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The Barriers Teachers Face When Implementing the Universal Design for Learning Framework

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**The Barriers Teachers Face When Implementing the
Universal Design for Learning Framework**

By

Dana Dacus-Hare

A culminating thesis submitted to the faculty of Dominican University of California in partial
fulfillment of the requirements for the degree of Master of Science in Education

Dominican University of California

San Rafael, CA

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Abstract

There are multiple barriers to learning that students face. Universal Design for Learning (UDL) is a framework for teaching and learning that gives all students an equal opportunity to succeed. While many studies address the hurdles teachers face when implementing the UDL framework, there is a gap in the research about the support systems that can minimize those barriers for teachers. There is also a lack of existing studies about the additional frameworks that can work in connection with UDL to meet the needs of diverse learners. Using UDL and Culturally Responsive Teaching (CRT) together provides a framework that traditional approaches do not, which can help educators meet the needs of all students (Kieran & Anderson, 2019). For this project, nine teacher participants were interviewed from an independent, co-educational K-8 school in San Rafael, California. The interviews were designed to understand the perceived barriers teachers face when implementing new frameworks, such as UDL and CRT, and to discover beneficial supports that could be put in place to diminish barriers. An additional 15 teachers were surveyed to collect data that illustrated alignment with UDL and CRT practices. This convergent mixed methods study included the collection, analysis, and interpretation of both qualitative and quantitative data. The findings show how the principles of UDL and components from CRT can address learning barriers for students. Findings also indicate the perceived barriers when implementing new teaching practices and frameworks, such as time, institutional priorities, teacher mindset, philosophical buy-in, teacher vulnerability, and lack of support systems. Finally, this study showed a range of strategies that support the successful implementation of new practices and frameworks. These findings have important implications for schools and administrators who can mitigate the barriers teachers face when implementing new frameworks and provide for teachers actionable support systems.

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Chapter 1: Introduction

“Inclusion is a philosophy that embraces the idea that everyone has something of value to contribute and that everyone has a right to belong”

-Lisa Friedman, Special Education and Inclusion expert and speaker (2016)

The frameworks of Universal Design for Learning and Culturally Responsive Teaching incorporate this core belief in the structure of their frameworks. As an educator, it is a belief that I also hold. I began teaching in 1996 at a private all-boys school in San Francisco. Upon graduation from college, I entered an organization called The Multicultural Alliance, which placed teachers of color in independent schools. As a public school-educated, multi-racial child of divorced parents, I felt entirely out of place in my first teaching position. Over that first year of teaching, I forged relationships with students and families who felt "out-of-place" and marginalized. I was drawn to understanding the experiences of children of color, children who had neurodiverse learning profiles, children of divorce, and children who came from lower-class socio-economic families at elite private institutions. I knew this was my role; as I grew and developed as an educator, I was driven to demonstrate to my students that every one of them had a right to belong. I was an advocate and champion for the students who struggled. After all, I had similar experiences as a child, growing up multi-racial in Marin as a child of a lower-class single mother, and a father I only saw on the weekends. I reflected on my own experiences growing up and wished I had an advocate and a mentor in the school system as a young girl when I was struggling or felt I did not belong—someone who could push me to achieve the high standards I could reach. Throughout my years as an educator, my experiences with all of the students in my classroom taught me that each child learns differently. As educators, we are

responsible for reaching and teaching the children in our care. As educators, the many aspects of "why" we teach center on the emotional gratification we receive acting as agents of change.

I was deeply invested in impacting change in some way. Throughout my years in the classroom, I began to look for equitable frameworks that would support inclusive teaching practices. I taught with a multicultural perspective, which helped me create a more just, inclusive, and caring classroom that I hoped would lead to a more equitable and unbiased society. I considered each student an individual and structured the curriculum to fit their cultural background, language, learning needs, and interests. I discovered Culturally Responsive pedagogy; then, in a professional development workshop, I learned about Universal Design for Learning (UDL). The more I read, I uncovered that connecting UDL with Culturally Responsive Teaching (CRT) helped create environments that not only support neurodiverse students and students who need different teaching approaches (UDL) but also brought the lived experiences of students of color and English Language Learners (ELL) and could create classrooms that effectively met the needs of ALL students.

As researchers, we are usually driven to this work because of our powerful feelings about a topic. I have observed students struggle in my and my colleagues' classrooms over the years. These students faced barriers to their learning. I often reflected on how our educational systems could eradicate these barriers, and create learning environments that supported all students. My motivations for conducting this research come from creating equitable learning environments for all students. I have observed pushback from teachers at the previous school settings where I have worked and the reluctance of some teachers to employ practices in their classrooms that may allow ELL students, neurodiverse students, racially and ethnically diverse students, and students who need something different than traditional teaching methods to fully

access the curriculum. I am continually left wondering why it is so challenging for some teachers to change their practices. We expect students to change, maintain a "growth mindset," and continue to grow and learn. Shouldn't teachers also do the same?

This humanistic research study was undertaken with the hope that we, as teachers, will be able to reflect and understand our resistance to change and collectively work on ways that we can support each other to learn, grow, and change because it is in the best interests of the students that we teach. The hope lies in promoting change to an institution's practices and the mindset of teachers, to shift the way we are teaching and use a different lens when designing classroom culture, curricula, units, and lessons. Now that I am a Learning Specialist and not a classroom teacher, I see the practices, routines, and expectations teachers set up in their classrooms more clearly since I am continuously in the role of an observer. I see students struggle to understand or be accepted for who they are and what assets they bring to the classroom. I see that some teachers have difficulty reflecting on their lessons and practice to see if they could try things another way. Through this research, I am attempting to find ways to invite teachers to shift their approach in a way that respects them and affords them dignity, all the while knowing how difficult it can be to shift our mindsets. This is a process that we can not do alone. As educators, we need each other for change to happen.

Statement of Purpose

The purpose of this research project was to explore the Universal Design for Learning (UDL) framework as a way to minimize barriers to student learning. This project also explores the benefits of connecting UDL with Culturally Responsive Teaching (CRT) practices. It further identifies the anticipated barriers teachers face when adopting new frameworks while also illustrating successful strategies that support implementation and help to create inclusive

learning environments. Systematic reviews of UDL-based teaching indicate that these strategies have "the potential to help teachers meet the academic needs of all students and to support the achievement of students with varied needs" (Wook et al., 2017, p.134).

A review of the literature supports the value of UDL as a framework that includes lesson design and access to content that meets the needs of all students. Co-constructing the frameworks of UDL and CRT allows teachers to identify and address potential barriers to student learning while sustaining their students' cultural and linguistic identities. The literature provides additional insight into teachers' perceived barriers when adopting new frameworks, approaches, and practices. Further, the literature underscores the importance of practices and support systems to eliminate any anticipated barriers for teachers as they utilize new frameworks.

Overview of the Research Design

This study, involving nine teachers at Montecillo Day School, utilized a convergent mixed methods approach. The qualitative and quantitative data were gathered concurrently using a convergent mixed methods design. This data came from interviews, observations, and surveys. Interviews with the nine teacher participants were conducted in person and included open-ended questions. The research was focused on these questions:

1. What barriers to learning do students face in the classroom?
2. What can teachers do to help students overcome barriers that prevent them from learning?
3. What barriers may teachers face when providing students with new ways to access learning and when implementing new teaching practices or frameworks?

4. What support systems or methods would help teachers adopt new teaching practices or frameworks?

The purpose of the qualitative data was to illuminate the perspective and experiences of the teachers in naming barriers to student learning and obstacles for teachers when adopting new teaching methods, practices, approaches, and frameworks. The quantitative data came from surveys designed to determine how teachers guide their lesson design and what lenses teachers incorporated while planning lessons and curricula, which drove their instruction.

The research site was a private independent school in northern California. As the researcher, I acknowledge a potential bias, given that I have worked at the school for two years. In addition, my position may cause some of my colleagues to lack transparency in communicating with me since I serve as Learning Specialist at this site. Nevertheless, I have maintained relationships with all the participants in the study for prolonged periods and continue to work with the teachers as colleagues at the school site.

Significance

The findings from this research support the assumption that both UDL and CRT encourage teachers to proactively consider educational approaches that should result in increased student engagement and learning (Anderson & Kieran, 2019). The findings further support the validity of UDL as a framework that allows all students to access learning and succeed in a classroom environment. Additional results from this study indicate that teachers aptly named student barriers to learning that fell under broad categories such as accessibility, instructional, emotional, experiential, motivational, and preferential barriers. In addition, many learning barriers were mitigated by utilizing the principles, guidelines, and checkpoints of the Universal Design for Learning (UDL) framework.

This project addressed the gap in the literature regarding the additional frameworks that could be utilized, in addition to UDL, to eradicate barriers to learning. The findings support the validity of Culturally Responsive Teaching (CRT) as another essential framework teachers can utilize to address barriers to learning.

When addressing the perceived barriers teachers faced when adopting new practices and frameworks, teachers noted barriers such as time, clarity of priorities, teacher mindset, buy-in, teacher vulnerability, and lack of training or support for implementing new teaching practices and frameworks. Teachers thought these perceived barriers could be alleviated by sufficient professional development and training, collaboration, and coaching, as essential support systems to help teachers learn, understand, and implement new frameworks, especially UDL and CRT.

Implications

The findings of this research further highlight the barriers specific to a student's ability to access learning which spoke to the necessity behind the need for UDL and CRT and gave validity to adopting those frameworks. An additional finding of significance is that there need to be more studies that identify perceived barriers teachers face when adopting new frameworks and adequately define practices and strategies that support the successful implementation of the UDL framework (Capp, 2020). There was limited research regarding the practical application of the frameworks without extensive study, collaborative learning experiences, or utilizing tools to assist educators. There is also a need for research discussing the additional frameworks that work with UDL to eliminate student learning barriers, specifically the CRT framework.

Universal Design for Learning (UDL) is a way of thinking about teaching and learning that helps give all students an equal opportunity to succeed. This approach offers flexibility in

how students access material, engage with it, and show what they know (Morin, 2018).

Additionally, students benefit from learning environments that have diverse populations. A diverse population allows students to learn various problem-solving strategies and observe how others view and navigate the world. According to Takacs (2003),

No matter where they live or work, students will interact daily with people with different perspectives, whose positionalities bias their worldviews in profoundly different ways. Therefore, education can have no more crucial function than helping students to function productively and joyously in their communities. This means learning to listen with open minds and hearts, respecting different ways of knowing the world borne of different identities and experiences, and examining and re-examining one's worldviews. (p. 38)

Teachers and students would benefit significantly if teachers embedded the framework of CRT into their practice, as this framework acknowledges diverse ways people view and navigate the world. Teachers can perpetuate the structural racism built into education systems if they are not conscious and do not take active steps to address their own biases and recognize how those biases can affect practice and decision-making in classrooms and schools. As educators, we cannot ignore the subject of race and culture in our society and our classrooms. Suppose educators allow themselves to look critically at their hidden biases and recognize how they may affect how they treat their students, understand a student's behavior in the classroom, and understand the systems that may not be equitable for certain students. Teachers are learning to develop the skills necessary to understand and implement culturally responsive pedagogy when engaging in this critical reflection process. We need to realize that many cultures exist and we need to know about our students, their backgrounds, their families, and their cultures. As the

author Peggy McIntosh states, "What will we do with such knowledge?" Hopefully, as teachers, we will use that knowledge to create systems that support ALL the students we teach.

Chapter 2: Literature Review

This literature review seeks to discuss the validity of the Universal Design for Learning as a framework for teaching and learning that gives all students an equal opportunity to succeed. While many studies address the effectiveness of UDL as a framework that creates inclusive learning environments where diversity is valued and all students can succeed, there is a lack of existing research discussing additional frameworks that work in conjunction with UDL to eliminate barriers to learning for students. Additionally, there is a lack of existing studies that identify the perceived barriers teachers face when adopting new frameworks, such as Universal Design for Learning (UDL), and the practices and strategies that support the successful implementation of the UDL framework (Capp, 2020).

The following literature review will discuss three main themes. First, it will provide the historical background on Universal Design for Learning (UDL) as a framework for promoting educational inclusion and illustrate its importance in the movement toward inclusive education and endorse its effectiveness. Second, it will discuss how the frameworks of Universal Design for Learning (UDL) and Culturally Responsive Teaching (CRT) can support student diversity when used in conjunction with each other. Third, this review will consider teachers' perceived barriers when implementing new frameworks such as UDL and CRT. Lastly, it will describe specific practices and strategies that may benefit teachers as they employ the principles, guidelines, and checkpoints of UDL in their classrooms.

In summary, this literature review explores the theoretical frameworks of Universal Design for Learning (UDL) and describes the benefits of connecting UDL with Culturally Responsive Teaching (CRT). It further identifies the anticipated barriers teachers face when implementing new frameworks while illustrating successful strategies that support

implementation and create inclusive learning environments. UDL celebrates learners' variability and diversity and intends to reach all students from the beginning of the design process (James, 2018). However, while many studies address the hurdles teachers face when implementing Universal Design for Learning, there is a gap in the lack of extensive information about the additional frameworks that are necessary to meet the needs of diverse learners, such as Culturally Responsive Teaching, and the specific support systems that are beneficial for the successful implementation of these two frameworks that help to eliminate the perceived barriers for teachers.

