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Concept Paper

Integrating Universal Design, Culturally Sustaining Practices, and Constructivism to Advance Inclusive Pedagogy in the Undergraduate Classroom

Tabitha Grier-Reed [1,*] and Anne Williams-Wengerd [1,2]

[1] Department of Family Social Science, University of Minnesota, 275C McNeal Hall, 1985 Buford Ave, St. Paul, MN 55108, USA; will5381@umn.edu

[2] Department of Psychology, St. Catherine University, 2004 Randolph Avenue, St. Paul, MN 55105, USA

* Correspondence: grier001@umn.edu; Tel.: +1-612-624-2089

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Abstract: While primary and secondary teachers are legally required to adhere to inclusion guidelines for students experiencing disabilities, instructors in higher education have had more leeway to operate under a more traditional paradigm which can marginalize rather than include students in the classroom. Furthermore, students experience exclusion for reasons other than and in addition to disabilities, including, race, ethnicity, language, gender, and sexual orientation. Inorderto advance inclusion for all students in the higher education classroom, we propose integrating universal design, culturally sustaining pedagogy, and constructivist approaches to teaching and learning. We aim to not only forward an integrative theoretical framework for inclusive pedagogy grounded in a constructivist perspective, but to also provide practical strategies that promote a more inclusive undergraduate classroom.

Keywords: universal design; culturally sustaining pedagogy; inclusive pedagogy; constructivism; undergraduate classroom

1. Introduction

The paradigms of universal instructional design (UID) and universal design for instruction (UDI) emphasize the importance of ensuring accessibility in the educational environment for students with disabilities [1–3]. Beyond a focus on the physical classroom and curriculum, these paradigms of teaching and learning require instructors to examine their basic pedagogical frameworks through the lens of accessibility for all students in the classroom. However, recent critiques of these paradigms highlight that in their inception neither UDI nor UID recognized diversity beyond disabilities [3–6].

Representing a kind of intersection between racism and ableism, not seeing color or recognizing racial diversity has worked to reify the dominant cultural narrative that devalues race as an important part of identity and that stigmatizes difference [7]. In fact, even in the area of disability services, difference can play out as "deficit". For example, in most higher education settings the onus is on the student to self-identify as having a disability (deficit), to request an "accommodation" (meant to eliminate the deficit), and to communicate the accommodation with the instructor (again meant to eliminate the deficit) [1,5].

By ignoring the need to design (from the ground up) inherently "open" or accessible spaces and pedagogical practices, traditional approaches to teaching and learning ignore the principle that it is the institution or classroom environment that is limited (or disabled), not the student [8]. Universal instructional design and UDI have advanced the field in this area and inclusive pedagogy can further extend the work. While inclusive pedagogy has utilized a broad definition of inclusion,

the literature has focused predominantly on the inclusion of those with disabilities, and it has only recently been suggested that a truly inclusive pedagogy should explicitly include age, gender, racial, ethnic, and cultural diversity as well [4].

Waitoller and Thorius [4] call for cross-pollinating universal design with culturally sustaining pedagogy to broaden the scope of inclusion and the ability of inclusive pedagogy to address intersecting identities, including intersections of race and disability. Like universal design, culturally sustaining pedagogy challenges the assumption that there is a "normal" or "average" student. An assumption that can perpetuate a deficit orientation in which the instructor or educational system works to eliminate deficits, while ignoring assets, to help students approximate the norm [9]. From the perspectives of culturally sustaining pedagogy and universal design, all students are unique, and it is the systems in education that are disabling rather than the students who are disabled [10]. In contrast to a deficit orientation, these perspectives are asset based. Furthermore, culturally sustaining pedagogy assumes that all students have cultural practices that are valuable in a learning context [4].

In addition to cross-pollinating culturally sustaining pedagogy with universal design, in this paper we advocate for the inclusion of a constructivist approach to education, and we provide examples for how integration across these three paradigms can occur in social science classrooms. Like culturally sustaining pedagogy, constructivist theory can provide a framework for examining the inequities and injustices that are present in the undergraduate classroom. This framework stands in stark contrast to the traditional model of teaching. In the traditional model, the instructor provides knowledge, and the student learns by receiving this knowledge and applying it to previous knowledge. In constructivist theory, however, knowledge is not transmitted but created [11]. Within constructivist theory more generally, there is disagreement about where the positioning of knowledge lies, e.g., within the individual or the interaction of the individual within the environment [12]. In social constructivist theory the assumption is that since knowledge is inextricable from a social setting, it is always created in the interaction of individuals [13].

