Future-Proof your Instructional Design with Universal Design for Learning and Translanguaging

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Abstract

We face new challenges in education as our learners are becoming increasingly diverse and expect our programs to be designed with quality and enrichment for their work-life balance. Our educational communities are also more global, with language and cultural differences, with technologies that continue to develop and offer opportunities to enhance our teaching and learning. Our course and instructional design need to remain responsive to our changing populations with a nimbleness in our strategic pedagogies that enable us to adjust with the changing times. We need to "future-proof" our designs and ensure personalized learning opportunities. Universal Design for Learning (UDL) offers a path to that end. UDL provides extra layers of design deliberation, including the use of existing and emerging technologies, that will reflect our considerations of our learners' uniqueness while also increasing the likelihood that their background knowledge and skills will also be tapped successfully [1]. Our programs are now global communities of learners who see each other as sources of knowledge and untapped resources for learning. This work presents the results of a course design with UDL that evolved over several years with an international demographic of learners. Results from the last two years are shared as an example of the implementation of UDL in course design, with data from the students' evaluations of multiple sections of 2 graduate level courses.

Keywords: Universal Design for Learning (UDL), Cultural sustaining pedagogies, Translanguaging, Learner agency, Diversity, Instructional design

1. Introduction

Through the years of the pandemic, college enrollment rates decreased across the board [2], [3]. Most educational institutions relocated staff and faculty to remote work, and instructional programs made immediate shifts from face-to-face instruction Rento online options. Many high school seniors who may have traditionally transitioned to higher education opted to delay entering college. Compounding this impact on colleges and universities, organizations adjusted their prerequisite hiring requirements of college degrees and opted to provide the needed educational training to new hires [3]. Selingo [3] noted colleges lost more than a million students since the fall of 2019. The National Center for Education Statistics [4] reviewed enrollment trends from 2010 to 2021 and reported a decrease in college enrollment rates of 18-to-24-year-olds (undergraduate and graduate) from 41% in 2010 to 38% in 2021. NCES noted college enrollment rates in 2021 were higher for Asian recruits (60%) than other racial and ethnic groups who had an average enrollment rate of 34.2% combined. There is also a gender gap in enrollment rates with more female enrollments than males across racial and ethnic groups. This variability in numbers and in populations over the last few years have added institutional pressure on admissions committees and faculty to recruit and retain students.

In graduate programs in the U.S., diversity and differences abound [5], [6]. Students enroll at varying points in their career paths. Some students continue the traditional transition and begin a graduate program directly after completing their undergraduate programs, while others take a gap year. There are also applicants in our graduate programs who first entered the workforce after completing their undergraduate studies in order to establish their careers, and who then returned to our programs at the university seeking deeper knowledge anchored in the experiential knowledge gained through those years of work. Therefore, in our graduate programs, not only is there diversity across age, race, gender identification, language, and cultures, but there are also these variabilities among our learners regarding their background knowledge and experiences [7]. Gutiérrez [8] notes the increasing socioeconomic and linguistic diversity among learners and adds there are differences in the roles and prior learning contexts they have experienced that contribute to this diversity. Finally, the globalization and increasing interdependence of our communities across the world has led to many individuals seeking international educational experiences, leading to an internationalization of college and university programs in response to these

trends and to meet the learning needs of these more diverse populations.

Our challenge as we strive to recruit and retain these students to our programs is that we must be skillful and intentional in planning for our current and future student populations. The traditional instructional approaches to teaching and learning, frequently perceived as the age-old pattern of "sage on the stage" where the teacher lectures and the students listen, may not be sufficient. This pattern is not unique to the United States and studies have found varied results regarding the traditional lecture format for teaching and learning [9]. If instruction is delivered solely through the lecture format, a passive learning experience is created for students, with divisions between student-instructor interactions and peer-to-peer interactions, resulting in learners losing agency in their own learning [10], [11]. This approach also eliminates the need for faculty to consider learner characteristics when creating course content and assessments because differentiation is not a priority in design [12].

Across the last three decades, higher education in the United States has embraced many antidotes to encourage inclusion and acceptance of diversity as tools for teaching and learning as well as increasing engagement in course content [10]. We recognize our learners may have foundational and experiential knowledge upon entering the classroom and could serve as models for, or support to, others in peer-based activities [13], [14], [15]. Yet, despite these advances in inclusive practices, active learning, higher order thinking, and a focus on greater depths of knowledge, even our hybrid models fail some learners. This is where UDL and translanguaging for diverse learners can play a critical role [14], [16], [17]. This article presents a model for instructional design for diverse populations in higher education, particularly focusing on graduate level learners, that embraces the multiplicity reflected in today's programs and creates an environment that reflects caring and inclusive practices that meet the variability across learners consistent with the tenets of Vygotsky [7], [14], [15], [18]. While accommodating the diversity of our classrooms, UDL offers a nimbleness to our instructional design that will enable us to be responsive to and inclusive of our students today and in the future.