Universal Design for Learning

Historical Background

Universal Design for Learning (UDL) is an educational framework based on research in the learning sciences, including cognitive neuroscience, that guides the development of flexible learning environments and learning spaces that can accommodate individual learning differences (Rose & Meyer, 2002). UDL first began in 1984 when two researchers from the Harvard School of Graduate Education, Dr. David Rose, and Dr. Ann Meyer, created The Center for Applied Specialized Technology (CAST, Inc.). The initial goal of CAST was to reform how students with special needs were taught by using technology to help teachers individualize instruction for students with learning disabilities (Thibodeau, 2021). In 1990, the framework shifted its focus to address the "disabilities of the learning environment" and moved away from the focus on "individuals with learning disabilities." This change in thinking mirrored what was happening in other disciplines of society, such as architecture, where the focus was on buildings, sidewalks, and other structures "being designed so that all people could access them regardless of their physical disabilities" (Thibodeau, 2021, p. 1). The UDL

framework studied the architectural example of how the design of a sidewalk could be built with features that are accessible not only to individuals with physical disabilities (such as the "curb cut" of a sidewalk - the inclined feature that is built into most sidewalks today) but how the design of the "curb cut" of a sidewalk can also be beneficial to someone pushing a stroller, riding a bike or a skateboard. Many examples of *universal design* exist in our everyday life. Closed captions, automatic doors, ramps, easy-grip tools, and accessibility features on smartphones are all examples of universal design (Morin, 2018). *Universal design* as a feature that is "essential for some, is good for all" transformed the Universal Design for Learning belief, and the framework was created (Thibodeau, 2021, p. 2).

Universal Design for Learning is a set of three principles, nine guidelines, and thirty-one checkpoints based on the science of the brain and how we learn. It provides teachers with a structure to meet the diverse needs of all learners. UDL incorporates a list of principles, guidelines, and checkpoints that will help teachers develop UDL lessons by rethinking students' learning barriers and planning for student variability by providing options and choices (Thibodeau, 2021). These options and choices are defined by providing students with three overarching principles:

- The Why: Multiple means of engagement - UDL encourages teachers to look for multiple ways to motivate students. Letting kids make choices and giving them assignments that feel relevant to their lives are examples of how teachers can sustain students' interests (Morin, 2018).
- The What: Multiple means of representation - UDL recommends offering information in more than one format. For example, providing text, audio, video, and hands-on learning

allows all students to access the material in whichever way best suits their learning strengths (Morin, 2018).

- The How: Multiple means of action and expression - UDL suggests giving kids more than one way to interact with the material and show what they have learned. For example, students might choose between taking a pencil-and-paper test, giving an oral presentation, or doing a group project (Morin, 2018).

Universal Design for Learning is a framework. A framework exists as a set of principles or beliefs. The three core beliefs of UDL are 1. Variability is the rule (not the exception)-students do not have to do the same things at the same time; 2. All students can work towards the same firm goals and state standards with flexible means, and; 3. All students will become expert learners if barriers are removed and engagement is deep. With UDL, students can differentiate their learning experiences based on the options and choices that the teacher provides (Thibodeau, 2021).

UDL guides the design of learning experiences to proactively meet the needs of all learners. It is a way of thinking about teaching and learning that helps give all students an equal opportunity to succeed and removes any barriers to learning for students. A learning barrier is anything that interrupts or prevents learning. It impedes the way students engage with learning, encode information, store knowledge and retrieve it during practice (Chalk, 2022). Learning barriers impair and damage students' educational outcomes. Universal Design for Learning presents multi-sensory ways educators can represent information, engage learners, and facilitate expression (Coogle, Storie, & Rahn, 2021). The philosophy of UDL is based on the idea that there are multiple ways of representing knowledge (principle one), multiple ways students can

demonstrate their knowledge and understanding (principle two), and multiple ways of engaging students in the learning process (principle three).

The framework is a strategy for promoting educational inclusion and inclusive teaching. Inclusive teaching refers to pedagogy that strives to serve the needs of all students, regardless of learning differences, background, or identity, and support their engagement with the subject material (Ambrose et al., 2010). Teachers can intentionally put into practice many different teaching practices, strategies, and frameworks that support an inclusive teaching and learning environment. UDL is one such framework that supports inclusion. The framework of UDL is utilized to promote inclusivity and equity in the classroom, and students are taught to develop a sense of ownership and agency over their learning (Hernandez, 2022). “Using UDL guidelines, teachers can integrate flexible options and supports that ensure that standards-based lessons are accessible to a range of learners in their classrooms” (Meo & Rao, 2016, p. 1). The UDL framework is valuable for all students and can be a beneficial inclusive teaching practice for students with learning disabilities and English language learners (Morin, 2018). UDL supports students by making learning more accessible in general education classrooms by providing accommodations and support for all students, not just students with diagnosed learning challenges. The framework presents information in ways that adapt to the learner instead of asking the learner to adapt to the information (Morin, 2018). UDL can also provide students with various ways to interact with their learning content and help them use their learning strengths. UDL reduces the stigma that students may develop from being the only ones needing a specific accommodation or modification to access the curriculum in the classroom. The framework provides various options to students and does not only single out the few who receive formal accommodations as part of IEPs or 504 plans (Morin, 2018). UDL is not just one

way of learning; it is a variety of different approaches that aid in eliminating any learning barriers for students (Morin, 2018). For example, UDL could look like posting and referring to lesson goals, making it easier for each student to know the goal at the end of the lesson. It can also offer different assignment options to let students showcase what they know in a way they feel comfortable and learn best.

Creative options for students include podcasts, essays, and presentations such as oral presentations, slides, or posters. Such options give each student the ability to choose and take control of their learning. Another example of a UDL approach is having digital, audio, and written texts for the same piece used in class. Digital visuals help students follow the lesson even when it is time for individual work (Hernandez, 2022). As stated by Novak (2022), "UDL is not just a framework for curriculum design. It is a belief that all students are capable of learning and that instruction, when crafted and implemented with this belief in mind, can help all students succeed in inclusive and equitable environments" (p. 17). Educators who implement UDL often find a reduction in the need for and time required to arrange individual learning and assessment accommodations. Universal Design for Learning is essential in the goal of inclusive education because it reduces barriers to learning by creating learning environments where students have the flexibility to meet their learning goals successfully.

Culturally Responsive Teaching and UDL

The growing diversity of students in race, culture, language, and background knowledge and the pressing need for educators to consider how students' differences affect learning and align pedagogies that address this diversity is at the forefront of education. Universal Design for Learning (UDL) has provided educators with a framework for differentiation to address learner differences. However, using UDL principles without explicitly considering how cultural

differences and perspectives affect learning may increase the disparity in student achievement for students of color (Kieran & Anderson, 2019).

“UDL as a framework to increase student’s engagement and learning outcomes has focused on students with special education needs, but UDL was designed as a means to facilitate instruction for every learner” (Kieran & Anderson, 2019, p. 1207). Culturally relevant/responsive teaching is student-centered, asset-based instruction that is “deeply embedded in student’s home lives, communities, and cultural funds of knowledge” (Byrd, 2016, p. 2). Culturally Responsive Teaching is defined by five main components (Najarro & Will, 2022):

- A strong knowledge base about cultural diversity-Teachers should understand different racial and ethnic groups’ cultural values, traditions, and contributions to society, and incorporate that knowledge into their instruction.
- Culturally relevant curricula-Teachers should include multiple perspectives in their instruction and make sure the images displayed in classrooms—such as on bulletin boards—represent a wide range of diversity. Teachers should also contextualize issues within race, class, ethnicity, and gender.
- High expectations for all students-Teachers should help students achieve academic success while still validating their cultural identities.
- An appreciation for different communication styles-Teachers should understand different communication styles and modify classroom interactions accordingly. For example, many communities of color have an active, participatory style of communication. A teacher who doesn’t understand this cultural context might think a student is being rude and tell the student to be quiet. The student may then shut down.

- The use of multicultural instructional examples- Teachers should connect students' prior knowledge and cultural experiences with new knowledge.

If UDL is utilized to meet the needs of "all" students, connecting UDL with the framework of Culturally Responsive Teaching can provide even more effective ways to create access points to the curriculum for all students regardless of learning styles, neurodiversity, culture, race, ethnicity, or linguistic background. Culturally Responsive Teaching (CRT) is a research-based approach to teaching. It connects students' cultures, languages, and life experiences with what they learn in school (The Understood Team, 2022). Our brains are wired to make connections. Our brains can store information much easier when we have the background knowledge to connect to. Often the backgrounds and experiences of students of color, English language learners (ELLs), and other underserved student populations are overlooked and are not used to support students' learning goals. "Culturally responsive teaching values and reflects the assets of all students. Doing that raises academic expectations for all learners. It also sends the message that multiculturalism *is* an asset" (The Understood Team, 2022, p. 1). By implementing inclusive teaching practices and culturally responsive instruction, faculty create learning environments where equity gaps can be closed, and all students feel they belong and have the opportunity to achieve at high levels (Ambrose et al., 2010).

Implementing both UDL and CRT provides a framework that traditional approaches do not, which can help educators meet the needs of all students. The framework of Culturally Responsive Teaching helps teachers gather facts about learners that are a crucial step in effectively designing differentiated lessons (Thousand, Villa, & Niven, 2015). Gathering facts through family-centered and culturally responsive means aids teachers' cognizance about how to engage, motivate, understand, and value students and their capabilities in the classroom.

Culturally Responsive Teaching (CRT) and Universal Design for Learning (UDL) work together to create equitable learning for all students. Both approaches include the use of students' backgrounds and high expectations in the classroom. Furthermore, both use instruction that engages students with their needs in mind (The Understood Team, 2022).

Through the lens of both frameworks, teachers can design instruction from an asset-based rather than a deficit perspective regarding student diversity. First, teachers can use CRT's guiding principles and turn students' diversity into assets, then UDL can use those assets when looking at how to create access points for students to learn effectively- "To boldly co-create something better, we must begin by doing the required 'inside-out' work called for by Zaretta Hammond (2015) to address, through self-reflection and cognitive training, the ingrained beliefs and implicit biases that unconsciously impact our teaching and the decisions and interactions teachers encounter every day" (Posey & Novak, 2020 p. 73). Next, educators need strategies to best support our diverse student populations and create systemic changes in schools.

The partnership between the frameworks of UDL and CRT can help educators build more intentionally inclusive classroom environments. Educators can use these frameworks to learn students' strengths and abilities, backgrounds, skills, cultures, and preferences. UDL and CRT assist teachers in customizing their teaching to invite students to access learning. The antiracist work acknowledges the barriers others do not speak of or address and annihilates them, and the use of UDL and antiracist teachings helps students access optimal learning (Fitzgerald, 2020). Both frameworks guide teachers to look at the benefits of their students' diversity rather than viewing it through a deficit lens. Teachers can leverage student diversity by employing the two frameworks together. Fitzgerald states, "We can open up opportunities for children simply by empowering them with engagement, representation, action, and expression

(UDL Guidelines). UDL captures the essence of safety for all students, and antiracist teaching ensures that the security intended is protected for Black and Brown students (Fritzgerald, 2020, p. 153). She highlights that implementing UDL in the classroom is a practical framework for teaching and reaching Black and Brown students. She purports in her research how urgent it is for us to take steps to ensure that Black and Brown children are given the necessary opportunities and education to excel in our society. That we, as educators, need to make inclusion, antiracism, and the acceptance of differences the first step and most crucial step in lesson planning (Fritzgerald, 2020).

Universal Design for Learning is a proactive method for designing and delivering flexible approaches to teaching and learning that address student diversity within the classroom context (Capp, 2020). As teachers find more ways to meet the needs of the diverse populations in their classrooms, they are discovering frameworks that may help address this diversity. UDL is perceived as an appropriate framework for designing inclusive lesson plans to meet the educational needs of students with diverse learning needs. Connecting UDL with the framework of Culturally Responsive Teaching (CRT) ensures that the needs of *all* the students in a classroom will be met. The connections between UDL and CRT are profound and bring a deeper level of understanding to each framework which is necessary to create an equitable educational environment. To eliminate cultural and linguistic barriers and meet the needs of all students, educators need to connect the two frameworks, UDL and CRT, and provide teachers with considerations when planning for instruction. Implementing these frameworks in the classroom produces more accessible learning environments for all students.

