Radical Accommodation:
Course Design for Extreme Access to Education

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Abstract
Universal Design for Learning (UDL) sprang from the concept of "universal design" in architecture that attempted to design the physical environment in a way that was accessible to all individuals [1]. UDL extends this idea by attempting to provide course design and instruction in a way that is flexible, customized, and easily adjusted to meet the needs of individual learners. Rather than designing courses for the "typical" student and "accommodating" diverse learners, the course designer attempts to anticipate diverse learners and design instruction in a way that is accessible to the widest range of potential learners from the beginning. UDL has focused almost entirely on learning needs related to the physiological elements of the brain (including cognitive, sensual, and motivational). Application of UDL principles improves access to a wider range of students, especially those with cognitive and physical disabilities. Yet students face many other situational, dispositional, and institutional barriers to learning that have not been well addressed in education or UDL. My research with UDL combined with expertise in humans/families, online learning, and experience with non-traditional students has challenged me to push the conversation about accommodation further. This paper will share my personal experience with the application of UDL to course design and then make two primary arguments.First, I argue for expanding our ideas of accommodation of diverse learners from physical and cognitive dis/ability to the broad and infinite human diversity that is part of the learner (e.g. family situation, language of origin, cultural background, SES, etc.). The second primary argument is to move beyond accommodating to promoting the learning of diverse students, for the benfit of all students. Course DESIGN will be emphasized as a tool for accomplishing these goals. Situational barriers and potential course design techniques to remove those barriers will be described and discussed. Critical questions will be raised regarding UDL as it relates to systematic oppression within education, maintaining rigor while improving access, teaching in an environment on increasingly diverse students, and addressing increasing demands on course designers and instructors.

1. Introduction
Efforts to increase access to education have become a priority globally and have targeted changes in cultural attitudes about education, public policy, institutions, and pedagogy. This movement has both pragmatic and philosophical roots [2]. Pragmatic beliefs are rooted in the democratic assumption that an educated citizenry benefits the whole society and is worth the investment. Philosophical beliefs are rooted in the tenets of social justice that view education as a human right in modern society which *should* be available to all, regardless of the presence of pragmatic benefits. Neoliberals critique the assumption that increased access to education is best for society and provide arguments to the contrary [3,4].
There is evidence to suggest that efforts to increase educational access have been successful in increasing social mobility, income, and opportunities for historically disenfranchised groups to more fully participate in society [3]. Yet there continues to be large difference in participation in higher education for different socio-economic and cultural and/or ethnic groups in almost every country, with only limited improvements as a result of policies intended to make access more equitable [2,3]. Other areas of inequity are based on dis/ability, gender, family status, the presence of domestic violence, and language of origin among others [5-9]. *I take a social justice perspective to argue for increasing access to learning in higher education at the pedagogical level through accessible course design using the Universal Design for Learning (UDL) framework.*

1.2 Social Justice Philosophy in Education

"Justice" is a value broadly held by persons of diverse backgrounds and perspectives. Depending on one's conception of justice, paths to achieving it can vary greatly. Most definitions of social justice are *distributive* in nature: they look at how the good and bad things in society are distributed and strive for more proportional distributions of each [4,10]. Neoliberal arguments of justice tend to be more *retributive* in that they focus on personal responsibility and protecting rights and property, competition, and liberty. Retributive concepts of justice include punishing those who infringe upon individual rights [4]. Unequal distribution of the "good stuff" – such as education – is not a concern for those with restributive justice ideals as they tend to view privileges as a product of personal achievement and problems as the result of a personal "lack" [3]. *Recognitive* justice provides *recognition* of various individuals and groups and attempts to provide the means by which all people can exercise their unique capabilities and determine their own actions in a way that generalizes to the interests of those who are least advantaged [4].

Applications of social justice frameworks in education have been focused at the policy level and largely vacillated between distributive and retributive approaches. Australia and the United States both applied distributive social justice frameworks to education in the 1960s and 1970s in response to increasingly disparate participation in education by race and SES [4,11]. Both countries tried to promote more equitable access to higher education by making it more affordable. Australia focused on financial incentives such as free tuition and universal living allowances for college students [4]. The U.S. passed the Higher Education Act of 1965 that provided financial assistance to low income students and allocated university resources to address the war on poverty [11]. The U.S. also passed legislation to target access to education for persons with disabilities, veterans, and minority groups [12]. Participation in higher education did expand, but increased accessibility occurred in unequal ways [4].Underrepresentation of some groups in higher education persisted – particularly those from lower SES, non-native speakers, disabled persons, individuals living in rural areas, and women in traditionally male dominated fields [4].

