Diversity, Equity, and Inclusion in MOOCs: Mapping Goals from Proposal to Design

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Abstract: The goal of this research is to support instructional teams that desire to create learning experiences that address the needs of diverse learning communities through approaches that value diversity, equity, and inclusion. First, we examine online learning experiences where faculty have identified specific aspects of diversity, equity, and inclusion that they want to cultivate, with one or more of the following goals: addressing social inequalities, recognizing the impact of power and privilege, including perspectives of historically disenfranchised populations, valuing individuals, and finding common ground. Second, we identify specific approaches that instructional teams have used to realize their goals. Third, we extract design principles for DEI that can be taken up by instructors and design teams within online learning spaces.

Purpose and Objectives

Many institutions of higher education have publicly announced their commitment to making their residential campuses more **diverse, equitable, and inclusive** (DEI) as a result of the Association of American Colleges and Universities (AAC&U) standing with the "University of Texas in its defense of the use of race in college admissions before the Supreme Court" (AAC&U, 2012, para. 1). More recently, these goals have been espoused within online education, both traditional (fee-based degree courses) and open.

To create a common understanding of these terms, we will utilize AAC&U's (2019) definitions. AAC&U defines **diversity** as "[i]ndividual differences (e.g., personality, prior knowledge, and life experiences) and group/social differences (e.g., race/ethnicity, class, gender, sexual orientation, country of origin, and ability as well as cultural, political, religious, or other affiliations)" (para., 5). **Equity** refers to ensuring historically underrepresented populations have

equal access and opportunities for participation in educational programs (para., 7). AAC&U further explains that **inclusion** is "intentional, and ongoing engagement with diversity—in the curriculum, in the co-curriculum, and in communities which individuals might connect" that help members increase their awareness of the complexity of interactions among individuals, institutions, and systems (para., 6). Universities engaged in open online learning spaces such as massive, open, online courses (MOOCs) often use words such as disruptive and revolutionary to describe their impact on access to elite universities, researchers, and scholars (Carver & Harrison, 2013). The assumption is that if the online learning experience is free and available online, barriers to access have been overcome. Unfortunately, equitable and inclusive access for diverse learning communities in MOOCs has not always been realized beyond the idea of being free. Designing for DEI in MOOCs, therefore, offers a variety of challenges, but also opportunities for innovative pedagogies and content that takes into account learners from a variety of global contexts (Ebben & Murphy, 2014).

This research explores coherence between DEI goals in MOOC proposals and their enactment within live courses at a Research I university in the midwest. In the Fall of 2016, a call for increased focus on the university's commitment to diversity, equity, and inclusion was sent out by the Provost. As such, the proposal for MOOC design was updated to include an additional question: *how will the course further the university's diversity, equity, and inclusion goals?*

Now, three years after the DEI call, it was determined that an investigation into the manifestation of the faculty's proposed DEI goals in their MOOC designs should be completed. Our purpose is to develop a plan to engage in a more systematic and purposeful approach for the realization of these goals within course design. To achieve this, we first examined online learning experiences where faculty identified specific aspects of diversity, equity, and inclusion that they wanted to cultivate. Second, we identified specific approaches that instructional teams used to realize their goals. Third, we extracted design principles for DEI that can be taken up by instructors and design teams within online learning spaces.

Theoretical Perspectives and Literature

Intercultural Education

Proponents of intercultural education embrace a postmodern/post-structural notion of culture and identity as fluid and dynamic (Jackson, 2019). Intercultural education, as described by Portera (2008), involves the possibility for personal and social growth through interacting with an "individual of different cultural origin[s]" (p. 485). The term intercultural education has a more recent origin in the field of education than either transcultural education and multicultural education, which are situated within universal and relative epistemologies respectively. Instead, Portera explains that intercultural education lies somewhere between these two epistemological poles in which "differences and similarities are taken into consideration, brought into contact, and bring about interaction" (Camilleri, 1985 as cited in Portera, 2008, p. 486 [1]). As educators and institutions continue to strive to demonstrate their commitment to diversity, equity, and inclusion within online learning experiences, intercultural education may "represent the most appropriate response to the challenges of globalization and complexity" (Portera, 2008, pl 488).

