Every Voice Counts - Embedding the Principles of Universal Design for Learning into Higher Education Online Course Design

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Abstract

University classrooms are diverse settings. With online courses becoming increasingly more common instructors in post-secondary institutions must create inclusive learning environments that meet the needs of adult learners with exceptionalities. Goldberg et al. (2003) asserted that innovative technological tools can be used to promote student engagement, motivation, and enhance the quality of learning for students with disabilities.

One such tool is the Voice Thread which can be thoughtfully and intentionally incorporated into the course design phase. Friedman and Lee (2009) contend that using visual images to present content is a necessary pedagogical strategy and provides an opportunity to reduce visual clutter. Making content visual and auditory rather than exclusively in print is a Universal Design for Learning strategy that makes the information more accessible to all students not just those who struggle with reading.

Hampton and Mason (2003) reminded us that many students with learning disabilities require additional time to formulate their thoughts to make meaningful contributions to an online discussion. The features of the program offer a comfortable way for students to share their knowledge and understanding, analytical skills and personal reflections related to a particular concept. Offering a choice in the response format allows students to utilize their strengths and concentrate more fully on demonstrating their learning.

Fostering an inclusive learning environment using innovative technologies, such as Voice Thread, offers online instructors a meaningful way to adopt inclusive approaches to curriculum and assessment. Pre-existing structures such as the Community of Practice (Lave & Wenger, 1991) provide inclusive leaders the opportunity to share these innovations with colleagues and ensure that every voice counts.

Keywords: equity, inclusion, technology, Universal Design for Learning, higher education, leadership, course design.

Introduction

Investing in a better understanding of and support for inclusive education will benefit us all, because it will create a more cohesive, equitable and compassionate society. (Towle, 2015, p. 6)

As an elementary school principal for twenty years, I experienced firsthand the need to ensure that we were creating equitable, compassionate learning environments for all students. This was, however, not an easy task. Educators at all levels continue to struggle to meet the needs of diverse learners.

In my leadership role, I facilitated many learning opportunities for novice and experienced teachers based on the principles of Universal Design for Learning. I was witness to the powerful impact that these principles played in creating inclusive learning spaces for students in a K-12 setting. As the educators immersed themselves in these principles, they had to learn to reframe their understanding of knowledge and how it is operationalized within the classroom setting.

It is helpful to better understand where these principles originated. Ronald Mace (1985) is credited with coining the term Universal Design. In the 80s and throughout the 90s his architectural work, at The Center for Universal Design at North Carolina State University, was the basis for a framework which sought multiple means of providing building and design options that could support a wide range of people. Mace et al. (1991) created a framework that incorporated seven guiding principles:

- Equitable Use – the design is useful to people with diverse abilities;
- Flexibility in Use – the design accommodates a wide range of individual preferences and abilities;
- Simple and Intuitive Use – the design is easy to understand;

- Perceptible Information – the design communicates information effectively;

- Tolerance of Error – the design minimizes hazards or the consequences of unintended actions;

- Low Physical Effort – the design can be used efficiently and comfortably with minimum fatigue; and

- Size and Approach – the design provides for approach, reach, and use regardless of the users' body size or mobility.

In the early 2000s Rose and Meyer (2002) along with their colleagues at the Centre for Applied Technology (CAST) incorporated these architectural/product design ideas into educational settings. Initially the work was focused as a strategy to support the needs of students with disabilities. Their work however quickly showed promise to benefit all students not just those with disabilities. They condensed the seven principles of universal design first posited by Mace into three guiding principles for Universal Design for Learning (UDL):

- Multiple means of representation (to give learners various ways of acquiring information and knowledge;

- Multiple means of action and expression (to provide learners alternative ways to demonstrate what they know; and

- Multiple means of engagement (to utilize learners' interests, challenge them and motivate them).