As political climates changed, a retributive approach took over in response to perceived excessive distributive justice [4]. Educated individuals were viewed as being more worthy than the uneducated because it was presumed that they were successful because of individual merit such as talent and hard work [4]. Similarly, many Western European countries that have a long history of distributive justice values in education have begun moving more toward the neoliberal meritocracy view of education. This is in part due to higher demand for education and a more consumerist model that looks at the economic value of education compared to costs and shifts the paradigm of public education as a public good to a private good that benefits – and should benefit - those who manage to acquire it [14]. Paradoxically, as access to education increased, those footing the bill (tax payers, parents, students) demanded to know that the cost was a good investment. This increased calls for accountability in education and that recipients (students) prove "worthy" of the investment.

I agree that it is critical that public policy continue to address disparities in access to education. But history has shown that access to the institution itself will not resolve the inequities. Educational inequities are the result of varied, multi-faceted factors that must be addressed at every level. What good is it to provide ways for underrepresented students to come to institutions that are ill equipped to address their learning needs and often propogate the barriers that they overcame to arrive there? Educational systems are populated with individuals with privileges that many underrepresented groups do not possess. The majority succeeded because they knew how to navigate educational systems, and their ways of learning likely fit the dominant ways of delivering instruction. As they becomes administrators, course designers, and teachers, they replicate the dominant ways of learning that contributed to their own success and others like them but do not serve underrepresented students well. This "ego design" is probably not intentional, but replicates patterns of pedagogical privilege within the classroom.

Simply "creating space" in our institutions is a woefully inadequate approach to educational equity if the students' learning needs, values, experiences, and epistemologies are ignored or devalued. The educational system itself from administration to classroom instructors must take responsibility for providing a culture that contributes to learning opportunities for ALL students [4]. *Epistemological equity* requires an active resistance to allowing Eurocentric knowledge and ego design to appropriate other ways of knowing [4]. *Recognitive justice* invites us to recognize the interests of those least advantaged by investing in understanding their experiences, ways of knowing, values, and approaches to learning. Universal Design for

Learning (UDL) provides us with the framework and tools to turn those understandings into accessible course designs.

1.3 Persistent barriers to accessing education

By far the most persistent and formidable barrier to accessing education is low SES [14]. Lower educational achievement for low SES individuals compared to middle and high SES holds true at all educational levels from grammar school to higher education [14-16]. Although there are diverse factors that may contribute to this gap such as student health, instability of families, etc., teachers are the most salient school related factor in combatting the SES achievement gap in primary and secondary school [14]. The condition of "working class" students who must put in long hours of paid work while in college also presents a situational barrier to educational achievement [17]. Being from a racial or ethnic minority is another consistent predictor of lower access to education and achievement. Although targeted efforts to make education more accessible to minority students have increased participation, these groups are still underrepresented in college attendance and graduation rates [4, 18].

Persons with disabilities continue to be underrepresented in education globally. Among countries in the Organisation for Economic Co-operation and Development, 11% of better educated persons have disabilities compared with 19% of the less educated. Poverty and multiple status disadvantages (e.g. being a woman or a minority race *and* having a disability) exacerbate these disparities [5]. Language barriers and restrictive educational policies about language can also pose barriers for students whose primary language is different than the language of instruction [9].

There are many situational barriers to higher educaiton that involve family issues and tend to impact women more negatively than men. Adult women's return to school is often characterized by role conflict and "hard choices" stemming from their roles as caregivers, primary providers of unpaid family work (e.g. housework), and providers or co-providers [7]. School becomes a competing priority with work and family life. Low income women face even greater barriers when they cannot afford childcare or help with housework and must try to perform these duties while doing class related work at home. Their costs tend to be higher than those of male contemporaries because they are more likely to be bearing the cost of childcare while attending school. Additionally, women report less support for their role as student [6,7].

Women especially may experience the effects of violence as they continue their education. Risks may be elevated when victims of abuse take classes, and they sometimes have the additional burden of deescalating the anxieties of the abuser or keeping their education a secret [8]. Education might also be traumatizing as content or even instructional methods may trigger memories of past violence [8]. There may be similar concerns with veterans or other persons suffering from post traumatic stress. Despite these challenges, there has been an increase in nontraditional students attending colleges and universities while balancing full time jobs and family responsibilities [7].

Lesbian, Gay, Bisexual, Transgendered, and Queer (LGBTQ) students are some of the most frequently affected by discrimination [19]. Anxiety that is associated with being a member of a negatively stigmatized social group has been shown to be very effective in interrupting and reducing the performance abilities of such groups, a process that is documented in the stereotype threat research and is especially significant for LGBTQ individuals as well as racial minority students [20].

1.4 The need for a paradigm shift

There was a paradigm shift in architecture and design when designers stopped thinking of the people who use their products as being "disabled" but rather the designs themselves. Previously, designers produced products and architecture for the "typical" user or assumed that users had the same capabilities as themselves (ego design). However, when designers made this faulty assumption and designed with their egos, their products typically did not meet the needs of a broad range of users [21]. Once designers thought of the *designs* as disabled rather than the users – the paradigm shift – new products and structures were created that not only benefited "disabled" individual but all users. For example, ramps to buildings had previously been designed as a way to accommodate disabled persons. Once buildings were designed for universal access, including persons in wheelchairs, they provided better access for wheel chair users but also for elderly persons, parents pushing strollers, small children, and people carrying heavy objects. Zero entry pools are another excellent example of how a design primarily for wheelchair users provided more

universal access to pools for a broad range of people. The key to Universal Design is that it focuses on *access* from the beginning rather than *accommodation* retroactively. It is this paradigm shift that is needed in education and encapsulated in the UDL framework.