The social constructivist theory is particularly useful for considering educational practices that create an inclusive environment. From this perspective, the instructor approaches the classroom as a co-creator of knowledge working alongside the student rather than in front of the student. The constructivist approach fits with critical race theory [14] in that it provides counter-narratives to students where they can then engage with the material and create meaning based out of their life experiences. This also provides an additional pathway for access and inclusion in line with the fundamental aim of universal design and inclusive pedagogy. For example, rather than relying on and reifying a normative life experience that can leave many at the margins, in the constructivist classroom instructors and students can act as co-creators of knowledge that is connected to the life experiences of those in the room as they engage in the process of making meaning of curricular material.

2. Co-Creating and Sharing the Space

In order to design an inclusive classroom, the adoption of a critical perspective is required. Recognizing the hidden values and underlying assumptions present in the educational environment is the first step. What factors contribute to exclusion and inaccessibility in the classroom for students? Key among these factors is the power imbalance inherent between instructor and student. How to share the space is a critical question. From a constructivist approach to teaching and learning, the teacher is viewed as a facilitator of learning rather than an all-knowing expert, and in the constructivist classroom, the instructor shares the space with students to co-create knowledge. In other words, rather than a one-way process of transmission (i.e., teacher transmitting knowledge to students), teaching and learning is a dynamic process of co-construction. Students are not simply empty vessels waiting to be filled (a deficit orientation) but active partners in the learning process (asset based). It is an inclusive approach at an elemental level, seeking to engage students in the learning process.

From a social constructivist perspective, academic inclusion and social inclusion go hand in hand. The instructor sets the social and emotional tone of the classroom through overt statements and

behavioral modeling. Soliciting the ideas, voices, and perspectives of students to develop classroom norms can set the stage for developing an inclusive instructional climate.

2.1. Developing Norms for Interaction

Articulating norms for interaction in the classroom cultivates inclusion. While the development of classroom norms are co-created with students, the instructor has the responsibility and privilege of designing an inclusive classroom space. The design of the classroom includes plans to not only welcome students to the space but to also orient students to learning in an inclusive environment. In welcoming students, I (the second author) introduce three key assumptions: all students are capable of learning, students' active participation is essential for learning, and learning is an ongoing process rather than an end state. While these are assumptions commonly held by instructors in higher education [15] and were initially given to me by my fellow colleagues, I have found that it is important to state these assumptions explicitly to my students. The students in my classroom are often first-generation women who come to the classroom questioning their place in higher education or their abilities to succeed academically. My intent in explicitly communicating these assumptions is to reduce any sense of alienation they may be experiencing and to create a learning environment in which they feel they belong.

In orienting students to an inclusive classroom, I (the second author) begin by providing the guidelines for classroom discussion that will support an inclusive learning environment. I base my guidelines on those provided by Lynne Weber Cannon [16], which include such examples as, "Acknowledge that racism, sexism, heterosexism, and other forms of institutionalized oppression exist," "Assume that others are doing the best they can," and "Create a safe atmosphere for open discussion" (p. 130–131). In addition to these guidelines, I place a high value on clearly communicating academic expectations as well as ensuring students understand the classroom mechanics (e.g., on-line course management systems) which can be alienating or unfamiliar to some students. In the inclusive classroom, the instructor has an important responsibility to make any implicit assumptions explicit to the students to avoid any hidden curriculum which can exclude students without access to this information. This explicit description of the course and introduction to an inclusive classroom provide the foundation for the students to develop the classroom norms [17].

In providing a clear understanding of the course and the guidelines for interaction, the students get a sense of what the class is about and are ready to develop a set of norms for how they will participate and how the class will operate. In a smaller class, students can work as a class to formulate shared ideas for classroom norms through discussion. In a larger class, students can work in small groups to develop ideas for class norms. Once a list is compiled, the class can review the norms and offer objections or further suggestions. For this process of developing classroom norms to be effective and safe for all students, it is essential that the instructor be skilled in facilitating the discussion among students while simultaneously attending to the non-verbal communication needs of students.

2.2. Attending to the Emotional Landscape of Learning

2.2.1. Mindfulness

Along with attending to norms for interaction, I (the second author) attend to students' experience in the class through the practice of mindfulness. While mindfulness has been associated with psychological well-being and stress reduction outside of the classroom, there is also evidence that mindfulness has similar benefits if practiced in a learning environment [18]. I came to higher education from a career in mental health treatment; after my positive experiences using mindfulness in a treatment setting, I adapted the mindfulness practice for the classroom. I have since found that students genuinely enjoy the practice, which is associated with emotion regulation and managing distress. Students have reported to me that it is a beneficial part of my courses, so I have continued to use it in all of my classes regardless of topic. While the practice can be beneficial personally for the

student, mindfulness often connects to the course topics I teach as well (Understanding Psychological Disorders, Basic Counseling Skills, and Introduction to Clinical and Counseling Psychology).

