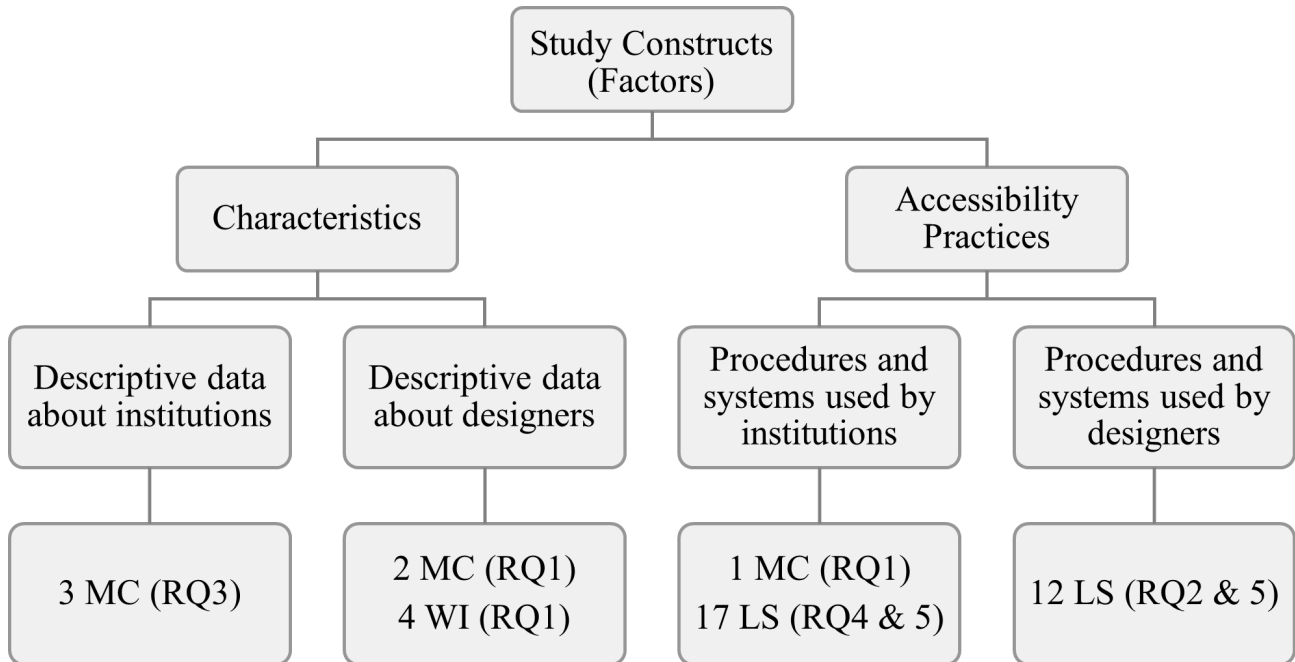
Note. Cronbach's α was computed using Likert-scale survey item data that excluded the responses of "Don't Know" and "Not Applicable."

Construct Alignment to Research Questions

Accessibility practices consisted of information about habitual procedures adopted by institutions or designers. These constructs were based on frequently identified factors in the literature regarding accessibility within online higher education, and the questions included in this survey had been previously addressed in the literature in various capacities, as shown in Figure 2.

Figure 2

Constructs (Factors) Considered in This Study



Note. MC = Multiple choice; WI = Write in, LS = Likert scale. These factors represent 39 of 41 questions used in the final survey. The two questions not represented here represent filter questions used to determine survey eligibility and were not considered in the analysis.

Data Collection Methods

No identifying information about their location, institution, or selves was collected during the survey. This study was conducted during the summer of 2021, and participants were asked to respond based on their experiences in the previous term. Respondents answered demographic and filter questions to determine their eligibility for participation.

Data Analysis Procedures

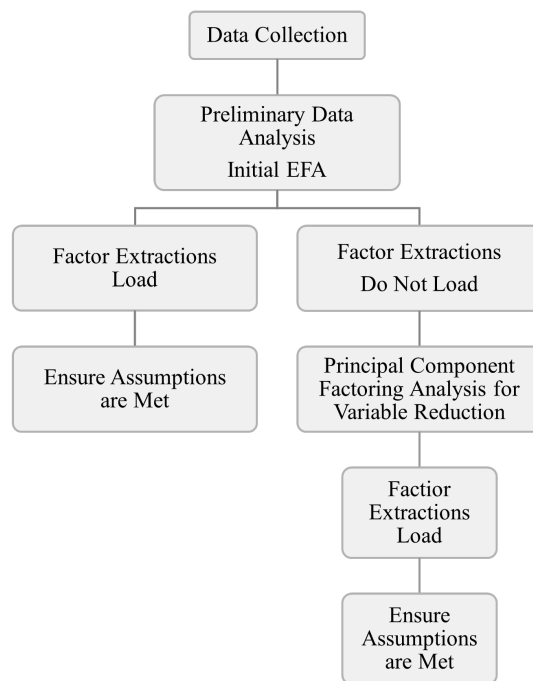
This study was approved by the IRB prior to data collection through the Qualtrics online survey platform. The quantitative data were entered into Statistical Package for the Social Sciences, Version 26.0 for Mac software and prepared for statistical analysis. Descriptive statistics were generated for survey data related to research questions 1-4.

For research question 5, the data was analyzed using an Exploratory Factor Analysis (EFA). The assumptions for an EFA including normality, linearity, sampling adequacy, and capability of being factored were checked (Cohen et al., 2011). During this analysis, Cronbach's alpha, α , was calculated to determine the reliability of the survey (Field, 2013). Suitability for factorization was tested using Bartlett's test of sphericity and the Kaiser-Meyer-Olkin measure of sampling adequacy (Cohen et al., 2011).

Once assumptions were met, an EFA, a statistical technique of identifying associations between clusters of constructs, was run (Field, 2013; Hoyle & Duvall, 2011). While there are no strict guidelines for EFA sample sizes, the adequacy of the sample is heavily dependent on other elements of the analysis such as communalities, factor loadings, and cross loadings (Costello & Osborne, 2005). Based on the low sample size, the analysis of this study adhered to stricter guidelines for acceptable communalities, factor loadings, and number of factors (de Winter et al., 2009). The results of the initial EFA determined the data analysis procedure, as shown in Figure 3 (Osborne et al., 2008). Because the factors failed to load after the initial EFA, a principal component analysis was used as a data reduction method to eliminate problematic variables (Costello & Osborne, 2005; Osborne et al., 2008). The results from the initial analysis were used to assess the integrity of the data and analysis.

Figure 3

Determination of Analysis Procedure Based on Preliminary Data Analysis



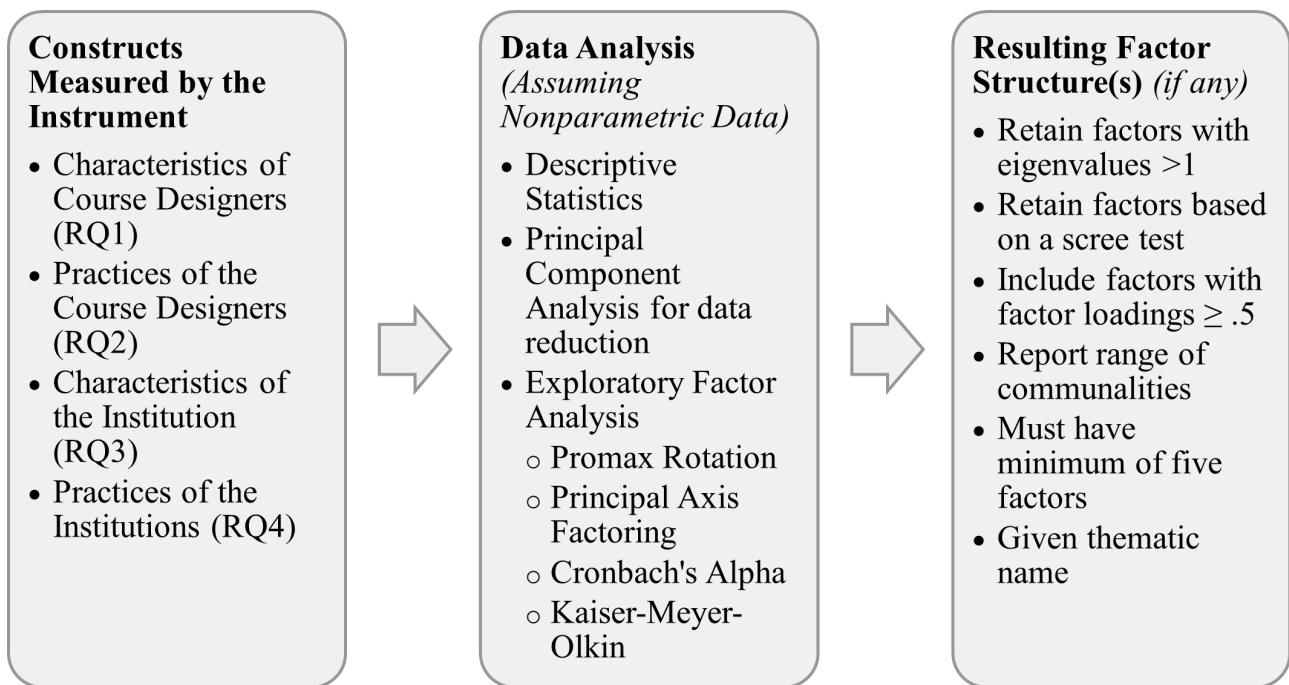
With assumptions met, an initial EFA using Principal Axis Factoring (PAF) and a Promax rotation was conducted. When the assumption of multivariate normality cannot be met, an EFA using PAF is recommended (Osborne et al., 2008). In addition to an extraction method, a rotation of factors should also be considered. In the social sciences, correlations between survey items are expected (Osborne et al., 2008). Oblique rotations assume that variables are correlated and is an appropriate choice for EFAs in the social sciences (Osborne et al., 2008). A Promax rotation is commonly used oblique in EFA (Guadagnoli & Velicer, 1988; Watkins, 2018).

Once the factor extraction loaded, the data was analyzed to determine factor structures. One of the primary concerns with EFA is the number of factors to retain in the analysis (Hoyle & Duvall, 2011). Factor retention was based on Kaiser's criterion and scree test. Only factors with eigenvalues greater than one were considered for the factor structure according to the Kaiser criterion (Cohen et al., 2011; Kaiser, 1958). These parameters were used to constrain and rerun the analysis to the specified number of factor structures suggested by the data (Whitley, 2002).

Using EFA, the factor structure of the survey items was determined using the PAF procedure shown in Figure 4. For small sample sizes, it is recommended to have fewer factor structures, with at least five factor loadings above .5 (Costello & Osborne, 2005; de Winter et al., 2009). Identified factor structures were reviewed for thematic associations.

Figure 4

Overview of Data Analysis Procedure Using Exploratory Factor Analysis



Limitations

The primary limitation of this study was its small sample size, which required the use of stricter guidelines for running and interpreting factor loadings and structures (de Winter et al., 2009). While smaller sample sizes are more prone to increased error, an EFA is designed to be exploratory and not inferential (Costello & Osborne, 2005). Though the results of this analysis will not be generalizable, they can be used in future studies with a confirmatory analysis to determine generalizability (Costello & Osborne, 2005).

Participants were recruited from an instructional designer professional organization and through social media using hashtags targeting instructional designers and accessibility. Accordingly, survey respondents likely had some familiarity and interest in the topic of accessibility within online education. Further, participation was limited to qualifying U.S. respondents. Therefore, this sample cannot be considered a representative sample.

The researcher was required to avoid the collection of the identifying information regarding the individual respondents and institutions. As a result, it is possible that multiple respondents may have been connected to the same institution. There is no method to identify if this was the case, however, if this did occur there is the potential for bias within the results.

Results

Due to this study's purpose, the descriptive quantitative methodology was selected as the best method for analyzing the research questions. A descriptive analysis was used for the first four research questions, and included reporting of report means, medians, standard deviations, and frequencies. Data was subsequently prepared for the EFA and was run to determine whether any associations between factors existed. This analysis also included the testing of assumptions and suitability for EFA.

Designer Characteristics: Research Question 1

The first research question addressed the characteristics of designers who are responsible for implementing accessibility in higher education settings. The applicable survey questions related to gender, age, role, and years of experience. The respondents predominantly identified as female, comprising 71% of participants. Respondents had an average age of 44.07 (SD = 10.22) and 10 years of experience teaching in higher education (SD = 8.22). Participants had taught online for an average of 6.84 years (SD = 6.44) and had spent 5.3 years (SD = 5.00) supporting online higher education programs non-instructionally. It is important to note that these figures do not account for corresponding experience in other settings. Most respondents' primary role was that of faculty or instructional designer.

Designers' Accessibility Practices: Research Question 2

The second research question addressed the accessibility practices used by designers in higher education online courses. The applicable survey questions related to designers' individual accessibility practices and limitations they had experienced.

Individual Accessibility Practices

Course designers reported that they almost always use some type of multimedia in their online courses ($M = 4.66$, $SD = 0.60$). Designers often formatted documents with appropriate text styles ($M = 4.25$, $SD = 0.98$), used alt text for images ($M = 4.08$, $SD = 1.19$), labelled headers in tables ($M = 4.09$, $SD = 1.17$), and included captions with videos ($M = 3.95$, $SD = 1.31$). However, including transcripts with videos ($M = 3.43$, $SD = 1.62$), complying with overall accessibility guidelines ($M = 3.57$, $SD = 1.26$), and using accessibility evaluation tools ($M = 3.39$, $SD = 1.52$) were only practiced about half the time. Descriptive statistics are shown in Table 3.

Table 3

Mean Frequency of Designers' Individual Accessibility Practices for Online Courses

Accessibility Practice	Min	Max	<i>Mdn</i>	<i>Mode</i>	<i>M</i>	<i>SE</i>	<i>SD</i>
Using multimedia in courses	3	5	5.00	5.00	4.66	.08	0.60
Formatting documents with text styles*	1	5	5.00	5.00	4.25	.13	0.98
Including alt text with images	1	5	4.50	5.00	4.08	.15	1.19
Identifying headers on tables	1	5	5.00	5.00	4.09	.15	1.17
Including closed captions with videos	1	5	5.00	5.00	3.95	.17	1.31
Including transcripts with videos	1	5	4.00	5.00	3.43	.21	1.62
Complying with accessibility guidelines	1	5	4.00	5.00	3.57	.17	1.26
Using accessibility evaluation tools	1	5	4.00	5.00	3.39	.19	1.52

Note. To report accurate means of frequencies, responses of "Not applicable" and "Don't know" were omitted from this data. The sample was $n=2$, except for one* ($n=61$).

Limitations in Implementing Accessibility Practices

Course designers reported that time ($M = 3.28$, $SD = 1.51$) was the most limiting factor in implementing accessibility. While most respondents reported that accessibility knowledge ($n = 24$, 38.7%), access to tools and software ($n = 21$, 33.9%), and budgetary reasons ($n = 21$, 33.9%) were almost never a limiting factor, a similar number of respondents found they were limited often or almost always ($n = 19$, 30.7%; $n = 21$, 33.9%; $n = 18$, 29.1%).

Higher Education Institution Characteristics: Research Question 3

The third research question addressed the characteristics of higher education institutions that offer online courses. The applicable survey questions related to information about type of institution and student enrollment. Participants provided information through multiple-choice responses. The higher education institutions were classified primarily as 4-year, at 77.4%, with 2-year and technical or trade, respectively, following. Most institutions were described as public, at 83.9%, followed by private non-profit. Enrollment was classified in ranges, with most institutions reporting having more than 10,000 students (63%).

Institutional Accessibility Practices: Research Question 4

The fourth research question addressed the accessibility practices of the higher education institutions that employed the designers who participated in this survey. The applicable survey questions related to institutional online course programming in the following areas: general course practices; responsibility for creating, building, or selecting instructional content; responsibility for reviewing courses for accessibility compliance; and training and support for the development of accessible courses or content.

General Online Course Practices

Institutions often offered online courses as a learning option ($M = 4.07$, $SD = 1.31$). Institutional systems or policies were often used to ensure the accessibility of online courses ($M = 3.84$, $SD = 1.21$), and courses often included disability statements or policies in course syllabi or materials ($M = 4.17$, $SD = 1.55$). However, reviews of online courses for accessibility were only conducted less than half the time ($M = 2.80$, $SD = 1.49$). Descriptive statistics are shown in Table 4.

Table 4

Mean Frequency of General Institutional Online Course Accessibility Practices

Online Accessibility Course Practice	<i>n</i>	Min	Max	<i>Mdn</i>	<i>Mode</i>	<i>M</i>	<i>SE</i>	<i>SD</i>
Offering of online courses*	59	1	5	5.00	5.00	4.07	.17	1.31

Online Accessibility Course Practice	<i>n</i>	Min	Max	<i>Mdn</i>	<i>Mode</i>	<i>M</i>	<i>SE</i>	<i>SD</i>
Using systems or policies	57	1	5	4.00	5.00	3.84	.17	1.29
Requiring disability statements or policies	60	1	5	5.00	5.00	4.17	.20	1.55
Reviewing courses	50	1	5	3.00	1.00	2.80	.21	1.49

Note. To report accurate means of frequencies, responses of “Not applicable” and “Don’t know” were omitted from this data. As a result, *n* has been reported to account for these omissions. *Online courses refer to courses specifically designed to be delivered online (in whole or part) and not as an emergency response to the COVID-19 pandemic.

Institutional Responsibility for Online Instructional Content

Responses in this section related to how often specific staff or departments were responsible for creating, building, or selecting content for online courses. Overall, institutions usually assigned this responsibility to faculty or instructors ($M = 4.36$, $SD = 0.97$). Instructional technologists or designers ($M = 2.74$, $SD = 1.33$) and designated online course builders ($M = 2.41$, $SD = 1.50$) were responsible for online course content less than half the time. Further, the administrators or leaders ($M = 1.91$, $SD = 1.24$) and production staff ($M = 1.95$, $SD = 1.27$) were the least likely to be responsible for online course content. Descriptive statistics are shown in Table 5.

Table 5

Mean Frequency of Designated Responsibility for Online Instructional Content

Responsible Staff or Department	<i>n</i>	Min	Max	<i>Mdn</i>	<i>Mode</i>	<i>M</i>	<i>SE</i>	<i>SD</i>
Faculty or instructor	61	1	5	5.00	5.00	4.36	.12	0.97
Instructional technologist or designer	53	1	5	3.00	2.00	2.74	.18	1.33
Administrator or leader	53	1	5	1.00	1.00	1.91	.17	1.24
Production staff	43	1	5	1.00	1.00	1.95	.19	1.27
Designated online course builders	46	1	5	2.00	1.00	2.41	.22	1.50

Note. To report accurate means of frequencies, responses of “Not applicable” and “Don’t know” were omitted from this data. As a result, *n* has been reported to account for these omissions. *Online courses refer to courses specifically designed to be delivered online (in whole or part) and not as an emergency response to the COVID-19 pandemic.

Institutional Responsibility for Course Accessibility Review

Responses in this section related to how often specific staff or departments were responsible for reviewing online courses for compliance with accessibility guidelines. Overall, institutions usually assigned this responsibility to individuals more than half the time ($M = 3.69$, $SD = 1.48$).

Accessibility Training and Support Offered by the Institution

Overall, respondents indicated that institutions did not require the completion of training to develop or deliver an online course. Responses in this section related to how often specific types of accessibility training or support were offered to respondents in the previous term. Overall, institutions most frequently provided support or assistance ($M = 4.02$, $SD = 1.30$) and online resources ($M = 3.88$, $SD = 1.39$) to promote online course accessibility. External courses or workshops ($M = 2.07$, $SD = 1.37$) were the least frequently provided. Descriptive statistics are shown in Table 6.

Table 6

Mean Frequency of Institutional Accessibility Support and Training

Accessibility Support or Training	<i>n</i>	Min	Max	<i>Mdn</i>	<i>Mode</i>	<i>M</i>	<i>SE</i>	<i>SD</i>
Mentoring program	51	1	5	2.00	2.00	2.57	.19	1.38
Internal course or workshop	61	1	5	4.00	5.00	3.61	.19	1.49
External course or workshop	45	1	5	2.00	1.00	2.07	.20	1.37
Online resources	60	1	5	5.00	5.00	3.88	.18	1.39
Support or assistance*	58	1	5	5.00	5.00	4.02	.17	1.30

Note. To report accurate means of frequencies, responses of “Not applicable” and “Don’t know” were omitted from this data. As a result, n has been reported to account for these omissions. *Specifically for the development of accessible online courses or content.

Associations Amongst Surveyed Items: Research Question 5

Research question 5 addresses the associations, or factor structures, amongst the surveyed characteristics and accessibility practices. This analysis included two sub questions that analyzed the extent to which institutions’ and designers’ characteristics and practices contributed to the identified factor structures. The first factor structure retained nine variables, and the second structure retained five variables based on a rotated factor loading above an absolute value of .5. Table 7 shows the factor loadings and communalities after rotation.

Table 7

Summary of Factor Loadings Based on 24 Likert-Scale Items (N = 62)

Variables	Factor Loading		
	1	2	<i>h</i> ²
Institutional Distributes Responsibility and Provides Support			
Institutional office or department responsible for reviewing online courses for accessibility*	.711		.50
Online course builders responsible for online course development*	.626		.47
Institution reviews online courses for accessibility*	.608		.39
Internal course or workshop provided as training support*	.577		.51
Instructional technologist or designer responsible for online course development*	.536		.42
Administrator or leader responsible for online course development*	.517		.36
Online resources provided as training support*	.514		.40
Mentoring program provided as training support*	.513		.35
Individual academic department, schools, or college review online courses for accessibility*	.505		.25
Accessibility Compliance Supported by Resources			
Designers used tables that contained headers**		.673	.45
Designers used documents with proper text formatting styles**		.664	.44
Access to tools or software was considered a limitation*		-.581	.37
Courses complied with accessibility guidelines**		.560	.38
Budgets were considered a limitation*		-.517	.29
Eigenvalue	4.66	3.21	
% of variance	19.42	13.39	

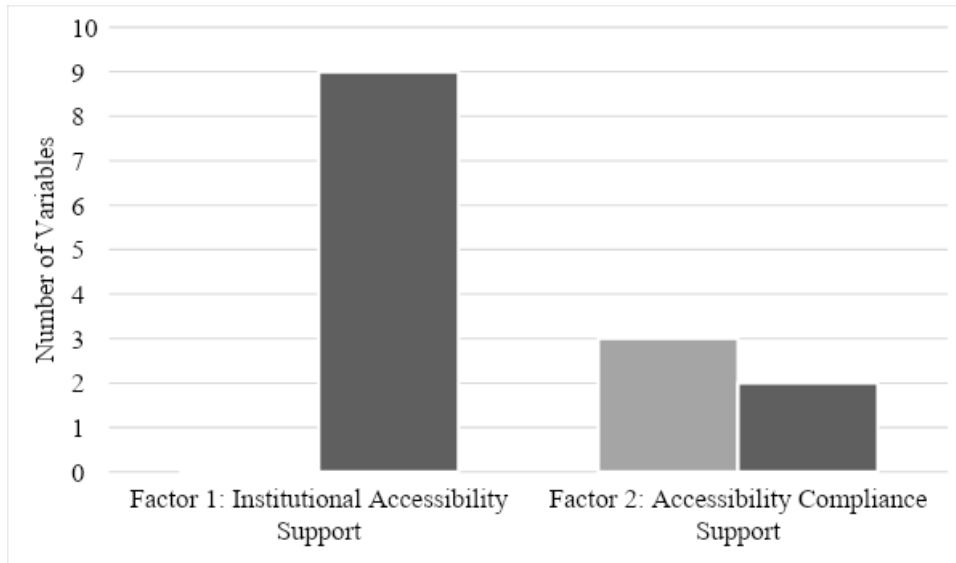
Note. *h*² = communality for rotated factors. Loadings < .5 suppressed. Factors converged after three iterations. Extraction used principal axis factoring with a Promax rotation. The absolute value of factor loadings is used to determine inclusion and negative loadings are interpreted in the opposite direction (Asnawi et al., 2012). *Institutional practices **Course designer practices

Thematic Associations for Identified Factors

The variables clustered on factor 1 suggest a thematic association in which accessibility is impacted by the institution’s distribution of responsibility for creating and reviewing accessible online course content while also providing training and support. Therefore, factor 1 has been designated as Institutional Accessibility Support. On the other hand, the variables loaded onto factor 2 suggest an association between online courses complying with accessibility guidelines and sufficient resources. As a result, factor 2 has been designated as Accessibility Compliance Support (See Figure 5).

Figure 5

Distribution of Designer and Institutional Variables for Each Factor Structure



Discussion

The goal of this study was to provide an updated view of overall accessibility practices and perceptions within higher education online course design and explore the relationships between them.

Designer Characteristics: Research Question 1

The convenience sample of this study consisted of designers who had experience in supporting online programs. Most respondents indicated that their primary role was faculty, instructor, or instructional designer. These results indicated that participants in this sample were more likely to be familiar with accessibility and institutional practices regarding online courses than course designers with less experience. The results of this study support previous research that indicated that faculty and instructional designers are typically responsible for online course accessibility (Green, 2010, 2019; OLC & WCET, 2019).

Designers' Accessibility Practices: Research Question 2

Course designers overwhelmingly reported using some type of multimedia in their online courses, which highlights the relevance of accessibility. Since many course designers have experience supporting and teaching online courses, it is appropriate for course designers to be familiar with basic accessibility practices. As a result, it is appropriate for designers to employ fundamental accessible practices related to text formatting, images, and videos. However, it is concerning that other accessible practices such as including transcripts with videos, complying with overall accessibility guidelines, and using accessibility evaluation tools are practiced only half the time. This implies that designers are familiar with accessible practices and that they tend to use the ones that are easier to implement with greater frequency.