1.5 Universal Design for Learning (UDL)

In the 1990s in the U.S., there was concern that, while students with disabilities has gained physical access to classrooms, they had not gained access to curricula. David Rose and Anne Meyer along with other people from the Center for Applied Special Technology (CAST) took on the challenge of making the "general curriculum" accessible to students with disabilities [1,22]. Rose and Meyer published a book in 2002 (available at: http://www.cast.org/teachingeverystudent/ideas/tes/) which grounded the UDL framework in research on brain development as it related to learning. They challenged the "one-size-fits-all" approach to curriculum and suggested a paradigm shift in education that viewed some students' inability to learn as an indication that it was the curriculum that was disabled, rather than the students [1,22,23].
UDL shifted the educational approach to working with students with disabilities from accommodation to accessibility. *Accommodations* modify an inaccessible learning environment in order to make it available to a specific person or group, usually upon request. This is inherently unequal as the individuals who require accommodation must first advocate for their own needs, hope that those needs can and will be accommodated, and then wait for the accommodation to be made (e.g. audio content captioned). This results in additional barriers (other than the disability itself) and a delay in access compared to other students. *Accessibility* describes an environment that is already accommodating to the users, so that every individual has equitable access from the beginning. Examples of this are sinks at different heights in public bathrooms, language translators built in to digital information, and digital documents with assistive technology such as screen readers in order to grant immediate and equal access to all.
One criticism of UDL is that it is simply "good teaching" or what teachers already do naturally [24]. What teachers "naturally do" without intentional efforts at inclusive accessibility is probably ego design. This is what teachers have been doing, and the problem of inequity within the classroom has not been resolved so far by what teachers naturally do or even with "good teaching." Teachers' choices directly relate to how much the learning environment expands or limits opportunities for ALL students, and especially those least advantaged [25]. *The intentional proactive valuing of diversity from the beginning (rather than accommodating later) is a critical value of UDL and essential to providing educational access to the broadest range of learners.*

1.6 The case for expanding our ideas of "diversity" and "inclusive course design"

UDL has mostly focused on providing more equal access to education for persons with disabilities through intentional, accessible course design. We know the people with disabilities are only one group of marginalized learners, and that many others are challenged by institutional, situational, and dispositional barriers [6]. I argue for a broader application of UDL that intentionally designs courses for students with a breadth of life diversities – including family situation, language of origin, poverty, health, work, living condition, negative educational histories, incongruence with community of origin, and different levels of support [6].
Without intentional design for diverse student, education is part of a systematic oppression that privileges learners "like us" at the expense of marginalized learners - thus extending the oppression from k-12 education and other societal institutions. Guinier and Torres discuss political race in democracy and liken marginalized groups to the canary in the coal mine whose death signals the miners that it is unsafe to go down: marginalized learners are the first to show signs of educational injustices that eventually harm all learners [26]. Universal Design for Learning embraces the idea that what is good for the canary is good for the miner and intentionally design for maximum learning opportunities for everyone.

2. Applying UDL for Extreme Access to Education

How can we design courses to meet the needs of all learners? A class design that is accessible to learners with every conceivable barrier sounds utopian, and it is. It is the ideal of inclusive education and requires the designer to:

1. Be aware of barriers to learning and be able to anticipate them in advance
2. Understand what is required to “enable” the course design in a way that eliminates the barriers
3. Identify (and have access to) the pedagogical tools, techniques, and technologies that will effectively enable the course design
4. Skillfully implement these ideas into a fully “enabled” design that is ready to function in advance of students entering the class

This requires a good deal of knowledge, imagination, empathy, creativity and investment. Course designers must know about the barriers potential students might face and also be able to imagine potential barriers they have not yet encountered. They must employ imaginative empathy to conceive what it would be like to experience their courses from another’s perspective. Knowledge and creativity are necessary to address those barriers with innovative course designs to improve access. All of these endeavors require a substantive investment of the designers’ time and energy. It is also necessary for the designer to understand that UDL is a process of continuous improvement rather than a destination, and know that the course design will never be truly “finished,” but more universally accessible with each revision. UDL course designers must be committed to inclusive excellence.

Although UDL may seem overwhelming at first, there are some very specific strategies that can be easily applied to course design and immediately improve accessibility. We will first look at some more conventional applications of UDL, which sprang from making learning accessible to persons with disabilities, and then stretch those ideas to apply to some of the situational and dispostional diversities of learners.