Barriers and Successful Strategies for Implementing UDL

Barriers to Implementing UDL

Adopting any new framework or curriculum can be daunting. Throughout my research, I have encountered the opinions of educators who continue to report perceived barriers to adopting new frameworks. One perceived barrier is that teachers may love the idea of UDL but may need more time to create lessons using the principles, guidelines, and checkpoints. Teachers may believe planning a UDL lesson may take more time to design and plan. Another anticipated barrier for teachers is that they may feel they have already found successful teaching approaches for their students and want to avoid being told to learn another framework or practice. Novak (2022) states, "Although one-size-fits-all practices and fixing kids may be well-intentioned, times have changed. Our job now is to teach all students to meet high standards by providing flexible and varied avenues to success" (p. 30). The implementation of UDL would allow teachers to teach to a wide range of abilities and learning styles in the classroom, which would, in turn, help teachers reach all of their students and increase student understanding which would lessen the amount of review or remediation a teacher would need to be responsible for, and create students who have agency over their learning and the ability to become experts. More importantly, other educators may be motivated to learn more about UDL but view the need for more training as a barrier and need to know where to begin their professional development journey to learn more. Teaching from the universal design perspective reveals the need to train teachers in UDL, understanding this as a research-based approach to curriculum design that enables everyone to develop knowledge, skills, motivation, and involvement in the learning process (Diaz-Vega, Moreno-Rodriguez, & Lopez-Bastias, 2020).

Training in UDL is as essential for students as it is for teachers for UDL to take root. Another perceived barrier could be the rigidity of the curriculum, which makes it challenging to address the educational needs that may arise from situations of disability in the classroom. When teachers feel the urgency to disseminate all the lessons in the school's adopted curriculum, educators often need more flexibility to think outside the box. Hammond states, "Remember that even as educators, we are subjected to the same amygdala hijack as our students. We feel anxious, fearful, confused, and overwhelmed as we step outside our comfort zone. Embrace this stage and use it as a time for inquiry and reflection because this too shall pass" (Hammond, 2015). No matter the perceived barriers, UDL should be a best practice across the continuum from early childhood to higher education (Coogle, Storie & Rahn, 2021). Suppose we are to embrace the best practices in our field and meet the needs of all learners. In that case, we need to discard the recognized barriers we may encounter and embrace the power of this learning opportunity to support our future generations. Novak (2022) states, "We have to design our schools and our systems to support teachers and students better to find balance, excellence, and passion because what is at stake is too important to ignore" (p. 1).

Successful Strategies for Implementing UDL

Despite the apprehension, teachers can implement the UDL principles, guidelines, and checkpoints despite their perceived barriers. The research supports that educators can implement many UDL principles despite the barriers they faced (i.e., lack of time, lack of training and professional development, and design of curriculum) using various tools that made UDL more easily accessible. One study by Diaz-Vega, Moreno-Rodriguez, and Lopez-Bastias (2020) suggests that some teachers were able to use tools like the Curricular Adaptations of University Students with Special Educational Needs tool (CAUSSEN), a document developed

by the Unit of Attention to People with Disability, that contains information about UDL guidelines and accommodations referring to students with special educational needs. The CAUSSEN tool provides teachers with inclusive teaching strategies they could employ in the classroom (Diaz-Vega, Moreno-Rodriguez, & Lopez-Bastias, 2020). Other resources are available for teachers to employ that break UDL into actionable steps, such as The Schoolwide Integrated Framework for Transformation's (SWIFT) *Five Steps to Get Started Using UDL* (Nelson, 2014). However, another resource is the company Goalbook, which creates professional learning tools that empower teachers to transform instruction for all students (Goalbook, 2022). One tool they have created is a toolkit of UDL-aligned strategies. The toolkit encompasses instructional lessons and tools that help teachers select concrete strategies that remove barriers to instruction so that all students can reach learning goals (Goalbook, 2022). Even without the use of tools and resources, teachers can use the learning strengths and challenges of their students and utilize the UDL principles, guidelines, and checkpoints from CAST, Inc. as a tool to guide lesson design and planning based on the barriers of the students in their classrooms (CAST, Inc. 2022). The UDL checkpoints provide practical suggestions and examples for teachers to incorporate the UDL principles into their classrooms and lessons. Therefore, educators can view these tools and resources as starting points for implementing UDL.

Equally important to the tools and resources available to educators that assist with implementing UDL are the practices that educators can implement to increase their capacity to learn about UDL and seek training. Educators must examine the importance of continuing to grow as a professional, which often demands that we step out of our comfort zones. The factors,

such as the lack of training and the resistance to learning new frameworks, are not compelling reasons. After all, UDL is considered a best practice (Novak, 2022).

As educators, our job is to inspire students to learn. How can we inspire them when we are resistant to learning ourselves? To combat the resistance to learning new frameworks, Novak (2022) uses research about building teacher efficacy to highlight how to generate buy-in and rearrange common beliefs to change old teaching practices. To counter the narrative, Novak (2022) talks about the importance of "not doing it alone" (p. 5) and that it is fundamental to have a team of educators and administrators to support each other as you collaborate and implement the UDL framework. One way to ensure this is to create or join a professional learning community (PLC). Novak (2022) proposes, "We cannot change the outcomes of students, especially those students who have been historically marginalized and minoritized, without the support, the minds, and the hearts of our educators. Furthermore, we need each other" (p. 7). An additional study supports the use of instructional coaching as a strategy teachers can use to improve their understanding and ability to implement UDL (Craig, 2020). In the study, the participants were surveyed, observed, and interviewed to determine the impact of instructional coaching. Classroom observations were then conducted to observe the effectiveness of instructional coaching for the participants who volunteered to participate in coaching opportunities. Finally, the participants were interviewed to collect data about how they felt about the coaching process. The quantitative and qualitative results both showed that coaching positively affected teachers despite a lack of statistical significance (Craig, 2020). In another study, recommendations were also made to reinforce teacher training and provide information systems to inform professors of the needs of individuals with disabilities (Diaz-Vega, Moreno-Rodriguez, & Lopez-Bastias, 2020).

Conclusion

The findings from this review of the literature indicate that there is existing evidence that supports the effectiveness of Universal Design for Learning as a framework for meeting the needs of all students. Systematic reviews of UDL-based teaching indicate that these strategies have “the potential to help teachers meet the academic needs of all students and to support the achievement of students with varied needs” (Wook et al., 2017, p. 134). UDL can make teaching and learning more inclusive and accessible for everyone. There are widely accepted studies that support utilizing the UDL framework as an effective solution for filling the gap between learner ability and individual differences (Al-Azawei, Serenelli, & Lundqvist, 2016). Furthermore, many other studies have looked at the positive outcomes of using UDL to create flexible learning environments and improve access to academic content.

One central area for improvement in the literature is the need for more information connecting the two frameworks of UDL and CRT. For instructional planning to truly make a difference for all learners, educators must consider how students’ differences affect learning and align pedagogies that effectively address those differences (Kieran & Anderson, 2019, p. 1203). In connecting the two frameworks, research supports the need to use the two frameworks together. In one study by Takemae, Nicoli-Senft, and Tyler, the authors proposed to respond to Thorius and Waitoller's call (2017) to develop pedagogies that seek to bring the cross-pollination of UDL and CRT into teacher preparation programs and teaching practices and build upon and further operationalize previous related work (Chardin & Novak, 2021; Kieran & Anderson, 2019). The researchers further state that it is essential for pre-and in-service teachers to understand this cross-pollination when using the UDL principles, guidelines, and checkpoints

as implementation tools in their classrooms to identify and address potential barriers to student learning while sustaining their students' cultural and linguistic identities.

This research study aims to illustrate the additional frameworks that would create an even more inclusive structure in connection with UDL. Consequently, there is also a limited amount of research linking the perceived barriers to UDL implementation. Moreover, it highlights specific practices and support systems that can eliminate any anticipated barriers for a group of experienced teachers.

Chapter 3: Methods

Multiple studies have examined the validity of the Universal Design for Learning (UDL) framework that eliminates barriers for all students and creates access points to the curriculum (Al-Azawei, Serenelli, & Lundqvist, 2016). However, to create equitable learning environments for all students, more research should be conducted connecting the framework of Universal Design for Learning (UDL) with the framework of Culturally Responsive Teaching (CRT). Both UDL and CRT highlight the importance of incorporating the use of students' backgrounds and high expectations in the classroom. The frameworks stress the importance of building relationships with students. Both frameworks seek to engage students in learning opportunities with their needs in mind.

Both UDL and CRT encourage teachers to proactively consider educational approaches that should result in increased student engagement and learning. In both models, teachers view students' differences as strengths rather than shortcomings. Simply providing choice for students in terms of the input of information, or their own output, is a step toward a culturally responsive classroom, as is inherent in the guiding principles of UDL.

Furthermore, there needs to be added existing studies that assess how teachers can put both frameworks in place resulting in minimal barriers to implementation-"These gaps are particularly pertinent when you examine how the cross-pollination of both frameworks can strengthen the systematic, proactive, and intentional implementation of both UDL and CRT in PK-12 classrooms" (Takemae, Nicoli-Senft, & Tyler, 2022, p. 9). Consequently, more data is needed to understand what specific practices and supports are needed to eliminate the barriers for teachers and institutions when implementing new frameworks. I designed the following

methods with the belief that the teacher participants' voices should be the direct authority and primary source of data on how to adopt new frameworks successfully.

Research Questions

This study focused on teacher responses to a two-part question series, presented in an interview and survey format for depth of substantive data. It also focused on a teacher's experience determining barriers to implementing and understanding new frameworks that support best practices in education. To achieve relevant data, the interview and survey questions were formed based on the following central questions:

- What learning barriers do students face in the classroom?
- What can teachers do to help students overcome those barriers that prevent learning?
- When providing students with new ways to access learning, what barriers may teachers face when implementing new teaching frameworks or practices?
- What specific practices or supports may help teachers adopt new teaching frameworks?

These central questions were used to focus the study on the importance of building inclusive learning environments for all students, the known frameworks that support teachers in accomplishing that goal, and the barriers, practices, and support systems that help teachers implement new frameworks.

Description and Rationale for Research Approach

To research how to create a best practice approach for an inclusive learning environment that results in the practical application of the UDL and CRT frameworks with minimal barriers and supportive practices and strategies, I conducted a convergent mixed methods study with a humanistic and transformative worldview. A mixed methods approach was chosen so I could gather data from the point of view of teachers at an institution. I wanted to understand where the

feelings of reluctance were coming from in regards to teachers not wanting to employ frameworks in their classrooms that allow racially and ethnically diverse students, English Language learners (ELL), neurodiverse students, and students who struggle with more traditional methods of instruction the ability to access the curriculum fully and become expert learners. This methodology involves the collection of both qualitative and quantitative data, as well as the analysis and interpretation of both types of data. A qualitative approach was appropriate because through open-ended questions, understandings will take place, and new insights will be gained about the views teachers have about deeply knowing the students in a classroom, the importance of building inclusive learning environments, and the perceived barriers and supportive practices that can be put in place when implementing new frameworks. Qualitative research allowed me to ask open-ended questions, allowing teachers to express their ideas and tell their stories (Creswell & Creswell, 2018). The face-to-face interviews involved open-ended questions intended to "elicit views and opinions from the participants" (Creswell & Creswell, 2018, p. 187). The qualitative research was conducted in a natural setting over a prolonged period. The collected quantitative data came from teacher surveys. The purpose of the quantitative data was to allow the researcher to test the insights learned through individual interviews on a larger scale.

The qualitative portion of this study followed the humanistic approach. The humanized approach to research is a method that seeks to build relationships between researcher and participant that are built on care, honor, and respect- "We conceptualize humanizing approaches as those that involve building relationships of care and dignity and dialogic consciousness-raising for both researchers and participants" (Paris & Winn, 2013, p. xvi). The approach helps researchers learn to create examples during their research where participants "feel valued"

(Paris & Winn, 2013, p. xvi) and respected and that they, in turn, are researchers who reflect on their own experiences.

Humanizing Research is a method that requires us to involve dialogic circles and the building of relationships for both researchers and participants. We, as researchers, are usually driven to this work because of our powerful feelings about a topic. My motivations for conducting this research result from the pushback observed by some teachers and the reluctance not to employ frameworks and practices in their classrooms that address learner variability and create inclusive learning spaces. In support of the students in the classroom, it is the teachers' responsibility to meet the student's needs. Researchers should be accountable to the participants in their studies, the teachers, and especially the students whom this research may benefit from. Through the research, some teachers will be able to reflect and understand their resistance to change and collectively work on ways to support each other through the process of change because it is in the best interests of the students that they teach. The humanizing approach to research is an approach that takes into consideration the values and feelings of researchers and participants. Incorporating this approach in the research will allow further reflection on how institutional growth and change could be a possibility at the research site.

The quantitative portion of this study followed the transformative philosophical worldview, which focuses on the needs of groups and individuals in our society that may be marginalized (Creswell & Creswell, 2018, p. 9). The driving force of this study was to address student accessibility to curriculum and content for neurodiverse students, racially and ethnically diverse students, ELL students, and students who struggle with traditional methods of instruction. As the transformative worldview describes, the hope is that the "research contains an action agenda for reform that may change lives of the participants, the institutions in which

individuals work or live, and the researcher's life" (Creswell, 2014, p. 9). On some scale, the researcher hopes to change an institution's practices and the mindset of teachers and use a different lens when teaching students and designing curriculum, units, and lessons. A transformative worldview places central importance on studying the lives and experiences of diverse groups that have traditionally been marginalized, particularly the strategies that can be used to resist, challenge, and subvert the constraints placed on them by forces of oppression (Creswell, 2014). In utilizing a transformative worldview, teachers would not be seen as an oppressed group, so in attempting the study, the researcher is inspired to conduct the research for the students who struggle every day to access the curriculum presented to them. In support of the students at the institution, the primary participants in the study would be the teachers since the researcher needed to gain insight into the barriers that prevent teachers from changing and the paradigm shift that needs to happen so that teachers can meet students where they are and allow them full access to the education they deserve.