Compared to the findings of the 2016 Huss and Eastep survey, these results indicate that there has been growth in the use of multimedia and accessible practices. The Huss and Eastep (2016) survey indicated that most participants were not or did not know whether they were using accessible media practices. This study indicates that most respondents knew about accessibility practices and that they implemented them with far greater frequency, which means a fundamental awareness of accessible practices has likely been established.

Course designers reported that time was the most limiting factor in implementing accessibility, but only about half the time. Respondents appeared to be split regarding the perceived impact of the other potential limitations, which included accessibility knowledge, access to tools and software, and budgetary resources. Many respondents reported that these limitations rarely affected them, while a similar amount felt that their accessibility practices were often or always impacted by them. The findings of this study suggest that these common barriers to accessibility implementation are being reduced, which is a marked change from previous studies. When looking at the literature, costs, resources, and time were often cited in earlier studies as barriers to accessibility implementation (Frey & King, 2011; Galusha, 1998; Linder et al., 2015; Rowland et al., 2014).

Higher Education Institution Characteristics: Research Question 3

Most participants in this study worked for public, four-year higher education institutions with enrollments of more than 10,000 students. This general pattern is present, but not consistent with those reported in other recent accessibility surveys (Mancilla & Frey, 2020, 2021a, 2021b). The small sample size of the study which was conducted during the height of COVID-19 may have impacted the institutional representation in this study.

Institutional Accessibility Practices: Research Question 4

The results indicate a growing role of the institution in accessibility practices through policy, training, and support. Now, online courses are frequently offered as a learning option, and institutions often use systems or policies to ensure course accessibility. Accessibility training in the form of online resources, internal courses, and internal workshops was frequently provided to designers. In addition, institutions frequently provide support or assistance in developing accessible online courses. However, there is still opportunity for improvement.

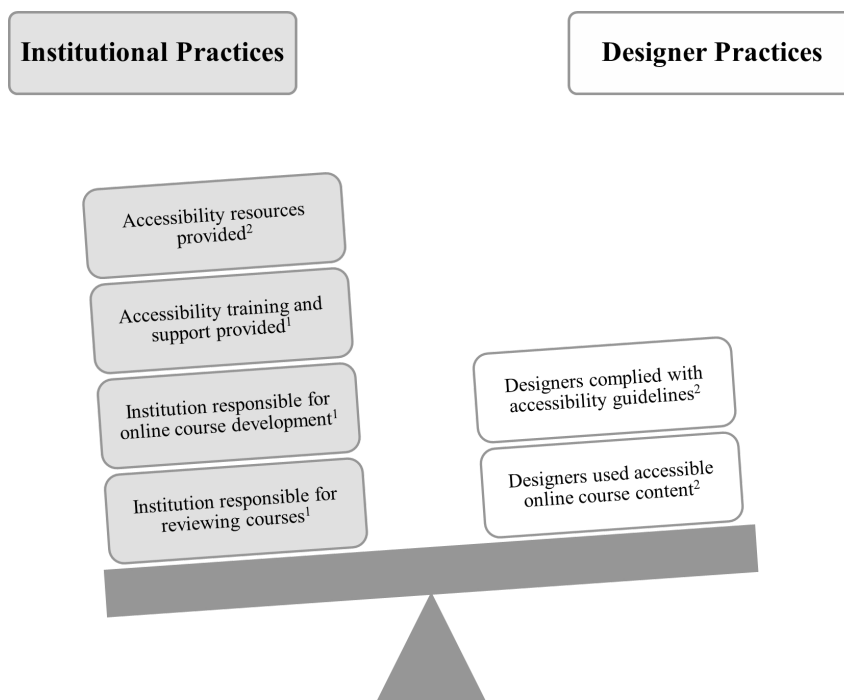
Overall, institutions usually assign individuals the responsibility to conduct accessibility course reviews and to design accessible course content. Since instructional content is typically the purview of the instructor, it is not surprising that they are responsible for creating, building, or selecting content online content. While instructional technologists or designers and designated online course builders were reported to be involved less than half the time, it is encouraging that faculty may have access to additional personnel when building online courses. Moreover, this question solicited the most “Don’t know” answers from respondents, which indicates that university employees may not even be aware of institutional practices or support in this area.

Associations Amongst Surveyed Items: Research Question 5

The distribution of institutional and designer practices contributing to the factor solutions is shown in Figure 6. As depicted, institutional practices contribute heavily to the variables associated with accessibility compliance. However, the results also indicated that there is an association between course designers who engage in accessible course design and access to tools, software, or budgetary resources. These findings imply that the institutions can positively influence accessibility practices of individual course designers. Further, this suggests that while designers contribute to the accessibility of individual courses, this accessibility may not always extend to all courses across an institution.

Figure 6

Institutional Versus Designer Practices Contributing to the Factor Solutions



Note. 1Variables contributing to Factor 1: Institutional Accessibility Support. 2Variables contributing to Factor 2: Accessibility Compliance Support.

Accessibility policies have previously signaled an increase of some accessible practices (Thompson et al., 2013). However, no known studies have explored how a variety of institutional and designer practices may be associated to impact the accessibility of online courses. This analysis indicates that institutional practices may have a major role in accessible course design. The results of this study suggest that there may be a link between institutions that offer training, support, and resources and designers who are developing more accessible online courses. These findings further highlight the interplay between institutional and individual practices. While institutional factors are key to creating a culture that values and prioritizes accessibility, individuals still need to be empowered and supported to develop accessible courses and content.

Implications for Practice

This is the first known study that has attempted to determine whether any variables measuring accessibility practices are statistically associated in some way. Combined with previous findings, the results of this study offer specific areas in which institutions should consider increasing leadership, collaboration, and resources. As this study was able to show associations between key practices, there are some specific recommendations for how institutions can improve or extend their accessibility efforts. Institutions are encouraged to audit their accessibility practices to map how accessibility responsibilities are distributed across the organization to identify potential areas of action in the following areas:

- Determine how to allocate institutional and departmental staffing resources to reviewing online courses for accessibility to ensure compliance and consistency.
- Allocate and dedicate staff to the development of accessible online course content, especially for accessibility practices that require a higher level of effort such as captioning or creating transcripts.
- Require completion of accessibility training to create and design online course content, courses, and learning environments.
- Provide resources (budget, tools, software, content, guidelines, support etc.) needed by online course designers to support accessibility practices.
- Systems are in place to ensure that individual course designers are using, creating, and implementing online instruction that complies with accessibility guidelines.

Support for these findings

There have been many studies that have reported on the frequency of institutional and course designer practices regarding accessibility. The findings of this study support the findings of many researchers who have previously measured in their studies (Frey & King, 2011; Huss & Eastep, 2016; Mancilla & Frey, 2020, 2021a, 2021b; OLC & WCET, 2019). This study supports the existence of a positive trend in awareness about accessibility and the increased use of accessible design in online courses. Further, the corroboration of previous work in this area supports the validity of the results despite the small sample size.

Recommendations for future research

Due to the exploratory nature of this study, a follow-up confirmatory analysis study with a large sample size is recommended. With additional data and a larger sample size, additional analyses are also recommended. Specifically, future research should consider the relationship between the experience level of course designers and their accessibility practices. In addition, the relationship between institutional characteristics and course designer practices should also be considered. The impact of accessibility tools should also be considered, as these are a fairly new resource for institutions and designers. Future studies may also consider exploring the factors that contribute to some course designers experiencing more barriers to implementing accessible design compared to others.

Summary

When considering equity and social justice in instructional design, reducing accessibility barriers for learners in online distance education environments is critical. Previous research had identified that various institutional and individual practices contributed to inaccessibility. However, none addressed how these factors were connected and contributed to designing accessible online instruction. From a systems perspective, understanding these relationships is critical to enact systemic and sustainable changes that can improve accessibility practices in online education. This study has identified several institutional- and designer-level practices that can be implemented to promote systematic and effective accessible instructional design practices.

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Changing from Within: Narratives of Resistance from Equity-Oriented Learning Designers

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Higher Education

Resistance

Learning Design

Learning Designers

Equity Orientation

This paper draws on a larger study where 34 women practising and supporting equity-oriented learning design across the world were interviewed in early 2021. The paper highlights the strategies learning designers use to navigate clashes between their own values and those held by their institutions. The authors argue that positionality, institutional culture, and personal history impact how learning designers navigate these spaces and that understanding context is essential when using an ecosystems theory view. Finally, the paper explores four shared building blocks framed by brown's (2017) elements of an emerging strategy, which promotes a way of seeing change as small actions and connections. These in turn create complex systems and patterns which eventually become ecosystems and societies.

Introduction

Learning designers' identities, voices, and practices are highly influenced by the systems within which they work: the dominant organizational cultures, the assumptions, norms, and behaviors of their institutions, and wider societal systems. However, where there are dominant narratives, there is also resistance and counternarratives that challenge the status quo (Yosso, 2006, p. 171). This paper focuses on these counternarratives, exploring how learning designers have managed to challenge and work within and against dominant institutional cultures.

Academic staff developers and learning designers do not occupy an easy space in higher education. In academic literature it is referred to as being at the margins (Little & Green, 2012) or on the fringes (Schroeder, 2011), working in liminal or in-between spaces (Simmons et al., 2013; Meyer & Land, 2005), within blurring boundaries (Land, 2004), or occupying positions of quasi-academics or third space professionals (Whitchurch, 2008). COVID-19 has moved learning design and learning designers into a slightly more central position, at least temporarily (Costello et al., 2022). However, it remains to be seen whether this is a permanent move.

In this paper, we are expanding Little and Green's (2012) work on academic staff developers' strategies to navigate institutional power dynamics (manifested in horizontal and vertical clashes) to explore learning designers' narratives around institutional clashes, and their strategies to work within institutional cultures that are often in direct opposition to their own values and beliefs. We are particularly interested in adding an ecosystems theory lens to Little and Green's work, by showing how learning designers' different positionalities, histories, and educational and professional journeys impact how they navigate the difficult spaces of the department, institution, and institutional culture. According to a systems theory perspective, human development is linked to the understanding of contexts and the ability to navigate these (Shelton, 2019). We argue that exploring how we connect and relate to the ecosystems we are based in (brown, 2017) is an important element of a learning designer's developmental journey. Dietz et al. (2022, p. 101) remind us that critical self-reflection enables acknowledgment of our own beliefs and where we may have benefited or contributed to privileged practices, stating "When we avoid scrutinization of our personal histories, we risk blindness to the harmful impacts of power, privilege, and disadvantage in our society and institutions."

Academic staff development as resistance

We (the authors of this paper and participants in our research) are academic staff developers. We are deeply aware of how our sphere of influence can be limited by not belonging to a specific academic discipline, working outside of departments, and thus often supporting but not being directly involved in the academic project. However, this sense of oscillating between cultures and groups can lead to some degree of freedom to speak out against dominant narratives or cultures at an institution. Roxå and Mårtensson (2017) emphasize the power of academic staff developers given by the position they occupy. They urge us to recognize our power and reflect on whether we use it to support the institutional status quo or actively use it for transformation and change. Stensaker (2018, p. 276) also highlights the role academic developers can play in broader institutional/organizational change:

Given the fact that academic developers have extensive knowledge about teaching and learning practices, and of the way these are embedded in the organization, while also being increasingly informed about institutional strategies and ambitions, it could be argued that they have a key role to play in stimulating increased collaboration, coherence, and even organizational learning in the modern university.

Our paper is interested in strategies of resistance in relation to tensions with the neoliberal academy, and how it plays out in the stories of a group of women learning designers. We see learning design as part of academic staff development, adopting a wider definition that encompasses instructional, technical, academic, and organizational support (Grupp, 2014 cited in Grupp & Little, 2019), which includes both support and academic staff in central or decentral roles, all with the goal to support the academic project and academic colleagues.

While there are many accounts of collective resistance in academia (see for example Feldman and Sandoval, 2019), we are interested in the 'everyday' academic resistance engaged in individually or collectively, framed by feminist, decolonial, and intersectional theories which call for the need for multi-directional modes of resistances (Bottrell & Manathunga, 2019). Stensaker (2018, p. 277) refers to it as cultural work, which he defines as: "a deliberate attempt to develop and disrupt the organization on the basis of established and emerging practices and knowledge."

Little and Green's (2012) paper discusses academic staff developers' roles in institutions based on their positions of marginality and how these allow them to navigate institutional power dynamics. The paper defines six categories of tensions that academic staff developers face: technology; academic development units' purview and policies; university policies and priorities; academic programs; university leadership; and culture and external requirements. These are placed along two tensions: horizontal, epistemological tensions between different academic positions and vertical, structural tensions between different levels of hierarchies found in academia (Green & Little, 2013). We use their model as a starting point to identify tensions but expand it further by adding an ecosystemic view which will help us further our understanding of why learning designers employ certain strategies of resistance.

Bronfenbrenner systems theory and brown's emergent strategies

Bronfenbrenner's (1979) ecological systems theory is a radical way to understand human development, recognizing the importance of context. While focusing on child development, his theory can be applied more widely. He views environments as a nested arrangement of structures, each contained within the next: the microsystem, the mesosystem, the exosystem, the macrosystem, and the chronosystem. Microsystems consist of "structures and processes taking place in an immediate setting containing the developing person (e.g. home, classroom, playground)" (Bronfenbrenner, 2005, p. 80). Mesosystems comprise the interaction between various microsystems; exosystems are interactions between two or more settings, and finally, macrosystems are defined as the "overarching pattern[s] of ideology and organization. . . common to a particular culture or subculture." (ibid).

Shelton (2019) argues that systems theory can be applied to any ecosystem, to any social group, be it a neighborhood, a community, employees of an organization, or an institute of higher education. Bronfenbrenner's system is useful to understand the site of our study, women learning designers' context and practice in higher education across the world, known for their equity-oriented practices. As we will show through the stories shared later in our paper, learning designers' practices are impacted by the different layers of the system. These include their upbringing and positionality in relation to identity, home culture, and educational and disciplinary background (microsystems). How these play out within their individual professional practice, within the culture in their department or center they work in, represent mesosystems. Macrosystems are how their department/center is positioned, within the institution, institutional culture, and wider societal culture or context. All these systems impact their practice, the tensions they experience within an institution, and the strategies they employ to work within these tensions.

In systems theory, human development is linked to understanding our contexts and our environments. Shelton (2019, p 117, emphasis added) explains that:

[t]he ecology of human development involves the scientific study of the progressive, mutual accommodation throughout the life course, between an active, growing human being and the changing properties of the immediate settings in which the developing person lives, as this process is affected by relations between these settings, and by the larger contexts in which the settings are embedded. So, to understand development we must attempt to see the ecosystem from the perspective of the developing person in whom we are interested.

Human development can thus be seen in the way we adapt our practices of resistance to our context. While Bronfenbrenner's work is useful in understanding what influences somebody's practice, it does not necessarily give insight into how we respond to these different influences. Here, we found adrienne maree brown's (2017, 2021) emerging strategy work helpful as it focuses on how the women we interviewed intentionally attempt to both develop and disrupt their institutions' practices and culture, showing how "small actions and connections create complex systems, patterns that become ecosystems and societies" (2017, p. 3). In her books, brown (2017, 2021), who has worked for many years in building social movements, suggests how we can navigate complex systems in ways that "grow our capacity to embody the just and liberated worlds we long for" (ibid). Drawing from ecological, ecosystems, and biomimicry literature and speculative fiction, such as Octavia Butler's writings, brown (2017) argues that we need to work not just individually but systemically to effect change. Her emergent strategy sees change as systemic, long-term, deeply interconnected, and relational. Emergence also has a strong political and ideological aspect, challenging neoliberal individualistic agendas and favoring more participatory, community-oriented, sustainable solutions to life and living. To design for emergence is to value uncertainty and unpredictability as "emergent systems are complex systems that exhibit self-organizing behavior" (Bass, 2020: 163). In education, while it must be enacted thoughtfully and responsibly, designing for emergence would value experimentation that leads to greater adaptability of structures and

practices, more flexibility and diversity in interactions, and a heightened capacity for rapid organizational learning. Elements of an emerging strategy that brown emphasizes - drawing from the natural world - include (2021, pp. 14-17):

- the relationship between small and large, influenced by the concept of fractals, which shows that patterns repeat at scale;
- intentional adaptation, i.e. accepting that change is constant and intentional, not reactive but adaptive in ways that move us towards where we want to go;
- interdependence and decentralization, focusing on the importance of building authentic, intimate relationships, supporting mutual transformation and collaboration;
- non-linearity and iteration, recognizing that change comes from small cumulative shifts;
- resilience and transformative justice foregrounding the importance of affecting change systemically, addressing problems at their roots; and
- creating more possibilities, and accepting that there are many ways to grow in a healthy ecosystem.

As our discussion of participants' stories demonstrates, these elements are interconnected and may intersect.

Research design

Our paper draws on a larger study, which, in early 2021 interviewed 34 women (including ourselves) who practice and support learning design across the world, using a social justice lens. Learning design could be practiced in a formal role as part of a central academic staff development unit, or more informally, as in supporting other colleagues. We selected these participants based on their public presence on social media and their strong social justice and equity orientation. We also sought diversity in our participants. As the EdTech and learning design literature has historically been dominated by white men from the Global North, we intentionally decided to only interview women from around the world (15 interviewees are from the US/Canada, six from Europe, seven from Africa, and five from Australasia). We intentionally sought out participants of color (18 of color, 16 white) with broad disciplinary backgrounds.

Out of the 34 participants, 24 are academic staff developers (both in academic and support roles), seven are academics, two are in leadership positions and one is in a consultant role. This diversity mattered: in their interviews, participants shared stories about their equity-oriented learning design practices and how their voices are being impacted by their positionality, disciplinary backgrounds, academic hierarchies, departmental affiliation and orientation, and institutional standing. We selected women whose stories speak to the focus of our paper. We created short narratives based on interview transcripts, co-constructed with participants, and weaved direct quotes into the narratives. As these women are known in the wider public domain, most of them have decided to use their real names. Those not comfortable using their names have chosen a pseudonym. From these narratives, three main tensions emerged, which we will discuss using Bronfenbrenner's systems theory lens (1979) to show how different layers of a system impact strategies of resistance vis-à-vis these tensions. Finally, we explore four building blocks shared by these women, framed by brown's (2017) elements of an emerging strategy.

Narratives of resistance

The following stories explore how the participants experience and respond to institutional tensions around areas of their work they are passionate about, such as openness, innovation, and transformation.

Robin is the Director of the CoLab at Plymouth State. She is a national leader in open pedagogy, an advocate for public infrastructures and universities, and passionate about social justice issues. As an undergraduate, she participated in campus activism around LGBTQ+ issues, race and financial aid, and sexual assault policies. Small regional public institutions such as hers are currently under pressure to develop distinctive identities to survive in a climate of harsh budgetary cuts. Her institution's identity, combined with her management position, has allowed her to help introduce an institution-wide initiative called Cluster Learning, focusing on interdisciplinarity, project-based learning, and open education. Still, even in this comparatively innovative and open space, she is highly aware of how important it is to be strategic in how she frames her work:

The CoLab... where I work... it's very central. We've changed the whole pedagogy of the campus. I'm in at the table for all the big decisions. I think it gets a ton of respect on my campus and has a ton of weight. That being said, you bring up the word 'care' in strategic planning, and you're just laughed out of the room... I've been absolutely shocked how willing they are to give me money and support me and put me in the front of so many initiatives and let me run the whole faculty, but you clearly wouldn't say the word 'care' in a strategic plan.

While she strongly believes in building capacity in colleagues and has developed a variety of innovative staff development initiatives, she acknowledges the pressure from the institution to standardize learning design: "I'm concerned that my lab is ultimately going to be replaced by more of an assembly line, churning out online course shells." At her institution, Quality Matters (QM) was used as a solutionist-oriented response during COVID-19, which she views as undoing many years of good work her center has done in terms of academic staff development. While her CoLab's initiative received a great response from faculty, and even the administration regarded it as "super successful", she shares how the QM reaction was an "uphill battle because it's so much easier to solutionize teaching than it is to wrestle with the fact that it's always going to be complex." She

strongly believes in staff development: "It's about the faculty feeling like they're ready for whatever happens next week. They've got tools... And they're constantly learning and engaged, rather than a piece of paper, recognizing the quality of a course at a specific moment in time."

Maha, Professor of Practice at the Centre for Teaching and Learning at the American University in Cairo (AUC), employs different strategies to get her message around critical pedagogy and openness across. AUC offers a US liberal arts education system within an Arab culture. Maha is widely known outside her institution as an expert in the field of open education through her blogging, tweeting, and as a prolific keynote speaker. Having started as an instructional designer she felt that some of her colleagues would recognize her technical expertise but not necessarily her pedagogical knowledge: "I got a lot of pushback from people I was working with until after I finished my Ph.D. and then suddenly I was more credible and I was given a lot more autonomy and authority." Over time her impact outside the institution has impacted her voice inside the institution, although she still feels much freer expressing her opinions outside; it takes years of discussing something in open spaces, and building allies, before she can confidently bring the same ideals into the institution. She also talks about the importance of allyship and locating strategic allies within one's own institution who can support your position, but also about bringing external allies into the institution, who might be received more openly than herself:

I got a fund to bring the digital pedagogy [lab] to Cairo, 2016, one of my colleagues was in a session with them and she said: 'I came out of it and now I feel like I've been in Maha's brain', because she'd been hearing me talk about this stuff but not consistently, right. But now she had to spend like a whole day with [them] ...and now she sort of understands what that was that I've been talking about all this time.

She recently discovered that some local colleagues are allies because they follow her work on social media and are therefore aware of what she shares online, not just what she is able to share within institutional boundaries. Therefore, when she does share these more radical ideas relating to social justice and care within the institution, the ideas are not new for these allies. This eventually made it easier to create impact inside the institution, particularly during COVID-19, where she was able to champion pedagogies of care locally as well as globally.

Brenna is the Coordinator of Educational Technologies within the Open Learning division at a smaller regional university in Canada, focusing on developing and supporting faculty use of technology. Hers is a tenure-track position, which is rare in our field. Brenna is one of the most vocal voices in the field of openness in education. She is an avid Tweeter but also hosts a podcast show and is widely published. While her institution has a provincial mandate for the ethos of openness and flexibility, as evidenced by the existence of the Open Learning division, her values are not always in line with institutional practices. A key tension she experienced during COVID-19 is her position on the exam proctoring/surveillance software ProctorU, which she openly critiqued on social media, while it was mandated by some areas of her institution. On one hand, she understands the need for proctoring exams in terms of requirements for transferring credits; her university is a stepping stone into more prestigious colleges for many non-traditional students. However, she believes the system shows mistrust towards smaller colleges. She describes her strategy as one of 'going rogue', using the relative obscurity of her unit to quietly support her colleagues in employing open practices, such as promoting the use of inclusive open-access textbooks or advising colleagues in designing exams that do not need proctoring.

She is aware of her privilege as an academic on a tenure track: "I am not going to stop critiquing either those kinds of assessment practices or proctoring technologies, just because we have thrown our hat in with both of those things, right? And, the privilege of my position, the privilege of the fact that it's a faculty position [in] this role, is that I can."

But she is also clear about the importance for her to be able to speak her mind:

Without being foolish and with a sense of pragmatism, I've made the decision that I'm going to be who I am, and I'm going to go up, and there's nothing in my body of work – there is no way to deny my tenure if it isn't political, right?

Alexandra is an educational developer at a European higher education institution. She both supports her colleagues in course design and teaches formal degree courses. She describes regular requests from the management board that contradict how she and her colleagues support educators and students, such as a request for three innovations to be implemented on campus. Alexandra explains:

[This] contradicts and comes into tension with how I actually work...we try to put the design, the teacher and the students in the centre and not the technology and processes. But nevertheless, two weeks later, another request comes, can we showcase this small VR project that we have? It's always the attraction to these shiny things that don't necessarily have a pedagogical coverage. But ... they look nice, they feel modern. And the university leadership tends to be attracted, like children by shiny objects.

Alexandra believes in implementing small changes incrementally. She explains, "We can do a lot of interesting things on Canvas or like really small, small things that actually matter for the learners and for the teachers, but that will never be showcased...". She is convinced that it is up to her and her colleagues to do a "better job at convincing [management] to be innovative in less disruptive ways, such as design sprints with colleagues, or modeling innovative pedagogical approaches in their course designs and teaching.

Such institution-wide "innovations" are often conceived by management in solutionist ways (albeit with good intentions) but can have unforeseen negative impacts. Working at a small, public, research-intensive university in South Africa as an educational technology specialist in both a service and academic role, Nicola shared what happened at her institution when management tried to get staff and students to return to campus while government regulations (as a result of COVID-19) restricted indoor venue capacity to 50%. A system was needed to enable lecturers to continue teaching simultaneously to students in class and online. It involved purchasing additional equipment and training lecturers to use the new system. Nicola shared that the resulting experience was frustrating for staff and students as it involved yet another "pivot" where "management believed that there was an easy technology solution but did not factor in the complexity of aging venues and equipment infrastructure." While Nicola and her

EdTech colleagues see small-scale piloting as essential practice before university-wide rollouts, management insisted on rolling out a ready-to-use system in a short time. Nicola's team had supported lecturers and provided online professional development opportunities for them during the pandemic; however, they "went from heroes to zeros overnight" as academics associated them with this new system:

Suddenly the rapport that took time to develop during a difficult time seemed to have disappeared, and I think we were seen as being aligned with management's solutionist perspective, which we were thrust into, and thus made complicit in causing people additional stress.