Mindfulness is defined as a state of "conscious awareness" [19] (p. 289). I adapted the mindfulness instructions I use in my classroom from Dialectical Behavior Therapy developed by Marsha Linehan [20] as well as Jon Kabat-Zinn [21]. Although practice is not easy, the concept of mindfulness Linehan developed is quite simple in its instructions: just notice the present moment non-judgmentally. Included in these instructions is the idea that mindfulness is a practice, because it is not about doing it "right." For example, distractions are expected and serve as an important reminder to return to the present moment. The goal in mindfulness is not to avoid distraction, but to notice it when it occurs and then return to the practice. I lead a practice of mindfulness at the beginning of every class for 60 s. Students can choose to focus on their breath, sounds, or physical experiences, and a bell is rung three times at the beginning of practice and one time at the end of the practice. Occasionally, I will ask the class about anything they might have noticed: sounds, the passing of time, etc. I also incorporate opening readings as time permits and when it connects to classroom discussion.

Cultivating a practice of mindfulness can be a particularly useful strategy for students in developing an inclusive classroom. First, it offers the students a skill they can use to stop and notice intense emotions or difficult conversations that may occur in the classroom. I also refer students to the skills of mindfulness when taking exams. The framework of mindfulness supports the assumptions provided earlier about learning. Learning mindfulness is a process, not an end state; the same is true for classroom learning. Further, the skill of noticing the moment without judgment allows students to practice accepting themselves in these moments without judgment. Lastly, in an age of non-stop stimulation from phones and devices, mindfulness empowers students to create time to stop and breathe—to have distance from the stimulation of digital communication.

2.2.2. The Scientific Attitude

One concept from psychology I (the first author) draw on to support inclusion in the classroom is the scientific attitude, that is an attitude that encourages openness, curiosity, humility, and skepticism [22]. Introducing students to these characteristics is fundamental in the Diversity Lab included in my *Preparation for Working with Families* class. In an effort to share the lived experiences of a diversity of individuals and families, the Diversity Lab focuses on race, class, gender, ethnicity, religion, disability, and sexual orientation over the course of seven weeks. Each week opens with a cultural interview in which students reflect on and discuss their own social location on a particular identity, e.g., their relationship with power and privilege due to their race. Then we watch a movie, typically, a documentary in which we reflect on the social location and lived experience of the individuals and/or families presented in the video. (See Appendix A for the list of movies.) As the Diversity Lab draws on, the class increasingly reflects on how the identities we have explored intersect. For example, by the end of the lab, we are able to explore intersections of race, class, gender, ethnicity, and disability when we explore sexual orientation via the movie *Moonlight*.

For many of my students who are primarily White women, the exploration of their social location often involves acknowledging their own privilege which can be upsetting or at very least anxiety provoking. I (the first author) have found the scientific attitude an empowering way to encourage students on what can be an emotional journey. For example, I encourage an attitude of openness and curiosity about difference rather than fear and avoidance, and I create space for that exploration in the classroom. I also foster conversation and student reflections about their own resilience, and I strive to create a space for cultural humility and questioning. Connecting resilience and humility with skepticism and openness (i.e., recognizing that you might be wrong) supports students' ability to move from tears and guilt toward strength and empowerment as they find the courage to stay open and approach rather than avoid difference in the classroom. Furthermore, acknowledging the approach/avoidance paradigm and the scientific attitude empowers students with a language and coping strategy for understanding what may feel like primitive reactions to difference.

2.2.3. Silence and Voice

The Diversity Lab in the *Preparation for Working with Families* course brings to the fore the lived experiences and voices of those at the margins of the dominant discourse based in White, middle and upper-class values undergirded by Christianity, heterosexism, sexism, ableism, and cisgenderism [23]. Featuring alternative discourses in the classroom can be empowering, particularly for students of color whose voices and experiences are often silenced by the dominant discourse. Still, it is important to value diversity without oversimplification or tokenization. I (the first author) work to achieve this balance by bringing the lived experience and narratives of diverse people into the classroom through carefully selected source material for analysis and discussion. I do this, rather than primarily relying on students of color as the sole source of diversity in the class. The latter can lead to unintended but negative outcomes such as tokenism, e.g., asking students to speak for an entire race or religion. In contrast, by featuring a diversity of lived experiences from inside and outside of the classroom, I use videos in the Diversity Lab (see Appendix A) to bring students in conversation with diverse perspectives, where everyone is invited to engage and add to the conversation. Students of color may broaden, interrogate, and complicate the perspectives I bring to class.