Opportunities and Challenges in DEI-focused MOOC Design

It is important to consider faculty motivations for creating MOOCs from the start. Freitas and Paredes (2018) conducted a study to explore the backgrounds and motivations driving faculty innovation and MOOC development. According to Freitas and Paredes, faculty are mainly interested in designing MOOCs for the following reasons:

- the social value of learning,
- the dissemination of specific knowledge for a general audience,
- or the opportunity to teach a relevant subject in an attractive and entertaining way (p. 9).

While DEI did not appear to motivate the faculty in the study, it is important to note that faculty in the study did find value in social learning, which is important when considering the social-constructivist nature of intercultural education.

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[1] We are relying on Portera's translation and analysis of Camilleri's *Cultural Anthropology and Education* as the original source is written in French.

Intercultural competence can be defined as the "cognitive, affective, and behavioral skills and characteristics that support appropriate and effective interaction in a variety of cultural contexts" (Bennett, J.M., 2014, p.157). There is a need for MOOC spaces to foster intercultural competence in learners to engage in successful and meaningful interactions that not only transmit knowledge, but also cultivate learner interactions in the development of networked engagement of peers across diverse language and cultural backgrounds (Lawrence, 2013; Stewart, 2013).

Learners who enroll in MOOCs enter with a variety of expectations and prior experiences. Intercultural differences in the way learners perceive expectations and communicative norms could lead to tensions during interactions and discussions, which may inhibit learner engagement and motivation and reinforce feelings of difference (Lawrence, 2013). The environment should promote a sense of safety and trust for sharing ideas and critical reflections related to content and tasks that welcome diverse perspectives and multiple literacies (Blayone, van Oostveen, Barber, Di Giuseppe, & Childs, 2017; Loizzo & Ertmer, 2016; Marshall, 2014; Stewart, 2013).

In order to foster intercultural competence and respect learners' prior experiences and beliefs regarding communicative norms, Loizzo and Ertmer (2016) suggest acknowledging the notion of "lurking as learning" by removing discussion forum posting requirements and encouraging collaboration beyond platforms (p. 1022). Moreover, the peer-review process for assignments can be utilized as a feature to build intercultural competencies for learners to have space to reinforce content and expand their worldviews through collaborative interactions (Bali, 2014; Loizzo & Ertmer, 2016).

Methods

Design

Our study was conducted collaboratively by a group of four researchers. The study was guided by the following research questions:

1. What goals for DEI do faculty identify in their MOOC project proposals?
2. In what ways are faculty DEI goals from the AIF proposals manifested in the final design of their MOOC?

a. How can we better encourage the realization of DEI goals and aspirations in the design of MOOCs?

The study was conducted in three phases (see *Figure 1*):