Research Design

This is a convergent mixed-method research study. Data was collected through interviews conducted with Special Education teachers, General Education teachers, Specialist teachers, and Support Teachers, in addition to surveys from 15 faculty members at the school.

Research Site and Entry into the Field

The research was conducted at Montecillo Day School in Northern California (pseudonyms have been used for the school and research participants to protect their identities). Montecillo Day School is an independent, co-educational K-8 school in San Rafael, California. There are 380 students enrolled at Montecillo Day School, located in a suburb of San Rafael. The school is predominately White, 62%, with 38% of students of color enrolled (25% of two or

more races, 8% Latino, 3% Asian/Pacific Islander, and 2% African-American (Great Schools, 2022). The faculty and staff are comprised of 34% faculty and staff of color, and 66% of the faculty is White. The percentage of faculty, staff, and student populations with a first language other than English is 23%. The school is committed to reflecting the diversity and multicultural composition of the global and local communities in which the school is located. In addition, the school is committed to enrolling a socio-economically diverse community of families. It works individually with families to help make the school an affordable option through Indexed Tuition, which considers a family's ability to pay what they can afford. Regarding socio-economic diversity, 24% of students enrolled in the school pay below the tuition index.

During the study, the researcher was a K-8th Grade Learning Specialist in the school and had a caseload of 12 students with mild-moderate learning differences, ranging from Autism Spectrum Disorder, Dyslexia, Dyspraxia, Dysgraphia, and ADHD. After conversations with the Headmaster, The 5-8th Grade Head of School, the K-4th Grade of School, and The Director of Learning Services, all administrators approved the proposed study. This study did not disrupt the school day or interfere with teachers' classroom responsibilities.

Participants and Sampling Procedure

Nine teachers were interviewed in the school where the researcher conducted her study. Three teachers were Latinx (Mexican, Nicaraguan), three were biracial (East Indian/ English, Vietnamese American/Caucasian, Russian/Palestinian), and the other three were White. The researcher had been working with the teachers at the school for over a year before the start of the study, allowing her to develop a relationship with them before the study. By the time of the research, the researcher had built a collaborative relationship with the teachers and supported students in the teacher's classrooms and as a Learning Specialist at the school. When the

researcher conducted the quantitative survey part of the study, it was conducted anonymously with faculty members at the school.

The teachers interviewed included a special education teacher, a school librarian, four classroom teachers, one specialist teacher, and two intern teachers working to become lead classroom teachers. The K-5th Grade special education teacher is a 53-year-old female who has taught in general education classrooms and worked as a resource teacher in the school's Learning Services Program. She has been teaching for 28 years. The School's Librarian is a 42-year-old female who has taught in general education classrooms and worked in public libraries in San Francisco and Berkeley for 12 years. One classroom teacher is a 50-year-old male 6th-8th Grade English and History Teacher who has taught for over 25 years. Another classroom teacher is a 34-year-old male, 5th Grade Teacher who has taught for 10 years. The third classroom teacher is a 60-year-old female, 2nd Grade teacher who has taught for over 30 years. One intern teacher is a 47-year-old female, in 1st Grade who has been teaching for four years. Another intern teacher is a 25-year-old female, in 2nd Grade who has been teaching for three years. Finally, the specialist teacher is a 61-year-old male, a 4th-8th Grade Spanish teacher who has been teaching internationally and in the United States for 30 years.

Before the research began, the researcher distributed consent forms to the head of the school and the teachers who participated. The interviewees included Special Education teachers, General Education teachers, Specialist teachers, and Intern Teachers.

Methods

The study began by conducting interviews on campus at the school site in the researcher's office. The interviews occurred in 30-45 minute sessions. There were nine teachers included in the interviews. All interviews were audio recorded on the researcher's laptop and

cellphone, which were password protected. Notes were taken during the interviews. Written information did not include names or identifying information (e.g., addresses, phone numbers, personal references). During the interview, the researcher showed each teacher a short video that introduced the Universal Design for Learning framework (UDL) and a short video on Culturally Responsive Teaching (CRT) to help guide the teachers' responses about the two frameworks and add to their understanding of inclusive teaching practices. Interview questions can be found in Appendix A.

The next step in the study was conducted with the teaching faculty of 15 educators at Montecillo Day School. I presented my research study to the teachers, introduced the letter of permission, and elicited participation by asking the teachers to respond to a survey. I then instructed the teachers that I would send out the survey shortly after the faculty meeting. The faculty was presented with a brief statement about the study and its purpose.

Statement: I am attending Dominican University as a graduate student in the School of Education. Currently, I am conducting a research study designed to understand inclusive teaching practices. Your perspective is invaluable to my research. This survey is anonymous and the information gained through the survey will be used for my own research purposes. There are 10 questions to answer. Thank you for sharing your insights with me!

An example of a question in the survey that teachers were asked to answer was, "How do you engage reluctant learners in meaningful learning experiences?" Another example of a question on the survey was, "Do you plan lessons with students' racial, cultural, and linguistic needs in mind? Please explain." The surveys helped to answer the research questions "What barriers to learning do students face in the classroom?" and "What are some barriers teachers may face when implementing new teaching frameworks or practices?"

I provided reassurance of confidentiality for the teachers' participation in the survey. The faculty was then instructed to complete the survey on Google Forms. The survey data was collected and analyzed. I also observed the classrooms of the eight educators and one librarian who participated in the study to take notes on the inclusive teaching strategies the teachers were already implementing without explicitly utilizing the UDL or CRT frameworks. This additional observational data was beneficial because I had hypothesized that teachers were already employing inclusive teaching strategies without the awareness of the principles, guidelines, and checkpoints of the Universal Design for Learning framework and the components of Culturally Responsive Teaching.

Data Analysis

The qualitative and quantitative data were gathered concurrently using a convergent mixed methods design. Qualitative data analysis methods were used to organize and analyze the interview discussions and the classroom observations made by the researcher. I wrote analytic memos directly after the interviews to capture data about the meeting. An *analytic memo* is a versatile tool that can be used for many purposes (Maxwell, 2013, p. 19). The purpose of writing an analytic memo is to get ideas down on paper and use the writing (information) as a way to facilitate reflection and analytic insight (Maxwell, 2013, p. 20). The analytic memos were written and kept secure on my iPhone, so they would not get misplaced. All interviews were audio recorded and transcribed by the researcher.

The transcribing was followed by coding. "The object of the coding process is to make sense of text data, divide it into text or image segments, label the segments with codes, examine codes for overlap and redundancy, and collapse these codes into broad themes" (Creswell, 2005, p. 237). The initial coding process involved categorizing the text data by identifying keywords

and phrases. These categories were labeled with expected codes generated from the literature review and unexpected codes introduced during the interview. The coding process helped the researcher discover that there were certain inclusive teaching practices that teachers were familiar with, the perceived barriers, and the identified support systems that teachers highlighted that became patterns. Maxwell (2013) explains, "Open coding involves reading the data and developing your coding categories based on what data seems important" (p. 107). The open coding included reading the teacher's responses to the surveys. I conducted open-ended interviews that were audio recorded on my laptop computer. No one had access to them besides myself. I read the written responses and stored the data securely. In notes, teachers were identified with pseudonyms. Names were not recorded in written notes or on surveys to ensure confidentiality regarding all comments. The quantitative data from the faculty surveys were input into a spreadsheet. The quantitative data was also open-coded initially.

During the process of collecting the data, I conducted concept mapping to figure out the "value in developing a conceptual framework for the project" (Maxwell, 2013, p. 44). I thought a lot about collecting data while ensuring that each participant had a chance to express their point of view. Concept mapping allowed for further explanation of the data by organizing the codes into specific categories, and I used the information to uncover connections or gaps in the data. Themes emerged through the analysis of the concept map and written reflections on the findings. The final step then took place, and all the data was analyzed through focused coding.

Validity

When I reflect on how my positionality affects the epistemology of my research project different factors come to mind. Regarding my race, I think about how I can weave aspects of Culturally Responsive Teaching into my project as I focus on best practices and frameworks

like UDL, where ALL students' needs are met in the classroom, how I see myself concerning my white colleagues who may not grapple with feelings of difference and how in taking on this research topic I am set to go down this path to discover how to make students who are neurodiverse, or racially or culturally different feel that those differences are essential, honored and respected in the classroom community. "Connecting positionality to epistemology simultaneously empowers and disempowers individual expertise in the classroom. Students are empowered because they recognize their unique claims to knowledge that others can not deny. Only I have lived my life; only you have lived yours. This encourages me to listen to you and you to me, as we each have a unique perspective" (Takacs, 2003, p. 3). My positionality may cause some of my colleagues to not be transparent in their communication with me since I am an educator of color and a Learning Specialist at my site. In my research, I will have the opportunity to hear accounts of what teachers' resistance may be when adopting new frameworks, and they do not censor their responses because of the perception they might have over what I believe to be best practices.

This fact may have influenced data collection because I was invested in wanting teachers to look more critically at their practice and find ways to create additional accessibility to points in their curricula and lessons. I know my bias and want to be objective to ensure a valid study. I implemented some strategies to address these validity issues. One strategy I implemented was observing and giving feedback to the teachers I interviewed so that I could observe them teach and give them feedback about any inclusive teaching strategies I observed to confirm that I did not presuppose that they were not already using some practices that align with best practices. These observations provide more complete data about certain situations (Maxwell, 2013).

I planned to interview various teachers who teach at different grade levels. I have created collaborative relationships with the teachers I have asked to interview, built on mutual trust and understanding. Creswell and Creswell (2018) state that solid participant/researcher relationships can lead to more accurate and valid findings. Lastly, qualitative data were collected through interviews, audiotaped and transcribed, and also through classroom observations. Finally, quantitative data was collected through surveys given to the entire teaching faculty. Fifteen teachers responded to the survey, and that data was collected and analyzed.

Chapter 4: Findings

This qualitative project sought to answer the following questions: (1) What barriers to learning do students face in the classroom? (2) What can teachers do to help students overcome barriers that prevent them from learning? (3) When providing students with new ways to access learning and eradicate obstacles, what barriers and support systems may teachers encounter when implementing new teaching practices or frameworks? After analyzing interview transcripts, survey data, and researcher notes, four main themes emerged. Through these themes, the participants provided valuable data regarding practices and collaborative learning opportunities that could transform their pedagogy.

Table 1

Themes

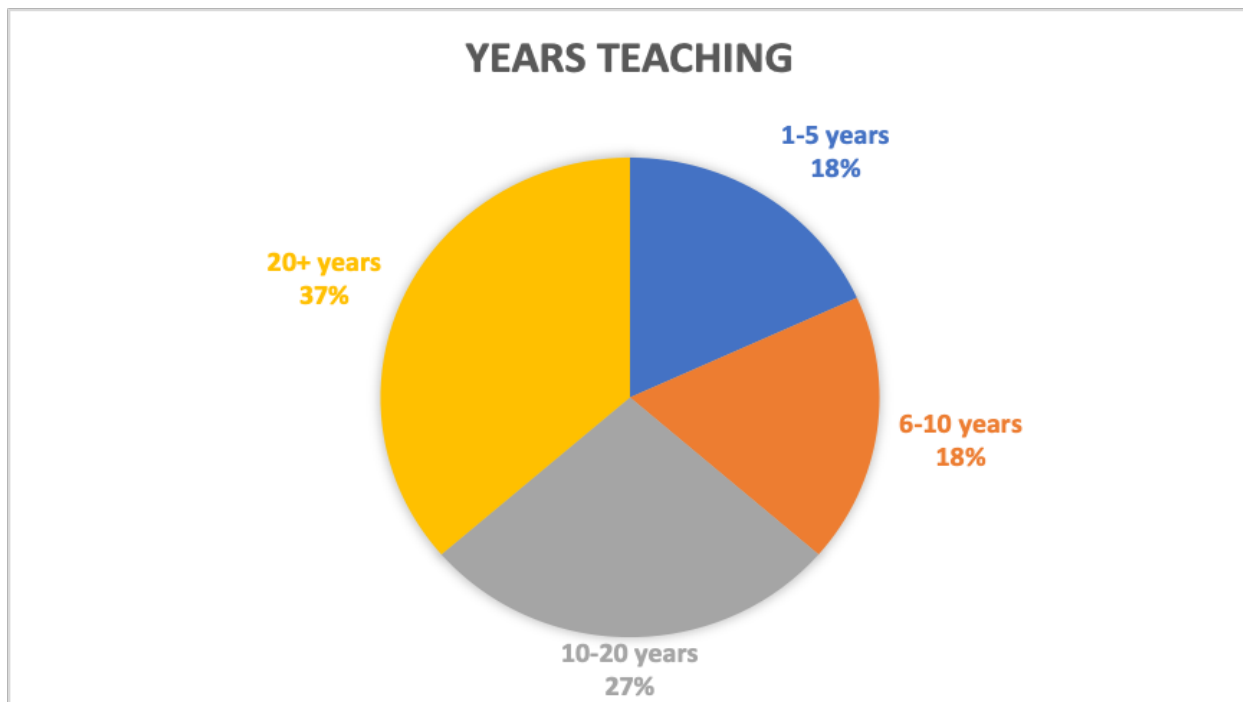
Theme Number	The Four Main Themes of the Study
Theme 1	Teachers identified a multitude of barriers to learning that students face.
Theme 2	Teachers understood that identifying and mitigating the most common barriers meant embracing a universal design for learning.
Theme 3	The perceived barriers to implementing new practices and frameworks when adopting Universal Design for Learning (UDL) and Culturally Responsive Teaching (CRT) are highlighted and discussed.
Theme 4	The support systems that can address barriers when implementing the frameworks of Universal Design for Learning (UDL) and Culturally Responsive Teaching (CRT) are presented and underscored.