As I (the first author) encourage openness, humility, skepticism, and resilience, I work to attenuate the potential burden that diverse students may feel to be the expert or to educate others which can result in additional emotional labor for these students [24]. In other words, by bringing in additional source material, such as carefully selected movies and videos, to facilitate the exploration of diverse identities, I work to relieve pressure diverse students may feel to be the voice or representative for their race or group in class. Rather than put the lives and experiences of my diverse students under a microscope in front of the class to be explored and dissected, I bring in outside material based in the lives and experiences of diverse people and families. Hence, diverse students are encouraged to speak and share (adding their perspectives) but also empowered with choice and the knowledge that they are not burdened with being the sole source of diversity in the class.

Still, there are tensions that arise when re-orienting the curriculum from a dominant discourse—that does not recognize race as an important aspect of identity and that generally views difference as deficient—to an alternative discourse that brings to the fore the lived experiences of oppression. For White students, the process can be disorienting, uncomfortable, and anxiety provoking. One challenge may be moving these students from tears and guilt toward resilience and empowerment. Students of color may simultaneously feel frustration and impatience with their White counterparts' lack of awareness, knowledge, and exposure. Hence, a revelatory moment of insight for one may feel like a microaggression for another.

Navigating these tensions can be challenging. Finding ways to support all students and meet them where they are at is essential. Photovoice can be useful in this endeavor, particularly with respect to processing race-based topics in multicultural coursework [25]. This activity requires students to find or take a photo that represents their reactions to the course content and then write a brief reflection explaining the connection. Paone et al. [25] suggest that Photovoice tends to generate more reflection on emotional responses to course content given the focus on the visual stimulus (a photo) which tends to tap into different areas of the brain than typical academic exercises such as papers, quizzes, and exams.

In the *Preparation for Working with Families* class, I (the first author) find Photovoice to be an invaluable tool for tracking the emotional journey of individual students in the class, and providing tailored, individualized, supportive feedback. For example, I can validate students of color with more advanced understandings of diversity who are frustrated by their White counterparts, and at the same time, I can support White and other students feeling conflicted about their privilege and struggling to grasp lived experiences associated with various identities. No matter their social location, I can meet students where they are and provide support and validation on their journey using the Photovoice assignments.

2.2.4. Summary

Creating an inclusive classroom environment involves welcoming students to the space, creating room for their voices and cultures, and attending to their learning needs from a more holistic perspective, especially the emotional landscape of learning. The focus of culturally sustaining pedagogy on bringing from the margins the experiences and voices of the oppressed undergirds inclusion in the classroom. We integrate universal design and culturally-sustaining pedagogy in our constructivist classroom by developing an instructional climate [8,26] that situates students as co-creators of knowledge who have the power to shape classroom norms, explore diverse identities, and narrate their own experiences.

3. Facilitating Authentic Dialogue

Activities that generate authentic dialogue center the student voice in the classroom and help create community. A key principle of universal design for instruction, developing a community of learners occurs through communication among students and between students and faculty [8,26]. Authentic dialogue that interrogates oppressive systems aligns with culturally sustaining pedagogy. Discussed below are two of the ways I (the first author) have structured opportunities for authentic dialogue in my classes to interrogate injustice and systems of oppression and to explore diverse identities.

3.1. The Fishbowl Technique

Fishbowl discussions that address socially relevant questions are one way I (the first author) stimulate authentic dialogue in my introductory psychology classes. Fishbowls are small group conversations of 5-6 students that happen in front of the whole class. Small groups are graded upon their ability to engage in respectful dialogue, offer divergent viewpoints, create space for all group members to contribute meaningfully, and integrate aspects of psychology. Small groups engage in discussion for at least five minutes. After the small group discussion has ended, the fishbowl is open to discussion from the rest of the class.

To stimulate authentic dialogue, I introduce the fishbowl question in class at the start of the activity and invite students to volunteer to participate. This generates spontaneity. I have learned that if fishbowls are introduced too early (e.g., all provided at the beginning of the semester), students may simply make notes or talking points and read from those for the entire five minutes. Although they do not know what the fishbowl question will be ahead of time, allowing students to volunteer for the fishbowl they participate in empowers them with choice, increases comfort with the activity, and taps intrinsic motivation, all important in a constructivist classroom. Moreover in line with culturally sustaining pedagogy, this activity brings a critical perspective to introductory psychology even as students cover traditional topic areas.

One of the fishbowls based in social psychology ask students to explore and unpack the all too frequent phenomenon of unarmed Black men being killed by police. Students are asked to examine how social psychology helps make meaning of or explain this tragic phenomen. In this fishbowl students tend to discuss implicit bias as well as racism. When studying nature and nurture, I introduce a fishbowl focused on the potential moral hazards of designer babies which gets at fundamental questions of who should have a right to live and exist in this society and who might be eliminated. These are existential questions for many with disabilities. In this fishbowl students are challenged to think about and discuss how to make room for and value difference in this society as well as the perils associated with technological advances aimed at "designing" more perfect humans. This theme is re-examined when studying sensation and perception with a fishbowl focused on cochlear implants that challenges perspectives based in ableism and a medical model of disability, i.e., disability represents brokenness that needs to be fixed by medical intervention. Here an introduction to the social justice model of disability that underlies universal design is apropo; that is, it is the oppressive society

or environment that does not make room for people with disabilities that is disabling. See Appendix B for sample fishbowl questions referenced in this section.