2. Designing for Diversity with UDL

Given the diversity of knowledge and experiences our student populations bring to graduate programs, we are in the exceptional position of designing instruction and teaching/learning experiences that will tap into that additive value of complex problem solving. Team projects and Socratic discussions unveil this creativity. To ensure our instructional design

provides these opportunities while also being responsive to our learner's unique differences, UDL provides deeper layers to design deliberations to increase the likelihood that our learners' knowledge and skills are being tapped successfully [1]. Translanguaging and culturally sustaining pedagogies embrace the internationalization of our classrooms and ensure our design is inclusive of all learners.

In 1984, Drs. Meyer and Rose created the Center for Applied Special Technology, now known by its acronym, CAST, and then created UDL (see Graph 1). It emerged at a time when our educational systems were creating assistive technologies to level the playing fields for K-12 learners who required specific accommodations to access learning and to demonstrate what they know and understand. In the U.S., accommodations for individuals with disabilities were not only being developed, but the federal legislature was passing laws to ensure these considerations became expected entitlements. In 1988, the Technology-Related Assistance Act was passed which brought awareness to the public and provided the legal definitions of assistive technology devices and services that are still in place today. With the scheduled reauthorization of the Education of All Handicapped Children's Act in 1990, the law's title was changed to the Individuals with Disabilities Education Act (IDEA) which placed the focus on the individual rather than the disability [19]. IDEA also included assistive technology as a mandated consideration for any individual with an Individualized Education Program (IEP), without exception. Also, in 1990, a civil rights law, i.e., the Americans with Disabilities Act, was passed which prohibited discrimination based on disability and ensured the provision of accommodations to individuals with disabilities to access and actively participate in many areas of public life [20].
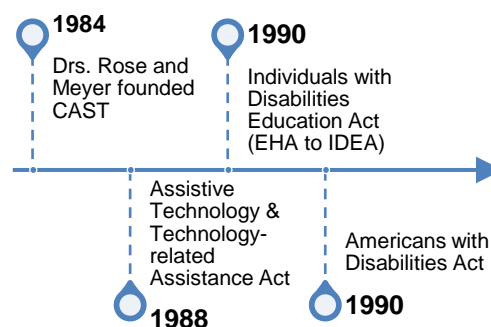
Graph 1. Timeline of designing diversity with UDL

In response to these legal mandates, a variety of tools and structural accommodations were developed and became commonplace. In our communities,

curb cuts were placed on street corners to ensure wheelchair access. Ramps and elevators were constructed and added to all public buildings. Hotels created rooms with maximum accessibility. To enable individuals with disabilities to control lighting and room temperatures, Environmental Control Units (ECUs) were created, with some being voice controlled. Within the educational sector, rapid technology developments occurred. To facilitate reading in schools for individuals with educational disabilities, software applications were created that provided text-to-speech, with highlighting options to assist readers with disabilities to follow the text when spoken. For writing, software applications were created for speech-to-text, with later refinements where, with training, the software became accustomed even to speech impairment patterns to increase successful dictations (e.g., Dragon Dictate, Speaking Naturally). Other applications facilitated the writing process by offering word prediction to increase production with less effort (e.g., Co:Writer). These capabilities are even more successful today than then and are seen in artificial intelligence (AI) applications. Emerging technological advances such as these have served to equalize or at least reduce the impact of disabilities within classrooms and within communities.

One of the unexpected outcomes of these technological advances and accommodations for accessibility was the adoption of many of these tools by the general public. What was once started as accommodations for individuals with disabilities became universal designs for all of us. Bikes, scooters, and strollers more easily managed travel using curb cuts. People with temporary disabilities (e.g., broken leg) or families with strollers took advantage of ramps and elevators to access and navigate buildings. The word prediction originally developed for individuals with disabilities has become commonplace on our phones and computers. Alexa and Siri are now common alert names for voice-activated environmental controls. Many of these tools are now universal in their use and are valued today.