2.2 Summary of UDL principles for “enabling” the course design

UDL endeavors to address learning in three different parts of the brain: 1) Recognition networks, which are “what” we learn, 2) Stretegic networks, which are “how” we learn, and 3) Affective networks, which addresses “why” we are learning [27]. The recognition networks are the ways that we recognize content and connect it to things that we already know. Strategic networks are about how we plan and organize our tasks and express our thoughts. Affective networks are how we become engaged in learning and what motivates, challenges, and interests the learner [27]. From these networks come three strategies for addressing diverse learners: 1) Multiple means of representation, 2) Multiple means of action and expression, and 3) Multiple means of engagement. Figure 1 provides UDL guidelines for each of the three areas and examples of how they can be applied in the course design.

Figure 1: UDL Guidelines and Examples of their Application to Course Design

Multiple Means of Representation	Examples
Perception: Provide content in multiple modalities of perception – sight, sound, touch.	• Same content provided in multiple ways: lectures, podcasts, and readings (text, articles) • Digital materials can easily be customized (e.g. text enlarged, volume amplified, video paused) and are screen reader friendly (e.g. PDF) • Does not rely SOLELY on visual representations to ensure access for site impaired students (e.g. visual material has verbal explanation) • Hands-on simulations and activities reinforce content
Language, Expression, & Symbols: Provide alternative representations of how information is expressed.	• Provide glossaries and legends to explain language and symbols • Provide explicit explanations of how syntax and symbols relate rather than assuming the underlying rules and structures are understood • Reduce barriers to decoding information by allowing text-to-speech software, auto voicing of math notations, etc. • Link to translated materials or translating software aids (e.g. glossaries, pictures, videos, translators) for non native speakers • Illustrate text ideas in multiple means such as interactive graphics and simulations.

	• Provide templates and organizers to build up executive functioning
Comprehension: Provide alternatives to aid comprehension.	• Link current content to background knowledge through examples, analogies, concept maps, etc. • Provide options to review pre-requisite background knowledge • Highlight main points and structures in text, visuals, and audio cues • Provide interactive models, scaffolds, and feedback to meet students from more basic levels and help them "step-up" to proficient
Multiple Means of Action & Expression	Examples
Physical Action: Provide alternatives for physical actions.	• Ensure multiple means of navigating through information and that controlling the navigation is accessible to people with physical disabilities • Only use instructional technologies that include assistive technologies (e.g. software that integrates with keyboard alternatives, such as voice)
Expressive Skills: Provide alternatives for how ideas are expressed.	• Provide alternatives for expressing knowledge or information (e.g. choices in assignments), unless a specific expression IS the learning goal (e.g. speech class) • Provide aids to improve expressions such as spell/grammar checkers, text-to-speech software, graphing calculators, examples, and templates. • Build fluency by providing support at graduated levels (e.g. multiple solutions to a single problem, scaffolds for basic to proficient expression)
Executive Function: Provide support and alternatives for executive functioning.	• Avoid over taxing executive functions by scaffolding class taskst, such as breaking them down, providing a sequenced list, adding a checklist, etc. • Emphasize main points with posted goals, objectives, and schedules • Prompt students to "stop and think" [27] and explain their process. • Provide organizing tools, note taking tips/templates, and prompts. • Encourage self monitoring by embedding reflection into the class
Multiple Means of Engagement	Examples
Recruiting Interest: Provide alternatives for eliciting interest.	• Provide learners with as much choice and autonomy as possible in meeting learning goals • Ensure that learning is valuable by explicit connections that are relevant personally, socially, culturally, for stage of life, etc., providing opportunities for authenticity of learners. • Create a safe and welcoming learning environment that is intentionally sensitive to stimuli that may be experienced as threatening • Minimize sensory distractions (e.g. background noise) • Vary stimuli, interaction, and novelty while maintaining reliable structure • Involve all learners in discussion and feedback
Sustaining Effort and Persistence: Provide alternatives for sustaining effort.	• Reinforce goals by presenting them in multiple ways and engaging learners in their creation/descriptions. • Provide alternative paths and degrees of challenge in meetings goals, while emphasizing growth and process • Create and guide collaborative work with clear goals and expectations. • Provide clear, specific, timely feedback that emphasizes continuous improvement
Self Regulation: Provide alternatives for self regulation.	• Support and guide students in setting personal goals and self-monitoring • Provide models and feedback for managing frustration, seeking help, combating negative self judgments, etc. • Create space for learners to de-escalate emotionally

*Note: This chart was summarized from: http://www.cast.org/udl/index.html [27]

UDL provides the framework and specific tools and ideas for making learning more accessible to diverse learners. However, the application of it has been narrowly applied. My work with an online program that is composed of many non-traditional students in diverse life contexts has prompted me to consider accessible course design beyond dis/ability. In the next section I argue for a broader application of UDL that will push the goal of "access" to address different populations of learners.