This experience has taught Nicola about the political nature of academic development work; how relationships and decisions can be seen as serving the agendas of management over that of lecturers and thereby, "not in the interests of teaching and learning." She adds that "it is hard to be supportive when people are mad at you", and professional development workshops became a forum for lecturers to express their frustrations. While sometimes active resistance is not possible, she managed to speak to a few of her colleagues at her community-oriented university to explain her situation. Slowly regaining allies became a strategy, as well as 'taking a back seat' during an emotionally heightened time when lecturers had different views on being back on campus, and some still had concerns about contracting COVID-19. Over time, relationships with lecturers improved, and she learned that rather than just venting, lecturers were desperate for someone to listen to them and relay their frustrations to management. Upon reflection, she realized; "if people are showing up and want you to listen, it means they recognize you may have more voice than you think and believe that you can change things."

As learning designers known for their strong orientation toward social justice, it is not surprising that one of the main contentions our participants mentioned in their interviews is what they perceive as the often performative nature of DEI (Diversity, Equity, and Inclusion) work in their institutions (Ahmed, 2012). Bonni is a white woman based in the US, working for a small, private, Christian higher education institution. She describes herself as idealistic, and highly influenced by Black writers such as Maya Angelou in her college days. However, it was only through her teaching in less well-resourced contexts that she realized her own privileged upbringing. Bonni is currently a dean but also continues to teach courses in business and management. She is tenured and holds an administrative faculty leadership role, which gives her more voice than some of her colleagues. During COVID-19, her institution initially made a decision to invest heavily in video recording equipment to standardize the provision of online learning. However, Bonni managed to influence the university into investing money in faculty development instead:

We said no - invest in people; invest in skill development. We wound up equipping our faculty and enhancing their skills in areas such as instructional design and digital pedagogy. Faculty received pretty good stipends to participate in the process, too, and made that fast move to online that I know so many in higher education made.

Her institution has transformed in terms of diversity of student population but not faculty, as yet. Bonni is very aware of how positionality impacts voice. She sees her role as trying to raise awareness among her colleagues about how who they are, impacts their ability to be heard. She attempts to use her privileged position, in terms of race and academic and managerial seniority, to advocate for more gender and racial equality in hiring processes. She is also known in her institution as a 'safe person' for those in the LGBTQIA student population, who can approach her when they need support. She is cautious about how openly she speaks out about her perspectives and values within the institution. However, she is also a well-known podcaster, producing content on teaching and learning in higher education, a space in which she feels she can be more transparent regarding her views.

Edran is the first person in her family to complete a Ph.D. She works as a (non-tenure-track) faculty developer at an Ivy League university in the US, supporting staff to think about DEI issues in their learning designs and teaching. She observes how the academic development field is predominantly white and female and that she still struggles to talk about race, even when facilitating DEI workshops. She talks about how she had to strengthen her voice and that throughout her PhD she was taught to be submissive, to submit to the system, graduate chair or committee. Culturally, as a Black woman, she was not taught to speak out, to speak up. Coupled with not wanting to be seen as an 'angry Black woman', she reflects on the necessity to perform when talking back to people.

[I am] very, very much restrained, and I'm very careful about how I frame things and how I approach pushing back on people when they say things that are racist or when they say things that I think are out of line with equity.

Because she is not in a faculty position, her voice is limited. She has been told that showing her expertise in pedagogy will "scare off faculty." As an example, in a workshop on microaggressions in a department, questions came from white colleagues on her lived experience :

I'm asked what like, 'what is your evidence? What is your research-based evidence for what you're saying? Because I can't believe that's true.' Or I'm told, 'well, we need more evidence, you know, we need more evidence that our students of colour are experiencing this form of marginalisation otherwise, it's not real.' And I kind of want to say, well, it's my experience, and my history is the evidence, is all the evidence, I need to know that this is something real.

Her strategy is to look for colleagues outside her department and outside her institution to work with, such as the Professional and Organizational Development (POD) Network in Higher Education: "I don't have a lot of power. But I am very attuned to the ways in which I can carve out space for myself, and so I do a lot of networking and collaboration."

Discussion: Building blocks towards an equity-oriented learning design practice

"Loving life means committing to the adaptation to stay alive, rather than the stubbornness to stay the same." (brown, 2021, p. 124)

The stories shared above are exemplars of women learning designers, across the world, navigating institutional tensions. These women were intentionally chosen by the authors for their passion for social justice, which more often than not collides with higher education institutions having to survive in a neoliberal climate. As Sara Ahmed (2016) writes:

Most of us with feminist commitments end up working for organizations that do not have these commitments, even when they might appear to have them. After all, we often acquire our commitments to do something because of what is not being done.

It is important to note that we cannot do justice, within the constraints of this paper, to the rich and complex backgrounds and practices these women shared with us. However, we tried to pull out what we thought important to show some of the tensions and strategies they employ.

We would like to focus particularly on three tensions: openness, different views of innovation, and the performativity of DEI work. We consider these to be vertical tensions around technology, and university leadership and culture following Little and Green's (2012) work. The stories show how our participants are impacted by different layers of the systems they are embedded in, e.g. their upbringing, their intersectional positionalities in the world in relation to identity, home culture, educational and disciplinary background, the culture in the department or center they work in, and how they are positioned within a department or center, how their department/center is positioned within the institution and the institutional culture or orientation, and finally, the wider societal culture or context. These impact on the strategies they employ to both support and resist institutional culture. However, there are also shared building blocks for these strategies, which echo brown's elements of emerging strategy (2017, 2021).

It is not surprising that 'openness' arose as a major tension and response strategy in our interviews. The women we interviewed are vocal advocates for openness in the public sphere, but not all are able to be equally open inside their institutions. While Robin, for example, uses her hierarchical power and personal standing within the institution to effect institution-wide pedagogical change based on values such as openness and interdisciplinarity, Brenna uses the relative obscurity of her center to do her work with selected colleagues 'under the radar of the institution', and Maha has to bring in external allies to advocate for openness in education.

Another point of contention is how institutions see innovation, and what we, as learning designers, understand as innovation. Rather than shiny technology and solutionist thinking which standardizes processes to make them scalable, the women we interviewed (and we, as authors and also participants in our research) believe in developing relationships, people, and practices. This may take longer but is more sustainable and more aligned with our values based on relationality and care (see also Macgilchrist et al., 2023). For example, Alexandra and Nicola have to both support and resist institutional attempts to introduce new technology that staff might not be ready for, and Bonni fought to ring-fence some of the extra funding received during COVID-19 for staff development instead of investing wholesale in technology.

As participants were selected for their shared passion for social justice, it is also not surprising that the final main tension was around the performativity of DEI work at their institutions. While some of the women we interviewed are specifically appointed to support colleagues in the infusion of DEI into their curriculum (or learning design), even those who do not have DEI specifically in their job description do see it as one of their responsibilities to support DEI work in their institution. Their values often clash with those of their institutions, as they consider the DEI agenda of their institution to be 'performative'. By this, they mean something that should appear to be happening but is not deeply believed in or addressed in all its complexity. Depending on how they are positioned within their institutions, this work takes different forms (see Bonni and Edran's stories). While Bonni can work more openly on infusing DEI- oriented work on an institutional level (i.e. in selection committees), Edran has to be more guarded within her institution but has been able to find her voice outside the institution through national professional development fora, such as POD.

As mentioned before our participants are highly aware of who they are and how they are placed in their institutions. They design strategies of resistance accordingly. This echoes Grupp and Little's (2019) findings that one of the most important competencies of academic developers is to understand their position, assess the terrain and determine how to represent perspectives. However, contrary to their findings and other literature that positions academic developers as liminal, 'in-between' and not necessarily embracing the power they have, the women we engaged with would not consider themselves as remaining 'neutral': rather, they see their work as necessarily deeply critical and political. In their efforts to deliberately "attempt to develop and disrupt the organization on the basis of established and emerging practices and knowledge", as Stensaker (2018, p. 277) calls for, shared building blocks for these strategies emerged in our respondents' stories, in the way they navigated these complex systems, which echoed brown's elements of an 'emerging strategy' (2017; 2021).

Building community in and outside the institution

brown emphasizes the importance of relationships within the context of emergence (2017; 2021). Our participants shared different strategies for building community: to look for allies across their institution; work with those colleagues who were open to their ideas; practice their strategies in their own classrooms; or draw strengths from like-minded people outside the institution. The idea of "critical connections over critical mass" (brown, 2017 p. 6) resonates with many of the stories (e.g. Nicola, Alexandra, and Edran). As brown writes, "Building community is to the collective as spiritual practice is to the individual" (2017, p. 90). Noddings (2012, p. 54) reminds us that people who work in caregiving positions, such as anyone who works towards social justice in a resistant organization, "need[s] the support of a caring community to sustain them." By reaching out to others

in the wider ecosystem of education and academic development, these equity-oriented learning designers establish networks in and outside the institution, which in turn create more and more opportunities and possibilities for themselves and others (brown, 2021).

Seeing change as small and nonlinear

The importance of “mov[ing] at the speed of trust” (brown 2021, p.17) is evident in the participants' stories. Our participants understand that change is not always linear, but that there are many ways to reach a goal, and sometimes they need to take a detour or ‘go rogue’, until the time is right to act more openly, e.g. Brenna and Maha. While some of the women we interviewed have a direct influence on executive decision-making, for others it takes time and intention to build voice and presence outside the institution before there is openness to listening to them inside the institution. Change can be small, as Alexandra and Nicola remind us, and we can leverage smaller changes to effect change on a larger level: “The large is made up of the smallest things, patterns repeat at scale. Help people see, celebrate, and build on the small shifts they are making” (brown, 2021, p.15). What is important is that they see both the smaller injustices within their institutions, but also how these smaller injustices are replicated within larger systemic injustices. While many of the tensions we are fighting are deeply contextual, they are also connected and framed by a “broader interconnected global struggle” (Bass, 2020, p. 9).

Centering care for self and others

While participants view their role as supporting and empowering educators in their institutions, the work they do is not easy. There is often tension with institutions in how to support colleagues, but there are also colleagues who resist interventions, such as Edran being invited to give a workshop on microaggression but then being challenged to provide evidence for her own experiences. This reminds us to ask, “How do we practice the art of holding others without losing ourselves? ” (brown, 2021, p. 7). Sometimes this means withdrawing, taking a step back, as in Nicola's case, or being strategic, performing a role we would not naturally inhabit, as in Edran's or Robin's stories. Practicing care towards ourselves and others is central to all of us, even if it is a difficult concept to engage with at an institutional level.

Finding ways to stay true to yourself in relation to others

Our participants have been working in the DEI space for many years, and have dedicated their lives to advocacy for open practices in academia, or creating more equity-oriented academic spaces. As such, our participants continue the work of early pioneers in academic staff development, who, as Lee, Manathunga, and Kandlbinder (2010) argues, were driven more by a passion for political activism rather than critical debates about teaching and learning (although we see these as generative tensions, rather than a binary). Our participants are intent on staying true to themselves, although this might look different depending on how the person is positioned. Where they have institutional or positional power they will use it; if they do not, they find other spheres of influence, inside and outside the institution. Robin can effect institutional change, while Brenna can speak her mind freely but has to often work ‘under the radar’ of the institution. Speaking out is more difficult for Edran, based on her positionality, or Nicola, based on her position in the institution, but they still find ways of resisting institutional practices they do not agree with, sometimes by withdrawing altogether or moving into different spaces that are more supportive of them. From the stories we get a sense that participants both feel more connected to, but also draw more strength from, their external networks than their institutions, and as such build collective resilience by attending “to the relationships and power dynamics in the rooms you hold, creating structures that support authentic, intimate relationships, mutual transformation, and collaboration” (brown, 2021, p. 17).

How do these building blocks emerge in our current practice?

To exemplify how these building blocks emerge in practice, we share a recent real-life scenario from Maha's context.

With the launching of ChatGPT in November 2022, and the challenges facing educators regarding how to respond, Maha's department was tasked with leading community conversations and workshops on the topic. The institution's overall approach to academic integrity tends towards the punitive; however, on the AI front, the institution's approach was to give educators time to learn about AI and figure out what was possible. One of Maha's first moves was to learn from her online international communities, on Twitter and other spaces, including the WhatsApp group and meetings with the co-authors of our paper, and reading the work of and interacting with many of the women who had been interviewed in our research, what was happening, and to share with local colleagues. ChatGPT was banned in Egypt, but with the help of people from all over the world, she managed to get it to work. Working with colleagues in her department, they explored the guidance others worldwide were using and distilled what was most locally relevant, taking a caring approach to avoid overwhelming colleagues, as she explains: “Before giving workshops, we had smaller conversations with some colleagues to see what their concerns are and where they needed the most support, and we built our workshops around that.” Maha also collaborated with an international scholar who had been working on AI, and had given workshops to the open online global community about AI.

Maha noticed a direction locally oriented toward “how can we detect AI-generated text and catch students who are using it?” While this direction went against her values of working constructively with learners to help them develop their skills, she still explored the detection tools, and, finding them inconsistent, tried to help educators find alternative ways to reduce overuse or misuse of AI tools by modifying assessment approaches. Although Maha blogged publicly about what she would do in her own classes (promote critical AI literacy and recommend transparency from her students), within the institution, a more equitable and caring approach meant curating and showcasing what different instructors were doing in their courses and showing a variety of different approaches that educators could take as “guidelines for AI” within their classes. This modeling of a way of centering the agency of the educators will hopefully help them nurture learner agency.

Conclusion

Working with these multiple narratives, we argue that equitable learning design positions are contextual and yet also permeate departmental or institutional boundaries and need to be considered from a broader ecosystemic perspective. Drawing on the elements of emergent strategy (brown, 2017; 2021), building blocks such as community building, seeing change as non-linear, centering care, and finding ways to stay true to yourself emerged, which supported learning designers' practices in both supporting and resisting institutional cultures. We advocate for valuing these socially just and equity-oriented learning designers as important change agents and amplifying their often silenced and siloed practices and voices. As such, we expand on the writing of authors such as Roxå and Mårtensson (2017), who argue that academic developers (and we see learning design as part of academic development) do have power and agency based on the positions they occupy but must also realize that the values attached to these positions by our institutions, often following neoliberal ideologies, might not match our own. Rather than withdrawing from our role as academic activists, however, we have shown that there are ways of navigating these tensions generatively, and, possibly most importantly, have shared strategies on how to amplify our voices through, for example, academic activism on social media. Our most important finding is to develop the language to have these conversations in and beyond our centers, around the positions we inhabit, how they impact our practice and what we could do collectively to make our voices heard because, as brown (2021, p. 124) reminds us: "Adaptation is not about being reactionary, changing without intention, or being victimized, controlled, and tossed around by the inevitable changes of life. It's about shaping change and letting changes make us stronger as individual and collective bodies."

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Designing Systems with Care: Responding to Inequality in an Online Course in South Africa

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Power

Learning Design

Affect

Ethics of care

Trauma-informed pedagogies

Reciprocity

Contemporary South Africa is a highly unequal society, emerging from a history of racial segregation, characterized by diversity along dimensions such as class, race, ethnicity, linguistic background, religion, culture and rural-urban locations (Czerniewicz et al., 2020). Informed by this diversity, higher education institutions attempt to “balance the pursuit of equity, quality and development goals” (Badat, 2020, p. 26). Over the last few years, in particular during COVID-19, care-oriented approaches that emphasise student wellbeing and belonging, such as humanizing online teaching, intentional hospitality, liberating structures, and trauma-informed design have gained traction in higher education. Drawing on three dimensions of human relations, namely affect, reciprocity and power associated with Bronfenbrenner’s ecological systems theory, we reflect on how adopting a care approach and working with trauma-informed pedagogies in a postgraduate course on blended and online course design was experienced by course participants. In this paper, we draw on voluntary participant interviews and our own reflections as course facilitators to make an argument for a caring learning design that intentionally creates caring learning experiences for a highly diverse group of students. Participants in this course come from geographically diverse locations, from secondary or corporate environments with differently positioned home institutions and diverse access to resources. Also, participants’ positionality and disciplinary backgrounds require different forms of care. We found that Tronto’s concepts of paternalistic and parochial care useful to reflect on our own care practices, as they highlight the importance of creating spaces where students can co-create the care relationship, while understanding how their different positionalities impact their voice and agency, but also remind us how important it is to understand how students’ context differ from our own and to set up caring relationships that suit their contexts.

Introduction

Over the last decade, spurred initially by the Rhodes Must Fall and Fees Must Fall protests, subsequently, by the #MeToo and Black Lives Matter movements, and, most recently, in the face of the COVID-19 pandemic, educators and learning designers have sought approaches to teaching and learning that respond to inequity and center well-being. Increasingly educators and learning designers have turned to ideas such as pedagogy of care (Noddings, 2003, 2005; Tronto, 1993, 2011, 2012), compassionate learning design (Pallitt et al., 2022), and human- (Palalas, 2019) and trauma-centered approaches (Imad, 2021, 2022) to teaching and learning to respond to the inequitable and challenging conditions faced by students and staff. Despite enthusiastic and robust efforts within courses and classrooms to cultivate safer, more human-centered spaces, students and staff continue to experience high levels of stress and mental distress (Arday, 2022; Harriman et al., 2022).

In this paper, we explore what Bronfenbrenner’s ecological systems theory (2005) surfaces about participants’ and facilitators’ experiences of an online learning design course grounded in an ethic of care (Tronto, 1993, 2011, 2012), and the implication of these for future design choices. Bronfenbrenner (2005) encourages us to inquire not only about the people’s experiences, but also about the precise characteristics of specific environments by directing our attention to how the individual develops within specific kinds of environments (Shelton, 2019). In particular, we utilise Bronfenbrenner’s three dimensions of relations, affect, power and reciprocity, that occur between parties within a microsystem to explore whether taking an ethics of care approach in relation to the dimensions could potentially create more caring and equitable learning spaces. In order to do this, we focus on the experiences of course participants and facilitators of EDN4501 Blended and Online Learning Design, a fully online course in a postgraduate diploma in educational technology. Drawing on interviews with participants, course materials, and recordings of our reflections as lecturers and designers on the course, we highlight emerging instances of care related to affect, reciprocity and power. However, we also reflect on where Bronfenbrenner’s work left us dissatisfied, in relation to what we see as a limiting view of power and suggest employing Tronto’s descriptions of paternalistic and parochial care to broaden our views of caring relationships.

We start with a brief review of the course and local context, and the trauma-informed pedagogies we adopted as a framework for our course design during and also after COVID-19, before sketching the literature on Bronfenbrenner’s ecosystems theory. We then go on to briefly describe the methodology underpinning this research and then outline the various ways that care emerged, or failed to emerge, across the three dimensions of

relations in Bronfenbrenner's work (affect, reciprocity, and power). We finally reflect on how this view has helped us, but also where and how we would like to expand his work through Tronto's ethic of care perspective.

Context

South Africa has a long history of racialized inequality (Davids & Waghid, 2020), which expresses itself in a contemporary context as the society with the highest Gini coefficient in the world (World Bank, 2022; Vlasov, 2021), wide-spread and persistent poverty (Ruswa & Gore, 2021), and deeply unequal access to life opportunities (Walker & Mathebula, 2020). Post-secondary education, and higher education in particular, is persistently if unhelpfully framed as the solution to this triple threat, particularly in documents such as the White Paper for Post-School Education and Training (Department of Higher Education and Training (DHET), 2013), and tasked with achieving the complex goals of improving "the economic, social and cultural life of its people ... to bring about social justice, to overcome the legacy of our colonial and apartheid past, and to overcome inequity and injustice whatever its origins" (DHET, 2013, p. 75). Despite this, and alongside the widening of access to higher education to redress the historical exclusion of black people, higher education remains "chronically underfunded" (Motala et al., 2018, p. 1) and subject to a range of historical and contemporary dysfunctionalities

When our course, EDN4501 Online and Blended Learning Design, ran in 2021, South Africa was about 15 months into the pandemic. Locally, we experienced extensive and brutal lockdowns during which our students were required to return to their familial homes, often in rural and poorly resourced areas, and all aspects of life, including commerce, access to health care and education, and freedom of movement were deeply constrained by national restrictions. Having weathered, albeit bruised and battered, the emergency remote teaching of 2020, by 2021, some institutions were looking to expand on the constrained offerings of the previous year while others remained simply in survival mode, offering minimally designed, low-tech online learning opportunities to their students.

In the South African context, as is the case in many, particularly, developing world contexts, students and staff regularly encounter harms in addition to COVID—including widespread poverty coupled with food insecurity; intimate (parental, romantic, cohabiting) relationships marred by verbal, emotional and physical violence; social instability such as riots and protests; pervasive, violent crime; and the effects of climate change—drought, floods, heat-waves, and unseasonable cold. In the context of both deep-seated and relatively new traumas that often fell most heavily on those already marginalized and vulnerable in society, it felt absolutely essential that we, as we have always tried to do, create an intentionally caring course context.

Despite their relative advantages of employment and education, we were fairly sure that our participants would need soft places to land for themselves as educators and as students, and we were very interested in modelling for our participants what pedagogies of care (Motta & Bennett, 2018), humanizing online education (Pacansky-Brock et al., 2019; Palalas, 2019), compassionate learning design (Pallitt et al., 2022) and in particular trauma-informed teaching strategies (Imad, 2022; Minahan, 2019) might look like.

Trauma-informed pedagogies

Trauma-informed pedagogies, as developed by educators such as Mays Imad (2021, 2022), suggest that trauma negatively affects learning: "when our nervous system is calm, [...] we are able to engage socially, be productive, and process new information in order to continue to learn and grow—and to feel we are living meaningful and fulfilled lives" (Imad, 2021, p. 2). Imad (2021), bringing the concept of trauma into Higher Education, argues that trauma-informed pedagogy involves awareness of students' past and present experiences, and how this impacts their well-being and ability to learn. Therefore there needs to be space within the learning experience to engage and reflect on emotions. During COVID-19, this was particularly important, as both students and staff experienced trauma, such as sickness and loss of family and friends, loss of employment or isolation, and loss of contact. While trauma can be triggered by uncertainty, isolation, and loss of meaning, secondary trauma can be caused by bearing witness to trauma (Imad, 2021). Trauma-informed pedagogies aim to foster a sense of safety by reducing uncertainty, forging trust through regular communication, creating meaning through reaffirming or re-establishing goals to create meaning, cultivating community through intentional connections, and centering well-being and care (Imad, 2021). Furthermore, other trauma-informed approaches have emphasized paying careful attention to cultural, historical and gender inequalities, in order to attend to the maldistribution of power in the classroom.

Bronfenbrenner's Ecological Systems Theory

Bronfenbrenner's Ecological Systems Theory (EST) (1979, 2005) offers a contextual framework for human development in order to map and change elements that hamper development. The developing person is understood to be in a mutual and reciprocal relationship with the environment: changing themselves and the environment (Shelton, 2019). Bronfenbrenner describes the interplay between the person and the context as

[...] the progressive, mutual accommodation throughout the life course, between an active, growing human being and the changing properties of the immediate settings in which the developing person lives, as this process is affected by relations between these settings, and by the larger contexts in which the settings are embedded (Bronfenbrenner, 1989, as cited in Shelton, 2019, p. 6).

For the purposes of this paper with its focus on a care approach, what is of importance in this definition is Bronfenbrenner's emphasis on the developing human, in a continuously adapting relationship to the setting and other people in it. Furthermore, Bronfenbrenner asserts that these contexts are also subject to change by the developing human. This definition also asserts that the environment in which development occurs has various settings and the developing human only participates in some of those settings. The definition also recognizes that the mutual accommodations that occur between the developing human and the environment will be influenced by the relationships between the various settings of the environment as well as by the larger context of these settings, such as society, community, and culture (Shelton, 2019).

Bronfenbrenner's framework subdivides the ecosystem of a developing human into four subsystems which are the microsystem, mesosystem, exosystem, and macrosystem, which operate over time in the chronosystem. These subsystems are interrelated and connected and change in one subsystem will result in the other subsystems adapting to the change, the subsystems therefore continuously influence each other. For this paper, we will focus on the microsystem which Bronfenbrenner defines as a "setting with particular physical and material characteristics" that contains the "pattern of activities, roles, and interpersonal relations experienced by the developing person" interacting in that setting (Shelton, 2019, p. 58). This definition recognizes the importance of relations with others in development. Bronfenbrenner viewed relations as transactions that take place when two or more people participate in the activities of the developing person. He goes on to describe these transactions as a "ping-pong game" (Shelton, 2019, p. 31) of mutually changing interactions that leave both parties altered in some way. It should be noted that in his writing, Bronfenbrenner focuses his theory on relations between two people, often a child (little p) and a parent (Big P), which he refers to as a dyad.

In attempting to understand the role of these transactions or relations in the process of human development, Bronfenbrenner posits that relations are characterized by three dimensions, namely affect, power, and reciprocity.

The affect dimension is defined as the feelings experienced by people within the microsystem. If the developing person has positive feelings towards others within the microsystem, they are more motivated to engage in activities within the microsystem and as a result development will occur. If there are negative feelings toward the particular microsystem then the developing person may wish to avoid participating in that space (Shelton, 2019).

In turning to the power dimension, Bronfenbrenner describes this dimension as the "relative strength of each person in the relationship, and [...] their influence on each other" (Shelton, 2019, p. 34). Bronfenbrenner views power as a continuum whereby relations could exist where one person could have all the power and the other none or where both parties could be equal in power.