Drs. Meyer and Rose took the support of learners beyond the tools and into instructional design itself. They created UDL from its outset to be a design process for learning that focuses on ALL learners. Their priority was, and still is, equity among all learners, with the goal of removing barriers while keeping the rigor of the learning content intact so ALL learners become "expert learners" [21]. In 2009, CAST published their first guidelines for UDL (see Figure 1) which provided a complete framework for ensuring direct connections for ALL learners in the presentation and representation of content, the actions and expressions used in teaching and learning, and in the consideration of establishing the learners' engagement. As their research continued,

their UDL Guidelines (2018) evolved into version 2.0 (see Figure 2) where they identified three neural networks that are being addressed by this framework, i.e., affective networks for engagement (the "Why" of learning), recognition networks for the representation of content (the "What" of learning), and strategic networks for action and expression (the "How" of learning).

Figure 1. Universal Design of Learning Guidelines [49]

Figure 2. Universal Design for Learning Guidelines, version 1.0 [50]

Although the strategies they developed began years ago, the implementation of UDL practices within higher education lags behind K-12 systems [6], [22], [23]. Dalton, et al. [22] found contributing factors within the higher education environments to be "lack of awareness, lack of knowledge and training, and lack of resources" (p. 6). UDL is a relatively untapped resource for faculty for creating course designs with the flexibility to be responsive to an ever-changing and diverse population of learners. No longer would we need to struggle with existing course designs, assessment practices, and pedagogical approaches that fail many of our

graduate learners despite good intentions [11]. With the growing presence of international students who are non-native English speakers, it behooves us as committed educators to revisit traditional and hybrid paradigms for teaching and learning and incorporate considerations such as UDL to ensure equity in our active learning processes [15], [17], [24]. We expect our learners to delve deeper into analyses and creativity. Teaching, learning, and assessment are focused on these complex cognitive levels of learning. Our goal is to ensure that our graduates leave our programs with deep knowledge of content, exceptional 21st Century skills, and a lens for reaching ALL learners as they build upon the foundational knowledge of the discipline. UDL offers that solution.

Curriculum development includes a thorough review of the latest research findings in order to determine the scope and sequence of content [25]. For our student population, instructional design begins with the question of what we want our learners to know and be able to do. UDL offers an additional factor, i.e., "what they care about", so the focus for planning is what we want our learners to know and be able to do that they care about. This builds in considerations of engagement and executive functioning that will help to increase their intrinsic desire for learning. UDL broadens the reach of instructional content to ensure all potential learners are engaged and focused on learning while being provided with varying supports and the means to demonstrate and represent what they have learned that will reflect their individuality [5], [22].

Finally, with the globalization of education and the increasing enrollment of international students whose native language is not English, our instructional design efforts must include intentional planning to embrace all students and welcome the richness that linguistically and culturally diverse learners bring to the classroom, including their unique linguistic repertoires. As noted by Gutiérrez [8], "Rich learning communities utilize all the social, cultural, and linguistic resources of all its participants". Translanguaging is a pedagogy grounded in pluralism that honors the multilingual talents of our learners. With this pedagogy, language is considered a resource to the learner, classroom, and learning process [16]. Each multilingual learner is viewed as having a linguistic repertoire, unique to them, and the teaching-learning process seeks to incorporate strategies to enable the learner to use this linguistic knowledge as they process and gain new learning [16], [26], [27].

Translanguaging is "the process of making meaning, shaping experiences, gaining understanding and knowledge through the use of two languages" [28]. When a pedagogy of translanguaging is in place, learners are free to utilize their full linguistic repertoire of vocabulary and prior knowledge to process and understand new concepts and incorporate them into their schema of knowledge. Implementing translanguaging practices does not require that the faculty be multilingual; rather, it means that the faculty embraces the diversity and is committed to incorporating a translanguaging pedagogy in their instructional design. With students being able to utilize their entire linguistic resources as they are learning new information, they will be able to obtain a deeper learning of the subject [16]. Language considerations are interwoven throughout course design when applying UDL Guidelines.

At their core, UDL, translanguaging, and culturally responsive and culturally sustaining pedagogies all include design strategies that begin with a focus and consideration of our diverse student population, and a goal to develop social and instructional practices that "nurture the unique talents of every student" [1]. Brown et al. [6] recommends these pedagogical approaches "bolster student agency so as to meet the needs of diverse learners, improve student retention, and create more equitable power relationships between faculty and learners".

3. Nimble Course Design through UDL

Course design includes a cycle of bringing together the latest research, planning scope and sequence, establishing course objectives and learner outcomes, identifying assessment strategies, and developing the syllabus.