Participants were teachers at Montecillo Day School (pseudonyms have been used for the school and research participants to protect their identities), which is an independent, co-educational K-8 school serving 380 students with diverse racial, cultural, linguistic, and socio-

economic backgrounds. In the survey, teachers were asked how they incorporated inclusive teaching strategies to meet the needs of their students. The interview teacher participants included a special education teacher, a school librarian, four classroom teachers, one specialist teacher, and two intern teachers working to become lead classroom teachers. All participants have been working at Montecillo Day School for at least a year or more. See Table 2 below for teacher participants' pseudonyms, positions, and years of teaching. In addition, Figure 1 shows that most participants had more than five years of teaching experience.

Table 2*Study Participants*

Teacher Pseudonyms	Position	Years Teaching
Elizabeth	K-5 Learning Specialist	28
Alexa	Librarian	12
Kyle	6th-7th English & History	25
Damien	5th Grade Teacher	10
Frida	2nd Grade Teacher	30+
Charlotte	4th Grade Teacher	18
Marissa	Intern Teacher	4
Tammy	Intern Teacher	3
Guillermo	Spanish Teacher	30

*Figure 1**Participants' Teaching Experience*

Students Face Multiple Barriers to Learning

All participants identified that students often face multiple barriers to learning. The participants named barriers that fell under broad categories such as

- Classroom and instructional barriers
- Accessibility barriers
- Emotional barriers to learning
- Experiential barriers
- Motivational barriers
- Preferential barriers

During the individual interviews, all participants elaborated on the barriers to learning that students face, and those barriers were then coded and sorted into the categories previously named.

Accessibility Barriers

All participants recognized that students faced accessibility barriers and illustrated how some students were unable to access the curriculum because of their neurodiversity. Learning challenges come in all shapes and sizes and vary from individual to individual. For the most part, they are outside of the control of students and teachers. Charlotte stated that the most common barrier for students she observed was "neurodiversity across the board." She illustrated that "if students cannot access the curriculum because of their neurodiversity," it can create situations where students cannot learn and take in the necessary information. Damien and Guillermo remarked not on learning differences but on whether students took medication for focus and attentional issues like ADHD. Damien observed that a few students in his class have, "been going through constant changes in medication, trying to balance and find the right combination of medication for them. They really struggled to focus, you know, through no fault of their own". He further elaborated on other consequences that occur when students have difficulties with prescribed medication-"And then the other way where

they take the medication, and they are overly focused and find it difficult to transition from one task to another without individual prompting, or peer prompting, or whatever." Learning and thinking differences and variability were recognized by all the participants in the study as a barrier to learning for many students.

Instructional Barriers

Many participants remarked that students faced instructional barriers, which encapsulated aspects of instruction, curriculum, and academic expectations. During interviews, participants stated that the curriculum should be developmentally appropriate and allow students to understand what is being taught and why it is essential to learn. Elizabeth further elaborated-"is the information on their level, is it taught in a way that meets how they learn?" If information is not presented in this way, then students will struggle to understand what is presented to them. The question about academic expectations and content was also considered when Charlotte elaborated on the importance of an explicit curriculum:

I think the Curriculum is not very clear. And there is not really a scope and sequence across the board. Is this age appropriate? Is this culturally appropriate? What are the best practices around the actual content that they are teaching? I think that is a huge barrier right there.

Tammy raised a vital point about the consistency of using a set curriculum from year to year- So if one teacher is full-on using the curriculum, but the students the year before, or the year after, do not get that same thing, then, you know, it is like you are spending so much time introducing something to the kids. And then the next year, it is just not used again. And that is a missed opportunity for students and teachers alike.

Many participants remarked that curriculum and lessons should be based on a scope and sequence that will progressively teach students what they need to know at each grade level. Each lesson should have a clear objective and expectations.

Another salient barrier was discussed in interviews about students understanding the importance of what is being taught and why it is essential to learn. Kyle shared:

I love when students ask questions like, why does this matter? Or, like, why are we learning this? As the teacher, you should be able to answer that question. You want to feel like what you're learning about is relevant.

Emotional Barriers

Many participants highlighted that some students demonstrated emotional barriers to learning, where low self-esteem can lead students to believe they cannot learn or do something before they even try, or their fear of failure leads to anxiety, apprehension, or refusal to learn new things. Alexa illustrated this point when she asserted the following:

One barrier that comes to mind is comparing themselves to other students. I see a lot of immediate comparing and looking over at another person's paper. Then panic seems to set in, and then there is just this override of, I cannot do it.

Tammy said, "Something that I have noticed is the student's lack of confidence. So I think having a support team around them that helps build that confidence can make a world of difference in a student." Furthermore, a few participants remarked on students not developing a "growth mindset" and that students needed to work on reframing failures and setbacks as opportunities for growth. Damien elaborated-

Mindset is a barrier. Some students have a mental block that even when you are doing something that you know, as their teacher, they are capable of, and you are

touching on a concept and, you know, you have differentiated to meet them where they are. There can still be this kind of resistance within them and all this kind of reluctance from the start and get engaged.

Experiential Barriers

Other participants identified that students faced experiential barriers. This could be demonstrated by ineffective teachers, poor classroom management or excessive student behavioral issues, disorganization in a classroom, or even a student's lack of background knowledge. Charlotte spoke to this by elaborating on a teacher's role-"instruction by the teacher can be a barrier. Teachers that can differentiate, step outside of only reaching that middle area, and reach all learners can be the most effective." Every student in the classroom has a history. As teachers, we will not necessarily know what that history is, but we play a significant role in determining how a student can have a positive learning experience.

Motivational Barriers

A few participants named motivational barriers to learning for students. Learning is not passive, and students should fully engage in the process. Motivational barriers to learning occur when students do not have a say in their learning. They need clarification about the goals or purpose and if the content they are learning is relevant. In addition, there are no opportunities for learning that offer student choice. Alexa reflected on how meaningful it is for students to be more self-directed with their learning when she stated, "Having students be more in charge of their learning or being more self-directed is almost like more of what they need. It allows them opportunities to grow."

Kyle illustrated another point clearly when he talked about how one learning barrier for students is that they "do not feel like the material is relevant" and went on to state further how

important it is for students to view content as relevant-

Students not feeling in connection with other members of their school community. They do not see themselves reflected in the curriculum or the program at the school. They do not necessarily see people who look or sound like them. They do not feel like the material is relevant and that cuts across all these race, class, gender, and religion categories.

When students do not feel connected with members of the school community or even feel isolated based on their race, culture, religion, socio-economic status, gender identification, and other identity markers does not just have an impact on a student's motivation to want to learn but speaks to emotional barriers as well.

Marissa spoke about the significance of having students learn about things they are passionate about and how vital it is for younger students to be motivated to practice foundational skills like reading, writing, and math when you can structure it around students' interests. If students do not have a say in how their learning journey progresses, it often presents roadblocks to learning.

Preferential Barriers

In this study, only two participants commented on preferential barriers to learning. Instead, those participants discussed that many students had developed strengths and challenges in absorbing information and demonstrating what they have learned. Elizabeth illustrated this by saying, "is information taught in a way that meets how they learn? Like, is it multisensory? Visual, auditory, tactile?" and talked about the importance of using a student's strengths and bolstering their weaknesses to help them learn. Guillermo, who focuses on teaching a language, talked about building variety into his lessons and using different formats like slide deck

presentations, Flip-grid, Jamboards, worksheets, and podcasts and then providing frequent checks for understanding regarding assessments and allowing students to submit their work in a format that works for them.

All the participants in the study revealed multiple barriers to learning that students face, which allowed the researcher to ask questions about what these participants felt teachers could do to help students overcome the barriers that prevent them from learning.

Using Universal Design for Learning to Prevent Learning Barriers

The researcher introduced the UDL framework to teacher participants before posing questions about how UDL addresses those barriers. The researcher also developed survey questions based on how teachers could use the principles, guidelines, and checkpoints of UDL without explicitly naming the UDL framework. The researcher observed a clear link between how teachers could implement many guidelines and checkpoints from the UDL principles to prevent learning barriers. The following data is presented under sub-themes organized by the three main principles of UDL: Multiple Means of Engagement, Multiple Means of Representation, and Multiple Means of Action and Expression.

Multiple Means of Engagement- "The Why of Learning"

"Learners differ markedly in how they can be engaged or motivated to learn. In reality, there are not one means of engagement that will be optimal for all learners in all contexts; providing multiple options for engagement is essential" (CAST, 2018). Many of the participants spoke to the necessity of teachers providing many ways to engage students in the learning process. The examples below illustrate some of the connections between the participants' reflections and the UDL Principle, Multiple Means of Engagement, and "The Why of Learning" (CAST, 2018).

Some participants spoke to the UDL Guideline of providing options for recruiting interest when they discussed how important it was for teachers to vary activities and sources of information so that information can be (CAST, 2018):

- Personalized and contextualized to learners' lives
- Culturally relevant and responsive
- Socially relevant
- Age and ability appropriate
- Appropriate for different racial, cultural, ethnic, and gender groups

Kyle further highlighted the UDL checkpoint of optimizing relevance, value, and authenticity when he made the connection of how vital it is for students to "see yourself reflected in the programs at your school, the curriculum at your school, the activities at your school, and it does go back to what we were talking about earlier, knowing more about culturally responsive education."

Along that same UDL guideline, other participants alluded to the importance of teachers creating safe spaces for learners. Moreover, one way to do this is to minimize potential threats or distractions that may hinder a student's learning potential. When students must focus on meeting their basic needs or avoid a negative or emotional situation, they can not give their full attention to learning. Damien illustrated this by stating, "Here, I think you don't tend to have too many students turning up hungry, for instance. Whereas I've worked in schools where that was very much the case. I think emotional distress has played more of a role here".

Tammy spoke to the UDL Guideline, sustaining effort & persistence. Specifically, she refers to the UDL Checkpoint heightening the salience of goals and objectives when she described how "creating a safe space and adjusting their learning environment where they feel

comfortable and confident to walk into the classroom and knowing that your goals are set for the day, the teachers talk about what you are expected to learn, and you know what you are going to learn today," helped increase the level of engagement for students.

Another participant spoke about fostering positive behavioral supports and community expectations and addressed the UDL Guideline of self-regulation; specifically, they referred to the UDL Checkpoint, which promotes expectations and beliefs that optimize motivation.

Elizabeth stated,

Before you can really teach anything, you need to have behavioral expectations in place and have students set goals for themselves. Be consistent with that. A safe space where kids know that they can make mistakes. It is okay to fail. We are all learning.

Charlotte further encapsulated this point by stating,

Another thing teachers can do is being able to give your students tools and strategies so they can help themselves, so they can be independent and, and have a full understanding of who they are as a learner, how their brain works, what strategies, techniques, if you will, whatever they can employ to move forward.

Kyle elaborated on teaching techniques he wants to learn more about when stating, "I think about that a lot, on the one hand, like are there aural cues? Are there visual cues? Are there kinesthetic cues? Are kids learning independently and in collaboration about developing ways to stay motivated about learning?"

Multiple Means of Representation-"The What of Learning"

"Learners differ in the ways that they perceive and comprehend information that is

presented to them. Also learning, and transfer of learning occurs when multiple representations are used because they allow students to make connections within, as well as between, concepts. In short, there are not one means of representation that will be optimal for all learners; providing options for representation is essential" (CAST, 2018). Several of the participants spoke about the importance of teachers providing a variety of ways that students can represent what they are learning. The examples below emphasize the participants' understanding and some of the connections between the UDL Principle, Multiple Means of Representation, and "The What of Learning" (CAST, 2018).

Some participants spoke to the UDL Guideline of providing multiple means for representation when they stated the importance of giving students content information in multiple ways. For example, Alexa, the school's librarian, elaborated on this idea when she talked about her collaborative experience with the school's art teacher and how their collaboration has demonstrated the link between how kids can be exposed to learning content using auditory and visual means. First, Alexa can present content information through written materials and audiobooks. Then Kayla (the art teacher) can use the same information to help students build their understanding in visual and kinesthetic ways. She explains, "There are different objectives that Kayla has in Art and I have in Library, but it helps students come out with the same information but learn it in different ways."