2.3 Ideas for pushing access to the extremes

Many of my students are low income and some are in poverty. Some are disabled veterans transitioning into a new career. They almost all work full time jobs and/or have major family caregiving responsibilities. Some of them suffer from debilitating physical and mental illnesses, addiction issues, and family or community violence. Others are marginalized and stigmatized by their sexual orientation, gender identity, race, or ethnicity. *They are ALL individuals capable of learning, applying, and developing the competencies that will make them excellent professionals. But many will not succeed in traditionally designed courses that do not consider their diverse challenges to learning.* I will use two scenarios of diverse students and my ideas for using UDL principles to provide access to each. Please note that I have altered details to protect identity, but the stories represent real challenges that I have needed to address in my course designs.

> *Rana is a woman with four children ages three to twelve, one of whom is Autistic.She is a very good student in her online program but is inconsistent with her work lately. Sometimes she turns in excellent work, and other times it appears to be hastily prepared and shows a lack of thoroughness and attention to detail. She has disclosed that her husband recently left her and the children, and that she is trying to get on food assistance while she looks for a second job, which is difficult because childcare is expensive, and few providers can care for her Autistic son. Rana emailed me early in the morning on a day that a major assignment was due to say that her brother was in a car accident yesterday, her husband came to get his possessions which upset the children, and she has been up all night with her Autistic son who is hitting his head against the floor. Can she get an extention?*
>
> *Joseph is a good student with an indigenous cultural heritage and a diagnosed anxiety disorder. He is thoughtful and conscientious about his work, and respectfully challenges the biases and assumptions of other students and content in his in-person course. He has missed some classes due to two deaths of tribal members, each of whom requires three days of mourning within his tradition. Because some of this work cannot be made up, and there are not alternative ways for him to get the information that he missed, he has fallen behind. Recently, the class was assigned to read an account of a massacre of indigenous people by the U.S. army. Since then he has missed more class and reported feeling anxious and depressed. Although his work is good, he struggles to get assignments in on time. When the instructor asks him about it, he says that the strict due dates are not part of his cultural understanding of "time" and that it is hard for him to organize his work around them. He gets a C- in the class, although the instructor recognizes that he knows the class content better than many students who received "As."*

Each of these students have bright professional promise but require courses designed to meet their diverse needs from the first day. I have attempted to address these needs by intentionally designing courses that include: Flexibility/Autonomy, Relevance, Centralized Issues of Marginalized Learners, Proactive Validation, and Proactive Eliciting of Student Voices.

Flexibility and autonomy is absolutely critical to the success of many students and is at the heart of UDL's emphasis on "options" and "alternatives." Students like Rana need the flexibility to work when her children are at school or in bed, and both Rana and Joseph need flexilibility to deal with multiple life disruptions. The need to disclose each personal event, request accommodations, and be "at the mercy" of each instructor is not validating, respectful, or effective for their learning. Additionally, there are cultural views of time that make inflexible courses difficult for some learners to succeed at. For example, many American Indians have a Procedural-Traditional view of time in which the procedure for completing tasks is the organizing factor and not the time to complete it. In this view of time, things are done when the time is right and not because of a

due date [28]. Circular-Traditional time is associated with Latin cultures, among others, and focuses on the cycles of life in which everything that happens has already happened and will continue happening in the same way. There is little sense of “changing the future” with this conception of time, but rather living in the moment. This conception of time has also been linked to people living in poverty as they often have no sense of being able to affect the future and live day-to-day [28]. Despite these different conceptions of time, courses are traditionally designed according to the Anglo perception of Linear-Separable time which is broken into dicrete segments of past, present, and future. Time is perceived as a commodity that people “have,” “waste,” “spend,” or “use wisely” and is easily used as a means to organize tasks [28]. Courses can be designed to better accommodate cultural views of time.

In order to maximize student autonomy and flexibility I design courses that:

1. Provide meaningful, content-focused options for making up missed work.
2. Employ open book, untimed exams with critical thinking questions, multiple attempts, and automated feedback to focus the learner, leaving the exams open for a span of time – usually several weeks - for maximum autonomy and flexibility.
3. Allow students to opt out of or drop two of their lowest weekly assignments.
4. Accept late work with a penalty that will not cripple the student
5. Balance guidelines for turning in assignments (to help students organize) with flexibility so they can determine when and how to do their best work
6. Provide prompt feedback to submitted work and questions to facilitate staying on track
7. Ensure that every course deadline is learning driven (e.g. allows me time to give feedback, facilitates effective student discussion) and not punitive
8. Embed time calculators and scheduling tools for learners who need help organizing time
9. Provide consistent, frequent reminders of course assignments in multiple modes (e.g. calendar, weekly video with text, checklists, and module overviews)

Students come to me from various life and professional experiences, and diversity in professional goals. For this reason, it requires intentional effort to ensure the course content and assignments are relevant for each learner. I do this primarily through multiple means of representing content and choices in types of assignments they can do to satisfy the course objectives. In a family policy course, students may choose to read a policy brief on the state of children in the area they plan to work, an analysis of a program to rehabilitate drug offenders in prison, or a review of how state funded health programs serve elders in hospice care – depending on the population they hope to work with. Learners regularly have choices about if they want to communicate their knowledge via multi media, group presentation, written report, etc. depending on their personal learning goals. If a student requests an altered assignment that still meets course objectives but better suits their needs, I readily grant the request and make sure they are aware of this option from the beginning. Student experiences and knowledge is intentionally included in the course design as student perspectives can help all learners apply course content to new situations, enhancing both learning and relevance.