Reciprocity, Bronfenbrenner's third dimension refers "to the mutual sharing or transactional character of the activities and interactions that take place in the relation" (Shelton, 2019, p. 35). Reciprocity in relations also exists along a continuum where on the one end relations can exist with "complete reciprocity, mutuality, and sharing" (Shelton, 2019, p. 35), and on the other end, relations exist with no reciprocity. This could be because the parties do not share with each other at all or because one party initiates an action but remains unresponsive when the other party attempts to initiate it. Examples of reciprocity include engaging in conversation, sharing of information or alternating roles within the microsystem.

Bronfenbrenner posits that relations characterized by positive affect, high levels of reciprocity and power balances that tend towards equality, yield the most positive influence on the developing person and result in change.

Methodology

The project from which this paper emerges takes inspiration from ethnographic and autoethnographic approaches (Stahlke Wall, 2016; Bali, 2020). This allows the "complex relations between identity, emotions, agency and investment in professional lives" (Yazan et al., 2022, p. 3) to emerge from "the study of ourselves" (Roy & Uekusa, 2020; Gant et al., 2020), and in so doing, to reflect on wider social and educational issues. We are thus able to function as both participants in the course, and researchers of the course. As a result of our embedded positions, we were able to collect a wide variety of data, including semi-structured interview data, secondary data from course activities, and our own meeting notes, recordings, and reflections.

Our individual positionality shaped both the design of this research and the analysis of the data. The broader research team consists of four female researchers: S, of South African-Indian descent, is an experienced educator who joined academia after ten years of secondary school teaching and is working towards her doctorate. D is a white European woman, who has been working within the academic staff development space for more than 20 years and is a seasoned researcher. C is a white woman who works in student affairs and is currently completing her Master's studies. W, a Muslim woman of mixed-race descent and the research assistant who conducted the interviews, opted not to join the writing of this paper.

There are two types of participants in this study: students from the course, and course lecturers. The student participants were broadly representative of various categories of difference, and thus inequality in the local context. Of the 30 participants on the course, 13 volunteered: eight identified as black, three white, and one colored. Eight presented as male, and five as female. Furthermore, interviewees were based at differently positioned post-secondary institutions, including six universities, four universities of technology, and three private colleges. This offered a good representation of the diversity in the higher education landscape in South Africa, including urban and rural contexts, differently funded and resourced institutions, with a wide variety of geographical, cultural and historical influences. Three interviewees had newly transitioned into their current work, while others had more than a decade of experience. We have deliberately offered a general overview of this group, in order to limit the likelihood of course peers, employers and colleagues identifying respondents.

We collected three broad types of data in this project: semi-structured interviews, course artifacts, and facilitators' reflections. These categories of data allow for student voices, lecturer voices and artifacts as embodiments of interactions to be available for study. Interviews, conducted by the research assistant, exceeded an hour and seemed to be frank and open discussions between the interviewer and the respondents. Collected data took the form of course artifacts, including video recordings of course sessions, video recordings of course meetings, emails between lecturers, responses to participants' work, and reflective journals. Additionally, we, the lecturers on this course and the authors of this paper wrote reflections on our experiences, which were subsequently discussed as a group with our researcher. The reflections supplement our collected data from the course.

Interviews and recordings were transcribed, using an automated transcription service and then edited for accuracy as required. Following Roy and Uekusa who argue that self-reflexivity and dialogical analysis of narratives can be "a pathway for productive qualitative research" (2020, p. 385), we adopted an iterative approach to data analysis, where we repeatedly and collectively engaged with the interview data and artifacts. We identified emerging themes through careful engagement with the data, informed by the literature on care, and by an ecological systems approach to understanding development and learning.

Designing with care in EDN4501

In this section we will explore how examining our design of EDN4501 through Bronfenbrenner's three characteristics of relationships: affect, reciprocity, and power, surfaced complex expressions of care in the course. As mentioned before, both during the pandemic and after the pandemic, trauma-informed teaching and learning (Imad, 2021) have been critical to us. It is important to note that we use the word 'trauma' in a more collective sense as well in the pandemic context as a shared traumatic experience; given diverse positionalities, we know that individuals have been affected differently. The following reflections by us and our participants will show how we applied Imad's seven principles of trauma-informed practices (2020) across affect, reciprocity, and power.

Affect

Affect is not always a visible or deliberate element of course design; additionally, affect emerges spontaneously through interactions, and has significant implications for development. In EDN4501, we took a number of steps to design activities and practices that created space for a range of affective responses that we hoped would enhance the likelihood of authentic affective responses.

Intentionally making space for feelings and relationship building to foster trustworthiness and transparency

For many of our participants, especially the younger ones, concealing their emotions is a way of establishing their 'professionalism'. As one of our participants, Sara, explained: "I feel like when it comes to teaching and learning, you have to be able to put those things [feelings] aside. [...]" (Sara, Participant). For us, a key part of exercising care in higher education is creating space for, and acknowledging the importance of our affective lives. For example, in EDN4501, we specially allocated time at the beginning and end of each live session to bring the personal into the room, and to allow space for acknowledging how we were feeling - about the EDN4501 journey, about particular activities, about how studies and life were entangled. Each session started with a prompt that helped us all get to know each other better.

In our experience, EDN4501 participants are not always equally able to seek support from course peers or lecturers. The kind of sharing we were encouraging is not a shared cultural practice within our participant group, and gender, race, and linguistic background might influence how and what participants were willing to share. We deliberately wove this approach through the fabric of the course, moving incrementally towards increasing openness and vulnerability. We understand this to be linked to participants' identities and the cultural diversity within the group.

Lean into safety to ensure students' emotional, cognitive, physical, and interpersonal safety.

In addition to weaving opportunities for acknowledging feelings into course meetings, we encountered and created space for emotions (ours and our students) in more intimate settings, adopting trauma-informed pedagogies by leaning into safety and promoting predictability and consistency. In the last decade in the local context, there has been a strong tendency to foreground the notion of discomfort as a pedagogy, drawing on work by Michalinos Zembylas, and finding expression in the work of academic development practitioners in South Africa (Leibowitz et al., 2010), suggesting that "some discomfort is not only unavoidable in talking about issues such as race and racism but may also be necessary" (Zembylas & Papamichael, 2017, p. 3). However, in light of the moment during which the course was taught, and the experiences of the recent past and foreseeable future, we opted to "lean into safety".

Not all our students experienced safety in the course in the same way. One of the participants we interviewed after the course explained that she found that the course created safe spaces to think. Referring specifically to the weekly reflections, she says:

...that's the part that I found the most helpful, just having a safe space to think about your thoughts and jotting down those thoughts that you're thinking about, without freaking out about how this is going to impact your marks. That this is going to be a train smash in the end, because you're not using the right words. And that was the best part for me. (Sara, Participant)

Another participant linked the ideas of compassion and safety, asserting the importance of creating a safe environment

What I mean by that is a place where they can be their true authentic self, where they don't have to think that if I say something, it's not good enough, or that's not what I'm supposed to say but allowing them to make mistakes. For me that's more compassionate learning because if they can make a mistake then they learn from it. And then they can go back and see why they didn't get it right and they can change. (Kagiso, Participant)

Creating safe spaces in the course felt like a constant tightrope walk, because creating safety for one person sometimes meant creating less safety or even a sense of risk for someone else, as Shanali, one of the facilitators, reflects here:

During one break-out room session, I was hovering in the main Zoom room. Jo, who had been in a small group discussion, suddenly popped up in the main room. When I offered to help them back into their breakout room, Jo declined, saying the conversation in their group was developing in an uncomfortable way. While I immediately invited Jo to stay and chat with me, I don't think I did enough to create a safe space for them. Yes, I asked a few questions and asked if they'd like me to take it further, but obviously Jo didn't - it would have put them in an awkward spot. (Shanali, Facilitator)

While painfully aware that creating truly "safe spaces" in the course was impossible, we strove, with varying degrees of success, to create spaces that were differently safe for different people at different moments.

Promote Predictability and Consistency

A key goal for the course has been to create a flexible and responsive teaching and learning environment. However, sometimes we experienced this as being in tension with a key principle of trauma-informed pedagogy - the need to provide predictability and consistency. "Consistency in routine and expectations when designing our course expectations" (2020, p. 80) are critical aspects of course design and facilitation (Pica-Smith & Scannel, 2020). One of our students echoed this sentiment when they said:

I really appreciate how[...] we'll always have weekly announcements every Friday, [...] and all the new materials were being posted on Friday. [...] So for me, the whole idea of knowing that, okay, every Friday, I'm getting something new to read or to work on. And there's an announcement to that, it really helped me because when I go into the weekend, before I come to class, I'm already preparing myself for the next class session. And when we begin that class session, we are touching on the task or the activities that we had to work on. And for me, it was really helpful, because everything was [there] that I needed. (Kagiso, Participant)

The same student also appreciated that we uploaded materials and activities on schedule, describing this as "a major highlight", and a practice that they intend to replicate in their context.

Reciprocity

Creating the conditions for reciprocity in highly diverse learning spaces requires intentional design, supplemented by deliberate and reflective implementation. Teaching and learning interactions are, most often, characterized by dimensions of difference: differences in role—teachers and students, differences in knowledge and experiences, age, gender, and race may also come into play. In this section, we reflect on how reciprocity emerged in participants' micro-contexts. We look first at how design elements of the course, including our focus on compassion and trauma-informed teaching, an emphasis on building connection through group work, and the modelling of inclusive behaviors fostered opportunities for reciprocity.

Making trauma visible and responding with compassion to create trust and respect

Following Imad's recommendations, the course sought to adopt an intentional awareness of participant experiences, including trauma, that acknowledged both individual and collective experiences. Luvuyo noted:

In terms of the approach, we are postgraduate students, most of us are working. And apart from work, we also have other things that are going on in our family circles. So sometimes meeting deadlines is not always possible. But the instructors showed a great deal of understanding and empathy, you know, which was then very easy to reciprocate...So there was a lot of respect and trust that the instructors accorded us as students, which then made the course even more enjoyable, and, you know, worth one's time. (Luvuyo, Participant)

Luvuyo further noted that this experience of being respected and trusted in the microsystem of the course impacted his practice in his work context, another micro-system. As lecturers, our interactions with him prompted him to rethink his students' motivations when they missed a deadline:

I shouldn't just dismiss that as an act of maybe disrespectfulness, negligence or not being serious about their work. But it's always important to understand what informed the fact that the student missed the deadline. Like I said earlier that students are human beings and they need to be treated as such in a dignified way. (Luvuyo, Participant)

The high levels of positive affect - trust and respect - allowed not only for a positive experience within the microsystem of the course, but also created conditions for change outside the course, in Luvuyo's workspace. Effectively, his ability to engage in complex teaching and learning activities, independently outside the course microsystem developed, allowing him to change the properties of other microsystems in which he functions.

Building connections through group work to foster mutual self-help and peer support

As part of the structure of the course, participants belonged to a "home" group. This group was supported by a lecturer, and was encouraged to meet regularly to build connections and work together. Reflecting on the group work experience, Luvuyo noted "It helped us to understand better because our class with people from different cultures, different races, different parts of the country, different countries". Furthermore, he noted:

when we were given an opportunity to be in the breakout rooms, ... you could freely talk to your colleagues or talk to anyone, and it was almost like those activities were hoping to break those little silos that we're having in the main course. And then by sending us to these breakout rooms, we were then able to work together and understand each other and understand who we are and what we're doing. (Luvuyo, Participant)

Reciprocity can be seen in conversational turn-taking, information sharing, and the alternating of roles (Shelton, 2019). Furthermore, reciprocity is seen as an interest in the thoughts, beliefs, experiences, and feelings of others. Luvuyo's comment points to how, in the design and implementation of the microsystem of the course, students had opportunities to exercise reciprocity in their dealing with course peers—to "talk freely", and to connect across perceived boundaries of race and nationality.

Exposure to inclusive practices to empower participants' voices and choices by identifying and helping build on their strengths.

The course offers participants an opportunity to explore two key activities that allow participants to do learning design work to better understand their students' and their own experiences and contexts—working with empathy maps and personas. Annika noted that the personas and the empathy maps enabled her to focus on who she was designing for:

this is the person I'm designing for. And this, this is the student I'm designing for. That's the facilitator, I'm designing for that facilitator.
(Annika, Participant)

Similarly, Ester noted that the empathy map exercise encouraged her to respond to educators in her design differently, in a way that she had not previously. This demonstrates the extent to which Ester is developing “progressively more complex reciprocal interactions” with “the persons, objects, and symbols in [her] immediate external environment” (Bronfenbrenner, 2005, p. 6).

Furthermore, a participant pointed out that the ways in which the teaching team conducted themselves in the microcosm of the course created a positive affect and modelled reciprocity:

the kinds of people they are, they were so caring, and they were quite involved, you know, you'd add them in your comment, and they will get back to you in no time. I liked that... it doesn't matter how many students you have, you just make time and make each student feel like they are special. And then again, group teaching - they were a team, even though we're online, they would give each other time and they would take turns, they would invite each other to comment. (Lindo, Participant)

Lindo's comment insightfully picks up on a difference within the lecturing team. While we share some common commitments, we also have some substantially different orientations. For example, Shanali leans towards courses that are more clearly mapped out in advance; Daniela is inclined towards more emergent course processes. We managed this tension by always inviting opposing perspectives into the space, and recognizing that apparently opposing ideas could simultaneously be true.

Power

Closely related to the question of reciprocity is the question of power. Who holds the power in a course system? How can we share power more equitably? Recently, learning design has moved away from focusing on the designer as decision-maker and inviting others into the space of co-creation. Drawing on both community-oriented participatory design processes (Retegi et al., 2019), and the more higher education-focused “Student as Partners” movement (Cook-Sather, 2020), learning design has become concerned with how to involve learners in all the aspects of course design, both before course start, but also during course delivery, and into the evaluation/assessment of course design processes. Similarly to Bronfenbrenner, we see this as a continuum of equity in participation, where depending on the context, power can be distributed from the designer to the students, to a point where students can be significant decision makers (Pallitt et al., 2022). Context is important here, as many factors influence the way participants in a design process are able to share power and decision-making. This may have to do with experience and say level of studies, as Bronfenbrenner argues: “As we develop, and gain more skill, we may acquire more ability to control an interaction or a situation, and we may be granted more permission to exercise control” (Shelton, 2019, p. 35). However, especially in higher education, it may also have to do with access to students, departmental, institutional, or industry requirements, and also culture and positionality of students (Pallitt et al., 2022).

Awareness of power and positionality

One of the first steps in any process of co-design is a reflection on one's own positionality and how this may impact voice and decision-making power (equityXdesign, 2016). One of the first activities participants undertake in EDN4501 is the drawing of an empathy map, as mentioned above, to reflect on participants' and facilitators' conscious and unconscious beliefs around teaching, but also one's intersectional positionality in terms of for example race, class, gender, culture but also disciplinary context. Participants mentioned the empathy map as one of the activities that helped them be more reflective and aware of how their own design practices can either support or harm their learners (Morris, 2021), but also develop compassion for their learners and for themselves, as Ester reflects here:

...these empathy maps, [...] made me understand that I need to pay attention to the teacher's personality, [...] to improve the academic experience of students [...] I was able to use this empathy map to map my characteristics as a teacher, and those of my colleagues who teach the same subject with me. So it's important to know the teacher of this, this course, that we are designing and taking into consideration these characters. [...] because the way the design will be implemented depending on the teacher, [...], the personality of the person who designing or who is teaching will influence a course design. (Ester, Participant)

These empathy maps help us visualize and externalize our teaching beliefs, which in turn help us elicit feedback from others, on possible blind spots or unconscious biases we may hold, as Luvuyo suggests:

I think it takes a lot of reflection, and also soliciting feedback from other people. Once you get to understand or once I get to understand how I deal with people or how people view my practice, it then makes it easy for me to make changes here and in my dealings with people. [...] So, when I give feedback, am I giving feedback that helps students reflect, learn and be better in the future? Or am I giving feedback that is completely undermining to students, destructive and not really helping them to do better? So those areas to me are very important and they can help in terms of displaying empathy, sorry, compassion on a regular basis in our practice. (Luvuyo, Participant)

Responsiveness and co-design to promote collaboration and mutuality

In our design of EDN4501, we tried to be responsive to our students' needs, by modelling a ‘design-on-the-go’ approach. While we agreed on a rough structure for the course, we met regularly to design the individual course weeks, as Christine, one of the facilitators reflects here:

I have always felt that working on EDN is like building a plane whilst flying. We have a structure and directions but we allow for flexibility depending on student feedback, inputs and latest trends in online learning design. In 2021 in particular, having taken in the lessons from the global pandemic that hit us in 2020, we modelled a very agile and responsive design process. (Christine, Facilitator)

In the course, we regularly invited feedback that shaped the focus of each iteration of the course. The students responded positively to the level of responsiveness that was modelled by facilitators, as Lindo shares with us:

I liked what [the facilitators] were doing, you know, that whenever you're suggesting something, they would add it right there and then in front of you, and that will be part of the course you know, for the following groups, that slide was going to be used. I liked that. So it changed my mind that one has not doesn't have to be rigid, they have to be flexible. (Lindo, Participant)

While many of the students are similarly positive about the flexibility in course design as displayed, flexibility might also mean uncertainty for others, as Shanali, another facilitator reflects the costs of flexibility:

it distributes responsibility in the classroom context [...] In designing for flexibility, I believe that we run the risk of placing the responsibility of design and the responsibility of creating a learning experience too fully on the shoulders of our students. (Shanali, Facilitator)

Learnings, open questions, and Tronto's ethic of care

Bronfenbrenner's three dimensions of relations within a microsystem assisted us in understanding how embedding trauma-informed pedagogies within our course design potentially supported the development of our participants within our EDN4501 course. Reflections from our course participants show that they felt an affective connection vis-a-vis the course, their peers, and facilitators which in turn motivated them to continue actively participating in the course in difficult times. The intentional weaving of trauma-informed pedagogies into our course design as well as throughout our course delivery allowed for the relations within the course microsystem to be respectful and caring and created the necessary safety for participants' development. This sentiment is shared by Luvuyo in describing the approach by the facilitators as making "the course even more enjoyable, and, you know, worth one's time".

The reciprocity dimension was further encouraged by the positive affective dimension in that course participants experienced high levels of engagement and support from their peers in their design groups as well as the course facilitators. The participants refer to talking freely and working together in groups, developing a mutual understanding of one another as well as the facilitators modelling reciprocity by inviting each other to comment on particular aspects of the course. Additionally, they felt that their voice counted and could see how facilitators flexibly responded to their needs and input into the course design. While it is tempting to turn to ideas such as race and gender to respond to historical and contemporary inequalities, in reality, these broad categories proved poor proxies for participants' intersecting needs. Creating safety in a fully online course with spaces out of the line of sight was particularly challenging. The commitments of our students to co-creating safe spaces with us became critical, with a number of students being in contact with us to let us know if things weren't going well for their peers, and recruiting our support for the challenge at hand.

As much as we found it generative to think with Bronfenbrenner's model about how we designed and facilitated with care in our EDN4501 course, there are also elements of his theory that do not sit comfortably with us. In particular, there are two main tensions that we see, when we reflect on our work through his writings. First, we struggle with the focus on the dyad. We see our practice as involving many partners and stakeholders, who should all have a say in course design. While our immediate relationship is with our participants, there are also important relationships between participants, between participants and their home institution, their teaching and learning context, their discipline, their colleagues, their departments, their HODs, and their family environment. One could argue all of these are microsystems that interact with each other, but the analytic unit of the dyad does not hold up as well in relation to adult development. As Tim Fawns (2022) writes:

Teachers may lead the choreography, but they have only limited control over how the dance plays out [...]. Furthermore, teaching, in this model, is not just done by teachers but by a range of stakeholders in a combined, mutual effort [...]. Each stakeholder may hold different values and purposes, and have different contextual forces acting upon them. Ideally, this could inform collaborative design and orchestration of the course, as well as helping students to reflect on and reconfigure their learning environments. Including stakeholders such as administrators, learning technologists, or employers, in these discussions, could help to make the different elements more explicit and visible.

The equitable inclusion of all stakeholders remains an ongoing challenge.

Our second point of discomfort is the clearly hierarchical arrangement of power between Bronfenbrenner's 'Big P' and the 'small p' in the dyadic relationship. Bronfenbrenner's initial conceptualizing of reciprocity is grounded in a developmental dyad where the developing person is a child. While McLinden points to a body of emerging literature that applies ecological systems theory to higher education, the notion of reciprocity is almost entirely ignored in this literature in favour of the "nested" spheres approach. Considering course design through the joint lenses of care and reciprocity, we come to ask about the relationship between them. Is it possible to talk about care without also asking about, and indeed, requiring our students some degree of reciprocity? In a higher education contest, this might look like showing up "interested in how the other feels, or what the other thinks" (Shelton, 2019, p. 35). But it might equally look like taking turns to give feedback, alternating between being a presenter and an audience. What remains difficult to explore in this data set, is the kind of reciprocity that might exist between lecturers and their students.

We engage with professional adults with their own disciplinary expertise and knowledge, who come into a course that offers potentially new knowledge and frameworks but which needs their disciplinary expertise to add life to these new concepts. We see our relationships with our students as more equitable than the ones Bronfenbrenner describes. Here, Joan Tronto's (1993, 2011, 2012) work on the ethics of care offers a useful caveat to Bronfenbrenner's work.

Tronto sees care both as a disposition and a practice, as deeply relational, but as larger than the dyadic care relationships that, for example, Bronfenbrenner bases his work on. Care ethics involves all stakeholders in decision making and as such necessitates careful negotiation and often competing care needs. She also sees care as something we can get better at, but also as something that is potentially dangerous. Tronto (1993, 2011,

2012) identified in particular paternalism and parochialism as constituting the dangers of care. Paternalism stems from the powerful position that a caregiver holds in relation to a care receiver in meeting the latter's needs, and may thus have an overdeveloped sense of his or her own importance in solving problems leading to the caregiver assuming that he or she is all-knowing about the needs of the recipient of care Tronto (1993). Ultimately, the recipient of care (the participant in our case) becomes infantilized in the relationship. As Tronto (1993, p. 170) puts it, "especially when the care-givers' sense of importance, duty, career, etc., are tied to their caring role, we can well imagine the development of relationships of profound inequality." From our perspective in this article, this would mean that we as learning designers and facilitators of learning are overconfident in 'knowing' or deciphering the participants' needs, and consequently, students may in the process become infantilized and relationships of inequality may be an inevitable result of such a situation. As a result of this, we are intentional in our efforts to involve our participants in the course design, to see them as equitable partners in design decisions, as partners that we can learn as much from as they from us. We hold different types of knowledge and expertise, and it is our responsibility as course designers, to create spaces, where this knowledge and expertise can be shared—a relationship between two big 'P's'?

In our course, which deals with designing blended and online learning, the use of technology, in particular, is socially and materially situated and relates to the traditions, practices, culture, policy, and infrastructure in which they are embedded, as Fawns reminds us (2019). This speaks to another danger of care that Tronto talks about parochialism. The parochial and partial nature of care focuses only on those close to us rather than distant others or little-known strangers. To care only for those near to one, would in Tronto's (2013) consideration, be a form of privileged irresponsibility, in that it would exclude a concern for more distant others. In our case that would mean designing a course for students that are similar to us, embedded in a context similar to ours, dealing with students, similar to the ones we engage with. As we know, this is not the case. Our students are highly diverse and engage in a highly diverse context, with highly different students, traditions, practices, cultures, policies, and infrastructures. Not taking this into consideration would be another form of bad care. Iris Young's (2011) notion of a socially connected responsibility also encourages a morality that links responsibility for issues of social justice across distances to institutional and structural relations that are socially connected and affect all, thus breaking free of a parochial form of care and social justice. As such, the design decisions we make must take into account our diverse learners' needs and expectations. This can only be achieved through an intense co-design process, with all stakeholders involved, and a sharing of our diverse experiences and expertise, while recognizing our own positions of power.

While we are highly committed to a trauma-informed, equity-oriented learning design process, we are not certain we succeeded in incorporating all of these perspectives into our design and subsequent facilitation. In attending to how deeply challenging experiences might emerge as trauma in our participants, we were also not always able to pay attention to how it showed up in us. Tronto helps us here, as she argues that in a care relationship responsibility for care is shared among all participants in the care relationship, and as such our participants could sometimes carry the burden of care for us. Bronfenbrenner's ecosystem of micro-, meso-, macro-, and exo-systems, paired with the characterization of relationships according to three dimensions, namely affect, power, and reciprocity, offered a useful initial framework to examine relationships in the microsystem of classrooms. However, when examining particularly, the dimensions of power, we found Tronto's ethics of care a useful lens through which to consider the nature of interactions.

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^[1] For a very accessible introduction, see Maha Bali's blog post, Pedagogy of Care: Covid-19 Edition May 28, 2020. <https://blog.mahabali.me/educational-technology-2/pedagogy-of-care-covid-19-edition/>

^[2] Coloured in the South African context refers to a heterogeneous South African ethnic group, with diverse ancestral links. Ancestry is likely to include some combination of European settlers, Khoi and San and Xhosa people, political exiles and slaves imported from the Dutch East Indies, and migrants from various Asian countries (or a combination of all).