Figure 3. A Model for Future Proofing Instructional Design with UDL

Once a new course is implemented, the cycle continues with an in-depth analysis of the success and flaws in the course design and a determination where changes are needed. Using the model displayed in Figure 3, the design process is expanded to include the incorporation of UDL considerations to improve the learners' experiences and active participation. UDL is student-focused and requires a reflection of the variability that is, or may be, present within the student population [29]. Creating rubrics

for course performance assessments with detailed and operational descriptions of expectations are particularly important for classes with student populations of diverse educational backgrounds [5]. When possible, choice is imperative for students; this option increases engagement and minimizes perceived threats while also requiring metacognitive awareness on the part of the students, a 21st century skill [30].

4. Designing or Modifying Course Structure to Include UDL and Translanguaging

When considering modifications of existing course structures, originally created for a different student demographic, the integration of UDL does not mean reducing expectations of performance by students nor does it require a complete overhaul of previous approaches to instructional design. Rather, using the CAST template for the UDL Guidelines, enhanced with questions suggested to guide reflection (see Figure 4), materials, assignments, and other performance assessments may be developed to provide an inclusive approach for the diverse student population that will lead to deeper learning and active engagement. In the following sections, findings from literature reviews of common teaching and learning practices in university programs are presented, including strategies found to increase engagement or improve performance.
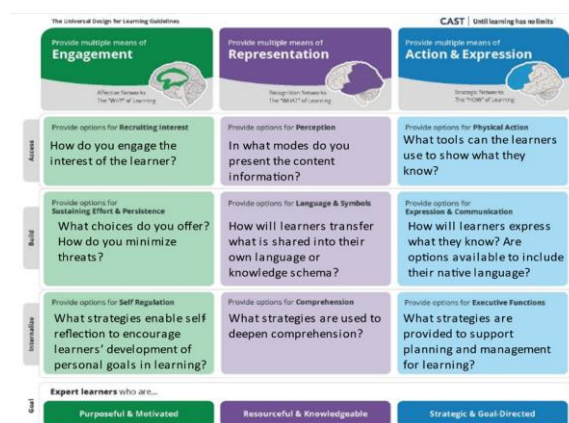

Figure 4. UDL questions for course content. Adapted from CAST UDL Graphic Organizer [51]

4.1. Lecture format for delivery of content

From the beginning, lectures and textbooks have served as primary means through which content is delivered at the university level [30]. However, lectures as a teaching method have had mixed reviews in the professional literature. With our rapidly developing technology and reliance on information sources that provide quick responses,

some are concerned that the student population of today may require more visual stimulation or may not have the attention span for content delivery relying on traditional lectures [31]. Schiullo [12] notes that the design of the traditional lecture did not consider audience, which also risks student engagement. With multilingual listeners, learners may need translation tools or extra time for processing internal translations of the information [14]. After a review of related literature on this topic, one of the factors that impacts student engagement is the delivery style. Lecturers who are dynamic and engaging hold the attention of their audiences. On the other hand, lectures given where the presenter reads information or does not clearly communicate the content and is unavailable for follow-up questions are deemed ineffective [12]. When lectures are effectively delivered, this format offers the means to summarize current research in a condensed timeframe, unpacks the assigned readings for the students, has the potential to pique student interests by demonstrating a passion and enthusiasm for the content, and increases engagement by students in discussions and by activating their prior knowledge [9], [12].

To ensure content is comprehensible to all learners in our diverse classroom, studies have found a variety of strategies to be effective. In the delivery of content, studies have shown that using gestures, visual supports, and demonstrations, including examples from varied cultures, help to ensure students' access to and engagement with the content, particularly for multilingual learners [12], [29], [32]. Creating opportunities for learners to be actively engaged in discussions of the content can be achieved through a welcoming of questions as information is presented or through strategies such as think-pair-share [12]. With small group discussions or think-pair-share dialogues, members of the group can share what they are learning and ask questions within their teams if they are hesitant to ask in the larger group [12], [18], [29], [31], [33]. Another strategy to ensure that students' questions are addressed is leaving time at the end of class for students who are more comfortable asking questions face-to-face [32]. All these interactive experiences contribute to a sense of community as learners share on a more personal level.