3.2. Cultural Interviews

In my *Preparation for Working with Families* class, cultural interviews provide opportunities for engaging in authentic dialogue, developing community and connection, and exploring power and privilege. Students engage in cultural interviews with a classmate during the Diversity Lab. I typically randomly assign students to interview a classmate each week. The cultural interview questions I use were given to me by my colleague Dr. Bryana French [27] who teaches a multicultural counseling course for doctoral students.

In general, students talk about how they feel about a particular social group membership (e.g., race, class, gender, ability status, religious or ethnic group, gender or sexual orientation). The interviewer asks how membership in a particular group has influenced the student's development, how the student has affirmed their social group membership, and about the parts or areas of their social group membership with which the student is uncomfortable. In addition, the interviewer asks about generalizations or stereotypes associated with membership in that particular group and about basic assumptions held about out groups.

Through a series of cultural interviews, students explore diverse identities with classmates and even the instructor as I (the first author) will often fill in when a student does not have a partner. I instruct students to rotate the role of interviewer and interviewee. Depending on the number of questions asked students may interview a classmate for up to 15 min; I usually keep time and tell them when to switch roles. I provide interview questions and ask the interviewer to really focus on listening and helping their partner explore and peel back the layers that comprise the lived experience of that particular diverse identity.

Cultural interviews can help to develop racial literacy which pushes back against a dominant discourse that minimizes race as an important aspect of identity and discourages talking about race [23]. In processing the experience each week, I often ask how many people had trouble discussing or finding words to describe the identity explored that week. Students are encouraged to think about why they lack language or a lens to describe their identity along a particular axis of diversity. Often students are surprised that they have never thought about or had to think about a particular identity before, and this is typically connected to privilege.

The opportunity to engage in these structured interviews in the classroom normalizes diversity as central to understanding individuals and families. Moreover, because everyone has the opportunity to be both the interviewer and the interviewee, the process underscores that diversity belongs to everyone. Everyone has a race and culture. Race and racism do not simply belong to people of color; diversity is not simply about the "other". Rather these issues of diversity are about all of us.

3.3. Summary

Activities designed to facilitate authentic dialogue utilizing a critical perspective can deepen approaches to culturally sustaining pedagogy focused on constructing knowledge by interrogating oppression in people's lives. Moreover, authentic dialogue can facilitate the development of a community of learners, undergirding a key element of universal design for instruction [8,26]. Cultural interviews and the fishbowl technique are two practical strategies for generating authentic dialogue in the classroom in ways that integrate universal design, culturally sustaining pedagogy, and constructivist approaches to teaching and learning.

4. Engaging in Assessment

Attention to what the class feels like is an essential component of inclusive pedagogy. In line with universal design, this involves paying attention to the physical space. I (the first author) am fortunate to work at a large research university with access to active learning classrooms. The circular

tables, microphones, and multiplicity of projection screens support the ability to engage in authentic dialogue and share the space. The circular tables or circles facilitate small group discussion, while the microphones facilitate large class discussion—better enabling people to hear each other's voices from across the room for example. The multiplicity of projection screens makes visual material more accessible regardless of where one is seated. Moreover, aligned with a constructivist approach to teaching and learning, the instructor table is not located in the front of the classroom. In fact, there is no front of the class in these active learning spaces. Whiteboards are located all over the room and near student tables, generating the expectation that students as well as the teacher will use these boards to work together, problem-solve, and construct knowledge. Students can even project their computer screens to the class from their seats. Hence, the physical space supports an inclusive and constructivist pedagogy aimed at sharing the space in active learning. The importance of the physical space to the feel of a class should not be underestimated, and responding to the ever-changing dynamics or energy in the classroom requires constant attention and assessment.

4.1. Assessing Classroom Dynamics

Since an inclusive classroom is designed with student participation at the center, it is essential to obtain not only formal assessment data but also ongoing informal feedback directly from students. Having been trained in counseling psychology, I (the second author) rely heavily on my informal interactions with students as data to inform not only my assessment of students' learning but also my understanding of students' experiences in the classroom and thereby my teaching. Students are continually providing me with data on what they are learning in the course and how they are experiencing the classroom. Students' facial expressions, body postures, eye contact, and verbal responsiveness reflect to me their engagement in the course and the value they are placing on their experience of learning in the classroom. While it is impossible to respond to every facial expression, seat shift, or eye roll (nor is it necessarily valuable), it is beneficial to notice patterns of student response. For example, most if not all instructors have had a lecture, exercise or discussion where it becomes apparent that the students are no longer attending and therefore no longer engaged in learning. This conclusion is drawn from an apparent pattern of non-verbal response (facial expressions, body posture, eye contact, etc.) as well as a lack of verbal engagement.