(CAST, 2018)

As a principal, I proudly bore witness to countless former students who graduated and transitioned to a variety of higher educational settings. As tales of their sometimes less than optimal experiences in higher educational settings made their way back to me, I began to consider how to create more equitable spaces in a post secondary learning environment. My appointment to a Faculty of Education in central Canada, teaching online master's level courses, soon afforded me

just such an opportunity to experiment and to apply my ethic of care to integrate more inclusive practices within my online university classroom.

Methodological Framework

I utilized an autoethnographic approach to engage with and present the critical reflections and interpretations of my personal experience as an inclusive educational leader. This methodological framework afforded me the opportunity to triangulate evidence as a participant observer, a researcher with access to my own course design and reflective journaling (Chang, 2008; Hughes et al., 2012). As well, I was able to use student report documents gathered from my role as an online instructor in a higher educational setting to inform my conclusions.

Ellis and Bochner (2000) posit that this approach offers forms of representation that deepen our capacity to empathize with people who are different from us. I sought to critically examine my own practice within the context of existing theories and scholarship. This enabled me to draw conclusions and ponder further questions related to inclusive leadership at a post secondary level.

Universal Design in Higher Education

In addition to recent secondary school graduates a more diverse range of adults are now returning to school (Denhart, 2008; Nuske et al., 2019; Sarrett, 2017). Post secondary education instructors can expect greater diversity of learners in their classrooms. This includes their background preparation, their learning situated in context and their learning based on their age and development (Rose & Fischer, 2009). Many of these adult learners have multiple roles and responsibilities. Universal Design for Learning offers an effective conceptual framework to support this diverse population of adult learners. This holistic framework highlights an epistemological shift which situates the problem within the instruction rather than the student. The

focus then becomes addressing goals, methods, materials, and assessment strategies that are not flexible enough to meet the needs of a diverse student population.

Many students face barriers in accessing information when it is presented in a manner that assumes a common background for all. Universal Design for Learning addresses this diversity as it reorients how knowledge is defined, obtained, and expressed by embracing difference (Meyer et al., 2014). Rogers-Shaw et al. (2018) assert that Universal Design for Learning offers the opportunity for the instructor to engage with, develop and appreciate not only the content and learning objectives but also the interaction between learners, their unique histories, abilities, cultures, and characteristics (p. 23).

Rose et al. (2006) utilized the neuroscience of brain networks in the learning process to inform their work on the guiding principles of Universal Design for Learning. Recognition networks (how one learns to recognize objects or patterns in the external environment) support content acquisition and are linked to *representation*. Strategic networks (which reveal the methods of learning) supports the generation of effective patterns of action or response and are linked to *expression* and affective networks (evaluating the significance or importance of the patterns that we encounter or generate) are connected to *engagement*.

The three guiding principles of Universal Design for Learning: multiple means of representation, engagement and expression provide the foundation for designing courses that support each student to acquire, generate and use knowledge in a way that is just right for their learning style. Hollingshead (2017) posits that this flexible instruction ensures that learners have multiple means to engage in learning, are provided the content through multiple modalities and can demonstrate their learning via multiple means (pp. 1-2).

Edyburn (2005) describes the path to Universal Design for Learning along a continuum which begins with advocacy. At this stage an awareness of inequity is highlighted, and accommodations are the typical response to advocacy. Inaccessible environments and materials are modified and made available. He asserts that these types of accommodations maintain inequity since there may be a delay, require a special effort to obtain or require going to a special location (p. 19). The following vignette highlights this issue:

> Allen is a full-time special education teacher in a large suburban setting. He has a nonverbal learning disability that makes reading a challenge. Throughout the undergraduate portion of Allen's academic career accommodations such as additional time for assignments, a quiet space to write exams and the availability of a scribe for notetaking were available. Allen has found that the traditional read-write response format of the online additional qualification courses taken to date have not effectively addressed the issues that are inherent to his above stated learning challenges. While all instructors have offered the opportunity to post his responses to online discussions in an alternative format, this made him the exception to the norm and as such he felt awkward doing so.