In graduate university classrooms today, it is rare that the sole format for delivery of content is lecture. Instead, there are various teaching and learning activities interwoven throughout the delivery of content as well as a plethora of supportive tools to ensure engagement and deeper learning [9]. Videos and digital media provide visual effects or examples of concepts with closed captioning. For multilingual learners, closed captioning assists in processing the verbal content. Videos in other languages on important concepts and content might also be

considered [18]. Lecture content is frequently delivered with presentation tools, such as PowerPoint or Canva, and may be posted to the university's Learning Management System, with accompanying lecture notes, concept maps, or other handouts [9]. Lectures may be pre-recorded and posted to be available to students on demand. In the classroom, collaborative small group discussions or question-answer periods offer the opportunity for students to engage in dialogue that helps to clarify concepts [34]. Aagard et al. [34] found that students preferred structured lectures with opportunities for collaboration and authentic problem-solving discussions of content. A study by Dean et al. [10] explored optional supports for large lecture classes and found that students felt lecture notes and PowerPoints were the most helpful, followed by the use of clickers for active engagement. To provide accountability for content delivered in class, students could be given assignments to summarize key points, a process which would provide information to the instructor regarding the students' grasp of new information [5].

A recent alternative or new addition to lecture formats for the delivery of content is a "flipped classroom" [35], [36]. When implementing a flipped classroom approach, students are provided with content-related materials for preview and study prior to the classroom meeting day. This ensures learners have background information and are adequately prepared for participating in learning activities that provide experiences in applying the concepts and content they have learned. The role of the instructor changes from lecturer to facilitator or guide [36].

4.2. Team discussions and projects

With a focus on building 21st century skills, team projects are commonplace. Team-based projects provide a means for building skills such as communication, collaboration, problem solving, taking initiative, and critical thinking, as well as technical skills, such as digital age technologies [30]. Not only do these pedagogical approaches serve these ends but they are also valued by the current generation of learners in our student populations [31], [34]. Teamwork creates a collaborative community where learning occurs within a social interactive context and likely includes diverse and varied skill levels across team members.

The diversity in students' prior experiences and learning results in the realistic potential that some team members will be more knowledgeable than others in specific areas. Those students will be able to provide additional insight and knowledge of the course content to their team members, similar to the experiences Vygotsky espouses in his sociocultural theory [37]. Wald and Harland [37] describe when diverse individuals learn together, they inevitably learn from each other and, with team projects, learners share responsibility and accountability for their completed tasks. These team-based assignments provide an added benefit of reducing threats or perceived risks in our learners as they work together. The informal communicative context of the team also reduces the burden of language for multilingual learners by leaving language choice and interactive structures to be determined by each team.

Team projects vary; however, regardless of the assignment, when teams are formed or assigned, they establish a structure for meeting their goals which includes assigning or assuming specific roles [38]. They may assign roles such as facilitator of team discussions, monitor of team logistics and scheduling, and a recorder to keep minutes from meetings. These interactions provide the opportunity for all team members to apply their leadership skills and often involve negotiation from each as their roles are put into place [39]. The content of their focus will involve planning, with team members having to engage in their own self-regulation and monitoring to ensure they meet the team's expectations. As team projects are successfully completed, trust builds within the community and teams subsequently serve as additional support and assistance to each other. Athanasiou [40] found that accuracy and motivation increase in our learners through these experiences.

Organizing teams for group discussions within the classroom serves multiple purposes [5]. Students engage in Socratic dialogue where concepts introduced through class are discussed and co-constructed through active discussion [35], [41]. If team members struggle with the content, there are opportunities for peer tutoring where additional details or examples might extend the members' thinking and ensure mastery of concepts [40], [41]. Through this dialogic and constructivist approach, teams actively engage in building meaning together as they unpack and analyze the concepts [11], [41]. Learning is maximized [40].

Team assignments are frequently designed to culminate in team presentations. In a survey conducted with undergraduate students by Aagaard et al., [40], students reported they preferred team presentations to individual presentations. As with group discussions, team responsibilities are distributed across team members and roles are established. Team members plan, research, organize content, and present their findings [10]. For students in education programs, these opportunities enable our learners to employ best practices in teaching and learning as they present their content, including the use of digital media, graphic organizers, and active learning activities such as group discussions [5], [35]. A translanguaging approach also means that new vocabulary and concepts may be presented in multiple languages, including videos and other tools.

For all learners, including those who are multilingual, assignments with presentations offer an opportunity to further advance oral language skills [40]. For the team, teaching their peers the content requires that they have a full grasp of the subject matter themselves, so they can strategize methods to engage the class in learning.