- Phase 1: We developed initial proposal selection criteria and operationalized these criteria in our selection process.
- Phase 2: We modified the National Center for Institutional Diversity's Framework for Diversity Scholarship (NCID, 2019) (see Appendix A) for use in the MOOC context and used it to deductively code MOOC proposals (see Appendix B).
- Phase 3: We examined the MOOCs (n=30) that were developed from the 12 proposals we identified through our selection process, looking for evidence of ways in which DEI goals were manifest in the design of each course.
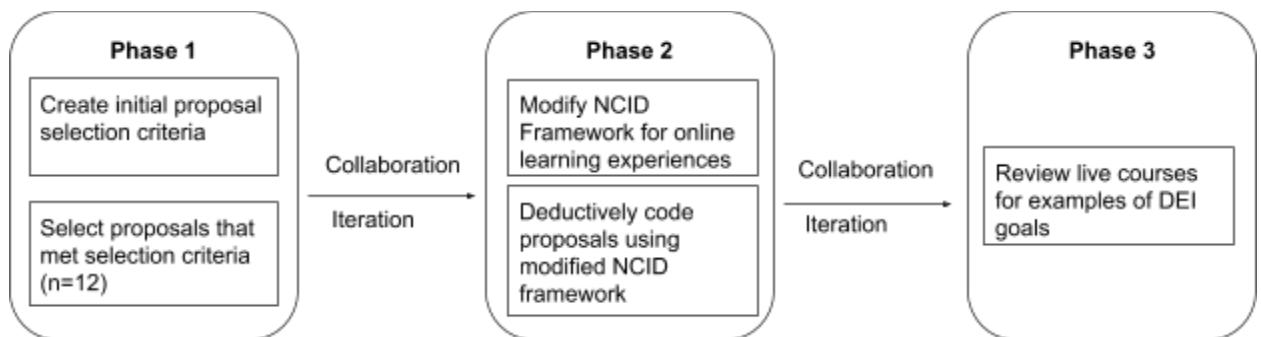

Figure 1. Overview of three phases of the study

Data Collection

We reviewed a large set of proposals by faculty who had submitted a proposal to a central support unit on campus to develop a MOOC. Faculty completed a proposal template (supplied by the unit that supports the development of MOOCs), which included a question about how the proposed MOOC addresses DEI goals set forth by the university.

Next, we established a set of inclusion criteria to select course proposals and corresponding course designs to include in this study:

1. the proposal must respond to the DEI question;

2. the proposed course must fall into the open content category (i.e., with no restrictions on enrollment)

3. the proposed course must be live (i.e., not archived).

The final dataset included the 12 proposals that we identified from our selection process (six single MOOC proposals and six Specialization proposals) and 30 live MOOCs.

Analysis

We engaged in qualitative content analysis (Elo & Kyngäs, 2007), using an iterative and flexible approach to coding that included deductive and inductive approaches (Deterding & Waters, 2018). Using a deductive approach, we analyzed statements in response to the DEI question. While coding the statements, we first identified discrete excerpts related to one or more dimensions of the modified NCID framework. Second, we coded these excerpts, applying dimensions from the modified NCID framework. Through an iterative process, we updated our codebook (see Appendix A) to more accurately capture aspects of the MOOC environment, which were not reflected in the original framework. Finally, we performed an artifact analysis, examining all aspects of each individual MOOC, including course syllabi, video transcripts, discussion prompts, course readings, and assessments. We looked for instances in which the proposed DEI goals were manifest in the artifacts examined in the course.

<p align="center">**Results**</p>

Stand-Alone MOOCs

The results of the stand-alone MOOC analysis suggest that during the MOOC proposal process there are certain DEI goals that are more prevalent in response to the question. Goals that fell under the theme *Addressing Social Inequality* were mentioned most in the proposal (n=6). Falling closely behind were *Including Multiple Perspectives* (n=5), *Recognizing the Impact of Power and Privilege* (n=4), and *Valuing Individuals* (n=4). The theme *Finding Common Ground* was the least represented in the MOOC proposals (n=1).

The course, *Advanced Searching for Health Sciences* included the highest total instances of DEI-related manifestations (n=11). When tracked by code, it was apparent that the design of the course went above and beyond the number of originally proposed goals. Although the course *Act on Climate* did not include as many instances of DEI-related manifestations, the proposal

may have been a bit more ambitious regarding the variety of goals stated. Similar to *Advanced Searching,* the coherence between proposed goals and their enactment in the course went above and beyond the number of originally proposed goals.

Dentistry and *Storytelling for Social Change* each stated numerous goals (n=9 and n=8 respectively); however, unlike *Advanced Searching* and *Act on Climate*, *Dentistry,* and *Storytelling* lacked the diversity in goal type and focused on either *Addressing Social Inequality (Dentistry)* or *Including Multiple Perspectives (Advanced Searching)*. (see Appendix C for a full list of stand-alone MOOC titles).