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From Nature to Pen: Designing an Inclusive Writing Course for Educators

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Equity

Instructional Design

Social Justice

Wellness

Culture

Diversity Equity and Inclusion

DEI

Authentic Writing

Designing for Equity

This design case highlights a collaborative effort among teachers, professors, park rangers, and local mindfulness instructors. Together, they developed a virtual course aimed at promoting wellness through nature and reflective writing, while emphasizing diversity. The team utilized instructional design processes and levels of culture to create an inclusive asynchronous course for educators. They faced challenges regarding the design team composition and the influence of popular culture, which hindered inclusivity. Recommendations include diversifying the design team, incorporating a diversity, equity, and inclusion audit, and allowing intentional planning time. These steps aim to enhance inclusivity and cater to diverse populations in instructional design endeavors.

Understanding the Larger System and Culture

The United States National Parks System (NPS) and schools have coinciding missions for the betterment of society. National Parks aspire to be available to everyone in the nation. Part of their mission states, “The National Park Service preserves unimpaired the natural and cultural resources and values of the National Park System for the enjoyment, education, and inspiration of this and future generations” (NPS, 2023). Every school has its own mission, but most outwardly aspire to educate all students for student success (Spring, 2018). Both institutions envision making a positive societal impact, yet both have been plagued with histories of exclusion of races and cultures (DeGoff, 2023; Finnley, 2014; Love, 2019; Hooks, 1994; Moore, 2022; Spring, 2018) which hampers actualization of that vision.

Both entities, NPS and schools, exist within the dominant culture, the larger culture or the supra-system (Netting et.al, 2017) that established them and overshadows all that operates within it (Bathany, 1992; Sockman & Kieselbach, 2022.) When the USA designed schools (hooks, 1994; Love, 2019; Spring, 2018), and its National Parks system (Finnley, 2014; Moore, 2022), they served the White privileged of the supra-system, and did not serve and under-served Black, Indigenous and other People of Color (BIPOC) (Gay, 2018; Love, 2019; Zivot, 2010). Both purposefully minimized or disregarded BIPOC people's value through explicit policies (DeGoff, 2023; Kendi 2019; Moore, 2022; Wilkerson, 2020) or implicit practice (Love, 2019; Safir & Dugan, 2021; Weber & Sultana, 2012). The supra-system influences all organizations embedded within, and then, individual behavior (Harro, 2018; Sockman & Kieselbach, 2022; Stroh, 2015) that manifests within the environments.

National Parks (NPSCSI, 2011) and schools (Best Practices Clearinghouse, 2023) have been purposefully examining and implementing strategies to change the dominant system influence in their institutions. State and local municipalities control schools, and so, schools vary widely in vision, policy, and practices (Spring, 2018; Starnes & Sockman, 2021). The NPS has strategically worked to welcome all people by researching and creating messaging materials to reach indigenous communities (DeGoff, 2023; NPS, 2013; NPSCSI, 2011; Zivot, 2010) so that all have access to the benefits of being in nature (Gupta, 2021; Keltner,

2023). The shift to welcome access leans into social justice, when entities intentionally disrupt the status quo and aim to welcome all people, especially those that have been historically marginalized (Adams & Zuniga, 2018).

The concept of social justice is both a goal and a process, according to Bell (2018). Social justice as a goal is the “full and equitable participation of people from all social identity groups in a society that is mutually shaped to meet their needs” (p.34). Likewise, the process of doing social justice gives voice to the different perspectives that are brought together from the identity groups. Bell describes further: “distribution of resources is equitably and ecologically sustainable, and all members are physically and psychologically safe and secure, recognized, and treated with respect” (Bell, 2018, pg. 34). The vision for social justice applies to schools and the NPS.

One piece of social justice encompasses respect, which includes being cognizant of and honoring cultural differences with humility (Harro, 2018; Nomikoudis & Starr, 2016). Culture “refers to a dynamic system of social values, cognitive codes, behavioral standards, worldviews, and beliefs used to give order and meaning to our own lives as well as the lives of others” (Delgado-Gaitain & Trueba, 1991 in Gay, 2018). There are many levels to culture (Hammond, 2015) which will be addressed in the method section. Dominant super systems dominate culture which is then practiced in the individual that lives within the system. From an instructional designer’s perspective, the dominant system - the supra-system of cultural norms influences how instruction is designed by individuals or groups of individuals.

When designers shift their practice to be more inclusive of cultures different from the dominant system, they may have a disposition of cultural humility (Hook, 2013). Hook (2013) describes cultural humility as the “ability to maintain an interpersonal stance that is other-oriented (or open to the other) in relation to aspects of cultural identity that are most important to the [person]” (p.2). Instructional designers have the opportunity to work toward social justice by being inclusive of the cultures that are often left out by moving beyond reflecting the dominant culture.

When designing with culture in mind, creators can be intentional through the instructional design process (Sockman & Kieselbach, 2022). The remainder of the article will move through a particular case that describes how a design team created and implemented a writing course for teachers inspired by nature, aimed to be inclusive of all people with an intentional awareness of those that have been marginalized. First, the context and partners will be explained. Second, the method will be described with the instructional design processes and with the depths of culture (Hammond, 2015) as a framework. Then, the salient experiences through the instructional design process and levels of culture will be described. Lastly, the article will discuss the findings in terms of the learning goals and design process. Overall, this article will wind together systems thinking and instructional design embedded in culture.

Context: Three Partner Groups Design

A National Writing Project grant supported the Pocono Writing Project (PWP) to partner with the National Park - Delaware Water Gap Recreational Area (DEWA) to create writing experiences for teachers that utilized the outdoors. The PWP design team of teachers, professors, and DEWA rangers co-designed a virtual course for educators to encourage wellness through nature, and a reflective writing experience for authentic learning (Hammond, 2015; Wiggins & McTighe, 2005). Through the process, we hoped that students, who are classroom teachers, would gain skills that they could transfer to their students through the writing process and appreciation of nature, specifically at DEWA. The design team used the instructional design process to create online modules with experiential learning and process writing that honors the cultural perspective of all participants through mindful awareness of our local ecosystem.

Principles of learning grounded in well-being and science supplied the foundation for the project. The principles are as follows: our local natural ecosystem is a treasure that is underutilized; spending time in nature is good for the well-being of all humans; living things are interconnected; having a better understanding of the science influences our decisions that impact the future of our environment; understanding is heightened with experiential learning through reflection; process writing and digital writing can honor the voice of individuals; each person comes to experience with their own cultural perspective that serves as a frame for the individual’s understanding; through sharing experience both face-to-face and digitally, our varied experience can make a greater impact; teachers need to be empowered so that they can empower their students; and humans learn best through community of sharing and refining.

Much of this article is written in first person since the authors took part in the design. We collaborated on the processes of needs analysis, design, development, implementation, and evaluation. The work was facilitated by DEWA park rangers. The design of the Teacher Writing Naturally course took place from 2020-2021 and pilot implementation was 2021-2022.

Method - Design Case of Teachers Writing Naturally Course

In the methods section, we introduce a design case (Svihla & Boling, 2020) that details the development process of a seven-module course. This process involved following the established steps of traditional instructional design (Dick et al., 2014). By providing episodic descriptions and lessons, we aim to contribute to the knowledge base for future designs, enabling us to build upon this foundation.

The designers included one person trained in instructional design practices and teachers trained through teacher education in lesson planning. While working through the process, we were cognizant of the cultural depths (Sackman & Kieselbach, 2022) and sought to honor each. The depth levels have been parsed into surface, shallow, and deep levels of culture to describe the complexity (Hammond, 2015) embedded in the societal systems (Harro, 2018).

Each cultural depth level (surface, shallow, and deep) is addressed in the front-end analysis, design and development, implementation, and evaluation. In summary, surface culture includes “observable and concrete elements, what we see, generally acknowledged” (Hammond, 2015 p.22); shallow culture overtly expresses “unspoken rules around everyday social interactions & norms” (Hammond, 2015 p.23); deep culture questions “unconscious assumptions that govern the worldview view of good or bad that guides ethics, spirituality, health, and theories of group harmony” (Hammond, 2015 p. 24). See Table 1 for alignment between Cultural Depth Levels and Instructional Design Considerations.

We used the Cultural Depth Levels of surface, shallow, and deep culture, and applied them to each part of the instructional design process. Depending on the instructional model used the process stages can slightly differ but often include variations on front-end analysis, design and development, implementation, and evaluation (Branch & Kopcha, 2014; Woodley, 2017). Through each step of the process, we analyzed the successes, challenges, and opportunities for growth through the cultural depth levels.

Table 1

Levels of Culture with Instructional Design Considerations

Cultural Depth Levels	Examples	Instructional Design Questions for Consideration
Surface	Observable and concrete elements, what we see, generally acknowledged	<ul style="list-style-type: none">• Media: Do images represent various cultures, ethnicity, and race in equal status through position, dress, and intellect in outdoor settings, images, and mindfulness in respectful ways?• Course Navigation: Does the participants' movement through the course seem seamless for their participation?• Greetings: Do opening messages welcome diverse perspectives when looking at nature and the writing perspectives?• Calendar: Does the course calendar represent the dominant or privileged culture or all cultures?

Cultural Depth Levels	Examples	Instructional Design Questions for Consideration
Shallow	Unspoken rules around everyday social interactions & norms, non-verbal	<ul style="list-style-type: none"> • Social Interactions <ul style="list-style-type: none"> ◦ What does communication look like for identities in different learning spaces on the discussion boards and assignments? ◦ What does communication with instructors of the course look like in an asynchronous course about nature and writing naturally? • Course Norms of time, sequence, and effort <ul style="list-style-type: none"> ◦ How are assignment due dates viewed? ◦ What process is expected when writing and being in nature and how is that expectation conveyed? ◦ How much time and effort are learners expected to give assignments of mindfulness, spending time outdoors, and reflecting?
Deep	Unconscious assumptions that govern the worldview, view of good or bad that guides ethics, spirituality, health, and theories of group harmony	<p>Success: What does success look like from the perspective of the learner and of the professor and why? Ethics</p> <ul style="list-style-type: none"> • What are the ethical embodiments of communication (i.e., netiquette, speech)? • What are the expectations and enactments of Copyright, Creative Commons, and Plagiarism? <p>Group Harmony – Individualistic or Collectivist</p> <ul style="list-style-type: none"> • How are learners expected to generate thought in groups or individually and how do learners perceive the difference? • Is the course collaborative and/or competitive in its orientation? <p>Exemplars</p> <ul style="list-style-type: none"> • What is “good” and “exemplars”? Do they represent a diversity of perspectives with various cultures in equal positions? <p>Aesthetics</p> <ul style="list-style-type: none"> • Is the course aesthetically pleasing for the content in its layout and design, to the beholder? • What is the basis for aesthetic preference that governs acceptable qualities?

Note: The basis of the table which designates the “Levels of Culture” from Hammond, 2015 p.22-24, combines with Instructional Design Considerations found in Sockman & Kieselbach, 2022. The Instructional Design Questions for Consideration correspond to the design case in this article.

Salient Experiences through the Instructional Design Process

The findings describe a summary of the way surface, shallow, and deep cultures were used in each stage of the instructional design process with explanations and data to support results. Data was gathered from our personal experience, course participants, and evaluators.

Front-End Analysis

At the beginning of any project, one needs to select the project design group. Our representation was made up of all partners: two DEWA rangers, two university professors, and four teachers. Ideally, the design group would have been composed of different genders, cultures, and races. All of the design team identified as women. One identified as a professor who is also a woman of color, and the others, as white. We reached out to a man, and some educators of color, but none were able to participate.

We desired the module to be completed in a rejuvenating way. Our audience or learners for this course were K-12 teachers in Northeast Pennsylvania (PA) schools. They were experiencing substantial stress during the Covid pandemic (Ferdig & Pytash, 2021), and spending time in nature is scientifically shown to de-stress many humans (Gupta, 2021; Keltner, 2023). We are located near the DEWA area and Pocono Region which supplies opportunities to enjoy the outdoors.

Learner Goals for the Course:

- Learners will experience nature mindfully through their senses and movement.
- Learners will write about their experiences naturally to include reflective writing and shared responses.
- Learners will gain an appreciation of the diversity that nature offers.
- Learners' well-being will be enhanced through their time outdoors, mindfulness, movement, and reflective writing.

Surface Cultural Level in the Front-End Analysis

As the design group, we desired diverse representation in the media chosen for the modules, so we continued to seek representation in the videos and images being used. In terms of the calendar, the course did not have rigid due dates, but the calendar was driven by nature. We wanted participants to enjoy the outdoors, and often people spend time outdoors during their preferred temperature and precipitation levels so we assumed that the rhythms of nature would influence the outdoor intention. The course was limited to K-12 teachers with technology access to Canvas, which would allow presentation of materials and interactions with discussions.

Shallow Cultural Level in the Front-End Analysis

An asynchronous format was determined since teachers were inundated with synchronous Zoom meetings during Covid (Ferdig & Pytash, 2021). Videos would be provided for most of the instructional interaction and assignments would be individually submitted with flexible due dates catering to the teacher's time constraints. A National Writing Project consultant would be dedicated to prompt feedback on the discussion board.

Deep Cultural Level in the Front-End Analysis

We aimed to have educators embrace writing, nature, and self-care with reflection. We wrestled with the questions of what does "authentic writing" look like? What is needed? In the current state, the school system in PA focuses on formulaic writing to meet the state testing requirements, however, researchers note that a sole focus on formulaic writing, based on prescriptive teaching methods, often squelches student motivation, lacks real-world application, and discourages transfer of knowledge (Hammond, 2015; Wargo, 2020).

Formulaic prescriptive methods often do not value learner experience, creativity, and authenticity (Kixmiller, 2004; Roger & Horn, 2000), especially when contrasted with authentic writing processes which become empowering for the learner when embedded within organic and meaningful experience (Behizadeh, 2014; Wargo, 2020). We wanted teachers to experience authentic writing so they in turn could empower their students with similar methods (Roger & Horn, 2000). In the instructional course, we designed reflective experiences so that participants would feel accepted in how they entered and support growth through their interpretations (Behizadeh, 2014; Love, 2019).

Design & Development

The design and development processes were closely intertwined, occurring concurrently, and involving iterative exchanges between the two. The following descriptions outline the progression, starting from the selection of media (surface cultural level) and extending to the interpretation of participant success within the course (deep cultural level).

Surface Cultural Level in Design and Development

As mentioned in the front-end analysis, the intention was to find media representative of diversity. We needed Creative Commons or Public Domain images of diverse ethnicities interacting in the woods or nature— specifically people that represented an array of skin tones, in a temperate forest biome, dressed in clothes that were common in the outdoor culture of northeast PA. This was more difficult than anticipated.

Many Creative Commons or public domain searches yielded images representing people of White identities when using popular search terms such as hiking or hiking in temperate forests. Even the person of color, whose web search algorithm should have been broader due to her personal search, found images of people of color in school uniforms or from tropical nations. To have more representation, we asked friends' permission to use their personal photos and found images that did not show people at all.

Each module had a quote at the top that pertained to the overall lesson. The person responsible for the quotes was given explicit directions to quote diverse voices, but when analyzed by other designers, all seven quotes were from people that identified as White males.

The quotes were considered literary and nature-focused but did not meet the course's diversity goal. One of the designers, a person of color, found some quotes by women who were female in a book that she was reading, written by a Black woman. The same designer, went online to search specifically for other outdoor advocates that were Black, using search terms such as "nature quotes by "Black people" or "people of color." The designer found a quote by Rue Mapp who is a writer and established Outdoor Afro, Inc. (see Figure 1).

Figure 1

Module "What We See"



Note. This figure shows a sample landing page of an instructional module with a quote from Rue Mapp, Outdoor Afro, Inc. Rue's quote inspires equality in nature: "The trees don't know what color I am. The birds don't know what gender is. The flowers don't know how much money I have in my bank account. I think we can rely on nature to be the equalizer for us so we can shed that weight."

Areas of accessibility were addressed. Icon images were designed and developed to represent each of the five senses and interconnectedness, with color contrast and icons that could be recognized even if a person had common forms of color blindness. To approach differently abled pathways, the course embraced movement in the outdoors. Hikes were described in terms of the difficulty level into “Easy”, “Medium Difficulty – short”, and “Medium Difficulty- long”. This would allow learners to enter the park at unique experience levels. The linked map designed trails that were handicapped accessible with a wheelchair.

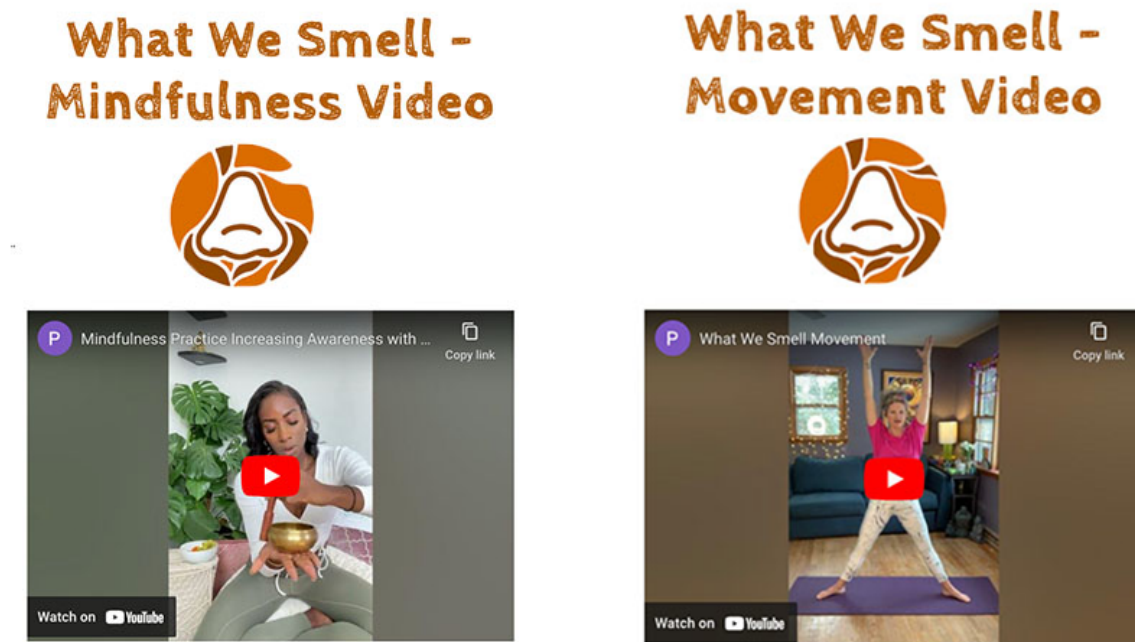
Shallow Cultural Level in Design and Development

In the design and development of communication, we constructed an asynchronous modality course. The rules of engagement were related to communication that could happen within the learner’s time and space. Learners were given a two-month period with suggested completion guidelines of 1-2 weeks per module.

Communication from the instructors would be in three different formats: 1.) Audio-podcast 2.) Video 3.) Written replies with no synchronous interaction. The videos and podcasts would incorporate movement, mindfulness, and writing in each module allowing participants to experience learning in different representations (see Figure 2). All audio had scripts available and all videos used YouTube with Closed Captioning. We wanted to honor each person’s journey so individual reflection was encouraged. Participants would mostly respond in writing, which could be a limitation, but the goal of the course was to encourage writing.

Figure 2

Module “What We Smell”: Two Videos Visually Representing Two Races



Note. This figure provides an example of utilizing shallow level culture in course development.

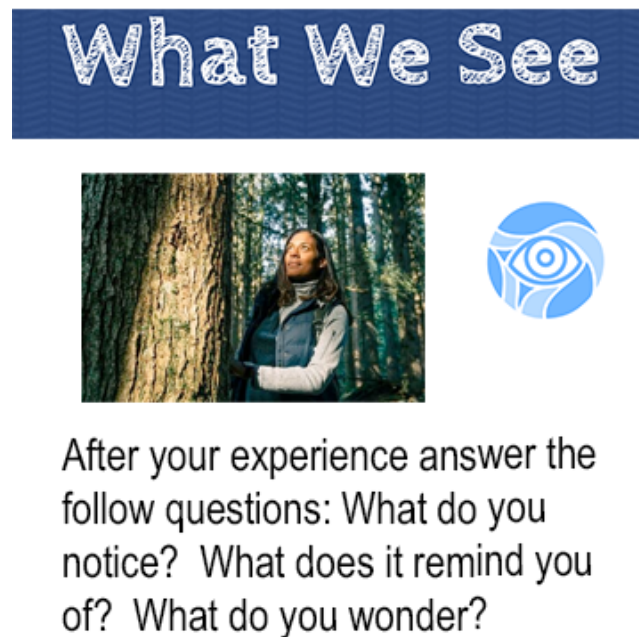
The audio and video needed to have voices and actors that represented a diversity of genders and cultures. Members of the design team quickly thought of females to help, but we intentionally sought voice representation of males, accents, and different high/deep tones. The videos about nature were created by DEWA who were limited to their personnel and were careful to use both male and female rangers. We had similar issues as our image references in offering diverse video content.

Deep Cultural Level in Design and Development

The course was for personal professional development and not linked to college credit, which resulted in more flexibility of success. Success would be determined by a participant's authentic experience with the modules that aligned with the goals of the course. The writing prompts encouraged the participants to enter their development in writing, mindfulness, or movement (see Figure 3).

Figure 3

Module "What We See" Journal Prompt



Note. This figure demonstrates a journal prompt that was given to learners to respect their experience. The initial prompt states, "After your experience answer the follow questions: What do you notice? What does it remind you of? What do you wonder?" After the initial prompt, learners are asked the following: After your reflection, journal about what you already know about trees. Did you know you can identify a tree by its leaves? Imagine one tree that you do know. Can you name the tree? Picture the leaves that come from your tree. What are their colors, shapes and textures? Do the leaves have smooth edges, wavy edges or toothed edges? Describe the leaf in as many details as possible. What do you know about that particular tree? Have you ever wondered how many different trees you might see on one walk? Take a few minutes to ponder in words.

The sequential modules were designed around elements of stretch, sketch, and connect. The "stretch" of each module included short movement and nature podcasts-mindfulness. The "sketch" portion of each module took the participant outdoors with recommended hikes through DEWA where participants were asked to sit, engage their senses, and write in their response to the prompts. "Connect" encouraged participants to write about their experience in a journal and share some experiences with the other participants in the group in a Canvas discussion board.

Success was based on individual ethical assumptions that participants would be authentic and share from their own experiences. Group harmony was built from an individualistic lens and not competitive. There were no exemplars at this time. Part of the aesthetic includes the advertising materials. The flyer was created in Canva with a naturalistic type of theme and icons that addressed the senses.

Implementation using Formative Evaluation

We were interested in formatively evaluating so when it was time to implement the course, we solicited participants. For the implementation, two instructors oversaw the participants. The instructors were not part of the initial design team. One had an

instructional technology background and another was a National Writing Project Fellow. There were 11 people who gave feedback. Seven were course participants, three external reviewers, and one conducted a Diversity, Equity, and Inclusion audit. The course participants and reviewers were provided with a small stipend for their input. Below we analyze the implementation evaluation through the shallow, surface, and deep cultural levels by examining the participant's identities, discussion posts, surveys, and the Diversity Equity and Inclusion (DEI) audit.

Surface Cultural Level in Implementation

There was no feedback regarding the surface level design elements which included the media, greetings, and calendar. However, since the course was voluntary, participants self-selected based on alignment with their beliefs. The financial stipend (\$50) was not high enough to attract teachers beyond personal interest. We expected the teacher-participants to be interested in writing, curious about the outdoors, and desiring something that lowers stress.

Shallow Cultural Level in Implementation Using Formative Evaluation

There were ten teachers that started the course. The social interactions and course norms were dominated by discussion boards at the end of each module. In a sample response below, the participant shares a reflection on nature, based on the sight module:

So much in nature changes with the seasons!! Life is really like that as well!! I'm not a huge fan of change because it scares me, but thinking of how the leaves change back and forth and the roles the leaves play (or don't play) in the different seasons....shade in the summer but lack of leaves opening up to let in the light in the darker, colder winter... makes me actually embrace change. Well, in theory at least..

The participant conveyed the meaning of observation using sight and nature while comparing changes in nature with change in life. This demonstrates that the participant was meeting some of the course goals which were "experience nature mindfully through their senses" and "natural way to include both reflective writing and shared responses."

We were also interested in the connections that students were making while encouraging one another. In part of a response, a participant writes: "People and leaves acting as changemakers really stuck with me. What an amazing perspective!" Another participant replied: "I enjoyed the metaphors you included when describing the leaves!" A different participant replied: "Love this comparison!!! So much that occurs in nature really applies to our everyday lives...especially when I look at my diverse classrooms and all the different roles played by each student and colleague." The sample group interaction demonstrates a norm that evolved throughout the modules where participants built their thoughts from one another. The exchange verifies an instructional goal being met, "learners gain an appreciation of the diversity that nature offers."

Deep Level in Implementation Using Formative Evaluation

In a course, deep level culture would include exemplars that we did not have yet, nor did we know what to expect since this was the first time using the course. Instead, we observed the patterns. As the course continued, the group responses became increasingly longer. In the aesthetic, there was an appreciation of nature. The participants were creating their norm and building connection. The samples shared are shortened for the article. For example, one participant wrote in the taste module:

Many of us have lost our ancestral connection to nature. Or, it has become dull. We are able to rely on the convenience of packaged items and don't have to think about the growth to table process. However, I do feel many of us have realized this and are seeking to reconnect. as for living in the wilderness. I hope I could. I know it would be extremely difficult but, I feel like I have a little bit of knowledge that would get me by. I grew up wandering through the woods. We regularly ate wild greens, mushrooms, and wildlife.

Another response went deeper into the participants' family experiences.