4.3. Textbook reading

Textbooks have been used for years as a cornerstone in course development, where students are provided the seminal and research history of a discipline. Supplemental readings with the recent research findings are commonly added to that foundation to provide a rich background for new members of the field. However, studies are finding that students may not be completing their assigned readings [42], [43]. In their survey of undergraduate students, Aagaard et al. [34] found that approximately half or 52% of the students in their sample reported not completing their reading assignments; students reported that most of their content was gained through classroom attendance. Students whose native language is not English may find it difficult to comprehend what they are reading and may require more time to process the content, e.g., frequently needing to reread text [44], [45]. They may have trouble managing the volume of reading expected in college level courses [44]. Recent studies have found that textbook reading may increase and occur with more reliability when there are specific components attached to the assignment, e.g., in-class quizzes, graded study guides to be completed while reading, and assigned shortened readings [34], [42]. It may also increase the likelihood students will complete the reading assignment when smaller segments of reading are assigned [34].

Research offers solutions to support the comprehension of reading material. With the advent of digital textbooks and online bookshelf services, students can write notes in margins or have text read aloud [5], [43]. Activating prior knowledge of the content is known to be a successful strategy for improving comprehension [44]. Maunsell [44] suggests one strategy may be to divide the classroom into small groups, introduce the topic to be covered in the next reading assignment, and have the students discuss what they already know in this area and what they would expect or want to learn. Instructors may supplement this activity by providing an outline of the reading in advance to assist students in deciding where to place their focus [6]. Juban and Lopez [43] found in a survey of university students that respondents felt chapter summaries were the most useful feature in textbooks, followed by review and discussion questions. A course reading assignment might also be designed as a scavenger hunt with students required to seek specific information, and record details regarding where they found the information and what strategies they used for finding it [44].

4.4. Inquiry-based learning

In a research university, one of our goals is to produce future researchers who contribute to the knowledge base of the discipline. Therefore, it is common to include a research paper as one of the requirements for a graduate level course. Students may be required to conduct a full literature review on broad topics or may be given the directive to create a narrower research question and demonstrate their research abilities by seeking peer-reviewed research that addresses a specific question. One skill that graduate students may or may not have been taught is how to use the Boolean operators for keywords when searching for content [46]. In this age of Google searching, students may conduct their search by browsing the internet with full questions or sentence fragments rather than using acclaimed journals and sources from their chosen professional disciplines and thinking at the level of key words and operands or citation chaining [46], [47]. Catalano [46] found in her meta-synthesis of graduate students' information-seeking behaviors that international students may begin with the internet for their searches and will be less likely to ask for help. Once they have identified their research sources to begin their reading and synthesis, they may not have had training on how to create a cohesive research paper that synthesizes their findings on a topic and provides a summary response to their research question(s). Instead, they may have developed a practice of writing their research paper as a series of journal article reviews rather than a synthesized summary [47].

A survey of faculty conducted by Ondrusek [48] found that writing ability was noted as a major obstacle to student success in graduate schools. Beginning undergraduate writing classes may have been structured around topics with which students had some familiarity and assignments may have dealt with reporting what was known on that topic rather than an inquiry-based research question that was unique to the individual learner's research focus [48]. There may also have been more focus placed on mechanics or basic skills, such as spelling and grammar [48]. With multilingual students, proofreading may become a focus rather than the content or conceptual focus of the topic [6]. To support basic writing skills, many universities offer writing centers for student support, although they may be restricted to the undergraduate student population and may not be available to graduate level students. Students may also seek tutoring services or pay editors to help them with their final

drafts [48]. Elective writing classes are also becoming more widespread as writing needs become more apparent.

Rempel [47] views writing as core to developing students as scholars, i.e., future researchers and publishers in the field. To be writers, our graduate students need to read as writers as they immerse themselves in professional literature. They need to know the premier journals and authors in the field and study the vernacular of the discipline. Through these activities, they will be able to discover their research interest for future studies. Producing a well-structured, inquiry-based piece of written work will precede their work being published [48]. However, other barriers of a personal nature may impede that journey. Students who have had unsuccessful writing experiences may face anxiety that interferes with their ability to get started or to focus on their writing. On the other hand, there may be students who focus on perfection, so they experience writer's block or difficulty in finding their draft work acceptable to their standards and thus ready for submission [48]. They may also have difficulty framing the scope of their work and therefore exceed the necessary requirements and the time needed to accomplish their goal [47]. The ability to determine these decision points of scope and sequence within a project are key to graduate students' success.