MOOC Series

In all, an analysis of five MOOC series was conducted. Similar to stand-alone MOOCs, the most prevalent theme was *Addressing Social Inequality* (n=3). The themes of *Valuing Individuals* (n=2), *Finding Common Ground* (n=1), and *Including Multiple Perspectives* (n=1) were also found within the proposed goals. The theme of *Recognizing the Impact of Power and Privilege* was absent in the series analysis.

The four-course series *Web Applications for Everyone*, taught by a single faculty member, had the highest total number of instances of DEI-related manifestations (n=59). Three of the four courses within the series had an average of seventeen instances of manifestations. The second course in the series, *Introduction to Structure Query Language*, however, only had a total of eight instances. While this may indicate that this course is an outlier in the series, consideration should be given to the lower number of lecture videos in this course as compared to the rest of the courses.

Within *Web Applications for Everyone*, The proposed goal—that fell under the theme of *Addressing Social Inequality*—spoke to leveling the playing field by offering easing transitions to college-level rigor. The most notable instances of this particular aspect of the goal involved lecture videos that included installation procedures for a variety of operating systems, code demonstrations for any new code types, and scaffolded assignments with demonstrations and code samples for learners to review prior to completing assignments.

Similar to *Web Applications for Everyone,* the *Public Library Management* series proposal goal also aligned with the theme *Addressing Social Inequality*. However, there are a

few elements that set the *Public Library Management* series apart from the other series analyzed. First, the series had eight courses—the highest number of courses out of all of the other series (see Appendix C for a list of series/courses). Second, the series design efforts were led by a faculty member within the university, but four out of the eight courses were taught by library professionals not affiliated with the university.

Each of the courses within *Public Library Management* taught by faculty members had an average of nine instances of DEI-related elements. Additionally, these elements were found to have been more clearly and intentionally related to the proposed DEI goal (*Addressing Social Inequality)*. While the faculty-led courses had an average of nine manifestations, the courses led by library professionals had an average of 2.5 manifestations. We can only speculate as to why this may have occurred, but it seems that the complexity of working with outside professional partners to design and develop a MOOC may have had an impact on the disconnect between the proposed DEI goal and the manifestations in those particular courses. Overall, the *Public Library Management* faculty (within videos and content) continually and explicitly referenced the proposed goal of opening access to courses for underrepresented students within the field (*Addressing Social Inequality)*.

Although *Statistics with Python* fell quite far behind the other two series in terms of total instances goals were manifested, a total of 15 instances were identified. The two proposed goals of the series related to the themes of *Valuing Individuals* and *Including Multiple Perspectives* (the only series goal related to this particular theme). Instances of *Valuing Individuals* involved meeting learners' individual needs. Instances of *Including Multiple Perspectives* were found in only the first two courses and involved intentionally including datasets from non-white populations and unpacking the "U.S.-centered jargon" that may be encountered within the field of statistics.

The *Python III* series had the next fewest instances of DEI-related elements (n=6). The series was led by a team of three faculty and variety guests, all of whom were introduced in a single series introduction video that was included in each course. The series' proposed DEI goals related to the themes of *Valuing Individuals* and *Finding Common Ground*. Within the series, the most notable manifestations of the *Valuing Individuals* theme were the two instances in which

learners were encouraged to complete assignments that were more personalized and project-based in nature (most of the other assignments involved auto-graded coding with no personalization). The *Finding Common Ground* theme was evident when learners were asked explicitly to engage with each other via a peer-review graded assignment or ungraded external tool allowing learners to share and comment on each other's work.