It is through the gathering of these data that I (the second author) know I need to stop and attend to this feedback and ask questions not only of myself but also of the students. Hence, I ask myself: "What is happening right now?", "What is not working?", "Am I missing something?" This type of mindful practice of stopping, noticing, and asking questions is useful and informs the next step I take in the classroom.

In addition to the ongoing interaction with students in the classroom, I (the second author) have found that informal one-on-one or small group interactions offer invaluable data regarding how students are experiencing the class and progressing in the course. While brief, the informal interactions, which occur just before or just after class, are particularly beneficial. More than once I have been informed about important information in these informal exchanges, such as one instance in which I learned that students' current grades were inaccessible in our course management system. I had previously asked the entire class if they were able to locate their course grades in the system (and received agreeable nods), but it was only by an informal conversation with an individual student that I found out that the information was not accessible. These types of interactions may be particularly beneficial for students who are reluctant to ask questions in front of the whole class.

Lastly, I (the second author) conduct an informal midterm assessment of students' experiences in the class by asking three questions [28]: In regards to your learning experience in this class, what are things I (the instructor) should start doing? Keep doing? Stop doing? The students write their responses to the prompts on pieces of paper without their names. At the next class, I provide a summary of the feedback received from the students by highlighting the patterns of response. While the feedback about what is working is helpful and encouraging to read, I review it with the students fairly quickly.

However, it is any negative or critical feedback that is particularly beneficial to discuss with the students. I facilitate a class discussion about options for responding to any patterns of concern and attempt to retrieve any suggestions the students may have. Inevitably, some students will provide feedback such as "Stop giving exams," but the predominant responses are insightful, informative, and impact my teaching in the course. Surprisingly, even the comments regarding the discontinuation of exams can be informative. I will ask the students, "Is this feedback about test anxiety or about being overwhelmed?" or "Is this feedback reflecting a concern that the exams are poor measures of learning?" Engaging with students about this feedback can not only be informative for me as an instructor about what students are experiencing, but it also builds rapport. The students learn that I am listening and responsive to their feedback, which facilitates an inclusive instructional climate and a strong student-instructor relationship that is important to student outcomes [29,30], particularly for those experiencing barriers to entering and/or staying in higher education.

4.2. Assessing Student Learning

Informal assessment and formal assessment go hand in hand. I (the first author) discussed two formal assessments or graded assignments (Photovoice and Fishbowls) in the previous sections. Drawing from universal design, culturally sustaining pedagogy, and a constructivist approach in the classroom in this section, I will describe three other approaches (quizzes, papers, and projects) I use to facilitate and assess students' learning.

4.2.1. Quizzes

In an age of information overload, fake news, and alternative facts, the ability to engage in convergent thinking to eliminate distractors and hone in on the best, most solid answer to an issue is increasingly important. This kind of discriminative analysis underlies my (the first author's) assessment of student learning via multiple-choice quizzes. Questions for each quiz are randomly selected from a larger pool of items. Aligned with universal design [8,26] these quizzes are delivered electronically, are not timed, require low physical effort, and can be taken in a location of the student's choice. Moreover, in line with tolerance for error [8,26], students can take the quizzes more than once—although they may not have the same questions each time.

Integrating a constructivist approach with universal design, I (the first author) include multiple-choice quizzes in my courses to develop convergent thinking and other skills. In my *Preparation for Working with Families* course, for example, when students are not performing as well as they would like on the chapter quizzes, I encourage them to practice the consultation skills professional helpers rely on to determine the best way forward when faced with issues. Helpers are trained to consult colleagues, professional texts (e.g., ethical codes), and supervisors. I encourage students to do the same, i.e., use their textbook and classmates, to improve their performance on quizzes. In line with social constructivism, my approach to quizzes underscores that learning is relational and occurs in a social context; hence, taking quizzes with a fellow classmate can facilitate learning how to discriminate among options and choose the best answer based on the information provided. Moreover, and importantly, because there are always errors in coding, I strongly encourage students to consult with me about answers they believe are correct but are marked wrong on the quiz. Key to universal design and an inclusive instructional environment, I model a tolerance for error, openness, and resilience in correcting my mistakes in the classroom.