Students marginalized by race, ethnicity, sexual orientaiton, gender identity, political identifycation, and religion require intentional efforts for access as well. A classroom operating under heterosexual or Eurocentric norms can be likened to a classroom where the instructor designs and implements a course for “able” students and retroactively accommodates any individual that does not fit that assumption. It forces the learner to disclose and then await the instructor’s response and, perhaps, changes in climate, language, or even content [29,30]. Cultural, ethnic, religious, ideological, and LGBTQ issues should be centralized preemtively in order to create a non-threatening, non-distracting climate for all learners [29]. I do this by designing courses that:

1. Intentionally integrating examples, theories and content that acknowledge diverse students’ perspectives and highlighting minority contributions [2,30]
2. Clearly differentiate the mastery of content and ability to *express* perspectives from the perspectives themselves so that students are assured that they will not receive a poor grade for having a particular opinion [30]
3. Acknowledge the difficulties some students face and provide options for assignments that may trigger anxieties or target a particular group [30]

Proactive validation and eliciting of student voices are an overlay to the entire course design and are evident in the examples above. Additionally, I am very conscious about providing encouragement and validation in class communication and correspondence with learners. I elicit formative feedback from students several weeks into the course, summarize the feedback to share back, and make adjustments based on student suggestions when possible. Although this paper cannot address course design ideas for every type of diversity I anticipate, it is important to note that there are many things that I do with the visual layout of the course to maximize access for all learners. ADHD learners benefit from a visual layout that is clear, clean, and sequential, with major items bolded or highlighted (including visual cues for the sight impaired). In include cues for assignments and important dates in multiple places – calendar, overview, checklist, weekly announcement – in order to minimize the time students spend "navigating" that they could spend learning content. Another deisgn point in using course management systems is that I try to put everything needed for a module or assignment in one space (or linked to that space) to minimize "hunting" around the site or excessive clicking to find what they need.
It is not a single technique, assignment, or content delivery that makes a UDL course. *What makes a UDL course is the constellation of pedagogies, tools, technolgies, and content employed for the purpose of maximizing student learning from the beginning with accessible course design.*

3. Discussion

UDL provides an organizational framework and many innovative ideas and tools for making courses accessible to diverse learners, but there are also criticisms of the UDL approach to course design. Select criticisms and my response are described here.

3.2 Criticisms and limitations

Major criticisms of the UDL approach to course design include that it: is not empirically validated, may lower the rigor of courses, does not prepare students for the "real world," is "utopian" and impossible to achieve, is unrealistic due to a lack of human capital, and that designing to increase access for one group limits access for others. There are also arguments that education should belong to the elite, but those will not be addressed here, as this paper is written from the perspective that education should be broadly accessible.
A major criticism of UDL is that it is not empirically validated. It is true that there is a lack of research to validate the UDL framework in terms of learning outcomes [24]. Many of the specific techniques, pedagogies, technologies, and tools embraced by the UDL approach have empirical validation as referenced on the CAST website, but the *framework* has yet to be empirically investigated in a substantive way. I hypothesize that this lack of research is due to the difficulty of designing research to study a framework and lack of resources for instructional designers and instructors to launch the kind of research design required to establish causality (e.g. experimental designs with randomly assigned treatment and controls). Studies establish causality by isolating the variable of interest and controlling other potential confounding variables. This approach does not work in studying a framework in which it is the constellation of variables (that differ depending on the designer and potential learners) must be investigated as a whole, but with the ability to isolate some variables in order to improve the effectiveness of the "whole approach." Although it is possible to creatively design studies to get at the effectiveness of frameworks, it is challenging, which is likely why so many commonly used social theories go largely unvalidated. Despite these challenges, I believe that investigating the effectiveness of UDL should be a priority.
Some argue that UDL may lower the rigor of courses or fail to prepare students for the "real world." It is important to emphasize that UDL does not propose lowering course standards or rigor. Rather, it promotes providing multiple pathways to meeting those goals and multiple ways for students to express or provide evidence that they have met course objectives. It also invites instructors to examine their learning objectives and course designs to ensure that they are relevant and not culturally or otherwise biased against some learners. For example, are timed exams necessary when learners are preparing for a field in which they will never be expected to recall facts quickly? In some fields, this may be important, but if it is not and makes success difficult for people with learning disabilities or a different first language, why should it be the only option for expressing learning? Providing scaffolding of content from basic to proficient does not lower rigor but provides steps for students at different levels to be successful at meeting the standards. For these reasons I disagree that UDL lowers course rigor. And when I consider the students that most need

accessible course designs, I have no doubts that they are living in the "real world." Joseph and Rana have more experience with real world challenges than I do, and navigating the complex educational system to find a seat in my class is evidence enough that they can deal with inflexible bureaucracies. Although I acknowledge many instructors' sincere concerns about rigor, in many cases I believe that calls for rigor or helping students learn to survive the "real world" are actually vehicles for oppression that legitimize and even lend self-righteousness to the oppressive group.