The *User Experience Research and Design* series, taught by five faculty members, had the fewest instances of DEI-related manifestations (n=0). The proposed *Addressing Social Inequality* goal was mainly related to including learners outside of the U.S. the ability to participate in a course led by faculty leaders in the field. While the stated goals of the series may not have been manifest within the design, it is noteworthy that the courses themselves did address several topics related to DEI within the fields of User Experience research and design.

Nearly every MOOC series analyzed involved a team of instructors—faculty or industry professionals—with the exception of *Web Applications for Everyone,* which was led by a single faculty member. This finding appears to be significant given the difference in total instances of goals realized (n=13) within a series led by instructional teams versus a single faculty member. One explanation for this may rest in the complexity of organizing the design of content and assessments across multiple instructional team members. While this was not a finding in relation to the analysis of the stand-alone MOOCs, further investigation will need to be done to understand the ways in which dynamics within design teams impact the realization of DEI goals.

The analysis of each of these courses and series sheds light on the overall proposed DEI goals and their enactment in the design. While it is clear that there were disconnects between stated goals and the designs, we were also able to identify a number of instances of elements related to equity and inclusion within the courses that were unrelated to goals stated. Additionally, Nearly every course and series examined included areas in which the research team noted opportunities for additional content or context that could enhance the course and relate back to the original DEI goals.

Discussion and Scholarly Significance

As leaders of course design efforts, it is our job to ensure that DEI goals are **purposefully** realized in courses. Unfortunately, faculty and course designers often have little guidance for

coherently enacting DEI goals in courses. Based on our initial findings, it is clear that the complexity and temporal challenges of the design process may sometimes hinder the realization of DEI goals in courses.

Since beginning this research, our team has solicited feedback from others within our division ranging from project managers to media designers to directors. Based on the feedback received, our team iterated further on the NCID framework and have developed a goal-oriented guide for designing with equity and inclusion in mind. The guide is meant to be flexible and assist designers in having conversations with faculty from the proposal phase through to the design phase. The guide includes information related to each of the original framework categories, examples of proposal goals related to each category, and examples of how the categories may be enacted within the design of a course including content, assessment, and pedagogy. Furthermore, the guide also includes examples of how faculty and design teams can hold themselves accountable for enacting the goals stated within proposals. As a result of this work, this guide is currently being piloted as part of the design process for an upcoming MOOC series scheduled to launch within the next year.

Beyond our institution, such design guidelines will be important as universities are forced by COVID-19 to enter online spaces *and* direct their attention toward DEI initiatives. Providing additional research-informed guidance for faculty and course design teams will be essential for continued efforts to make online learning experiences open to diverse audiences and more equitable and inclusive.

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Appendix A

Modified NCID Framework

Addressing Social Inequality	Proposal indicates a potential emphasis on historical and contemporary issues of social inequality across societal contexts and life domains (e.g., in education, arts and culture, health and mental health, economic and occupational attainment and mobility, infrastructure and community development).
Finding Common Ground	Proposal addresses challenges that arise when individuals from different backgrounds and frames of reference come together. The proposal demonstrates attunement to the variability in opportunities across significant societal contexts (i.e. schools and colleges, neighborhoods and communities, work teams in organizations, etc.).
Recognizing the Impact of Power and Privilege	Proposal seeks to promote understanding and awareness of systems of power and privilege and how these systems interact with groups historically underrepresented and marginalized based on identities including but not limited to race, ethnicity, gender, social/economic, class, culture, sexual identity, ability, status, and religion.

Including Multiple Perspectives	Proposal makes a commitment to include epistemological perspectives of those from disenfranchised populations within the content
Valuing Individuals	Proposal makes a commitment to utilizing inclusive pedagogies. Proposal seeks to value and incorporate the lived experience of learners who are represented in the course

Appendix B

Below are two sample MOOC proposals which were coded using the modified NCID framework outlined in Appendix A.

How does your Initiative help the [university] to become more diverse, equitable, and inclusive?