4.2.2. Papers

I (the first author) find that papers are a fruitful way to integrate constructivist and culturally sustaining pedagogies. For example, the Diversity Lab referred to earlier ends with a Diversity Paper in which students narrate their own understandings of diversity and their diverse identities. This narrative includes unpacking attitudes passed down in their families, and their own basic assumptions about race, class, gender, ethnicity, religion, disability, and sexual orientation. In this

discussion, students are also asked to envisage what social justice work looks like for them. The narrative identity work involved in writing these papers integrates the self-authorship [31] connected with constructivist approaches into culturally sustaining pedagogy by valuing students as cultural beings and supporting their cultural literacy. Although I include a grading rubric that I share with students as I introduce the assignment, I generally pay attention to students' depth of reflection and their ability to articulate an understanding of diversity in assessing student learning. In line with universal design and the principle of low physical effort [8,26], all papers are turned in online.

4.2.3. Projects

Well-designed projects can also be useful for advancing an inclusive pedagogy based in constructivism, culturally sustaining pedagogy, and universal design. One example that I (the first author) will share here is called *The Psychology for the Social Good Project*. *The Psychology for the Social Good Project* is a two-part project in which students use psychological concepts to create and critically evaluate media in order to address an important social issue.

The Psychology for the Social Good Project is designed to empower students to use their education to think critically about the kind of society in which they want to live and to contribute to the social good. For this project groups of 5-6 students apply concepts they have learned in psychology—like the serial position effect, i.e., the fact that we remember best what is at the beginning and end of a message—to construct an engaging website aimed at advancing the social good. For this project, each student takes on a specific role as either a writer/content generator or as a graphic designer to co-construct the website. From a constructivist perspective, students are not only encouraged to construct knowledge in the form of a public messaging campaign but also empowered to use their voices to shape society. Over the years, my undergraduate psychology students have designed websites to address issues such as sex trafficking, Islamophobia, sexism, rape culture, and homelessness—applying psychological concepts to make their websites meaningful and impactful in ways that get their message across.

The opportunity for students to use their voices to push back against oppression and discrimination in society integrates aspects of constructivism and culturally sustaining pedagogy. I (the first author) developed the *Psychology for the Social Good Project* after a few years of teaching introductory psychology and ending the semester with a typical 100 question multiple-choice exam. Although I very much enjoyed teaching the class, the final exam was always rife with anxiety, fear, and an energy that did not match the rest of the semester. Once I implemented the *Psychology for the Social Good Project* as my final exam, these were some of the most enjoyable days of the class.

The last day of class—during the scheduled final exam when students' websites are projecting from the screens on the walls of my classroom—is an incredibly gratifying testament to constructivist teaching and learning and a fulfilling way to share space in these final hours. During this time, each group of students is assigned to critically evaluate another group's website, and they are required to turn in their critical analysis online by the end of the scheduled final exam. In alignment with universal design, there is flexibility in who types or turns in the critical analysis for the group. Moreover, students are given a rubric for the critical analysis that I review with them at the beginning of the exam and project for them during the course of the exam. Listening to students argue during those two hours over which psychological concepts they detect in their critical analysis is edifying. Moreover, watching them work through and tease apart the logical arguments in their classmates' website by taking the positions to their logical extreme is delightful. Finally, listening to students evaluate evidence—trying to discern authority, credibility, and bias—as they critically analyze media makes me feel like this is what higher education is all about. The teaching assistant and I grade each group's website and critical analysis, where students receive the grading rubric for the website when I introduce the assignment. Additionally, students are evaluated on their ability to perform their role in co-constructing the website by their fellow group members; expectations for performance and the rating form are also shared when I introduce the assignment. Taking the average rating of each group member to determine the

role performance grade, assessment, and grading for this final project is shared between students and instructional staff.

4.3. Summary

In our approach to inclusive pedagogy that integrates universal design, culturally sustaining perspectives, and constructivism, assessment is multifaceted—directed at classroom dynamics, students' experience of the course, and student learning—and shared between the instructor and students. Maintaining principles of universal design such as an inclusive instructional climate and community for learning [8,26] is key. Informal assessments can be useful. In this section, we discuss informal assessment strategies and provide examples of (a) how formal assessments such as multiple-choice quizzes can be informed by social constructivist approaches that are integrated with universal design and (b) how papers and projects can integrate constructivist approaches with critical perspectives that advance culturally sustaining pedagogy.