Agree!! This makes me think of my dad's mom, my Grandma Katie. She used to come and visit from Florida. She would be outside picking dandelions in our yard, and we thought she was nuts! And she would produce the most delicious dandelion salad you ever tasted! We did not think she was nuts as we were eating it!! My mother's mom also used so many fresh herbs and plants and to this day, I love the memory of her homemade iced tea with fresh mint leaves that she grew in the garden behind her garage. As an adult, I marvel at this because my Grammy lived just outside of Philadelphia, just steps away from what I would consider a city setting, yet she grew all her own vegetables and herbs in that well-planned garden behind the garage!!

Within the space the course created, participants connected to their family roots, experiences from the past and their current experiences with nature. The learners' "well-being" was enhanced through "reflective writing" a course goal.

Evaluation through Participant Survey and DEI Audit

There were three ways the evaluation was conducted. First, participants completed surveys halfway through the course and at the end of the course. Second, those who facilitated gave anecdotal feedback. Lastly, a Diversity Equity and Inclusion (DEI) auditor reviewed the course.

Both the midterm survey and end survey asked questions at different depth levels. Interestingly, five participants completed the mid-survey and seven completed the final survey. Since no names were given, we do not know the participants that completed both, but can report the identifiers for the seven. Of the ten participants that started, three did not continue with the end-of-course survey. Of the seven teachers, all identified as white females: one taught K-5 teachers (students ages 6-10), four taught middle-level grades 6-8 (students ages 11-13 years), and two teachers taught 9-12 graders (students ages 13-18).

Shallow Culture in Evaluation

In the mid-way survey, there were standard questions about usability. In the mid-way survey, one participant would have liked a "check mark" to appear after completing a task, and expanded, "Course navigation was a bit awkward for me - a suggested calendar or numbered steps would be helpful." We agreed with the participant, but the free version of Canvas had its limitations, so we were unable to implement a completion indicator. In the final survey, six of the seven completers found the course easy to navigate and user friendly. By the end, the activities chosen were rated agree or strongly agree for ease of use of the course including the media and discussions. In terms of the shallow cultural elements, the course was meeting goals.

Surface Culture in Evaluation

Both in the midway and final surveys, participants addressed some of the social interactions, norms, sequence, and effort. Overall, participants enjoyed learning at their own pace, the outdoor recommendation, and applying what they learned to their classroom which was the last assignment. Out of seven participants, six found the movement and mindful videos interesting, and all were satisfied or very satisfied with the course.

Below are brief comments from the final survey addressing some of the course's learning goals.

Participant: This course served as a reminder of how much I enjoy creative writing. I also enjoyed reading the writing of my classmates.

Participant: I truly started to think more about the environment as I experienced it. I also learned how to connect those experiences to my writing. My goal is to do the same with my own students.

Participant: I am journal-writing more, I am using some of the resources, and I recommended things to family and friends.

The course aimed to achieve some effective goals with the appreciation of the outdoors and wellness joined with writing and reflection. None of the participants-initiated mentioned diversity or interconnection of diversity in the open-ended question.

There was a suggestion for more variety in the interactions by a participant that did not have experience with Canvas, but still had an opinion about the way participants could express themselves:

I never used this online program before, but I would suggest adding various assignments, besides discussions, to the course if you can. I also would add more technology. For example, we could do a Flipgrid video discussion while we are actually hiking! We could also incorporate pictures of the things that we are experiencing.

Providing multiple means of expression (CAST, 2018; Chardin & Novak, 2018) would allow participants to demonstrate their understandings in a way that may be stronger for them which can increase interaction and engagement with the community and content (Hammond, 2015; Jones, 2020; Lehman & Conceicao, 2010; Safir & Dugan, 2021).

Deep Culture in Evaluation

Goals Met

In the end-of-course survey, qualitative questions were asked about how the participants grew and more suggestions for improvement. Participants felt that they grew in their understanding of nature and included feeling better throughout the day. Below are three quotes that support the various areas of personal growth:

I found that I was able to relate so much of the natural things in the world to my classroom and students.... Like a little ecosystem in my classroom!

I feel that this course helped me to slow down and appreciate nature more. I felt that it was easier to clear my mind/become more mindful on my last walk.

While I did not complete the recommended hikes, I did walk in my own area and nearby woods. Having a set time to get outside and connect with nature was rewarding. Having this time connected to a course made it a time I felt I couldn't remove it from my schedule. Too many times, taking time out of the week to explore nature seems like taking frivolous time. When in fact it is taking crucial time for oneself.

Benefits were the intentional practice of slowing down, an increase in outdoor activities, the prioritization of self-care, and fostering a reflective mindset. One participant successfully incorporated their learning from the course into their classroom environment. There were three external reviews that previewed the course, who also indicated views as expressed above. This ensured that the course appropriately addressed the first three goals.

Goals Unmet

There were unmet design and learning goals. We also intended that participants would feel the value of the diversity nature offers. When we asked participants in the open-ended question about how the participants grew no one initiated "appreciation of the diversity in nature." It could be that participants already had that recognition, but it could also be that we missed an opportunity to be explicit about the learning goal.

Participants were asked for suggestions. One participant discussed a self-created option that would increase the feeling of success and open the course for those less able.

Add a self-created hiking option (or a reminder that this is ok) and some info for hiking/exploring nature for those with mobility needs. I felt like some people might feel this course means those without mobility needs. Adding a few tips to make it more accessible would help it appeal to a larger audience.

In a course that aims to be inclusive, these were salient issues that would increase success and still meet our goals. We needed to have obvious links to the DEWA map that had mobility access since our links were not noticeable enough. Likewise, we indicated that participants could use their own hike, but it was not reinforced enough that self-selected outdoor spaces were valued as much as the DEWA hikes.

Feedback from the DEI audit uncovered deep cultural considerations, specifically, the values of "success" or the unconscious assumptions. The DEI report was conducted after the course was completed, and the auditor addressed areas we had not anticipated such as using the word "should." The auditor identified directions that we gave to participants, "In many of the elements of this course 'should be'" was written when referring to the hikes. The auditor suggested rewriting the directions as "Many of the elements of this course are 'suggested to be.'" Then, the auditor noted why the word choice of "should" was not recommended for this case. "The word 'should' can trigger feelings of guilt or shame if they can't," contrasted with the word "could." "Could" prompts participants to propose self-created hikes and would not induce feelings of shame if they were unable to complete the DEWA hikes. As a design team, we were reminded how "should" should be intentionally used, reserved for undisputed expectations.

The auditor recognized another word choice, "but" - "and." The auditor suggested a rewording in the directions for participants. The directions read "There will be key questions to guide your thoughts, but you are welcome to move beyond the suggestions." The auditor suggested restating "using the word 'and' in place of 'but'." "But" suggests one is better than the other. "And" holds both ideas equally." The DEI auditor made similar recommendations throughout the modules. These subtle changes invite all ideas rather than excluding thought (Brown, 2012).

Unlike the participants, the auditor also detected that we were trying to foster an appreciation of diversity.

I get the sense that Module 2 is about what we can learn about diversity from nature - to better help us understand the diversity of people and how sight provides one perspective unless we are deliberate about noticing the uniqueness of all living things.

The DEI auditor was the only evaluating participant that articulated any mention of diversity or the uniqueness of living things. From our perspective, the auditor described a learning goal that was too subtle for others to notice: to gain an appreciation of the diversity that nature offers. Her comments signal that that goal should be addressed deliberately, less subtly, if we want the learning goal met.

In terms of participants' gender, we noticed that the course appealed more to women than men. One designer communicated with male teachers that originally said they would participate but then did not. Informally, the men told the designer, that they did not like the one icon on the advertising flyer – the icon with the tongue representing the sense of taste. The deep level of cultural aesthetics in the images did not appeal.

The deliberate implementation and evaluation of the model yielded information about the ways that shallow, surface, and deep culture was met for the course. As to be expected, surface culture was easier to meet because it entailed overt elements such as prechosen pictures and quotes of which we were aware. Shallow and deep cultural elements such as navigation and word choice were more challenging to pre-identify without the outside voice.

Discussion of the Depth Levels of Culture and the Instructional Design Process

The process of looking through the cultural levels during instructional design processes highlighted equity fulfillment, deficits, and opportunities for designers. The findings, summarized below, embed the system's contexts with recommendations to better address the surface, shallow, and deep cultural levels. As designers of the course, we wear cultural humility. Nomikoudis and Starr (2016) write about how to embody cultural humility: "maintain a constant state as both learner and self-reflective practitioner" (pg. 70). And, so it is, that we learn from our work.

On the surface level of culture, searching for representative media with a Google Search needed to be purposeful since typical searches yielded images and quotes representing people who are phenotypically White (Nobel, 2018). Finding images and quotes that represented BIPOC peoples in a temperate forest biome took extra steps. We needed to qualify terms or utilize friends for images.

The image and quote level challenges are symptoms within the supra and macro systems where searches are based on the dominant culture (brown, 2017; Harro, 2018; Nobel, 2017; Sockman & Kieselbach, 2022). Currently, search efforts require instructional designers to go beyond the traditional search methods since algorithms may not produce the desired results even with specific descriptors such as "women" or "people of color" (Nobel, 2017). We are a search-driven society with images and quotes impacting impressions. Our experience demonstrates that instructional designers would benefit with more people of color in basic image and quote searches about nature, so the outdoors are welcoming to all.

On the shallow level of culture, other than navigation and technologies, test participants suggested no modifications. The lack of suggestions could be symptomatic of the self-selected participant pool of those who identified as racial White – female gender and were perhaps already comfortable in the virtual space we created.

Deep level of culture considers aspects that move toward the learning goals and away. First, we address the learning goals. Participants dove into meaningful dialogue about themselves, and their appreciation of nature, but missed what the DEI auditor noticed: the comparison of biodiversity with the diversity of people. We are aware that interconnection in nature could be seen as a dangerous metaphor when advocating for equity (Dennett, 1995), but also, nature needs biodiversity for healthy biomes (brown, 2017). As designers, we intended to mirror the interconnectedness in nature and diversity needs in our lives to be healthy. The students' omissions suggest that designers need to be more explicit to help the students "see" the diversity quality in nature.

Aesthetics resides in deep culture. From front-end analysis to evaluation, the team composition affected the design in the deep cultural elements. The team identified as females, which was indicative of the supra and macro systems challenges dominantly female representation in education (Cabral et al., 2022; Finnely, 2014; Shaw-Amoah et al., 2020). In the advertisement, two males mentioned the "tongue" as deterring involvement. If we want to attract gender diversity, aesthetic matters. We recommend that recruiting materials are tested with people who identify as part of marginalized groups in the field.

Lastly, deep cultural elements surreptitiously appeared in word-choice. In this project, the DEI auditor evaluated at the end, and suggested language modification more welcoming of divergent thinking. She recommended more "and" and less "but," more "could" and less "should," which coincides with the psychologist researcher Brené Brown (2012) who noted that these words can induce shame which insinuates inadequacy. Based on what we experienced, we recommend having the DEI auditor embedded in the process rather than at the end so that deep cultural expectations could be modified before implementation.

The goal of the course was to enhance learners' well-being. Through the test participants and the DEI audit, we found successes and design gaps. Our learners successfully connected with nature in meaningful ways and wrote authentically about those experiences.

The unmet deep cultural levels goals were identified as word choice, advertisement aesthetic, and participant's omission of nature's diversity.

Conclusion – Intentionally Moving Forward

In this paper, we presented a design case for a comprehensive seven-module course that aimed to cultivate mindfulness of nature, sensory and physical engagement, reflective writing, and connection with diverse aspects of nature. Through our experience, we demonstrated how the influence of the larger system manifests in the smaller implementation of course design (brown, 2017; Banathy, 1992). Initially, our design team consisted of teachers, professors, DEWA personnel, and local mindfulness instructors who represented the dominant gender and culture in PA education (Shaw-Amoah et al., 2020). This composition had an impact on various aspects of the design process. Recognizing the limitations of our team's demographics, we incorporated a DEI auditor at the end of the creation phase. In retrospect, it would have been advantageous to have the modules audited throughout the design and development stages, rather than waiting until implementation and evaluation, given the homogeneous perspective of our design team.

Throughout the design process, we were intentionally mindful of the Levels of Culture (Hammond, 2015, pp. 22-24) and instructional design considerations (Sockman & Kieselbach, 2022). We purposefully integrated images, quotes, and content that acknowledged the surface, shallow, and deeper levels of learning necessary to achieve our goals. While our design work was not exhaustive, it represented a step towards recognizing and embracing our interconnected differences, allowing us to gain a better understanding of the processes and objectives required to foster social justice in our instructional designs.

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Guiding Course Development: Trauma-Informed Rubrics for Asynchronous Online Learning Environments

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Systems Thinking

Online Learning Environments

Trauma-informed pedagogies

Trauma has a ubiquitous and deleterious impact on learning and engagement, impacting students in physiological and psychological ways and thus interfering with nearly every facet of the learning experience. Educators who are attuned to these effects can design trauma-informed courses that anticipate and attend to student needs. We contribute to the extensive research on humanizing and trauma-informed pedagogies in online spaces by focusing on instructional approaches that can be structured to enhance student safety, engagement, and learning outcomes within asynchronous learning environments. We propose two rubrics – one focusing on the instructor role and other focusing on course content – to provide guidance to instructors and course facilitators in their course development of trauma-informed content in online learning environments.

Introduction

Statistics suggest that up to two thirds of children have experienced some form of trauma (CDC, 2019). By adulthood, up to 90% of American adults report having experienced at least one traumatic event (Kilpatrick et al., 2013). Traumatic experiences are distressing events that can have short- or long-term impacts on a person's nervous system, impacting mental health and cognitive processes among other physiological impacts (Naparstek, 2004). Traumatic events can include individual experiences of abuse and neglect, widespread community trauma such as natural disasters or shootings, and broader national trauma such as the impacts of COVID-19 and continued racial violence. Indeed, prior to the COVID-19 pandemic, as many as 40% of learners reported an impact on their learning as a result of traumatic experiences (Carr-Chellman, 2022). This percentage has likely increased, as nearly every learner and educator in the world contends with the impacts of COVID-19 as a global shared trauma with far-reaching pedagogical implications (Harper & Neubauer, 2021).

Impacts of trauma on the brain are significant and influence attention, retention of material, and motivation to learn (Carr-Chellman, 2022; Naparstek, 2004; van der Kolk, 2015). The awareness of the impacts of trauma on how students learn and engage in education thus continues to grow out of necessity, as educators consider how to support learners who have histories and/or current experiences of trauma that impact their learning (Raptis, 2022; Thompson et al., 2022; Wuest & Subramaniam, 2022). Educators and pedagogical scholars have therefore turned towards exploring how

education systems can be adaptive to the needs of students experiencing short or long-term impacts of trauma (Brown et al., 2021; Brunzell et al., 2016; Dombo & Sabatino, 2019; Venet, 2021).

Resulting research and conceptual models indicate that educators can adopt trauma-informed pedagogy (TIP) to mitigate the adverse impacts that trauma has had on learning (Cannon et al., 2020). This pedagogical approach bears similarities to other approaches that center on the learner's needs, including Universal Design for Learning (UDL; Carr-Chellman, 2022). We view UDL as guidelines and recommendations for creating equitable learning artifacts. The shift to online learning during the pandemic has only increased the need for educators to be attuned to equity-focused online education approaches, which consider learners from a holistic perspective to ensure equitable access to content and equal opportunity to achieve learning outcomes (Kelly & Zakrajsek, 2021; Venet, 2021). Adapting these approaches recognizes trauma's effect on learners and seeks to integrate specific pedagogical approaches that will minimize adverse effects.

Though there are models for TIP, a need still exists to position trauma-informed education within fully online learning environments. Such modalities present unique challenges and opportunities for educators to consider how to enhance learning through an awareness of trauma and its impacts. In this paper, we will situate a consideration of equity-focused online education through systems thinking and then offer a conceptual framework for instructors to consider how to mitigate the consequences of trauma on learning in asynchronous online environments. We anticipate that our framework will be beneficial to instructors in reviewing current online courses and applying strategies for ongoing improvement.

Background Literature

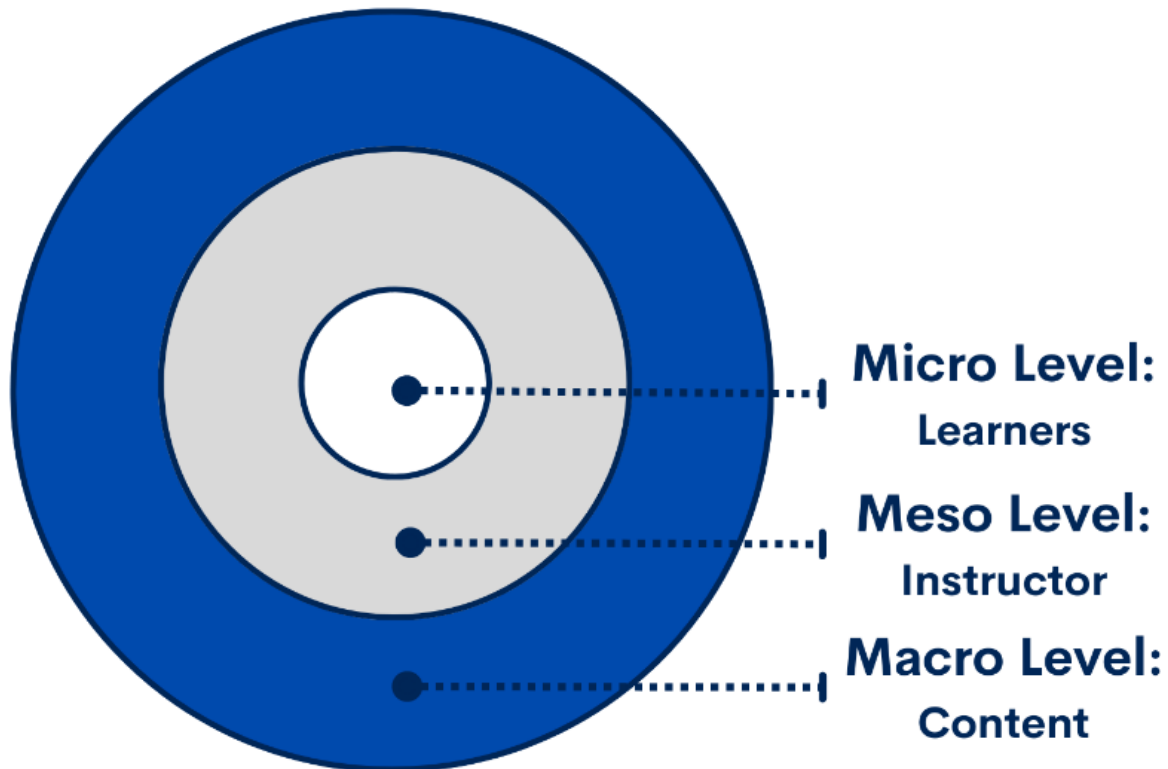
Systems Thinking

Higher education is a complex system with interconnected relationships, and systems thinking is a helpful way to understand these relationships (Bond et al., 2021; Cabrera & Colosi, 2008; Moore, 2022; Peck, 2019; Powers & Moore, 2023; Sockman et al., 2019). A benefit of a systems thinking approach is that we can isolate the specific relationships within the larger system that we want to focus on. This examination of relationships can lead to a better understanding of the system and how to impact meaningful change within the system (Bond et al., 2021; Moore, 2022).

Typically, systems thinking examines the relationships among embedded levels of the system (Sockman et al., 2019; Staggenborg, 2002; Zawacki-Richter et al., 2009). These embedded levels are referred to as micro (individual, relational), meso (organizational, community), and macro (national, cultural) (Moore, 2022; Sockman et al., 2019). This paper focuses on the online learning environment and specifically how a trauma-informed approach can be applied to create a more inclusive learning environment. Mao and Shearer (2019) suggest that three levels of user, design, and infrastructure are critical for online environments. We have adapted their work and the micro, meso, and macro levels to present a systems-thinking approach to trauma-informed online learning environments (Figure 1).

Figure 1

Systems thinking view of a trauma-informed online learning environment (Adapted from Sockman et al., 2019).



In keeping with the core principles of trauma-informed pedagogy, we have placed the learner at the center – at the micro level. To take a trauma-informed approach means that instructors not only acknowledge potential sources and symptoms of trauma, but also commit to designing an inclusive learning environment to mitigate the effects of that trauma. We put the instructor in the meso level, representing the bridge between the macro level (the course content) and the micro level (the student). At the macro level, the impacts of the trauma-informed approach are operationalized and influence the overall learning experience. The instructor works at the meso level to make infrastructure and management decisions. These decisions include the types of assignments, how they are submitted and evaluated, and how the learners will interact and engage with each other and the content. Placing the content at the macro level also reflects the ways in which learners tend to interact and engage with their instructors. These interactions are course and content related.

Viewing a course through the lens of systems theory can thus provide a framework for considering multiple levels of intervention and impact. Instructors who understand how trauma can impact a student's online experience can adjust course components to attend to and minimize these effects.

Trauma-Informed Pedagogy (TIP)

A holistic view of students involves acknowledging trauma's mental and physical consequences on student learning (Pica-Smith & Scannell, 2020; van der Kolk, 2015; Venet, 2021). This is because brain and body responses to trauma can make it difficult to learn using traditional didactic instruction, given the impact of trauma on language and processing (Naparstek, 2004; Pica-Smith & Scannell, 2020; van der Kolk, 2015). Exposure to traumatic events, whether singular or continued, can thus result in marked physiological changes that impact cognition and behavior (Dombo & Sabatino, 2019). Hypervigilance, or the elevated sensory experience of constantly being on high alert to identify potential threats, can reduce a person's comprehension and focus to a significant degree (Wilson, 2020). Additionally, the physiological

impacts of trauma on the brain have been associated with the impairment of language centers and complex reasoning, thus impacting verbal expression and processing (Dombo & Sabatino, 2019; Wilson, 2020).

Increasingly, researchers and educators are becoming aware of trauma's ubiquitous and deleterious effects on learning and engagement. The physiological and psychological impacts of trauma can be observed in the academic setting in several significant ways. Post-traumatic stress disorder (PTSD) and acute stress disorder (ASD) can be observed in memory impairment, difficulty with language, poor test performance, frequent absences, and lower academic engagement including dropout rates (Dombo & Sabatino, 2019). Exposure to trauma and post-traumatic stress disorder also shows comorbidity with attention deficit disorder, conduct disorder, and placement in special education courses, which can complicate the identification of the need for a trauma-informed approach to the classroom (Dombo & Sabatino, 2019). Rates of singular and repeated trauma exposure are higher for racial and ethnic minorities, people with disabilities, sexual and gender minorities, and women, thus making trauma-informed pedagogy an issue of equity as well (Brown et al., 2021).

In addition to these equity issues, national and international crises can also contribute to the overall trauma response in learners. Research on the effects of the COVID-19 pandemic, for example, demonstrates a loss of connection between students, instructors, friends, and communities. This loss of connection can be detrimental to students' social-emotional development and academic achievement (Wuest & Subramaniam, 2022). And while some of these shifts have been jarring, they have also presented opportunities to reflect on and improve our instructional practices, particularly in online environments (Hodges et al., 2020; Korkmaz & Toraman, 2020; Roitsch et al., 2021). Educators must thus take a more human-centered approach to the design and delivery of courses with an emphasis on centering learners' needs and providing opportunities for learners to interact and engage with each other in collaborative learning environments (Carr-Chellman, 2022; Raptis, 2022; Thompson et al, 2022).

However, despite the impacts of trauma, taking a deficit perspective ignores resilience characteristics and precludes consideration of how pedagogy can be adjusted to maximize student safety and engagement (Brown et al., 2021). Understanding how trauma impacts a person, particularly in terms of learning, can enable educators to design curricular experiences that attend to student needs and well-being. Given the widespread nature of traumatic exposure, employing trauma-informed pedagogy is essential to meet the needs of a significant and growing percentage of students.

To mitigate the impacts of trauma on student learners, Brunzell et al. (2019) states that the instructor should aspire to build classroom relationships, increase psychological resources for well-being, offer timely feedback, and state clear goals and rules for tasks. Additionally, the instructor should provide a predictable environment that employs strategies such as mindfulness and de-escalation (Brunzell et al., 2016) which are not always options in an asynchronous course. Brown et al. (2021) recognizes the use of the Trauma-Informed Care (TIC) framework that identifies 6 principles: (1) safety, (2) trustworthiness and transparency, (3) peer support, (4) collaboration and mutuality, (5) empowerment, voice, and choice, and (6) cultural, historical and gender issues. Other studies support that the instructor ensure a connection with the students, be flexible, and have consistent expectations and communication (Brunzell et al., 2016; Pica-Smith & Scannell, 2021).

Research on trauma-informed strategies identifies the modalities that are more equitable for students who have or are experiencing trauma including community-based learning, creative and art-based assignments, and flexible policies for attendance and engagement (Bliss et al., 2021; Carr-Chellman, 2022; Naparstek, 2004; Pica-Smith & Scannell, 2020; van der Kolk, 2015). Other strategies that are mentioned include clarity around elements of the course such as information, explanations, and directions about tasks and procedures, specific goals and objectives, and flexible options for student assignments/assessments (Brunzell et al., 2016; Davidson, 2017). Davidson (2017) also mentions the need for welcoming and respectful materials, readily available contact information, and the need for flexible options for instructor meetings. Additionally, it is also recommended that the instructor provide opportunities for the student's strengths and skills to be recognized in the course (Brunzell et al., 2019; Davidson, 2017).