True accessibility according to Edyburn describes an environment where access is equitably provided to everyone at the same time. It is to that end that I set out to incorporate the principles of Universal Design for Learning in my own graduate level course design. Friesen and Kuskis (2003) remind us to consider both pedagogy and technology in terms of online interaction. They highlight the importance of student interaction with content and the need to establish a positive social presence to increase learning. The authors posit that incorporating flexibility and choice at the design phase allows the instructor to meet instructional objectives while enhancing student

interaction, addressing diversity, and increasing access. Meier and Rossi (2020) highlight the need for proactive planning and the importance of considering barriers to learning at the design phase. The authors assert that to fully address learner variability an instructor should consider two types of barriers: skill and curricular. When considering skill barriers instructors can for example utilize the strategy of scaffolding to ensure that all learners have the support they need. They describe curricular barriers as roadblocks to a students' ability to access and learn the content of a particular course. By focusing on this type of proactive planning instructors can begin to consider how these instructional barriers may affect a students' ability to master a particular learning goal.

Meier and Rossi's approach is useful however there is also great value in recognizing that learners want to exercise control over their own learning, make decisions about how to learn, use their personal life experience in the learning process and apply their knowledge to solving authentic problems. The applicability and relevance of the content comes to the foreground when the principles of Universal Design for Learning are effectively embedded into the course design. Zeff (2007) reminds us to 'build out' the curriculum from a set of goals rather than trying to meet the needs of diverse learners after an issue has surfaced. The principles can be applied to the course objectives, teaching techniques, learning materials, outcomes, and assessment methods. In so doing, all students will be able to learn regardless of their skill level, needs, motivation or interest. This can however feel like a daunting task. So how does an instructor know where to begin? Tobin (2018) suggests adopting a 'plus one' approach. He offers the following example, instead of creating all possible alternative formats for multimedia, select one consistently throughout the course (p. 22). It is with this 'plus one' mindset that I set out to utilize the VoiceThread tool to embed the principles of Universal Design for Learning into my course design.

Technology – Voice Thread

Many higher education students possess digital literacy and are comfortable expressing themselves in a web-based environment that incorporates expression through audio, video, and graphics. Smith (2012) asserts that technology offers higher education students a convenient means for increased productivity and a way to stay connected to others. She posits that the flexible features of digital media offer opportunities for students to interact with the content, connect in conversation with others and demonstrate their understanding. The infusion of digital media via the Universal Design for Learning lens also offers instructors a way to customize students' learning experiences (p. 36). Dede (2008) argued that the effective use of web 2.0 tools would help form the basis of this epistemological shift away from the traditional classroom. He asserts that active learning pedagogies emphasize a constructivist approach where students cocreate knowledge. In many online classrooms a 'traditional classroom' takes the form of mandatory weekly assignments that require a read-write response format and do not afford the students the opportunity to engage with one another in constructive and collaborative ways.

As I set out to infuse digital media into my course design, I was presented with a myriad of choices. Why then did I focus my efforts on the VoiceThread tool? VoiceThread is an asynchronous platform that helps users communicate and collaborate around a variety of topics. It provides an opportunity for students to share their voice in multiple ways (audio, text, imagery, and video).

VoiceThread provides a visually stimulating inclusive learning environment. It can be used across fields of study with a variety of content areas and a multitude of learners. VoiceThread allows the discussions to be either instructor or student led. The video and voice comment features of the tool increase the sense of community and enhance the students' perception of the instructor's

social presence. The instructor can offer individualized audio or video feedback to the students' responses and the students are able to learn from their peers.

Student Voice

To better understand its impact, I turned to the students to gain deeper insight. Throughout this section several graduate students share their thoughts and perceptions related to the use of VoiceThread and the role it played in their learning (pseudonyms have been used to protect privacy).