Brown et al. [6] note the inherent value of learner agency and its impact on increased engagement by students. This agency becomes further developed when our students are provided with opportunities to direct their learning and inquiry and provided choice in their inquiries [7]. Boothe et al. [6] designed an action research project with 37 students that presented a two-week module on UDL, with a requirement to complete a culminating project that allowed for multiple means of action and expression as per the UDL framework, with a detailed rubric reflecting operational descriptions of course standards. Final submissions from 37 students included children's books, a brochure/pamphlet, and research papers, as well as a play, a book of poems, an online game, a video, a student handbook, and a cookbook. A survey completed by the students found the majority felt having a choice for action and expression enabled them to be more creative and engaging; a few students found openness of choice to be more challenging than a clearly defined end product with expected parameters. All participants were "100% highly satisfied that the final UDL project allowed them to demonstrate their understanding of the concepts learned in the course" [7]. The students also felt the project provided them with the opportunity to experience an application of UDL principles within their own coursework.

5. UDL and Translanguaging: A Case Scenario

Using the content of the literature review, paired with the UDL Guidelines in Figure 3 and the reflective questions in Figure 4, two years ago I reviewed syllabi for two courses that I had already been teaching for two years with my international students whose native language was not English. I then delivered the UDL-enhanced course content for the last two years in five sections of these two courses. Approximately 98% of the students in the cohort hail from China. Based on my observations of the first couple of cohorts, I wanted to establish a safe space for learning, increase the engagement of the students in class discussions, minimize threats or concerns regarding their language proficiency in speaking or writing, and ensure comprehension of the content represented in the textbook and in class sessions. Initially, students were hesitant to participate in class discussions. I observed that students who had had previous experiences in a U.S. university were relatively less hesitant to speak in class and they tended to gravitate to other students with similar experiences, sometimes resulting in a level of isolation for other students who were hesitant to speak out in class. As I became more familiar with them, many of them shared with me their initial hesitancies to share in discussions, particularly if they felt that someone else had provided a comprehensive or eloquent response. Over time, they realized my interest was to hear their thoughts and analyses in our discussions without a right/wrong or fluent/not proficient judgment being assigned to them.

In those first couple of years, I eventually learned that the textbook readings were particularly difficult for many of my students. Not only was the density of the text difficult to comprehend, but the volume of the reading per week was also a monumental feat. Having carefully chosen the textbooks so they presented the most recent research and also specific, research-based instructional and assessment strategies for new members of our discipline, the students' reading of the content was a valued and key component of the course. Given the characteristics of my student population, I also reviewed textbook options to ensure they were available electronically and well-written, with many helpful text features such as chapter objectives and summaries, definitions of bolded texts, visual features, and a supplemental website. Therefore, in my UDL-modified courses, I adjusted the syllabi so that chapter readings were divided and assigned to teams in a jigsaw strategy for covering the content. To ensure a sense of community became established in the cohort, I used a Table of Random Numbers and randomly assigned teams for the readings. Each

week, the teams would teach their chunked section of the text to the class, with each team member sharing equally in the presentation. A detailed rubric operationally defined the expectations, including not reading their content when they were presenting. The goal was to build confidence in a safe space (classroom) where there were no points taken away for word-finding or verbally hesitating, but where there were points taken if they used their phone or tablet or memorization to present the prepared content.

Regarding the students' inquiry-based research project required for the course, my intention was to help students learn to pose a research question in their topic of interest within the general content of the course, i.e., an inquiry that was narrow enough to yield a focused study of the literature when finding answers to their question. The focus was not a general paper on a topic, but a specific inquiry made to find focused facts and information. In my UDL-modified approach, within the first three weeks of the start of class, each student met with me individually and we explored searching the relevant databases in our University's library together, with my teaching them the use of the search filters and Boolean operands for narrowing the selection pool for a literature review of peer-reviewed research, when needed. If the topic was too broad, it was readily apparent by the thousands of articles that were returned from the search, albeit all within the designated 10-year timeframe. The rubric for the project provided specific and detailed descriptions of the 5-page research paper, including the requirement to synthesize the content from the minimum of 10 peer-reviewed articles, and write their paper to address the inquiry question, not be a sequenced list of article reviews. To prepare my students for synthesizing data and information, a mini-lesson was conducted during class. When the students completed their inquiry-based research paper, they also presented their findings to the class, and created a supplemental research summary on the topic. The format for the research summary was not defined but left to the inventiveness of each student. Examples were provided to demonstrate the vastness of options for the product the students could choose, e.g., a brochure, a web page, a blog, or whatever format they chose. In my most recent semester, one of my students created an engaging video on graphic novels and English language learning that set the scene with a video of a young boy in bed at night reading a graphic novel under the tent of his covers with a flashlight. The video continued with the value found in the research that supports the use of graphic novels as an engaging medium for young learners.