5. Implications

Although we have focused on integrating constructivist approaches with universal design and culturally sustaining pedagogies in the social sciences, we believe that such an integrative approach to teaching and learning can undergird efforts toward inclusion across disciplines, including STEM fields. For example, inquiry-based learning in the sciences has its roots in constructivism, where students are active participants in the learning process [32]. Moreover, there is some evidence to suggest that this approach is superior in increasing scientific literacy when compared to traditional teaching methods [33]. We believe that integrating universal design and culturally sustaining pedagogies with inquiry-based learning can result in additional gains associated with inclusive pedagogy. Integrating constructivism with universal design and culturally sustaining pedagogy provides a coherent lens for viewing students holistically as social, cultural, emotional learners and creating space in the educational setting to attend to students' social, cultural, and emotional needs. Intentionally creating spaces where students can bring their whole selves to learning across disciplines, including and especially the STEM fields is needed, and it is beginning to happen. For example, at the University of Minnesota, faculty in our Chemistry Department are providing leadership on the University's student mental health initiative—recognizing, accepting, and advocating for educational and institutional responsiveness to students with disabilities, specifically disabilities related to mental health. An intentional theoretical perspective, such as the one we present, grounded in teaching and learning can strengthen these efforts by informing approaches to the STEM classroom. In fact, we believe that creating access and space for student identities, including their socio-cultural identities, in classrooms is ripe with the potential to make STEM fields more accessible and attractive to women and minoritized groups who are often difficult to recruit and retain in these fields.

6. Conclusions

The integration of universal design and culturally sustaining practices with constructivist approaches to teaching and learning has vast potential to advance inclusive pedagogy. We agree with Waitoller and Thorius' [4] assertion that culturally sustaining pedagogy can broaden and deepen conversations about inclusion and access within universal design. Moreover, constructivist approaches to teaching and learning provide educators with a broad avenue for integrating theory and practice in the classroom. Throughout this paper, we provide examples of ways we integrate universal design, culturally sustaining pedagogy, and constructivist approaches to teaching and learning, particularly with respect to creating an inclusive instructional climate, developing a community of learners, facilitating tolerance for error, and incorporating a holistic approach to students that values their cultural and other identities.

Integrating theory and practice, we share practical strategies for co-creating and sharing the space with students, facilitating authentic dialogue, and engaging in assessment. Highlighting the

importance of the emotional landscape of learning and assessing classroom dynamics, we also discuss strategies for attending to silence and voice in the multicultural classroom. For us, access and inclusion are about developing classroom environments and curricula that welcome and validate students across a range of diverse identities including race, class, gender, ethnicity, disability, religion, and sexual orientation, and we hope that our work inspires others toward advancing a more inclusive pedagogy.

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Appendix A

Diversity Lab Topics and Videos

Topic	Video
Social Class	Tough Love, Director Stephanie Wang-Breal
Race	Off and Running, Director Nicole Opper
Ethnicity	Twin Sisters, Director Mona Friis Bertheussen
Religion	Between Allah and Me and Everyone Else, Kyoko Yokoma
Disability	Louder Than Words, Director Saj Adibs
Gender	Growing Up Trans, Frontline Documentary
Sexual Orientation	Moonlight, Director Barry Jenkins

Appendix B

Sample Fishbowl Questions

Fatal Shootings of Unarmed Black Men

- The fatal shooting of Trayvon Martin by George Zimmerman took place on the night of 26 February 2012, in Florida. Martin was a 17-year-old African American high school student temporarily living in the gated community where the shooting took place. Walking home at night wearing a hoody, Martin who was unarmed was shot by Zimmerman during an altercation between the two.
- 23 November 2012, Michael Dunn pulled into a gas station in Jacksonville, Florida. He parked next to a red Dodge Durango full of African American teen-aged boys. Dunn didn't like the loud music—"rap crap", as he called it—coming from the teens' SUV. So he asked them to turn it down. The teenagers did not comply. Dunn felt threatened and shot into the SUV killing 17-year-old Jordan Davis. The teenagers were unarmed.
- This year, Michael Brown, an unarmed black teenager, was shot and killed Saturday, 9 August, by Darren Wilson, a police officer, in Ferguson, MO, a suburb of St. Louis.
- How does social psychology help explain what happened?

Designer Babies

- Aided by inexpensive DNA-scanning techniques, medical personnel are now becoming able to give would-be parents a readout on how their fetus' genes differ from the normal pattern and what this might mean.
- With this benefit comes risks. Might labeling a fetus for example, "at risk for a learning disorder" lead to discrimination or self-fulfilling prophecy?
- Assuming it was possible should prospective parents be able to take their eggs and sperm to a genetics lab for screening before combining them to produce an embryo?

Deaf Culture

- Cochlear implants can help children become proficient in oral communication (especially if given to them as preschoolers or even before age 1).
- Deaf children who grow up around Deaf people more often identify with Deaf culture and feel positive self-esteem.
- Deaf children who grow up in signing households whether by Deaf or hearing parents express higher self-esteem and acceptance.
- Do you think that implanting cochlear implants in prelinguistically deaf children discriminates against and suppresses Deaf culture?
- Do you believe that parents should have the right to have a cochlear implant implanted in their prelinguistically deaf children before the age of consent?

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