Melissa, a graduate student shares her thoughts about the VoiceThread, "*It was a nice way to connect with my peers to see them and hear their voices. It felt like I was actually in the classroom at times.*"

The sense of community that is created by the VoiceThread also reduces the isolation that can often be associated with online learning. Rao (2012) reminds us that there are several challenges for adult learners in online courses: uncertainty about expectations, technology issues, and insufficient learning community. The concern related to a sense of community is at the heart of Gino's comments related to his experience using the VoiceThread, "*I appreciate how interactive this course has been for an online course. Often online courses are very solitary.*"

The collaborative knowledge creation that can be shared via the VoiceThread may motivate students to higher quality work since they know that their contributions will be viewed by others (Smith & Dobson, 2009). Speaking directly to her classmates on the VoiceThread another student, Shana declares the following:

Thank you for being so engaging. I learned so much from your stories and your experiences. I felt inspired by how passionate everyone was. I really appreciated how engaging this class was. I have never used VoiceThread before and I've never done

that type of group project, so I got to spend time with a couple of the ladies in the class and we had an awesome time collaborating.

The features of the program offer a comfortable way for students to share their knowledge and understanding, analytical skills and personal reflections related to a particular concept. Offering a choice in the response format allows students to utilize their strengths and concentrate more fully on demonstrating their learning. Students who may not be comfortable speaking out in a face-to-face class are able to have their voice heard in a less intimidating environment. The tool also allows for students to have time to reflect on their response prior to sharing it with others. The feature of the tool which allows for a student to listen to a portion of his/her response and choose to delete and rerecord made the editing process much more manageable. Michael's description of his experience using the VoiceThread highlights the importance of choice:

> It was interesting because it made it feel like we were all part of a group that was a lot closer together than the distances that we actually had which was across the country and around the world. The videos that we created ourselves were easy to upload and to put onto the course to the VoiceThread. Once there was VoiceThread there, it was quite easy to actually respond to each person's ideas by using either the text option, or the audio, or the video options that were there and it was nice because we could choose which options we wanted to use. I really enjoyed using this and I found it quite easy to use. It made it more interesting and more personable. It was interesting to hear what their ideas were and hear that they could emphasize the parts that they felt most passionate about.

Lerner and Johns (2009) posit that students who are often considered passive learners become more actively involved through ongoing interaction with both the instructor and their

peers. Another positive benefit to the use of this multimedia tool is the ability for the instructor to reduce visual clutter, a factor that often impedes students with learning disabilities from fully engaging with the academic task. Presenting the content both visually and in an auditory format makes the information more accessible to students who struggle with reading. Zemlyanova et al. (2021) assert that the use of VoiceThread for foreign language learners enhances active and meaningful second language learning, improves critical thinking skills, and provides opportunities for interactive and collaborative learning.

Mayer (2001) focused on how the virtual learning environment (VLE) can be enhanced. He posits that tools such as the VoiceThread can offer a media rich experience that enables a more natural, social, and collaborative learning experience. Fox (2017) found that the use of the VoiceThread increased the instructor's online presence and reduced the sense of isolation that is often cited as a concern by students enrolled in online courses. Peter's comments reinforce this notion of a more natural learning experience, *"Having the opportunity to use the VoiceThread to hear/see my classmates. It is nice to see some real faces on the other end of the line."*

Brunvard and Byrd (2011) put forward that the important ingredients for learning success include the ability to engage, sustain attention, participate actively, maintain high levels of motivation and complete assigned tasks (p. 29). Enrique's thoughts on his success in the course support this assertion, "*I have gained insight from the interactive sessions.*"

Innovative technological tools can be used to promote student engagement, motivation, and enhance the quality of learning for students with disabilities (Goldberg et al., 2003). Brianne, a graduate student with a learning disability makes the following statement related to the VoiceThread's response format options, "*I like being able to verbally communicate back and forth*".

Friedman and Lee (2009) contend that using visual images to present content is a necessary pedagogical strategy when using the VoiceThread. It provides an opportunity to reduce visual clutter within a particular thread. Making content visual and auditory rather than exclusively in print makes the information more accessible to students who struggle with reading.