These strategies used in my classroom were created from the literature review conducted to build each course and were modified in response to

student evaluations received each semester. Not surprisingly, although the instructional strategies resounded successfully with a large percentage of my students, there were two students who shared a preference for more traditional approaches. One student expressed an interest in a traditional lecture-style delivery where the content was primarily delivered by me rather than through presentations of their peers. They felt some tension that they might be missing out by not having the information conveyed by the instructor (see below). Another student was unsettled by the openness of the requirements for the research summary and was uncomfortable not having specific details of the product output that was expected, consistent with the findings of Boothe et al. [7] regarding the challenges inherent when there is openness for choice.

Below are the results from the last two years of these face-to-face classes where the structure of the classes has now stabilized. Each four-point Likert-based item of the evaluation and the mean rating are listed. The mean rating response across all items was 3.835588. Course evaluations were submitted by 84 students which represented a response rate of 72.6%. I have also included a few representative student responses that addressed the specific strategies in this papaer from the open-ended questions on strengths and areas for improvement (see Table 1).

Table 1. Student evaluation findings

Item	Mean
The learning outcomes/objectives of this course were clearly articulated.	3.83
The learning outcomes/objectives aligned with the course content.	3.852
The guidelines (e.g., assignment instructions and rubrics) provided to me on assignment were clear.	3.786
The course assessment aligned with the learning outcomes/objectives set for this course.	3.784
The instructional methods used in this course were effective.	3.76
The technology used to support the delivery of the course was effective.	3.786
The course challenged me to produce my best work.	3.758
This course enhanced my practice.	3.872
Overall, I rate this course as:	3.752
The instructor was knowledgeable about the subject matter.	3.926
The instructor communicated effectively.	3.866
The instructor encouraged student participation.	3.868
The instructor treated students equitably.	3.888
The instructor displayed cultural sensitivity.	3.952
The instructor actively engaged me to learn the subject matter.	3.914

The instructor was receptive to different viewpoints.	3.914
The instructor provided feedback on my performance that was both timely and helpful to me.	3.872

Table 2. Selected comments specific to the course practices in this review

UDL-modified Practice	Student Comment
Lecture format for delivery of content involving student presentations	"At first I felt overwhelmed by regular presentations. Now I sincerely appreciate the course design into which student presentations were incorporated. Dr. Millikin taught us theoretical basis for performing as a TEFL teacher, and also guided us to be more familiar with teaching through practice."
	"The teacher can use PowerPoint to teach some content systematically, rather than do the presentations all the time."
Textbook reading assigned in smaller segments to teams	"Group reading is effective in helping us to grasp the content of the book quickly, and it helps us to practice our group work skills. The choice of the text was amazing!"
Team discussions and team projects	"There were many opportunities for cooperative learning with my peers, which is a great method for me to acquire new knowledge."
Inquiry-based Learning	"Flipped classroom; self choose research topic."
	"The guideline for research product is a little bit unclear."

6. Discussion

UDL, with the infusion of translanguaging and cultural-sustaining pedagogies, offers an instructional approach that embraces diversity through instructional design with the end result being classrooms that are inclusive of more diverse, global populations. The CAST resources for UDL provide invaluable support for our reflection and consideration of refinement to existing course designs to build in flexibility that will increase intrinsic motivation and engagement with our learners. To support the application of UDL in our graduate programs, I created specific reflective questions within the CAST UDL Guidelines that I used when I was designing modifications to several courses for our international population of graduate students. The questions served as specific foci as I

considered the course content, requirements, and assessments. I then reviewed all student course evaluations carefully as I reflected on each course's strengths as well as weaknesses so I could determine where I wanted to make improvements to further engage or inform my learners.

7. Conclusion

In this research, I found that the incorporation of the UDL considerations, including the translanguaging and cultural-sustaining pedagogies, served to build an apparent confidence in my learners as well as increased motivation and self-direction in their development of an inquiry-based approach to research. As my students were introduced to more co-constructive learning environments with this increased agency in their own learning, my role as teacher became more of a facilitator and guide to them as they explored the research of our discipline and learned how they could apply what they have learned to their current and future practice.

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[51] Figure 4. UDL questions for course content. Adapted from CAST UDL Graphic Organizer. https://udlguidelines.cast.org/binaries/content/assets/udlguidelines/udlg-v2-2/udlg_graphicorganizer_v2-2_blank.pdf (Access Date: 11 December, 2023).