Guillermo also spoke to this idea when he referenced the UDL Checkpoint, illustrating through multiple media when he highlighted the importance of illustrations to help build students' understanding, especially when students are expected to learn in a language that is not their native language. He said, "I use pictures and symbols when teaching new vocabulary, it helps some students to understand the word's meaning." As an English teacher, Kyle also

discussed the importance of teaching vocabulary using different formats and not relying only on text. For example, when helping students learn new vocabulary, he talked about using videos as a way for students to learn definitions.

Kyle, Charlotte, and Elizabeth also focused on "building background knowledge," which illustrates the UDL Guideline providing options for comprehension. Kyle calls attention to his collaboration with the middle school English teachers and how they can make explicit cross-curricular connections between English and History when the 7th Graders are reading Trevor Noah's *Born a Crime*, and Kyle (as the History teacher) realizes that the students do not know the system of apartheid.

And I was like, full-time out. They're reading Trevor Noah's *Born a Crime* in their English class and have no apartheid background. The fact that matters is I probably would have stopped whatever I was teaching selfishly because I've taught this material and it lights me up. They needed this background knowledge to help them understand the book.

Charlotte and Elizabeth spoke about the need to "build background information" to help students understand concepts. Other teachers talked about anchoring instruction by activating prior knowledge and using tools like KWL charts and other systems or graphic organizers. Still, other participants discussed the need to make audiobooks available for all their students when reading a novel or book as a class to help students understand the main idea of a story without experiencing barriers to reading and decoding.

Multiple Means of Action and Expression-"The How of Learning"

"Learners differ in how they can navigate a learning environment and express what they know. It should also be recognized that action and expression require a great deal of strategy,

practice, and organization, and this is another area in which learners can differ. In reality, there are not one means of action and expression that will be optimal for all learners; providing options for action and expression is essential" (CAST, 2018). Most of the participants in the study discussed how teachers could provide ways to show how students are learning (action & expression). The following examples emphasize the link between the participant responses and the UDL Principle, Multiple Means of Action, and Expression, "The How of Learning" (CAST, 2018).

The teacher participants (through both survey and interview responses) articulated various ways that teachers could reduce barriers to learning by varying student's responses to motor demands, especially when students have been diagnosed with learning disabilities like dysgraphia or dyspraxia; this underscores the UDL Guideline of varying the methods of response and navigation. For example, one participant, Guillermo, shared how some students in his class struggled with conjugating verbs and the expectation to handwrite each verb in its different forms. As a result, he created sets of manipulatives to help students identify the proper ending of the verb. In addition, Kyle shared examples of varying expectations for annotating texts when they offered choices for students to make annotations directly in the text, type annotations into Word documents, or even use a speech-to-text feature to capture annotations while reading. He also reflected on the need for teachers to vary the expectations they have for students and create a more physically interactive learning environment, which speaks to the UDL Guideline, providing options for physical action:

Kids and people learn in all kinds of different ways. And it really depends on what it is that you are learning. So when kids are like, I'm a visual learner, I'm like, probably with some things, so I think about that a lot. But I don't feel like I

have the best skill set when it comes to kinesthetic learning. I'm always thinking about how can I get the kids up and out of these seats. The fact of the matter is we're still participating in these centuries-old, archaic, not working for a lot of kids, systems, and structures. I mean, we've got four walls with windows and desks. So we're already signaling to the kids right away that the major expectation here is that you're sedentary. Yeah. And for a lot of kids in middle school, people who identify as boys, from what I've seen, that is really a challenge. I'm not serving them that well if my lesson is 40 minutes in a chair and then you get a seven-minute break and then 40 more minutes in a chair.

The teacher participants also shared how the school has leveraged technology to eliminate barriers for students. This can be demonstrated by teachers sharing the importance of all teachers using the school's amplification system (Front Row) or closed captions while watching videos related to learning content. One teacher said, "I have noticed that the Front Row system makes it easier for students who struggle with processing auditory information to hear what is being said," and "there are often not as many questions about what I am talking about, or students needing clarification when they can 'hear' the instructions" (while using the Front Row system).

Many participants spoke to the UDL Guideline, providing options for expression & communication when they suggested using many of the tools CAST listed on their website to support students' learning needs. In addition, most teachers surveyed talked about offering learners tools that match their abilities and task demands (CAST, 2018); According to CAST, these tools may include:

- Spell Checkers, grammar checkers, and word prediction software

- Text-to-speech software (voice recognition), human dictation, and recording
- Calculators, graphing calculators, geometric sketch pads, or pre-formatted graph paper
- Sentence starters or sentence strips
- tory webs, outlining tools, or concept mapping tools
- Virtual or concrete mathematics manipulatives (e.g., base-10 blocks, algebra blocks)

Elizabeth also mentioned "having a good understanding of who your students are, and what they need to be successful in the classroom." She specifically talked about providing students with tools to help them access learning, like calculators for math computations, if they have working memory problems and cannot remember their multiplication facts.

When teachers use strategies and practices they already know, they often utilize practices already embedded in the framework of UDL. Using the principles, guidelines, and checkpoints that have been researched and based on scientific insights into how people learn, you can meet the needs of all learners in the classroom. Alexa said it best when she expounded, "UDL moves away from the one size fits all model. And it makes us feel like we have an individuality that can grow. And then when you do that, you get to see beautiful things happen".

Using Components of Culturally Responsive Teaching to Prevent Learning Barriers

Over the last few decades, educators have developed teaching methods and practices, known as asset-based pedagogies, that incorporate students' cultural identities and lived experiences into the classroom as tools for effective instruction (Najarro & Will, 2022). The approach of Culturally Responsive Teaching (CRT) centers the knowledge of traditionally marginalized communities in classroom instruction. As a result, all students, and in particular students of color, are empowered to become lifelong learners and critical thinkers (The Understood Team, 2022). Culturally Responsive Teaching is another essential framework that

teachers can utilize to combat barriers to learning for students.

Most of the participants in both the survey and interviews spoke about the importance of the components of CRT in relation to their own teaching and lesson planning. Some of the survey responses remarked on specifically using students' cultural identities to guide their lesson planning. One teacher participant shared,

I try to be inclusive of various races and cultures during social studies lessons as well as read-aloud. I feel it is important for students to see their culture/race being represented and it allows all the children to learn about each other. It helps create an inclusive and welcoming environment.

Another survey participant added, "We ask students to name their multiple identities. We work to make our classroom a safe space where each child feels valued, seen, and heard." The Visual Art teacher added, "I am consciously working towards using more images of people and artists from a variety of ethnicities, specifically images that reflect our student population. Still, more work to do...." Another participant added that it is "important to look at racial and socio-economic diversity. Because it's important for me to understand what the kids' lives look like, and bring that into the classroom while honoring what their lives are currently like." One survey participant remarked on using the experiences and perspectives of parents and families as other ways to address culturally responsive pedagogy, "I think about sharing lessons from different perspectives than my own and try to incorporate the skills and talents parents have to bring to the table as well". Another survey participant stressed the importance of using a CRT lens when he stated, "I'm constantly looking for resources that provide windows and mirrors for our students. While I'm not always successful, I seek to use as many of these resources as possible".

Some interview participants spoke in more detailed reflection about the perceived apprehension of incorporating the framework of CRT into their teaching practice. Alexa, a teacher of color, spoke about what she anticipates her colleagues may think about adopting the CRT framework:

So the first thing that comes to mind is, specifically with culturally responsive teaching, is this feeling that if it's not my culture, I'm going to get it wrong. If it's not my culture, and I'm trying to acknowledge this culture, then I can be naive in how I'm approaching it. So getting some authenticity around culturally responsive teaching can feel tricky, so I think people would step away, mostly in fear, like fear is what keeps us from doing almost anything in life. And therefore I'm gonna be a bad person and be labeled as a person that is culturally insensitive. So instead, we actually step away even further. I think culturally responsive teaching has an incredible amount of power. And people step away from that because they're, they're afraid of doing it wrong.

Participants in the study noted the importance of nurturing and supporting cultural competence in both home and school cultures. Most teachers sought to incorporate students' home cultural experiences as a foundation upon which to develop knowledge and skills. Teachers also sought to connect students' cultures, languages, and life experiences with what they are learning in the classroom. These connections help students access content in lessons, and curriculum and develop higher-level academic skills. A few teachers even highlighted the importance of utilizing CRT to help students make brain-based connections to what they are learning.

Barriers Teachers Face When Implementing New Practices or Frameworks

As previously stated, adopting any new practice, framework or curriculum can be daunting for educators. The perceived barriers when implementing new practices and frameworks can be many. When asking participants about “perceived barriers” the researcher defined barriers as “something that prevents or hinders movement or action.” The researcher then asked the participants to discern which barriers they perceived may be present when implementing new practices and frameworks, specifically highlighting the frameworks of Universal Design for Learning (UDL) and Culturally Responsive Teaching (CRT).

The Challenge of Time

One of the perceived barriers reported by teachers was the challenge of “time.” All teachers interviewed spoke to the issue of time constraints. Elizabeth reported, “Is there enough time? Are teachers given time? Is there time in the schedule to implement a new framework?” She spoke about the concern of teachers having a finite amount of time to learn and understand new frameworks and practices, and having to learn in their own “free time” as opposed to being given time, or having time structured for them in their existing schedules to learn something new. Tammy further supported this belief of constraints on teachers’ time by stating,

Always time is the first thing that comes to mind. I think with that, you know, comes training. I think not just one training but continual training or check-ins every once in a while...but that takes time. Planning always takes time. Again, implementing and then assessing also takes time. Again, time takes a lot of time.

Damien, Kyle, Charlotte, Marissa, and Guillermo also elaborated on the fact that learning something new and implementing it as a teacher takes time. Alexa took another stance on the constraints that “a lack of time” presents, and devised some new thinking around it:

The first thing that comes to mind is this idea, this concept that we don't have enough time. Especially when we try to add something to what we were already doing. So you're just feeling stressed about all the things that you're adding together. And instead, to understand that you're not adding on, you're kind of shifting one of the other things out and making them better. It's like a component, one of your old components is coming out and new components coming in.

Elizabeth reflected on how administrators could combat the perceived barrier of time if they allowed teachers more time in the schedule, especially during regular faculty meetings, to learn about new practices and frameworks so that they could be successful at using them. She states,

There should be meeting time being given to implement a framework like this [UDL] and you can't keep adding things to a teacher's plate without maybe taking away and really looking at what are the priorities. I think it's critical that administrators are very clear with teachers and communicate effectively that time, that more time is being carved out for them to learn this new framework.

Many of the participants spoke about administration allowing them more time to grow as educators; they could look more closely at existing systems and schedules and develop more clarity around priorities and what teachers could dedicate their time to learning more about.

Lack of Clarity Around the School's Priorities

A second barrier that teacher participants addressed was a lack of clarity from the administration around what new practices and frameworks would be worthwhile for teachers given the school's priorities. Should teachers focus on learning more about DEIJ (Diversity, Equity, Inclusion, & Justice) initiatives, SEL (Social Emotional Learning), neurodiversity, literacy, math, and science? Many of the teacher participants did not have a clear idea where

they should focus their learning, so the thought of learning new practices or frameworks felt like something they might need to do on their own, without the school having clear messages around its top-tier priorities which left many teachers feeling frustrated. Tammy expresses, “It's kind of like we're doing research on our own and we're having to educate ourselves, rather than having training, or a conversation, or a meeting about it. So I think that could be another barrier.”

Marissa talked about knowing what the school's priorities are in relation to professional development- “really looking at what are the priorities. Just you know, stressing that it's important that it's critical. That it's not an ‘Oh, that sounds good’. Yeah, maybe I'll do that.”

As a seasoned teacher who is still in his first year teaching at Montecillo Day School, Kyle talks about the professional development opportunities that he has been a part of in his first year at the school and how these did not feel tied to anything that seemed to be a priority for the school, which made him feel confused about knowing where to focus his energy.

And it just feels a little bit like, Are you a Bay Area School, check? Do you have an SEL program somewhere in there? Check. So I think a lot about, what I call checklist logic, which is faulty logic. Like, don't just do it because you want to check the box. And I think a lot about what I call like sewn-on appendages, like things that just get sewn in there, but it's not a priority, but it's going to traffic with priorities. And then it's going to render teachers confused and tired and asking the question, what are my priorities?

Many of the participants illustrated the lack of clear priorities at the school, and how they felt that they had the autonomy to choose what they felt they could prioritize. Some teachers even discussed how some curriculum programs were not prioritized and how this leads to teachers

not implementing set curriculum programs, which include new practices or frameworks because it just does not seem like a priority but more of a “suggestion.”

Teacher Mindset

Another perceived barrier reported by participants was the mindset of teachers, and the willingness to learn something new. Charlotte shared her perception of teacher mindsets presenting barriers to implementing new practices by suggesting, “Are teachers being flexible and open-minded? That doesn't come easy for some of the teachers. I think teachers are comfortable with what they've been doing for a long time and don't want to have to change.”

Elizabeth also shared this point of view when she stated,

Teachers, especially if they have been teaching a long time, like fifteen years or more, have a hard time taking on something new. They are comfortable with what they have been doing. It takes a lot of time and energy to keep evolving and learning.

Damien shared another take on “mindset” when he looked more closely at the process of growth mindset for teachers.