Critics also point to the utopian nature of a truly universal design and also point out that UDL may place expectations on course designers and instructors that is unreasonable. I agree in part with both criticisms, but do not believe that they delegitimize the importance of UDL. It is important to recognize UDL as a *process of continuous improvement* rather than a destination. Designers and instructors have limited resources – such as time, training, knowledge, and access to tools and techologies that make UDL possible. This does not mean that UDL should not be used as an ideal to aspire to. As motivational speaker Les Brown is quoted, "Shoot for the moon. Even if you miss it, you'll land among the stars" [32]. I agree that designers and instructors should not be held to standards that they do not have the resources to meet. However, implementation of UDL can begin small, and a course intentionally designed for maximum access does not require retroactive accommodations, is more comprehensible to learners, and meets their needs in a way that I believe reduces the work load in the implementation stage of instruction.

Finally, critics argue that designing for increased access for one group may put up barriers for other types of learners. I agree that this is true. For example, some students do better with a highly structured course with clear deadlines and rigidly defined assignments. They may feel overwhelmed by choices. I believe that it is just as important to provide course designs that work for these learners as for those requiring flexibility and choices to engage them. It is an art to balance the needs of so many diverse learners, but I do think that we can be more successful by intentionally designing for diversity rather than by ego. My courses include a schedule with due dates and regular cues and reminders for students. However, they also include options for making up work, choosing alternative assignments, and manipulating the flow of the class to meet the needs of students requiring flexibility. I may have discussions with "suggested due dates" and a reading list on a suggested weekly schedule. But the exam for the readings is open over a period of several weeks, allowing students to do it early, spread it evenly, or all at the end. The design provides structure and serves to guide students through the course rather than a demand for them to get on board with my schedule or be left behind.

3.3 Author's Conclusion

Recognitive justice provides *recognition* of various individuals and groups and attempts to provide the means by which all people can exercise their unique capabilities and determine their own actions in a way that generalizes to the interests of those who are least advantaged [4]. I believe that UDL is an excellent vehicle for introducing recognitive justice to our educational system. Of course, without distributive justice, many of these marginalized learners would not have access to my courses.

UDL is not "THE solution" to providing better access to education, which needs to happen on cultural, political, institutional, and program levels. But I believe that it is one of the best ways to provide access at the institutional and program levels of instruction and should be part of the overall efforts towards increased access. California Community Colleges took a three pronged approach to improving access to education by addressing it at a paradigmatic level with "Equity Mindedness," an emphasis on cultural competence at the institutional and individual level, and accessibility in practice at the course and program level through UDL [2]. I personally believe in fighting for access at all levels while making it a reality on the level at which I work – course design and implementation.

Applying UDL is only as effective as the resources of the instructor. In order to make a better case for improved training, knowledge, technology, support, and other resources for successful application of UDL, more research is needed [24]. This is an investment worth making. If changes in society and public policy put more diverse students in our courses, it is our responsibility – and privilege – to design and implement courses in which all learners can succeed and thrive.

Family historian, Stephanie Coontz, argues that we should stop talking about the hard choices that women and men make in order to accomplish family and work tasks, and start creating an environment that removes the hard choices and allows people to practice their gender ideals. Although she is talking about workplace

policies that unnecessarily constrain the options of men and women with regard to family, this argument also applies to education and course design. Instead of designing a course that puts learners in the position of making a hard choice between their education and their families, communites, or personal well-being, why not design a course that removes the difficulty of that choice? Why not provide universally designed courses that make it possible to maintain personal values and authenticity while succeeding in education?