Despite the valuable contributions to trauma-informed pedagogy, few frameworks focus specifically on online learning environments or discuss tangible ways for instructors to apply the strategies. While Pate (2020) lists several strategies

and examples for trauma-informed distance learning, their recommendations are for synchronous courses rather than the asynchronous format we are targeting.

Problem Statement

Based on the above literature, we recognize that there are limited resources to help an instructor design an asynchronous online learning environment for students impacted by trauma, despite the prevalence. We propose to address this gap by presenting a rubric for instructors to evaluate an existing course and implement new changes to support the trauma-impacted learner.

Framework

We situate our exploration of trauma and the design of online learning environments from a systems thinking approach. This approach to the design will allow instructors to consider the relationship between the learner, environment, and themselves. Taking this systematic approach, and using the framework outlined in this paper, will allow the instructor to apply a trauma-informed approach to their asynchronous online courses. The framework in Figure 2 shows the learners' needs as the micro level, providing input to the instructor's role in the course, which then provides input to the course content at the macro level.

Figure 2

Framework for trauma-informed strategies



For this framework, we organize our pedagogical strategies to meet the learners' needs through instructor's role and course content. We describe what role the instructor can take to mitigate the impacts outside of the design and how they can structure and design their course to meet the needs of the trauma-impacted learner. Using this framework will allow the instructor to mitigate the consequences of trauma listed in Table 1.

Table 1

Consequences of Trauma

Anxiety about deadlines, exams, group work, or public speaking

Decreased concentration

Decreased language processing

Frequent absences

High drop-out rates

Inability to form positive peer and adult relationships

Impulsivity and poor decision making

Lower academic engagement

Memory impairment

Poor test performance

Learner Needs

Aligning with TIP, we have placed the learner in the center of the framework. This framework aims to meet the learner's needs through the role of the instructor and course content. Some consequences of trauma impact the student directly, not only in the classroom but outside as well. However, consequences of trauma can be mitigated by the course content itself or the instructor's role in the course and are also specific to the asynchronous online learning environment.

In the context of trauma-informed pedagogy, it is crucial for teachers to develop a thorough understanding of the needs of their students to effectively meet those needs. This can entail a range of tactics, such as soliciting student feedback, carrying out needs analyses, and giving students the chance to reflect on and pinpoint their own needs. Additionally, teachers can use TIP's guiding principles to help with course design and content selection. For instance, teachers can place a high priority on establishing a secure and encouraging learning atmosphere and include material that is interesting and relevant to students who have experienced trauma. Teachers can work to create a learning environment that serves the specific requirements of their students and fosters their overall success by putting the learner at the center of the framework and aligning with TIP principles.

Instructor Roles

The instructor plays an important role, not only as the course content expert, but as the liaison between this content and the learner. This direct contact with the learner provides an opportunity for the instructor to create and build relationships that are beneficial to the trauma-impacted learner (Brunzell et al., 2016; Brunzell et al., 2019; Imad, 2022; Pica-Smith & Scannell, 2021). When the instructor comes to the course with awareness, availability, and focuses on community, they can greatly impact the trauma-impacted learner.

Awareness

When it comes to trauma-impacted learners, many symptoms manifest in learning environments. It is essential for instructors to be aware of the impacts of trauma on learning and the signs (Brown et al., 2021; Imad, 2022). This information can allow the instructor to be prepared to accommodate the learner who may be struggling. To become

familiar with the impacts of trauma, instructors can take advantage of any training or resources available to them through the institution or other online resources, such as those provided by the Centers for Disease Control and Prevention or the Crisis Prevention Institute (CDC, 2022; CPI, 2023). Online web training platforms or mobile apps, such as LinkedIn Learning or Coursera, offer numerous opportunities for instructors to develop professionally in this area.

The instructor should be aware of resources available to the student that the respective institution provides, and they can make these resources readily available (Brunzell et al., 2019). In addition to these resources, instructors are encouraged to learn how the language used in the course can affect the learner that has been impacted by trauma. The course language should represent all those in non-traditional situations, such as changing the wording from “parent” to “caregiver.”

Availability

In addition to awareness, instructors can ensure they are available to students. While a set amount of time available to meet with students is often required by the institution, instructors could also offer additional flexible meeting times and locations. These locations can utilize online web tools like video conferencing software, phone calls, or email and messaging platforms. This flexibility allows the student to pick the location and time in which they are most comfortable. Not only is the flexibility valuable, but it is beneficial for the instructor’s contact information to be in a readily available location in the eLearning management system such as the homepage of the course (Davidson, 2017). This location can contain a QR code or link to an online business card or even an appointment booking software. The instructor should include instructions for how the student can reach out to them in multiple ways (for example, the instructor is available on a specific platform during a specific time, via text message and/or email anytime, or by phone during specific hours). The instructor could also commit to responding within a specific range of time, and this response time can be included with the instructor’s contact information.

Community

Community is essential to the student impacted by trauma (Brunzell et al., 2016; Brunzell et al., 2019; Imad, 2022; Pica-Smith & Scannell, 2021), so the instructor should create a welcoming and respectful environment for the student online. To do this, the instructor could create a welcome message for the student on the online course’s homepage. This welcome message can be a video or a short paragraph with a welcoming image. In addition to this welcome message, all assignments can be created with positive language that is sensitive to trauma.

Another technique that instructors can implement is creating opportunities for students to develop positive online relationships with the instructor or others in the course (Brunzell et al., 2016; Brunzell et al., 2019; Imad, 2022; Pica-Smith & Scannell, 2021). Instructors can foster the development of these relationships with frequent check-ins with the student. Another strategy to engender positive online relationships is integrating opportunities for students to recognize their strengths and skills. Instructors could choose to have students start the course with a skills assignment in which students can recognize or discover their specific strengths. This allows the student to gain confidence, and instructors can encourage students to use this skill and approach future assignments from this perspective.

Course Content

Through the course design and structure, instructors can mitigate some of the consequences of trauma. Several pedagogical strategies are included in this framework and can be utilized throughout the course. Including strategies such as clarity, consistency, and flexibility throughout the course provides specific and actionable items that could result in a positive experience for the students.

Clarity

Some consequences can be mitigated by providing clarity throughout the course. Specifically for online courses, clarity is crucial to the learner (Ralston-Berg et al., 2015). Understanding expectations can help the learner navigate the course content and easily tackle assignments and assessments. Clear, specific goals and objectives, directions, explanations, and information about tasks and procedures are beneficial to the trauma-impacted learner (Brunzell et al., 2016;

Brunzell et al., 2019; Davidson, 2017; Imad, 2022). Knowing what is expected for each lesson, assignment, or assessment can reduce anxiety and increase engagement in the course. Reducing this anxiety and increasing engagement may also help reduce circumstances that can cause frequent absences and high drop-out rates (Wang & Fredericks, 2014). When designing the course, include this clarity throughout while maintaining consistency. For example, the instructor could include video, text, and/or audio instructions embedded into the eLearning software or platform. This included element should be concise and clearly state the goal or objective of the assignment and provide clear instructions for completion.

Consistency

It is valuable to the learner to provide a consistent structure and design throughout the online course, specifically from one lesson to the next (Brunzell et al., 2016; Imad, 2022; Pica-Smith & Scannell, 2021). A uniform structure and design will allow the learner to be prepared for what the course will offer and know what to expect as the course progresses. Consistency allows for an increase in usability in the online setting. Easy course navigation can reduce anxiety about deadlines, exams, group work, or public speaking and increase engagement in the course (Davidson, 2017). For example, the learner can benefit from an online interactive syllabus that links content in the syllabus to content in the course.

Flexibility

Flexibility is important to the learner for several reasons. As identified in the literature, the trauma-impacted learner benefits from flexible policies for attendance and engagement and flexible assignments and assessments (Brunzell et al., 2016; Davidson, 2017; Imad, 2022; Pica-Smith & Scannell, 2021). The asynchronous online design allows for flexible options for attendance; however, the instructor can deliberately design flexible engagement opportunities, assignments, and assessments. Various educational technology tools such as e-portfolios, online timelines, infographics, and online presentations allow the student to use creative/nonverbal modalities that also help bypass the limitations of trauma on language centers. For example, the instructor can allow the learner to do an artistic project, blog, poem, or video rather than a paper or discussion board post.

TIP Rubric

We have adapted previous research and created two rubrics that course facilitators can use to identify ways to implement trauma-informed pedagogical approaches into their online courses. We designed these rubrics for instructors or course designers to support their efforts to ensure their course content is sensitive and uses trauma-informed teaching strategies.

Instructor Role

The rubric in Table 2 lists the strategies that will allow the instructor to employ best practices concerning the learner impacted by trauma.

Table 2

Instructor Role Rubric

Awareness	Excellent (3)	Proficient (2)	Satisfactory (1)	Unsatisfactory (0)
Awareness of the impacts of trauma on learning	Instructor is aware of all the possible impacts of trauma on learning	Instructor is aware of most of the impacts of trauma on learning	Instructor is aware of some of the impacts of trauma on learning	Instructor is not aware of the impacts of trauma on learning

Awareness	Excellent (3)	Proficient (2)	Satisfactory (1)	Unsatisfactory (0)
Awareness of the signs and symptoms of trauma	Instructor is aware of all the signs and symptoms of trauma	Instructor is aware of most of the signs and symptoms of trauma	Instructor is aware of some of the signs and symptoms of trauma	Instructor is not aware of the signs and symptoms of trauma
Trauma support resources are available and easily accessible to the learner	Instructor provides readily available trauma support resources to the learner	Instructor provides some readily available trauma support resources to the learner	Instructor provides some trauma support resources not readily available to the learner	Instructor does not provide readily available trauma support resources to the learner
Availability	Excellent (3)	Proficient (2)	Satisfactory (1)	Unsatisfactory (0)
Instructor availability	Instructor is readily available to the learner	Instructor is available to the learner	Instructor has limited availability	Instructor is not readily available to the learner
Flexible options for learner/instructor meetings (email, phone, online video conference)	Instructor has more than 2 flexible options for learner/instructor meetings (email, phone, online video conference)	Instructor provides 2 flexible options for learner and instructor meetings	Instructor provides only 1 option for learner and instructor meetings	Instructor does not provide any options for learner and instructor meetings
Community	Excellent (3)	Proficient (2)	Satisfactory (1)	Unsatisfactory (0)
Online course has a welcoming and respectful environment	Instructor creates a welcoming and respectful environment	Instructor somewhat creates a welcoming and respectful environment	Instructor creates either a welcoming or a respectful environment	Instructor does not create a welcoming and respectful environment
Opportunities to build online relationships	Instructor creates many opportunities to build online relationships	Instructor creates some opportunities to build online relationships	Instructor creates few opportunities to build online relationships	Instructor does not create opportunities to build online relationships
Opportunities for learners to recognize their own strengths and skills	Instructor creates many opportunities for learners to recognize their own strengths and skills	Instructor creates some opportunities for learners to recognize their own strengths and skills	Instructor creates few opportunities for learners to recognize their own strengths and skills	Instructor does not create opportunities for learners to recognize their own strengths and skills

Course Content

The rubric in Table 3 lists the strategies that will help the instructor assess the overall course structure and design.

Table 3

Course Content Rubric

Consistency	Excellent (3)	Proficient (2)	Satisfactory (1)	Unsatisfactory (0)
Consistent structure and design	Course has a very consistent structure and design	Course has some consistent structure and design	Course has either a consistent structure or design, not both	Course has no consistent structure or design
Clarity	Excellent (3)	Proficient (2)	Satisfactory (1)	Unsatisfactory (0)
Clear explanations and information about tasks and procedures	Course contains clear explanations and information about all tasks and procedures	Course contains clear explanations and information about most tasks and procedures	Course contains clear explanations and information about some tasks and procedures	Course does not contain clear explanations and information about tasks and procedures
Clear specific goals and objectives	Course contains clear specific goals and objectives	Course contains some clear specific goals and objectives	Course contains either clear specific goals or objectives, not both	Course does not contain clear specific goals and objectives
Clear and readily available directions	Course contains clear and readily available directions	Course contains some readily available directions	Course contains clear directions that are not readily available	Course does not contain clear and readily available directions
Flexibility	Excellent (3)	Proficient (2)	Satisfactory (1)	Unsatisfactory (0)
Flexible options for assignments and assessments	Course contains flexible options for assignments and assessments	Course contains some flexible options for assignments and assessments	Course contains flexible options for either assignments or assessments	Course contains flexible options for assignments and assessments

Application

Using rubrics designed specifically for evaluating the use of trauma-informed pedagogical strategies can help instructors create a safe and supportive learning environment for students who have experienced trauma. The rubrics include specific criteria for evaluating the use of trauma-informed strategies, such as the instructor's ability to create a sense of community, offer choices and empowerment, and foster positive relationships with students. These rubrics can be used in several ways and can be valuable for the instructor and the course designer. The instructor can use the rubrics after the initial design of the course to evaluate the content, or the instructor could use this rubric as a reference while they are designing their online course. Each criterion could be assigned a score based on the degree to which it is met, allowing the instructor to identify areas of strength and weakness in their use of trauma-informed strategies.

While these rubrics will be helpful in analyzing courses, implementation will require the use of available tools and technology to ensure the strategies have been employed. There are many available tools and technology that meet the needs of each listed strategy. Incorporating this technology will help address the needs of the student that has been impacted by trauma. Tools such as surveys or polling software can help check the needs or status of the students throughout the course. Other tools, such as recording tools, help to clarify information located in the course content. Technology like e-portfolios, online timelines, infographics, and online presentations can provide flexible options for students to complete assignments or assessments. Online web resources, like LinkedIn Learning or Coursera, can

provide training on trauma-informed practices for instructors and students. Due to the high availability of these resources, instructors can get creative to incorporate a variety of technology into their courses while following this framework.

Conclusions and Future Work

Trauma has detrimental effects on learning, and it is evident that the instructor plays an important role in mitigating these effects. Although much has been written on these effects and strategies to use, they have not previously been fully captured for the asynchronous learning environment. Being mindful of a trauma-impacted learner in the design and delivery of an online course supports not just that impacted learner but all the learners in the course. While the strategies presented in our rubrics may improve the learning environment, some consequences may not be completely mitigated through the course content or by the role of the instructor. Additionally, not all trauma-impacted students will benefit from the incorporation of all the strategies. Some of the strategies will have a larger impact on some students than others. However, the asynchronous online learning environment designed around the trauma-impacted learner's needs provides many opportunities to mitigate these consequences. We saw a gap in the practitioner-focused literature regarding actionable strategies for trauma-informed pedagogies in online environments. We hope that the rubrics provided will be a helpful starting point, and we invite instructors and course facilitators to implement, adapt, and enhance our rubrics. Future work should focus on the implementation and evaluation of these rubrics as a tool for the instructor and the impacts they may have on the learner experience or engagement.

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Liberatory Design Thinking for Equity-Centered Instructional Design: A Systems Thinking Analysis

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Instructional Design

Systems Thinking

Liberatory Design Thinking

Equity-centered Design

Unconscious Bias

Psychological Safety

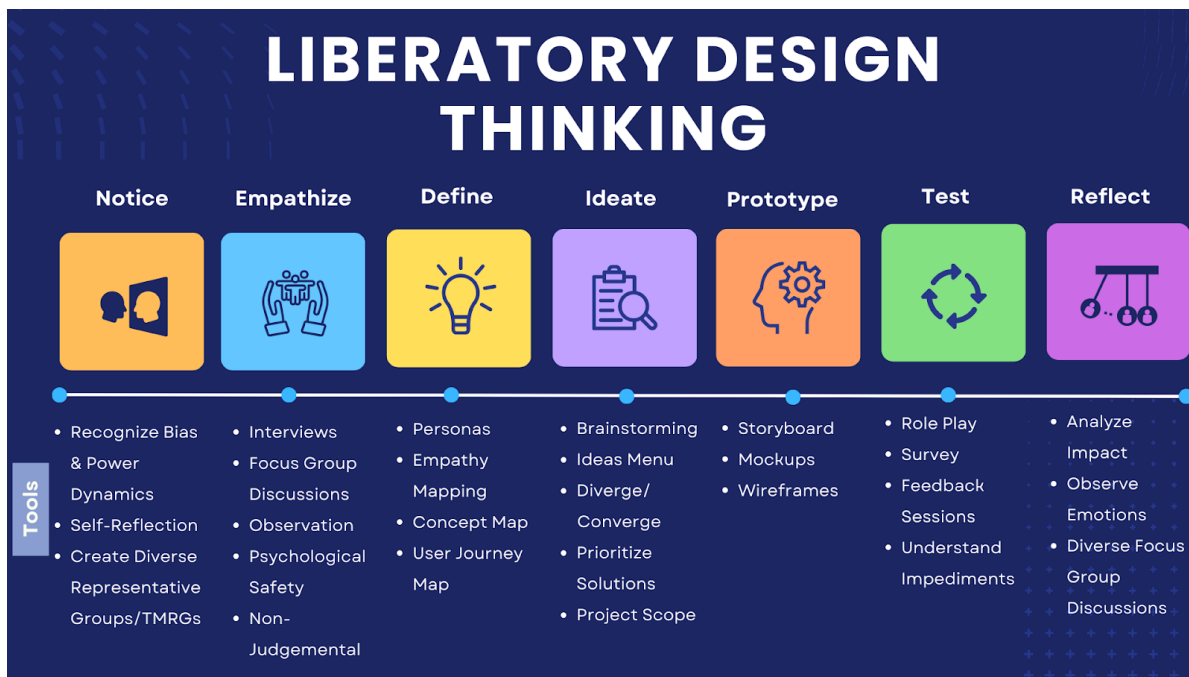
As per the National Equity Project, any system that produces inequities, injustices, and inequalities is often a product of design. Research has shown that systemic inequity often results from the design process and can rupture the power balance producing inequitable relationships in the social justice arena (NEP, n.d.). Systems design in K-12, higher education, and other organizational or workplace contexts are crucial to empower every learner with equitable opportunities or create more inequities. The historical data shows that systemic inequities were intentionally designed with oppression as the goal; hence the importance of equity-centered systems design justice becomes indispensable for producing equitable learning experiences for everyone (NEP, n.d.). Equity-centered systems design is pivotal in dismantling systems of oppression and empowering people of color, people with disability, the LGBTQ+ community, the indigenous, and other marginalized communities. Using the liberatory design thinking framework, instructional designers can recognize individual, institutional, and structural inequities and create opportunities to produce equitable learning experiences for learners. An equity-centered liberatory design thinking approach can support instructional designers in identifying and addressing the problems of inequities in an existing system. By considering the ethos and strategies necessary to center equity by design, instructional designers can provide a platform and opportunity for all stakeholders to practice converging and divergent thinking. Furthermore, the needs and beliefs about learning design as they ideate solutions grounded in the experiences of people from diverse backgrounds, especially people with disability, the LGBTQ+ community, the indigenous, and other marginalized communities. (Khalil, 2020).

Introduction

Liberatory design thinking is an equity-centered design framework that was co-created by Tania Anaissie, Victor Cary, David Clifford, Tom Malarkey, and Susie Wise during a collaboration in the year 2016 and 2017 with the National Equity Project and Stanford d.school's K12 Lab expanding the familial design thinking process (Anaissie et al., 2017). While design thinking has five phases —Empathize, Define, Ideate, Prototype, and Test (The Interaction Design Foundation, n.d), liberatory design thinking has two added phases: Notice and Reflect, as shown in Figure 1. These phases in the context of learning experience design focus on what instructional designers can do to add equity to designing and developing learning experiences. In the liberatory context, systems thinking can identify, analyze and challenge the systems of power and design interventions and strategies for promoting social justice and liberation. It involves identifying the root causes of inequities and analyzing how different systems and structures contribute to or reinforce those inequities. It can also include envisioning alternative, more equitable systems and redesigning strategies for transitioning to those systems. In this context, liberatory design thinking helps from systems thinking perspective, i.e., systems to bring that social change and help to promote a more holistic and nuanced understanding of the systemic inequities at hand and design inclusive learning experiences. The liberatory design thinking framework is non-linear and does not need to be followed in a sequence. Design directions and alternatives can be generated, presented, and evaluated simultaneously and in real time, making it agile and non-rigid (Anaissie et al., 2017).

Figure 1

Liberatory Design Thinking Framework (Anaissie et al., 2017)



Design Challenge

In this paper, the author explores a design case in a nonprofit organization following the 'liberatory design thinking' framework for designing and developing a learning program by challenging the systemic inequities and empowering people of color, the LGBTQ+ community, people with disabilities, and marginalized communities for better learning experience outcomes. At heart, a design case is a description of an experience that has been intentionally designed, tracing the inception of an idea through the design process to the use of the ultimate design (Glanz & Lipton, 2003). While implementing the liberatory design thinking framework, the design case focused on a systems-thinking approach to implementing the framework within the constraints of the existing system for designing an equitable learning experience using the 'liberatory design thinking' framework.

The nonprofit organization in the context of this study experienced high turnover during the COVID-19 pandemic combined with other factors like a significant organizational restructuring. The exit survey showed that many employees left within the first few months of joining the organization. Most of the reasons were inequity in job expectations, inequities in resource availability, and lack of inclusion in team member experience. The organization realized that one central area to improve team member experience was the onboarding and orientation learning program focusing on diversity, equity, and inclusion (DEI) initiatives. Apart from other policy changes in the context of DEI initiatives, like hiring a more diverse workforce, the learning and development department was asked to redesign the onboarding and orientation learning program as the previous program neither resonated with the diverse workforce nor addressed their needs. Furthermore, the senior leadership asked the learning and development department to create a framework for future learning program design that dismantles inequities and provides team members with an inclusive learning experience.

The author, the sole instructional designer on this project, introduced the 'liberatory design thinking' framework and inquired two significant questions: How do instructional designers implement an equity-centered framework to design learning experiences that disassembles structural inequities? Second, how might instructional designers promote effective instructions and learning strategies within the constraints and interdependencies in an existing system?

The new onboarding and orientation learning program focused on the following core objectives:

- **Identify and address power imbalances:** Identify how team members in the organization may have different levels of access to resources, power, and privilege, moreover, how this may affect their ability to engage with and benefit from the learning experience of team members.
- **Make instructions accessible:** How to make instructions accessible, ensuring instructions are clear and written in concise language. What types of multiple media formats can be used (e.g., text, audio, video), and what modalities do the learners prefer? What are the language preferences, transcription, closed captioning needs, and accessible color contrasts to make instructions accessible to a diverse audience?
- **Provide context and scaffolding:** How to ensure that instructions are grounded in a real-world context, culturally inclusive, and provide the necessary background knowledge and support for learners to succeed.
- **Use inclusive language:** Learners have diverse backgrounds, experiences, and needs; hence, consider providing inclusive language. Inclusive language refers to acknowledging diversity, respecting everyone, being sensitive to differences, and promoting equal and equitable opportunities. Inclusive language recognizes a language that may unintentionally lead to marginalization, offense, misrepresentation, or the perpetuation of stereotypes (Linguistic Society of America, n.d.).
- **Use a learner-centered approach:** Put the needs and interests of learners at the center of the instructions and learning experience. The learner-centered approach allows flexibility and choice in how they engage with the instructions and learning experience.
- **Continuously assess and revise:** Regularly evaluate the effectiveness, impact, and emotions of the instructions and learning experience. It can be done by seeking feedback from learners to identify areas for improvement and make necessary adjustments.

Design Limitations

While the findings from the design case will provide significant insights into the framework of liberatory design thinking, it must be kept in mind that the findings are based on one single design case with a non-profit organization and within the constraints of the existing system of the organization. Furthermore, the author was the only instructional designer in the project; hence, the author's perspective may only partially capture the experiences and perspectives of the studied community. Additionally, the design case was exploratory and involved observing and interacting in an unstructured way. As a result, the author had limited control over the variables and might have needed help establishing causal relationships.

Although the findings have low generalizability, instructional designers, learning and development professionals, and other stakeholders may find the transferability of the findings significant.

Design Decision and Outcome

The 'liberatory design thinking' framework's proponents stress the process's iterative nature, conceptualizing the phases as a system of overlapping spaces rather than a sequence of orderly steps (Brown & Wyatt, 2010). Hence, an important place to start is noticing with empathy. As such, the design team focused on the intersection of the 'Notice' and 'Reflect' phases overlapping with the other liberatory design phases to indicate the recursive nature of the process. However, the additive nature of each phase of the liberatory design thinking framework was kept in mind, such that the empathy work conducted early in the process shaped the latter phases (Kulver et al., 2021). As shown in Figure 2, the project plan was designed per the liberatory design thinking framework with a liberatory mindset as the core philosophy by connecting diverse people through the design process. The project started with creating a project plan using the 'liberatory design thinking' framework, as shown in Figure 2.