So I'll give an example of mindset, like teaching growth mindset. You know, initially, I was like, this is something I really want to develop in the class. But if it's just me, and I'm starting from zero, what do I do... buy a book, or do I look at a few websites and you know, who's to say those are particularly good websites or who's to say that I've managed to pick up on the most important parts, or that I'm not missing something else.

He grapples with learning “how” to know the steps to take to understand new frameworks and to make sure that you even know where to start, and not be left feeling confused about how to

implement a new practice or framework. He talked about the willingness to implement something new but feeling confused about what the next steps are, and then the growth that you want to engage in just feels “stifled.”

A few teachers, who had been teaching at the school for longer periods of time, remarked on the lack of motivation from private school teachers to look at the current best practices to make changes to their practice since they did not have the same mandates that many public school teachers did. Kyle even stated, “I think most educators are attracted to an independent school because of the word independent.” Alexa talked about the variety of thinking and mindset between all teachers in an institution- “Teachers have different approaches to learning. Everybody has a different approach to how tuned in they are to their own learning. So they may not even know what their own obstacles are.”

“Buy-in” from Teachers

Another barrier that was discussed was getting “buy-in” from teachers when implementing practices and frameworks so they could help generate momentum when instituting change. When asked about barriers to implementing the UDL framework, Marissa brought up questions such as, “Is there buy-in from the teachers or, are the teachers excited about it?”Charlotte further elaborated on this by reporting:

I think it would be better if it was researched beforehand and hey, here's a framework that we think is going to be really good and they really have a true understanding of it. And you kind of don't want to say this because you know, who always says this? We have to get buy-in, but I think they have to have a real understanding of what it is and why it's important to follow that framework.

Damien communicated the importance of collective research before implementing something new as a way of generating “buy-in” from teachers. He explained-

I've definitely experienced, I'm gonna say cynicism or skepticism by teachers over anything new that could be seen as you know, ‘faddish’, for example, or anything you don't think is going to last the course. If you begin with research that shows the benefits of this, and you know, you have evidence when you take a UDL approach, you know this, this improves this, and, you have data to share with people, in whatever format, whether it's, you know, just anecdotal or statistical. I think that then that's a big motivator for people because they see the value in it.

Kyle shared an insight-when adopting new practices or frameworks, the school can be clear about what is non-negotiable in the hiring process; even with current faculty, if they had clear parameters around what is negotiable and what is non-negotiable, this could increase teacher “buy-in.” He explains-

So I think the barriers can be like, just from a hiring process upfront, like just to be clear, if you join this organization, it's non-negotiable. I'm talking about curriculum; if you're a member of this organization, there are many things that you can choose to do, or not choose to do, but here are three things that are not optional. Suppose you don't have a lot of training and skill set here. We're gonna make sure you get it. Making sure that teachers are clear on like, where their agency, autonomy, and sovereignty can express and manifest and where it is not an option.

Charlotte also talked about the importance of accountability and buy-in from the administration when she asserted, “And then there has to be some sort of oversight accountability. Not just letting people fly on their own and then never actually checking in. Unless we have the key players, really leading, this is not going to work.”

Teacher Vulnerability

The vulnerability of teachers was reported as a barrier for some of the participants when they discussed aspects of stepping outside of one's comfort zone and learning something new, and how teachers can feel insecure and lack a sense of control. Alexa shared reasons behind why teachers may not be open to utilizing new frameworks when feeling unsure; she explained, “So there's this little chain reaction when we do new things, we're not good at them and a teacher needs to feel successful in order to keep going. So I think frameworks get dropped because teachers don't feel successful.”

Marissa and Tammy also spoke about teacher vulnerability. Marissa stated-

So, it makes me think about that fear of being vulnerable in some way. Different kinds of vulnerability, lots of different vulnerabilities, my expertise, my identity as a teacher, my ability to succeed in class, the level of tired I might be at the end of the day because I did something new that I've never done before, so, I think, I think those are the barriers.

Tammy elaborated on the vulnerability that teachers may feel if they are not provided with guidance. “I think there isn't often a check-in from anybody so that could be a problem and you don't know if you're doing it right.” Frida, a seasoned teacher, asserted that teacher vulnerability was the primary barrier for most teachers when she stated-

I think one of the biggest barriers for teachers is thinking that going into a new curriculum or adopting a new framework is somehow reflecting their inability to teach. It's a defense mechanism that they think that their own curriculum or practice, isn't up to par rather than being open about maybe thinking that there's a better way.

Only four of the participants spoke about teacher vulnerability as a barrier. Most participants, however, spoke to the need for training, collaboration, and peer coaching as a means to allow teachers to learn new practices and implement new frameworks. This addresses a barrier by providing ways that teachers can feel secure when approaching learning which could help eliminate those feelings of vulnerability.

Lack of Training and Support Systems

Training and professional development are expected practices in education. When teachers are offered training opportunities for professional development, the school builds a learning culture that benefits the entire institution. All participants talked about the importance of providing teachers with opportunities to learn about new frameworks and practices, especially the frameworks of UDL and CRT. They noted that a lack of training or support systems would be a major barrier to the implementation of new practices or frameworks.

Damien expressed-

I think like a shared access point, would be useful whether you know, it's done with like, the same book that everyone reads and discusses or, like a program.

Having that kind of anchor to help everyone kind of get on the same page is definitely you know, a good starting point, and I think having clear desired outcomes as well. So there's a reason for what you're doing.

When asked about the necessity for training, participants made statements like, “I think not just one training but continual training or check-ins every once in a while;” Other participants asked, “Are there professional development opportunities?” or “Do the teachers have all the materials that they need and all the support that they need?” Charlotte also quipped, “Teachers that just don't have the training, and they don't understand why we need this program and how is this going to serve our students?” Frida also asserted, “I think another barrier is not having enough teacher training, getting introduced to something new, and not having the summer to learn it and understand it.” In one form or another, all participants thought that a lack of training would be a major barrier teachers face when implementing new frameworks or practices. They also thought that adequate training and professional development would be one of the essential practices and strategies that could support the implementation of UDL and CRT.

Practices and Strategies to Support the Successful Implementation of New Frameworks

There are practices and strategies that can support the successful implementation of new teaching practices, methods, approaches, and frameworks. Educators can work to achieve short and long-term goals and acquire continuous learning, training, teacher efficacy, and self-reflection by making use of many of the practices highlighted by the teacher participants in this study, which include adequate professional development and training, collaboration, and coaching.

Professional Development and Training

One practice that was named by all participants was professional development and training. Teacher participants stated that professional development and training were of the utmost importance when implementing a new framework. When asked by the researcher, “What support systems or practices need to be in place to implement new frameworks?” Frida said, “I

think you need to have extensive training.” Elizabeth affirmed, “Teachers need professional development. They need to learn what these frameworks are, and how to implement them.”

Tammy also stressed the importance of training when she discussed the need for training and continual check-ins with the teachers who went through the training-“the first thing that comes to mind, is training. I think not just one training but continual training or check-ins every once in a while. Because, you can get overloaded with the training in the beginning, but a continual check-in would be great. I think there isn't often a check-in so that could be a problem and then you don't know if you're doing it right.” Guillermo and Marissa also thought that professional development was one of the most viable ways to learn and understand new frameworks.

Marissa expressed, “there has to be thorough professional development, and not just a one-off, just be consistent, you know, to follow up on once it's once you are, once you learn what it is and how to implement it, that there is follow up.”

Kyle reflected on his experiences of going through a week-long training to establish a Critical Friends Group at his previous school, and how powerful it was as a learning experience to have a group of ten teachers go through the training together and then have intentional time scheduled throughout the year for the same group to spend time together to look at their practice and make constructive changes. Damien brought up the point about professional development as beneficial when looking at the adoption of new frameworks as a whole-school approach and going on the learning journey as a group of colleagues- “ I find with professional development, something you hear, something new or something you get introduced, it sounds brilliant, and you're keen to do it, but it's just so hard to implement without looking at an overarching whole school approach. Right?” Alexa was hopeful when she suggested that professional development

and training would help teachers adopt new frameworks when she reflected, “During PD, it is important for teachers to maybe let go a little bit just to learn something new.”

Collaboration with Teachers

When teachers work together, they form important professional and personal relationships. Through their work and collaboration, they learn to support each other and delegate tasks to help them collectively be more effective. All of the participants listed collaboration as another one of the most important supports that should be in place when implementing new frameworks. Charlotte illustrated this by stating-

I think in order for new frameworks to really happen everybody has to be on board and it has to really be a school-wide initiative, or at the least lower school, or the upper school but I really feel like school-wide is the way to go. And we all do the work together.”

Alexa attested-

I think a school that really wants to be progressive and dynamic and really provide a very rich, meaningful experience. There's going to be grade-level meetings with counselors with learning specialists, you're going to meet with grades below and above you and you're going to have really good conversations about what's going on and where these kids need to go and how you're going to get them there.

Elizabeth further elaborated on collaboration as a system of support when she suggested, “not working in a vacuum not teaching in a vacuum but having like, maybe observations or planning with someone, working as a team with teachers.” Damien endorsed collaboration as a key part of his practice- “I'm very pro collaboration, I really don't enjoy just working alone. I like to have

someone to bounce ideas off of and, and plan lessons that way. ” Kyle reflected on how collaboration can help teachers feel supported, and how that allows for further growth when he pronounced, “The experience to collaborate with experienced individuals who are doing things that I have never done before, and their experience to translate and share what they know is special. I feel supported.” Frida further illustrated collaboration as a powerful learning experience when she described the aspect of shared goals through a collaborative experience-

I think the basis for good collaboration is to have the same goals. And those goals have to be clear. And then you have to be open and flexible to listen to the other person and also be brave and then try something that might take you out of your comfort zone. And I think when you have that, you can be very successful because it helps to find colleagues who help you with your weaknesses. And in turn, you are then able to share your strengths. And I think that that creates a very successful model for collaboration.

All participants valued teacher collaboration as a means to utilize new practices or adopt new frameworks. They desired dedicated time to work with their peers, where they could learn new frameworks, discuss and try out effective teaching techniques, and support one another in developing their craft.

Instructional and Peer Coaching

Instructional coaches are experts, usually from outside the institution, who partner with teachers to help them improve teaching and learning practices. They can collaborate with teachers to identify goals, pick teaching strategies to meet the goals, monitor progress, and problem-solve until the goals are met. Instructional coaches are helpful when adopting new frameworks.

Peer coaches are colleagues who work together to learn and reflect on new frameworks or practices; expand, refine, and build new skills; share ideas; teach one another; conduct classroom research; or solve problems in the school. Most of the participants in the study thought that either instructional coaches or peer coaches would be a significant support system when teachers were learning new frameworks or practices. Alexa spoke about the aspect of coaching when she expressed-

They (teachers) may need a whole other person to observe and see them struggle. And then after that struggle, they've got a process and then they've got to have a coach basically, like another teacher that's gonna help them develop new skills.

Tammy also endorsed the role of institutional and peer coaches when she voiced-

I think having an advocate or someone to make sure that these practices are being put in place and that there is time in the schedule to continually check in, learn and talk about these things would be really beneficial. That is what we should do during faculty meetings so that there is some consistency.

Damien spoke to the need for a “coach” to help the whole school develop and gain an understanding of a new framework when he stated, “And I think that to make sure that new frameworks are instituted you have a cohesive system across the school. You know, you kind of need someone, like a coach, to have an overview that they're aiming for and to help coordinate that. And manage that. You know, across the school”.

Kyle shared his experience with peer coaching when he reflected on his participation in a Critical Friends Group-

We were intentional. We're basically having these kinds of conversations during our faculty meeting time. It was a group of us. So, one of us would be a lead

facilitator and address an issue someone wanted help with, it was like a coaching experience and it was so healthy.

Most of the participants in the study shared their support of models like instructional coaching or peer coaching as a practice that would support teachers' understanding and confidence to learn and acquire new frameworks and teaching practices.

Conclusion

Existing research discusses the validity of Universal Design for Learning as a framework for teaching and learning that gives all students an equal opportunity to succeed. There is a lack of existing studies that identify additional frameworks that can be used in conjunction with UDL to create optimal learning environments for all students, as well as the perceived barriers teachers face when adopting new frameworks, such as Universal Design for Learning (UDL), and the practices and strategies that support the successful implementation of the UDL framework. This study sought to take a more humanistic approach, using teachers' language to illustrate their experiences with student learning barriers, how teachers could combat those barriers using the UDL principles, guidelines, and checkpoints, and closely examining any perceived barriers teachers face when implementing new frameworks, such as UDL, and what support systems may make the adoption of new frameworks more straightforward. This study aimed to acknowledge the expertise of teachers as the catalysts of change in an institution.

The first research question asked, *What barriers to learning do students face in the classroom?* The findings of this study show that teachers named barriers that fell under broad categories such as accessibility barriers, instructional barriers, emotional barriers, experiential barriers, motivational barriers, and preferential barriers.

The second research question asked, *What can teachers do to help students overcome barriers that prevent them from learning?* The findings revealed that many strategies and approaches to prevent learning barriers were guided by principles, guidelines, and checkpoints of the Universal Design for Learning (UDL) framework. Culturally Responsive Teaching (CRT) was emphasized as another essential framework that teachers can utilize to address barriers to learning.