References

[1] Jiminez, T. C., Graf, V. L., & Rose, E. (2007). Gaining access to general education: The promise of universal design for learning. Issues in Teacher Education 16(2), 41-54.
[2] Fulks, J., Córdova, J., Mecom, A., Parsons, M., Pittaway, D. S., & Smith, D. (2010). Practices that promote equity in basic skills in California community colleges. The Academic Senate for California Community Colleges.
[3] Brennan, J., & Naidoo, R. (2008). Higher education and the achievement (and/or prevention) of equity and social justice. Higher Education, 56, 287-302. doi: 10.1007/s10734-008-9127-3
[4] Gale, T., & Tranter, D. (2011). Social justice in Australian higher education policy: An hisotircal and conceptual account of student participation. Critical Studies in Education, 52 (1), 29-46.
[5] United Nations Enable. Factsheet on persons with disabilities. Retrieved from http://www.un.org/disabilities/default.asp?id=18
[6] Flynn, S., Brown, J., Johnson, A., & Rodger, S. (2011). Barriers to education for the marginalized adult learner. Alberta Journal of Educational Research, 57 (1), 43-58.
[7] Deutsch N. L., & Schmertz, B. (2011). Starting from ground zero: Constraints and experiences of adult women returning to college. The Review of Higher Education, 34 (3), 477-504.
[8] Horsman, J. (2004). But is it education? The challenge of creating effective learning for survivors of trauma. Women's Studies Quarterly, 32, 130-146.
[9] Tayyaba, T. (2014). The politics of languages in education: Issues of access, social participation and inequality in the multilingual context of Pakistan. British Educational Research Journal, 40 (2), 280-299.
[10] Swain, C., & Edyburn, D. (2007, March). Social justice: Choice or necessity? Learning & Leading with Technology, 14-18.
[11] Early history of the Higher Education Act of 1965. (2003, Feb. 2). Council for Opportunity in Higher Education. Washington D.C.: National TRIO Clearinghouse. Retrieved from http://www.pellinstitute.org/downloads/trio_clearinghouse-The%20Early%20History%20of%20the%20Higher%20Education%20Act%20of%201965.pdf
[12] Sass, E. (2014). American educational history: A hypertext timeline. Retrieved from http://www.eds-resources.com/educationhistorytimeline.html
[13] Huisman, J. & Kaiser, F. (2002). A comparative view on policy trends in Wester European higher education. German Policy Studies, 2, 1-23.
[14] Ladd, H. F. (2011, Nov. 4.). Education and poverty: Confronting the evidence. Duke Sanford School of Public Policy. Retrieved from http://research.sanford.duke.edu/papers/SAN11-01.pdf
[15] Sirin, S. R. (2005). Socioeconomic status and academic achievement: A meta-analytic review of research. Review of Educational Research, 75 (3), 417-453. doi:10.3102/00346543075003417
[16] Walpole, M. (2003). Socioeconomic status and college: How SES affects college experiences and outcomes. Review of Higher Education, 27(1), 45-73.
[17] Hammack, F.H. (2012). Class matters in higher education. Contemporary Sociology: A Journal of Reviews, 41(4), 460-463.
[18] Brock, T. (2010). Young adults and higher ducation: Barriers and breakthroughs to success.The Future of Children, 20(1), 109-132.
[19] Messinger, L. (2009). Creating LGBTQ-friendly campuses. Academe, 95(5), 39-42.
[20] Steele, C. M. (2011). Whistling Vivaldi: How stereotypes affect us and what we can do. New York: W.W. Norton & Company.
[21] Molenbroek, J. F., & de Bruin, R. (2006). Anthropometry of a friendly rest room. Assistive Technology. 18{2), 196-204.
[22] CAST. CAST through the years: One mission, many innovations. Retrieved from http://www.cast.org/udl/

[23] Mole, H. (2012/2013, Winter). A US model for includion of disabled students in higher education settings: The social model of disability and Universal Design. Widening Participation and Lifelong Learning, 14(3), 62-86.
[24] Edyburn, D. (2010). Would you recognize Universal Design for Learning if you saw it? Ten propositions for new directions for the second decade of UDL. Learning Disability Quarterly, 33, 33-41.
[25] Swain, C. & Edyburn, D. (2007, March) Social justice: Choice or necessity? Learning & Leading with Technology, 14-18.
[26] Guinier, L. & Torres, G. (2003). The miner's canary: Enlisting race, resisting power, transforming democracy. Cambridge, MA: Harvard University Press.
[27] CAST (2011). Universal Design for Learning Guidelines version 2.0. Wakefield, MA: Author. Retrieved from: http://www.cast.org/udl/index.html
[28] Graham, R. (1981). The role of perception of time in consumer Research. Journal of Consumer Research, 7, 335-342.
[29] Connolly, M. (1999). Issues for lesbian, gay and bisexual students in traditional college classrooms. In V. A. Wall & N. J. Evans (Eds.), Toward acceptance: Sexual orientation issues on campus (pp. 108-130). Lanham, MD: University Press of America.
[30] Daniels, J. R., & Geiger, T. J. (2010, Nov. 19). Universal Design and LGBTQ (lesbian, gay, transgender, bisexual, and queer) issues: Creating equal access and opportunities for success. Paper presented at the annual meeting of The Association for the Study of Higher Education.
[31] Goodreads. Retrived from https://www.goodreads.com/quotes/1037915-wine-is-proof-that-god-loves-us-and-loves-to
[32] Coontz, S. (2013, Feb. 16). Why gender equality stalled. The New York Times. Retrieved from http://www.nytimes.com/2013/02/17/opinion/sunday/why-gender-equality-stalled.html?pagewanted=all&_r=0