Figure 2

Project plan for liberatory designing thinking phases (Self-Design)

PROJECT PLAN - MANAGER TOOLKIT					
PROJECT TITLE			PROJECT ROLES		
Onboarding and Orientation			START DATE	Individual Names and their roles	
PROJECT TEAM			02/01/23		
Core and Reflection Design Team			END DATE		
			12/15/23		
*WBS NO.	TASK NAME	MILESTONE STATUS	Assigned To	DUE DATE	COMMENTS
1	PHASE I - NOTICE AND EMPATHIZE				
1.1	– Project Conception, and Kickstart	Done			
1.2	– Notice Exercise	Done			
1.3	– Empathy based Research	Done			
2	PHASE II - DEFINE AND IDEATE				
2.1	– Create Personas	Done			
2.2	– Synthesize Data	Done			
2.3	– Learner Personas	Done			
2.4	– Ideate Solutions/Project Scope	Done			
3	PHASE III - PROTOTYPE				
3.1	– Program Goals and Learning Objectives	Done			
3.2	– Content Breakdown	Done			
3.3	– Task Analysis, High Level Course Design	Done			
3.4	– Opening Module (Pre-Arrival)	Done			
3.5	– Module 1 (First 2 Weeks)	Done			
3.6	– Module 2 (First 30 Days)	Done			
3.7	– Module 3 (First 60 Days)	Done			
3.8	– Module 4 (First 90 Days)	Done			
3.9	– Module 5 (First 90 - 180 Days & Closing)	Done			
4	PHASE IV - TEST AND REFLECT				
4.1	– Pilot Release Focus Group Feedback - Opening (Pre-Arrival) and Module 1 (First-Two Weeks)	Done			
4.2	– Pilot Release Focus Group Feedback - Module 2 (30 Days) and Module 3 (60 Days)	Done			
4.3	– Pilot Release Focus Group Feedback - Module 4 (90 Days) and Module 5 (90-180 Days)	Done			
4.4	– Communication Strategy & Email Templates	Done			
4.5	– Final Course Launch	Done			

The Notice Phase: As per the liberatory design thinking framework, the Notice phase focuses on stakeholders, designers, and people who hold power to influence the design to build a practice of self-awareness. It includes awareness of their values, identities, biases (unconscious, conscious, and subconscious biases), assumptions, and their impact on the end-users or learners. It allows for authentic learner-centered design, dismantling inequities in the design process. Some tools to practice the Notice phase are creating diverse team member resource groups for multiple perspectives, self-reflection exercises, and self-inquiry.

The first initiative taken before moving on with the project was to create a design team. Traditionally, people who participated in the design team were from the learning and development department consisting of instructional designers, training facilitators, learning administrators, content writers, project managers, leaders, and subject matter experts. In order to bring a liberatory mindset, multiple stakeholders were invited who were impacted by learning designs, i.e., the team member representatives. These representatives were from the 'team member resource groups' known in the organization as TMRGs. As part of the nonprofit organization's commitment to building a culture of inclusion and belonging, the organization established TMRGs; the TMRG groups consisted of team members from the Black and African communities, Younger Professionals, Women, LGBTQ+ communities, People with Disabilities Communities, Hispanic and Latino Communities, Asian Communities, Inter-Faith Communities, Multicultural Communities, and Veterans Communities. The TMRGs were team member-led groups around shared characteristics or life experiences. The objective was to amplify the voices of traditionally under-represented people and marginalized communities by providing them a platform for the members of these communities and their allies to connect in the organization.

When the author introduced the 'liberatory design thinking' framework, the senior leadership provided excellent support as it aligned with the organization's inclusion mandate. However, the thought of inviting external team members to the design team created tension in the existing team. The tensions were due to insecurities about giving up the power of design decisions and overlapping team member roles and responsibilities. In order to address these concerns, several discussions were held between the existing team, senior leadership, and TMRG representatives. In a democratic environment and with collaborative consent, it was decided that the design team would be divided into two sub-teams: the 'core' team and the 'reflection' team. While the 'core' team consisted of members from the learning and development department, with clearly defined roles for each member. The reflection team consisted of the TMRG representatives and subject matter experts to provide crucial feedback at each iteration and have a final voice for a more inclusive learning design.

Second, to notice with empathy, both the core team and the reflection team started a self-reflection exercise to notice shared values, identities, biases (including unconscious, conscious, and subconscious biases), power imbalances, and assumptions and assess the impact of the design on the end users or the learners. The objective was to ensure increased equity, authenticity, leverage systems priorities, and political will. The reflection exercise helped to notice constraints and opportunities and negotiate with key stakeholders and people in power to influence the overall design. The self-reflection exercise consisted of questions, as shown in Table 1.

Table 1

Liberatory questions for the Notice phase (Self-Design)

Liberatory Questions for the Notice Phase

1. Who am I/we? Who are our learners? What do I/we know about our learners?
2. How does my identity or job title position me in improving the learning experience?
3. Do I have privileges enjoyed by others? How does it impact the learning design to improve learning experiences?
4. Do I see patterns in the previous learning designs that might be biased and affect the learning experience?
5. Have I/we designed learning programs using inclusive language? Have I/we included examples and language that was culturally sensitive? Were the learning programs accessible to people with disabilities?
6. Do learners have the flexibility and choice to engage with the instructions and learning experience?
7. How do my leader's identities and positional power shape what I see/feel and experience in the design decisions?
8. What is my wildest idea to make the learning experiences inclusive?

The Empathy Phase: The Empathize phase is core to understanding the people for whom the learning experience is designed. It means considering learners' experiences, perspectives, and needs when designing learning programs. This approach prioritizes the voices and perspectives of especially marginalized and underrepresented learners. The empathy phase also helps to understand the social and cultural contexts in which learners live and learn and consider how these contexts may impact their experiences and needs. The Empathize phase helps to have a new perspective from a liberatory mindset to have awareness about the learners' motivations, experiences, physical and emotional needs, and what is meaningful to them (Anaissie et al., 2017). Some tools to empathize with learners include interviews, focus group discussions, observations, and shadowing in a non-judgemental environment.

During this phase, the 'core' team collected data through ethnographic methods, including observations, interviews, and focus group discussions from both the 'reflection' team and with team members who joined the organization in the past 12 months and were impacted by the current onboarding and orientation learning program. The core team focused on liberatory questions that opened the door for more profound and meaningful data collection, as shown in Table 2.

Table 2

Liberatory questions for the Empathy phase (Self-Design)

Liberatory Questions for the Empathy Phase

1. What do my learners wish/like/wonder about the current onboarding and orientation learning program?
2. How does my identity and role in this project affect how and what people share with me about their lived experiences? Do the learners feel safe to share their experiences?
3. What are the core needs of the learners? What are their struggles and aspirations regarding the onboarding and orientation program? When and where do their struggles occur? How often does this happen? Are there any additional data available?
4. Are the learners clear about their job expectations? Do they have any inequities in resource availability? Do the learners feel included? Do they feel their opinions and viewpoints are given a platform to be heard? What do my learners hear, think, and feel about the onboarding and orientation learning program? What do they see in their environment that affects their learning experiences?
5. What is the purpose of the new onboarding and orientation learning program, and how will the new program help the learners?
6. How will we know the learning program was effective? What constitutes an 'Aha' moment?
7. How will the learners, managers, and other stakeholders perceive this?

Another critical aspect followed throughout the Empathy phase was creating an environment of psychological safety. In a systems approach, it is a shared expectation that leaders or people with power to influence will not embarrass, reject, or punish each other for sharing ideas, taking risks, or soliciting feedback (Staff, 2022). When learners feel psychologically safe, they are more likely to provide honest feedback about their experiences, needs, and perspectives. This honest feedback is crucial to creating inclusive, equitable, and responsive systems. Creating psychological safety in a system is a continuous process that requires active engagement and commitment from all stakeholders, including designers, educators, and learners.

Psychological safety was a core inclusion mandate for the non-profit organization to build a system-wide safety culture. Hence, it merged perfectly well with the Empathy phase when team members shared their opinions that there would be no punishment or retaliation for speaking up with ideas, questions, concerns, or mistakes throughout the liberatory design thinking phases. The success of creating an environment of psychological safety depended on the organizational leadership, as they had the political will to create an environment of psychological safety. Psychological safety was crucial to get meaningful feedback. During this phase, it was noticed that while some team members were comfortable sharing their experiences in front of others, others needed more privacy to feel safe. Hence, the 'core' team took the following steps to provide a platform that promotes safety:

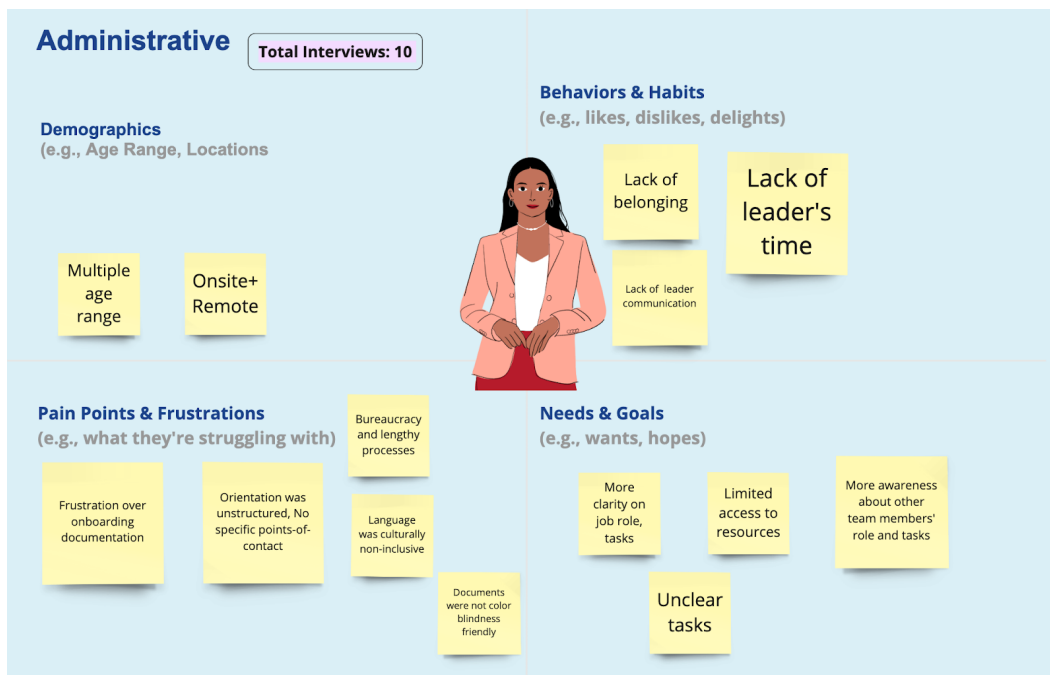
- Anonymous feedback forum if team members are unwilling to disclose their identity.
- Multiple options to collect data using personal interviews, anonymous surveys, and focus group discussions. Hence, the team members can share their experiences in whichever format they prefer to feel safe.
- Encouraging open and non-judgemental communication and active listening with no interruptions when someone shares their opinions, ideas, frustrations, or pain points
- No personal remarks and respecting diverse perspectives and lived experiences
- Focus and prioritize the well-being and safety of all stakeholders.

The Define Phase: The Define phase focuses on developing a point of view and defining the user or learner's needs. Some tools used in this phase are creating user or learner personas, empathy maps, concept maps, or user/learner journey maps. Liberatory mindsets are critical in the Define phase to embrace complexity and ambiguity and recognize and name oppression that may contribute to systemic inequities (Anaissie et al., 2017).

In the Define phase, the design team, including the 'core' and the 'reflection' teams, collaborated to synthesize the findings and articulated the insights by creating learner personas and empathy maps, as shown in Figure 3. During this phase, the design team narrowed down the information collected during the Notice and Empathy phases to a visualization capturing the data and the essence of the learner's needs. At the same time, the learner personas helped to visualize the target learner or group of learners for whom the learning programs were designed. On the other hand, the empathy maps helped to understand what the end users, i.e., the learners felt, thought, saw, and heard, what pains and gains they experienced, and what were their own biases. During this phase, the team used whiteboards and visualization tools like the Miro visualization and collaboration platform to brainstorm and narrow down the key learner personas, their characteristics, behaviors, likes, pain points, and needs, as shown in Figure 3.

Figure 3

An empathy map showing a learner's persona and needs (Self-Design).



The 'core' and the 'reflection' teams were given the raw data collected during the Notice and Empathy phases. The Project Manager asked everyone to come to a brainstorming session with generated themes while synthesizing the data. Sensemaking in the Define phase opened a Pandora's box reflecting the systemic inequities that existed, affecting overall team member experiences in the organization. Both the 'core' and the 'reflection' teams struggled to wrestle with the reality that the learning program would need to be designed to accommodate multiple interests and concerns. While some members captured themes of lack of cultural sensitivity, feelings of isolation, disengagement, and even discrimination, ultimately hindering the employee's ability to thrive and succeed within the organization. Others felt that these themes were not the actual representation of the majority. One member said, "I do not think this is an accurate theme; all the team members I spoke with said good things about their onboarding experience." Someone else said, "We are not here to start a movement but create a learning program that solves business problems. Too much diversity is making others feel marginalized."

Challenges in navigating politics and power imbalances were a significant consideration during the brainstorming session; however, the moderator appointed for the brainstorming session captured core themes and asked everyone to vote to conclude the themes for each learner's personas. This phase turned out to be more difficult than expected; however, it allowed both the 'core' team and the 'reflection' team to provide their viewpoints, collaborate, brainstorm together, and in a democratic environment, come to a consensus.

The visualization also helped to understand what leaders and team members went through during the onboarding and orientation program. The learner personas and empathy maps helped the design team narrow the information to a visualization capturing the inequities of users or learners, and the essence of the learner needs, as shown in Figure 3.

The Ideate Phase: The Ideate phase is at the heart of the innovation in the design thinking process. This phase provides solutions to the challenges and opportunities in the earlier phases. Here, the design team brainstorms various possible solutions without judgment or feasibility. By refusing to be bound by constraints, the design team also challenges assumptions about the nature of the problem and potential solutions (Culver et al., 2021). Imagination is crucial in distinguishing liberatory design thinking from other frameworks.

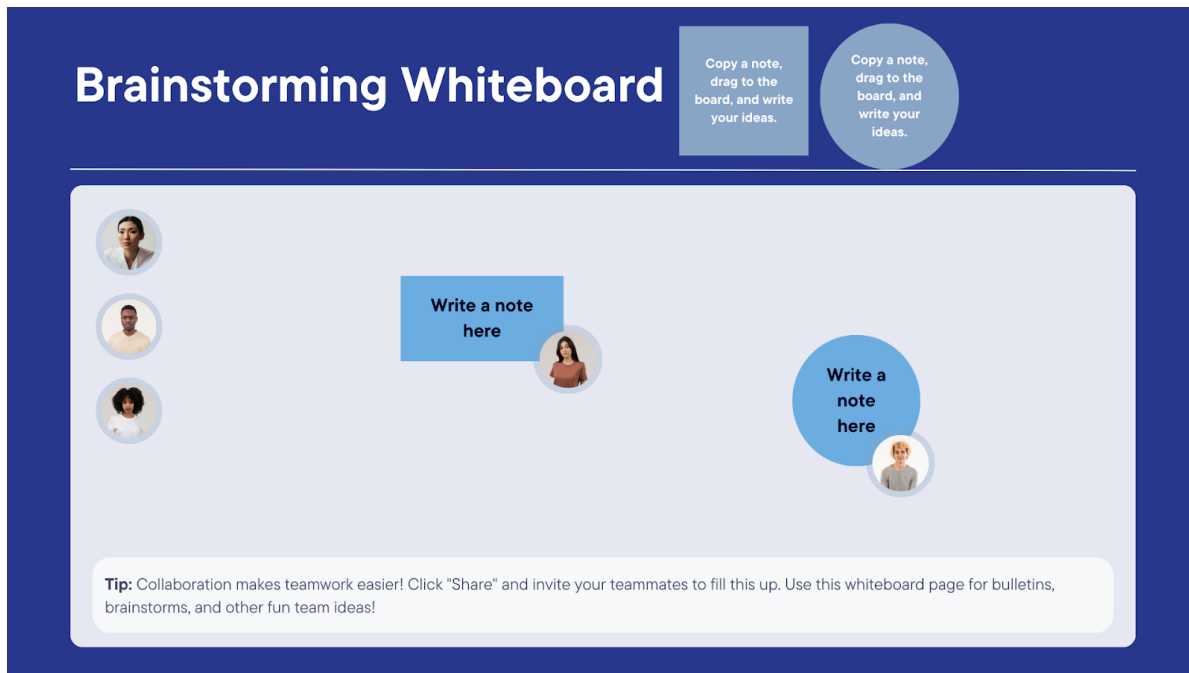
After the Define phase, the senior leadership received feedback about the challenges the design team faced navigating politics and power imbalances. However, the senior leadership had the political will to embrace a culture of psychological safety; hence, despite the fierce debate, the entire team was advised to form relational trust. The design, including the 'core' and 'reflection' teams, ideated multiple solutions relying primarily on experiential knowledge gained through lived experiences, researching recent studies on diversity, equity, and inclusion initiatives on onboarding and orientation practices, and benchmarking other similar organizations. As the design team transitioned to the Prototype phase, they knew that selecting solutions out of all the solutions offered would have an afar-reaching impact beyond their colleagues, especially considering how chosen solutions may affect equity and inclusion.

To ideate learning solutions using liberatory design thinking, the design team used virtual whiteboards for brainstorming sessions. A similar format of having a moderator during the brainstorming sessions helped to moderate the team environment. It allowed everyone to share their viewpoints, collaborate, brainstorm together in a democratic environment, and come to a consensus.

The 'reflection' team consisting of the TMRG representatives, played a crucial role in offering insights into the solutions. The TMRGs also were involved in the co-design processes to co-create solutions that met their needs and aligned with their values. The Ideate phase also overlapped with other phases, especially the 'Reflect' phase. Taking feedback from multiple stakeholders, including the TMRG group members, helped to understand the impact of the learning solutions. Furthermore, to make adjustments as needed to ensure that it genuinely empowers marginalized individuals and communities, as shown in Figure 4.

Figure 4

A virtual whiteboard for a brainstorming session for the Ideate phase (Self-Design).



The Prototype Phase: The Prototype phase involves the iterative development of tangible artifacts or learning experiences intended to elicit feedback and answer specific questions about a concept. Some tools to prototype are creating storyboards, mockups, and wireframes. Prototyping learning solutions using liberatory design thinking involves creating a preliminary version of the solution that can be tested in the context of the larger systems in which it operates. At the same time, feedback is critical from the diverse community of learners it wants to serve. In liberatory design thinking, rapid prototyping is essential; rather than spending much time to develop a solution fully, designers quickly sketch out the solution to experiment with it. Prototyping is a form of thinking and learning by creating; as designers build out the specifics of a solution, they can recognize new challenges and opportunities revealed by the process (Culver et al., 2021).

During the Prototype phase, the 'core' team designed prototypes incorporating learning principles like the backward design model and adult learning principles and created storyboards and wireframes. The 'reflection' team, which included the TMRG representatives, played a crucial role in providing feedback to co-design the learning solution at each iteration.

The design team at the nonprofit organization followed a few criteria to prototype the learning solutions:

- The solution must address the problems, challenges, and core learning goals within the larger systems in which it operates. It included understanding the social, economic, political, and cultural contexts that impact the systemic inequities affecting onboarding and orientation learning experiences from the core themes captured in the empathy maps.
- The solution must address and ensure that it aligns with the needs and values of diverse learners, especially the marginalized and underrepresented learners, and communities.
- Use systems mapping techniques to visually represent the current systems and identify key stakeholders, feedback loops, and leverage areas. It included considering the potential ripple effects of the solution on the more extensive system and how it can be scaled or adapted over time.
- Use co-design techniques to involve multiple stakeholders, including representatives from the TMRG groups, in the prototyping process. Encourage participation, listen to feedback, and incorporate suggestions.
- Use inclusive and accessible design principles when creating the prototype. It included ensuring the prototype was accessible to diverse team members with different needs. For example, ensuring closed captioning, good color contrast, culturally relevant images and language, and other WCAG (Web Content Accessibility Guidelines) protocols were maintained.

Differences in opinions did arrive in the Prototype phase. These differences were primarily due to power imbalances, cultural biases, unconscious biases, conflicts of value, and resource limitations. Like other phases, an appointed moderator played a crucial role in helping to solve conflicts during the Prototype phase. The moderator ensured there was no dominant voice in the room and everyone had an opportunity to contribute, especially those who may be marginalized or have less power. The moderator also had the notes from the Notice phase encouraging team members to practice active listening, relational trust, and empathy.

The Test Phase: The Test phase focuses on getting specific feedback about how ideas and solutions can improve. Did the solutions answer the existing inequities? During this phase, it is essential to remember that prototypes are imperfect, but feedback is precious. Some tools to test are role plays, surveys, feedback sessions, and understanding impediments. In liberatory design thinking, testing a learning solution involves considering the solution as part of a more extensive system and evaluating its impact on that system. Moreover, testing the solution with multiple stakeholders, especially marginalized community members, to understand the impact and effectiveness of the learning solutions to address systemic inequities is crucial. It includes conducting user research, pilot testing, and ongoing evaluation to ensure that the solution is inclusive and promotes empowerment for a diverse community of learners.

In this phase, moderators from different departments were invited to conduct focus group discussions with multiple stakeholders, including leaders and team members impacted by the new onboarding and orientation learning program to gather feedback on the solution's effectiveness in meeting their needs and addressing systemic issues. Inviting diverse moderators was to ensure the data capturing removes any bias. These moderators brought a fresh perspective and were not directly involved in the design process. This independence and objectivity helped identify and challenge biases that may be present in the testing phase. The external moderator then provided feedback to the design team to make necessary adjustments before rolling it out more widely.

The Reflect Phase: The Reflect phase is ongoing and transparent throughout the design thinking process. It allows one to focus and reflect on the actions taken, observe the emotions, and analyze the insights and impact of the design on the users/learners as a designer for a more liberatory design. Some tools are self-reflection and returning to the TMRG representatives to understand the impact and make necessary changes in the design. Reflecting on a learning solution in a liberatory design framework involves considering how the solution aligns with social justice and equity principles and promotes empowerment for diverse users, especially marginalized communities.

The design team at the nonprofit organization incorporated reflection as an essential part of the liberatory design framework by creating an assessment plan and a questionnaire, as shown in Table 3.

Table 3

Reflection questions in a 'liberatory design thinking' framework (Self-Design)

Liberatory Questions for the Reflection Phase
<ol style="list-style-type: none"> 1. As a team, does the learning experience feel equitable and inclusive? If not, why? What and how should we adjust? 2. How might cultural norms trigger unconscious biases that impede our relationships and work? What are the suggestions to improve the learning program? 3. What emotional state affects representative groups after experiencing the learning program? 4. How can we share or release distressful emotions to move through the Liberatory Design process with care for each other?

Although the new onboarding and orientation learning program is in a pilot release phase, however, practicing reflection on the design process and the solutions, the design team is committed to ensuring that learning experiences align with the principles of the liberatory design thinking framework and that the solution does not perpetuate oppressive systemic structures.

Like the empathy phase, the design team developed some core protocols for the Reflection phase to promote safety and authentic program assessment:

- Anonymous feedback forum if team members are unwilling to disclose their identity.
- Multiple options to collect data using personal interviews, anonymous surveys, and focus group discussions. Hence, the team members can share their experiences in whichever format they prefer to feel safe.
- Encouraging open and non-judgemental communication and active listening with no interruptions when someone shares their opinions, ideas, frustrations, or pain points
- No personal remarks and respecting diverse perspectives and lived experiences
- Focus and prioritize the well-being and safety of all stakeholders.
- Review the design process and user feedback to identify areas where the solution may not have met the needs of marginalized communities or addressed systemic issues.
- Analyze the solution's impact on learners and communities, and consider how it may have perpetuated or challenged oppressive structures.
- Reflect on the values and assumptions that guided the design process and consider how they may have influenced the solution.
- Gather feedback from users and stakeholders to understand the long-term impact of the solution.
- Identify improvement opportunities and make necessary adjustments to the solution to ensure it remains inclusive and effective over time.
- Continuously reflect on the solution in the context of ongoing social and political changes to ensure it remains aligned with the principles of liberatory design thinking.

Conclusion

To conclude, the author explored a design case using the equity-centered 'liberatory design thinking' framework to address systemic inequities that affect learning design and experiences. The design team of a nonprofit organization implemented the 'liberatory design thinking' framework to redesign an onboarding and orientation learning program. The 'liberatory design thinking' framework challenged the systemic inequities by empowering people of color, the LGBTQ+ community, and indigenous and marginalized communities for better onboarding and orientation, and learning experience outcomes. The guidelines explored in the design case intend to be benchmarked by other corporate or academic organizations to design more equitable learning experiences.

The author observed three critical observations in the design case for successfully implementing the 'liberatory design thinking' framework. These were:

- Create a diverse design team including traditional stakeholders and members from diverse backgrounds, especially marginalized members. The nonprofit organization created team member resource groups known as TMRGs. The TMRG groups comprised team members from the Black and African communities, younger professionals, women, LGBTQ+ communities, people with disabilities, Hispanic and Latino communities, Asian communities, inter-faith communities, multicultural communities, and veterans communities. These diverse representatives provided valuable feedback during the entire design process.
- Promote psychological safety. Psychological safety was another critical element for successfully implementing the 'liberatory design thinking' framework. Given the inequities plaguing organizations in the corporate sector or academic institutions, the author observed that political will from the senior leadership is critical to promote psychological safety and inclusion.
- Appoint moderators who can serve as facilitators, mediators, and champions of inclusivity, working to create an environment that challenges biases, promotes equity, and fosters social justice. Their contributions throughout the design process are essential in realizing the goals of liberatory design.

Furthermore, systems thinking is another essential aspect in vetting, reconfiguring, and addressing the complex issues in a system. Liberatory design thinking focuses on empowering a diverse community, especially marginalized communities, by involving them in the design process and addressing oppressive structures. Combining the liberatory design in a systems thinking approach helps to understand the complex interactions and relationships within a system and the impact of a solution on the system as a whole.

Instructional designers, educators, learning professionals, and design teams can create solutions that empower marginalized communities while addressing the complex issues within a system by following the guidelines explored in the design case. Finally, it is vital to remember that liberatory design thinking is an ongoing process that requires continuous reflection, adaptation, and monitoring to ensure that the solution effectively addresses the complex issues within the system.

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