Hampton and Mason (2003) remind us that many students with learning disabilities require additional time to formulate their thoughts to make meaningful contributions to the discussion. VoiceThread automatically creates wait time and allows students the time they need to respond and the time to listen and make changes prior to posting.

The VoiceThread tool proved to be an effective means for supporting the principles of Universal Design for Learning. It afforded students the opportunity to acquire the course content knowledge in several ways (audio, visual, and text). The students were then able to demonstrate what they had learned in any one of these response formats. Collaborating with one another via the VoiceThread challenged and motivated these adult learners. This did not however happen by chance. Thoughtful planning at the course design stage was the key to successful implementation.

Online Course Design

As I began to 'build out' the curriculum the first step was to focus on developing clear goals. Smith (2012) reminds us that, from a Universal Design for Learning lens, this approach will ensure the separation of the intent of the goal (the outcome) from the way in which the students acquire the goal. This paves the way for offering more than one option to achieve the desired outcome. An example of this type of goal from a Graduate level course I teach is as follows:

Students will be able to investigate, critique, and apply different approaches to
addressing various problems of practice related to the academic learning of students
with exceptionalities.

Once the goal had been clearly formulated the next step was to ensure that I had embedded a variety of methods to present the information (UDL Guiding Principle 1 – Multiple Means of Representation). Smith (2012) posits that instructional environments that capitalize on the flexibility of digital mediums offer opportunities to strengthen the specific guidelines within the first UDL principle (p. 34).

Focusing on the above stated goal, course material was first presented in a synchronous learning session using a PowerPoint, video, and small group breakout rooms with interactive whiteboards. Closed captions were enabled, and the session was recorded. These multiple means of representation afforded students the opportunity to see and hear the information. The recording of the session enabled students to go back and review the material as often as they needed at a time and pace conducive to their learning style/needs.

The adult learners in my graduate courses present with a range of capabilities, preferences, and approaches. Their past experiences may mean that there are gaps in their prior knowledge, different cultural or regional learning experiences and some may be challenged by a disability. Ensuring that the options presented strengthen comprehension is a key tenet of the Universal Design for Learning approach as it affords the opportunity to activate prior knowledge. The use of the small group breakout rooms is one example that offered students the opportunity to share their understanding in a smaller group setting. The students learn from one another, share previous background knowledge, highlight patterns and relationships while using digital technology to capture this learning. Rose and Fischer (2009) confirm that learners vary widely in how they make use of instructional information in a learning situation. By offering multiple opportunities for students to gain, express and demonstrate their understanding (UDL principle 2 – Multiple Means of Action and Expression) student variability can be addressed more effectively.

In this online course design example, the content material related to concept mapping first shared in the synchronous session described above is then purposefully followed up with an interactive activity using the VoiceThread. Edyburn (2005) reminds us that access to information is not access to learning. He highlights the need to consider how technology and digital media engage a student in meaningful learning activities. Therefore, to be most effective, the use of the VoiceThread should be incorporated into the course design phase. It should be purposeful, thoughtful, and intentional.

Students were tasked with creating and sharing their original concept maps on the VoiceThread. This afforded the students the opportunity to continue to consolidate their learning asynchronously while choosing the means of expression that best suits their learning style (text, video, audio).

Delmas (2017) focuses on the role that the VoiceThread can play in strengthening the instructor's social presence and thus creating a more effective online course design. To foster greater social presence instructors should consider incorporating the following elements:

- Viewing and thinking carefully about the VoiceThread;
- Leaving a succinct spoken or written comment that adds value to the current conversation; and
- Leaving an effective spoken or written comment that promotes future participation.