The leadership modules have been designed to integrate equity, diversity, and inclusion into how we learn about leaders and the process of leadership, and how we approach leadership development. It is our philosophy that equity, diversity, and inclusion are not simply important factors to consider in reaching many decisions, but integral to what it means to be a leader in today's higher education environment. Particularly in delivering this material to [university] faculty and staff, the course will explicitly address the role of leadership—practiced at many levels—can contribute to furthering [the university's] goal to become a more diverse, equitable, and inclusive institution of higher learning. As further evidence of our intent, we have inquired of many scholars across a wide range of disciplines about the ways in which diversity is being approached in their fields. We have captured some of these perspectives in a book, "Transforming Perspectives on Diversity in Higher Education" (Pasque, Ortega, Burkhardt, & Ting, 2016) that informs many of the learning modules that are the backbone of the curriculum. Accordingly, we take a wide view of the concept of diversity, intentionally incorporating many forms of difference without losing sight of the particular biases and resulting injustices that, to our great remorse, have defined the American experience. Finally, we attempt to move beyond descriptions of the various institutional "-isms" that frustrate our progress toward equity and inclusion, and we steer away from relatively easy statements about "inclusive excellence" or "opportunity for all". The diversity terrain has been paced and trampled by too many simplified explanations. The era of good intentions has run its course. Now real leadership is needed, capable of fulfilling promises made in this generation and all that follow.

How does your Initiative help the [university] to become more diverse, equitable, and inclusive?

1) Our MOOC design will be based on best practices with regard to inclusive teaching and universal design. With the support of AI expertise, our MOOC will be ADA compliant. 2) Student developers received instruction on inclusive teaching during Fall 2016. We plan to acknowledge our limitation as instructors and will invite participants' diverse perspectives that may be lacking from our MOOCs conversation. We will work to ensure that our MOOC's presenters will consist of a diverse (based on gender, race, experiences) group of researchers, professionals and other individuals. 3) Our planned assessments will draw upon the personal experiences, locations, etc. of MOOC participants and our plan is to make participants' artifacts available/shareable on the site. Thus, some of the major contributions to diversity and inclusion will come from our participants themselves. This will also allow us to ensure that future versions of the MOOC will be more inclusive. 4) Environmental issues such as climate change disproportionately impact the underprivileged in society. Our MOOC will focus on actions that can be taken to address/respond to climate change and thus to assist those who may be most vulnerable or come from underprivileged communities.

Appendix C

Stand-Alone MOOC Title
Advanced Searching in Health Sciences
Act on Climate
Dentistry
Storytelling for Social Change
Leading for Diversity, Equity, and inclusion in Higher Education
Accounting for Decision-Making

Series Title	Course Title
Public Library Management	Identifying Community Needs for PLM (Kristin)
	Managing a Diverse and Inclusive Workforce (Lionel)
	Personnel Management for Public Libraries (Josie)
	Budgeting and Finance for Public Libraries (Larry)
	Infrastructure Management for Public Libraries (Josie)
	Strategic Planning for Public Libraries (Larry)
	Grant Writing and Crowdfunding for Public Libraries (Kristin)
	Public Library Marketing and Public Relations (Kristin)
Python III	Python Basics
	Python Functions, Files, and Dictionaries
	Data Collection and Processing with Python
	Python Classes and Inheritance
	Python Project: pillow, tesseract, and opencv

Statistics with Python	Understanding and Visualizing Data with Python
	Inferential Statistical Analysis with Python
	Fitting Statistical Models to Data with Python
User Experience Research and Design	Introduction to User Experience Principles and Processes
	Understanding User Needs
	Evaluating Designs with Users
	UX Design: from Concept to Prototype
	UX Research at Scale: Surveys, Analytics, Online Testing
	UX (User Experience) Capstone
Web Applications for Everyone	Building Web Applications in PHP
	Introduction to Structured Query Language
	Building Database Applications in PHP
	JavaScript, JQuery, and JSON