Students engage in meaningful ways with the content and with one another (UDL principle 3 – Multiple means of Engagement) as they constructively critique one another's concept maps on the VoiceThread. Engagement however is more than interaction with one another, it includes meaningful opportunities to recognize the value, relevance, and authenticity in what they are learning. Zeff (2007) reminds us that the concepts of Universal Design for Learning can also be applied to assessing what students have learned. In the example below, the success criteria for the

online discussion portion of the course using the VoiceThread embeds the key tents of relevance and authenticity. The following should be evident in the online discussion:

- What the key points are of the theory, discussion, or argument in the course materials;
- A critique of the strengths and weakness of the theory, discussion, or argument in the course materials;
- How these may apply or may not apply to the real-life context - incorporating one's own work or personal experience; and
- A thoughtful response to other students' submissions including opposing viewpoints when appropriate.

The excerpt below is drawn from the final assignment in this course and demonstrates another way in which the principles of Universal Design for Learning can be built into the formal assessment components of a course design. The example highlights how additional choice within and between the assignment is conveyed. These choices relate to the 3rd guiding principle as the focus is on expression and engagement:

Final Assignment - Critical Report Choice

For the Critical Report students are to identify a specific learning challenge of particular interest (Learning Disability, Autism Spectrum Disorder, Fetal Alcohol Spectrum Disorder, Conduct Disorder etc.) and share in a report style format specific strategies that would support students with this learning challenge in one of the content areas covered in the course (literacy, numeracy, or science). The report must include a critical discussion of the strengths and weaknesses related to the supports discussed. The report should draw upon at least 3 peer reviewed articles in addition to course material. The report should adhere to the stylistic guidelines of APA 7th edition.

Original Online Educational Resource Choice

For the Original Online Educational Resource students are to identify a specific learning challenge of particular interest (Learning Disability, Autism Spectrum Disorder, Fetal Alcohol Spectrum Disorder, Conduct Disorder, etc.) and create **in an online format** (i.e., web page, virtual classroom space etc.) a resource that will support students with this learning challenge in one of the content areas covered in the course (literacy, numeracy, or science). The online resource must also include an educator section that includes a critical discussion of the strengths and weaknesses related to the supports presented to the students and draw upon at least 3 peer reviewed articles in addition to the course materials. References should adhere to APA 7th edition and should be included in this section.

So What Does This All Mean?

The online course examples described above highlight the need to purposefully plan. Beginning with a clearly articulated goal ensures that each of the elements of the course design that follow (synchronous or asynchronous) support the attainment of the learning goal. It is important to keep in mind that the goal is the destination not the path traveled. In keeping with this journey metaphor, how your students arrive at the destination will depend on their skill set, preference, and interest. It is our role as effective inclusive educators to ensure that from the onset, we intentionally embed opportunities to effectively explore and utilize the various options for travelling along the path. In addition, collaborating with peers (sharing course designs embedded with the principles of universal design) in a Community of Practice or similar professional learning setting provides the opportunity to broaden our impact. This affords all students, not just our own access to more meaningful learning experiences.

Challenges

Designing this type of meaningful experience is however not without its challenges. Moore (2007) reminds us that technology alone is not flexible or accessible – we build those sorts of environments through deliberate design that include universal design and accessibility as part of the framework (p. 523). The versatility of digital media such as the ability to manipulate, store, or network are valuable characteristics that are mediated by technology. Moore highlights the need to ensure that conscious design considerations must be built into the tools. We can not assume however that just because we are using a resource such as the VoiceThread that that alone makes it accessible. For example, currently the use of VoiceThread presents accessibility concerns for students who are blind/low vision as it is not compatible with screen readers and while audio comments can be captioned there may be a lag time before it appears to the student. Moore posits that there is a need to work in tandem with the instructional design community who she asserts are uniquely equipped to explore flexible learning infrastructures (p. 524). As instructors continue to strive to make their learning spaces more equitable, nurturing these valuable partnerships will benefit all learners.

Recommendations for Inclusive Leadership

Leading inclusive teaching is multifaceted. It requires effort and a desire to challenge yourself. The first step is a willingness to engage in earnest self-reflection. Begin by critically reviewing your current course design. Ask yourself the following questions:

- Have I provided learners with more than one way to acquire new knowledge?
- Have I provided learners with different ways to demonstrate what they know?
- Have I embedded ways in which learners can utilize their interests to strengthen motivation and engagement?

For each of the above questions, if the answer is no, then consider ways in which you can begin to do so. If the answer is yes, reflect on ways to enhance and improve what you already have in place.

The second step is to engage in further critical reflection with peers. Inclusive leadership is not a solitary endeavour. Consider joining a professional Community of Practice or take on more of a leadership role within a group to which you already belong. These are practical and meaningful ways to deepen your understanding and enactment of inclusive leadership practices.

The third step is a willingness to stretch the boundaries of your comfort zone. Learn about and try to embed technologies that support these principles. Lead by example and learn with humility. These are the necessary ingredients for a deeply rewarding experience for you and your students.

Conclusion

As previously stated, I spent a large portion of my career in a K-12 educational setting. I have experienced firsthand the benefits of implementing a Universal Design for Learning framework from our youngest learners in kindergarten all the way through to those graduating from secondary school. For instructors who have embraced an epistemological shift from the notion that a failure to learn is inherent in the learner to a belief that reflects a flawed curriculum, the Universal Design for Learning framework has provided an effective point of departure. Applying these experiences to the higher education context has brought me full circle as most instructors want to create more equitable learning spaces in their online higher education courses. A meaningful example of the power of this framework is highlighted in the discourse of one of my graduate students. Steven, a health care professional shared that not only had the course design benefitted his own learning but that the principles of Universal Design for Learning were so

profoundly impactful he was planning to utilize the framework in his own healthcare course design.

Embedding the principles of Universal Design for Learning into the online course design in a purposeful and systematic way is an effective starting point for online higher education instructors regardless of their field. The first step is to ensure the creation of a clearly articulated goal focused on the desired outcome. This important first step will set the stage for success. Next thoughtful consideration must be given to representing the content knowledge that learners need to acquire in a variety of ways. This will support meeting the diversity of needs that are present in every online learning space. Instructors are then able to offer their students the opportunity to demonstrate this newly acquired knowledge in more than one way. By doing so they can ensure that no one is left behind. Finally, incorporating the students' interests will challenge and motivate them. Embedding these carefully planned steps into the initial course design will lay the foundation for students to ultimately display the various indicators of successful learning discussed previously (engagement, sustained attention, motivation, active participation, and task completion). Utilizing the principles of Universal Design for Learning offers a framework to create meaningful and effective course designs.

Making thoughtful decisions about which digital technologies to use and how best to incorporate them into the design of the course from the outset will further ensure that online instructors move towards a more student-centered approach. Cochrane-Smith and Lytle (2010) remind us that reflective educators seek opportunities to adjust and improve their practice and redevelop their classrooms into rich and meaningful learning spaces.

Fostering an inclusive learning environment using the principles of Universal Design for Learning and innovative technologies such as VoiceThread offer online instructors a meaningful

way to adopt inclusive approaches to curriculum and assessment and ensure that every voice counts!

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Biography

Dr. Elaine Fournier – Elaine is an Assistant Professor of Teaching Students with Exceptionalities and Educational Leadership at University of Western Ontario (UWO), Canada. She is dedicated to creating inclusive learning spaces. Elaine has thirty years of teaching and administration experience. Twenty of these years were spent as an elementary school principal. During this time, she served on a number of committees including the Principal's Advisory Committee for Special Education and the District Advisory Committee for Indigenous Education. She also served as the Coordinator for the New Teacher Induction Program (a role she held for seven years). Elaine's research focuses on inclusive education, leadership, the use of technology to create equitable online learning spaces and novice teachers. Elaine was awarded the 2023 Vice-Provost (Academic Programs) Award for Excellence in Online and Blended Teaching and the 2020 Canadian Educational Researchers' Association, Todd Rogers Research Award.

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