The third research question asked, *When providing students with new ways to access learning and eradicate obstacles, what barriers may teachers face when implementing new teaching practices or frameworks?* Teachers noted barriers such as time, clarity of priorities, teacher mindset, buy-in, teacher vulnerability, and lack of training or support for implementing new teaching practices and frameworks.

The fourth and final research question asked, *What support systems or methods would help teachers adopt new teaching practices or frameworks?* Teachers spoke about adequate professional development and training, collaboration, and coaching as being the three most important support systems that would help teachers learn, understand, and implement new frameworks, especially UDL and CRT.

The findings show that teachers are acutely aware of student barriers to learning, and also knew how to alleviate those barriers with strategies they had previously learned about. These teachers expressed the overwhelm many teachers feel when learning and utilizing new teaching frameworks and practices. They also drew upon the strength of teachers working collectively to effectively communicate about the goals and priorities of an institution and how through collective work, teachers could embrace new frameworks and innovative ways of thinking.

Chapter 5: Discussion

Determining the aspects of the theory that students often face multiple barriers to learning, this research study aimed to understand, identify, and allay the most common learning barriers that get in the way of a student's potential to learn. After determining barriers for students, I utilized Universal Design for Learning and Culturally Responsive Teaching frameworks as approaches to teaching and learning that give all students an equal opportunity to succeed. The study also sought to uncover the perceived barriers teachers faced when adopting new frameworks and illustrate the practices and strategies that supported the successful implementation of a UDL framework.

This study's findings illustrated consistencies with several themes covered in the literature review. One significant, consistent theme between this research project and the literature review is the endorsement of the effectiveness of the UDL framework for promoting educational inclusion. The literature and study highlighted how utilizing the UDL principles, guidelines, and checkpoints can help teachers develop curricular lessons that rethink students' learning barriers and plan for student variability by providing options and choices (Thibodeau, 2021). The findings from the research demonstrate strong support for using the frameworks of Universal Design for Learning (UDL) and Culturally Responsive Teaching (CRT) which can support diverse students when used in conjunction with each other. This finding is consistent with the literature review, regarding a previous study that focused on the impact of using UDL principles without explicitly considering how cultural differences and perspectives affect learning; this may increase the disparity in student achievement for students of color (Kieran & Anderson, 2019). While the former study focused primarily on the cross-pollination of UDL and CRT as a means to identify and address potential barriers to student learning while

maintaining students' cultural and linguistic backgrounds, this research project adds to the previous research by discovering that through implementing inclusive teaching practices and culturally responsive instruction, teachers can create learning environments where equity gaps can be closed, and all students feel they belong and have the opportunity to achieve at high levels, regardless of the learning barriers that are present (Ambrose et al., 2010).

The value of Universal Design for Learning and Culturally Responsive Teaching is underscored in the literature review and the results of this project. The findings of this project indicate that teachers are profoundly aware of how student barriers prevent access to learning; these barriers can be addressed by building strong relationships between students and teachers and deeply knowing and understanding a student's strengths and challenges. These are the central principles of both UDL and CRT. Educators in the study embraced the practices of UDL and CRT; however, they felt that adequate knowledge, a deeper level of understanding, and sufficient training around the frameworks were necessary for the implementation of both frameworks to be embedded in their practice.

Another similarity between this research project and the literature review was established by highlighting the perceived barriers teachers identified when implementing new frameworks, such as UDL and CRT, and the systems of support that eradicate those barriers. One significant consistency between this research project and the literature review was the barriers teachers faced when learning and utilizing new frameworks. An additional similarity was discovered between the support systems named by teachers and the literature; there is a necessity for creating systems that may allow teachers to change their practice. In the literature review, Novak (2022) uses research about building teacher efficacy to highlight how to generate buy-in and rearrange common beliefs to change old teaching practices. Novak (2022) talks

about the importance of "not doing it alone" (p. 5) and that it is fundamental to have a team of educators and administrators to support each other as you collaborate and implement the UDL framework. This significant consistency between this research project and the literature review found that teacher efficacy was needed to generate "buy-in" for teachers and change the mindset of teachers to adopt new practices and frameworks. The findings from the research also stress that collaboration and professional development are effective means to encourage teachers to create systems of support and take the necessary steps to acquire knowledge of new teaching practices and frameworks. The literature review and this research project's findings speak to the need for educators to work collectively when embracing new teaching approaches, methods, and pedagogy.

Implications for the Literature

The literature review briefly highlighted the learning barriers that students faced; however, there was limited research on the complexities and range of learning barriers experienced by students, the relationship between learning barriers, and how the components of UDL and CRT could alleviate those barriers.

This research project uncovered significant barriers specific to a student's ability to access learning which spoke to the necessity behind the need for UDL and CRT and gave validity to adopting those frameworks. In uncovering detailed information about learning barriers through the study, insufficient information was highlighted in the literature review, which only detailed accessibility barriers (for students with neurodiversity, learning disabilities, and ADHD). The significance of the named barriers detailed in the study differs in comparison to the learning barriers named in the literature review. The findings from this study named a variety of learning barriers, whereas the literature focused solely on accessibility barriers. In

fact, the findings of the study uncovered multiple challenges and barriers to learning that students face, such as

- Classroom and instructional barriers
- Accessibility barriers
- Emotional barriers to learning
- Experiential barriers
- Motivational barriers
- Preferential barriers

The teachers in this study named accessibility barriers such as neurodiversity and the side effects of taking medication for Attention-Deficit-Hyperactivity-Disorder or Mental-Health issues as barriers to learning. Many teachers expressed instructional barriers to learning, which indicates barriers to instruction, curriculum, and academic expectations. Many teachers discussed emotional barriers to learning in talking about students' low self-esteem, fear of failure, and lack of a growth mindset. Other teachers in the study pointed to experiential barriers, demonstrated by ineffective teachers, poor classroom management or excessive student behavioral issues, disorganization in a classroom, or even a student's lack of background knowledge. A few teachers highlighted motivational barriers to learning illustrated by limited student voice and choice as to what they are learning and the relevancy of the learning content. A limited number of teachers remarked that students had preferential barriers summarized by students' strengths and challenges in absorbing information and demonstrating what they have learned. These barriers motivated educators to examine frameworks that would address barriers closely. As a result of looking more closely at barriers that limit students' access to learning, teachers worked to understand the limitations of their students and strived to meet the varying needs of all students in their classrooms.

The literature review revealed the importance of endorsing the framework of UDL. However, there was limited research regarding the practical application of the framework

without extensive study or utilizing tools to assist educators. There is also a need for existing research discussing the additional frameworks that work in conjunction with UDL to eliminate student learning barriers. This research project sought to fill that gap by connecting the framework of UDL with CRT and then using the practices and strategies participants named to correspond to the principles, guidelines, and checkpoints of UDL and the components of CRT.

All teachers interviewed for this project indicated they wanted to deepen their understanding of UDL and CRT. Since the frameworks of Universal Design for Learning (UDL) and Culturally Responsive Teaching (CRT) are approaches to teaching and learning that allow all students an equal opportunity to succeed and help eliminate barriers to learning, teachers wanted to examine the frameworks as solutions that provide student access to learning.

An additional finding of significance is that there need to be more existing studies that identify a comprehensive range of perceived barriers teachers face when adopting new frameworks and adequately define practices and strategies that support the successful implementation of the UDL framework (Capp, 2020). Teachers in the study indicated that in addition to limited time, lack of training or professional development, and design of curriculum represented barriers to implementation. There were other salient barriers, such as clarity of priorities, teacher mindset, and teacher vulnerability. Many teachers indicated they needed more time to learn and understand new frameworks, better access to resources, or directives from administrators to adapt their lessons or curriculum. Understanding UDL and CRT takes considerable time, effort, and research in regard to what each student needs to thrive in a classroom. To fully implement the frameworks of UDL and CRT, teachers can not take this journey alone. The issues of teacher vulnerability can negatively impact a teacher's need for growth and development. With the proper support systems in place, teachers can avoid falling

into despair and take the necessary steps to acquire knowledge of new practices and frameworks, avoiding a return to the inefficient teaching methods and approaches they had previously utilized. Additional guidance for this work could be better explored in the literature.

Implications for Policy and Practice

Based on research from the literature review as well as the findings of this project, there is a clear connection that can be made between how teachers could implement many guidelines and checkpoints from the UDL principles to prevent learning barriers. Teachers have a variety of strategies and approaches they use to combat barriers to learning. Many strategies presented can incorporate the UDL principles, guidelines, and checkpoints as tools. Another link was also made to support teachers utilizing components from CRT to develop asset-based pedagogy in their practice. Culturally Responsive Teaching can be used as another essential framework to combat barriers to learning for students.

The participants in the study were introduced to Universal Design for Learning (UDL) and Culturally Responsive Teaching (CRT) frameworks during the interviews. They were asked how the two frameworks could address learning barriers. I was able to gain insight into the inclusive teaching practices that the teacher participants were already implementing. With this information, both researcher and participants were able to connect to the principles of UDL and to components from CRT to emphasize the practices teachers could implement to address barriers to learning. Teachers must understand how the two frameworks can support student diversity when used in conjunction. Educators need to understand this cross-pollination when using the UDL guidelines and the components of CRT as an implementation tool in their classrooms to identify and address potential barriers to student learning while sustaining students' cultural and linguistic identities (Takemae, Nicoli-Senft, & Tyler, 2022).

To utilize the frameworks of UDL and CRT, teachers need time to develop their understanding, professional development opportunities, and collaborative learning environments. The data from the literature review and this project support the need for professional development and administrative support to clarify school priorities and include a focus on UDL as best practice, along with Culturally Responsive pedagogy. School leadership should develop systems of accountability that are shared by individual teachers and administrators. By developing these shared systems of accountability, administrators and teachers can rely on each other and additional colleagues from the institution which leads to a feeling of shared responsibility. This lessens the feelings of overwhelm for teachers who often feel like it is their sole responsibility to learn new teaching methods and practices.

Another way to utilize the frameworks of UDL and CRT would be to adopt collaborative professional learning environments and teacher coaching opportunities. All of the participants listed collaboration and working together as integral practices when implementing new frameworks. Creating structures where teachers could work together and co-lead professional development as they learn about the frameworks of UDL and CRT would increase a sense of self-efficacy and ownership and build trust between all teachers at a school site.

Limitations of the Study

Several limitations to this study exist. First, the limited and biased perspective that all of the teachers interviewed are private school teachers, working at a suburban private school in a wealthy county in California. Most of the teachers in the study have worked primarily in private institutions and private schools, and private schools are not required to adhere to the regulations of IDEA because they do not receive federal funding for their programs. These schools are not required to offer special education programs, although many private schools do have

departments that support students with learning differences and neurodiversity. Even at this research site, the resources and support are limited and often that support is not the foremost priority of an institution. The idea of prioritizing frameworks that support and encourage inclusive teaching practices are not at the forefront of the private school's strategic plans. The school in the research study does make the principles of Diversity, Equity, Inclusion, and Justice (DEIJ) a priority and values and embraces Culturally Responsive pedagogy; however, only 34% of staff and teachers are people of color, 38% of students are people of color, and 23% of faculty, staff, and student populations have a first language other than English. Diversity principles may not permeate the fabric of such a private institution as much as they might at a more culturally, racially, and linguistically diverse institution. The findings speak to a limited population of mostly middle-class to upper-class students, and mostly middle-class teachers.

A second limitation is that the researcher has a previous relationship with all the survey and interview participants. This existing relationship and comfort level may have offered different results than if the researcher was not familiar with the participants, and had existing collegial relationships. Another limitation was that the survey and interview participants were a small representation of the faculty. If the researcher were able to collect additional data and interview other specialist teachers (art teachers, music teachers, world-language teachers), and other K-5 and 6-8 teachers, other viewpoints and perspectives would be gained.

Directions for Future Research

Additional interviews with public school teachers in a more diverse, urban setting would be useful to gain a fuller understanding of the barriers students face when learning, and help identify specific practices and approaches teachers may adopt to confront and alleviate those barriers, especially regarding the barriers that affect a student population that differs from the

population used in this research study. The research into the perceived barriers teachers face when adopting new frameworks would allow for a different perspective when incorporating the experiences of public school teachers who must adhere to IDEA and meet the requirements of the law by adopting inclusive teaching practices and frameworks. Replicating this study with a different cultural, racial, socio-economic, and linguistic population would allow for further insight into how to best support students who are navigating inequitable access to learning.

An unforeseen area for future research was highlighted by the abundance of data that spoke to barriers to student learning. The research uncovered a multitude of barriers teachers identified when they reflected on all the blockades to learning for their students. Participants in the study acutely identified many barriers that did not surface in any of the literature, given the fact that teachers so adeptly recognized that students struggled to access learning and the disconnect with access points to the curriculum, this area warranted more study. Additionally, more studies connecting learning barriers to the UDL principles, guidelines, and checkpoints, as well as to the components of CRT, to create inclusive learning environments, are needed.

Conclusion

As we plan and create educational environments for our students it is essential that we incorporate Universal Design for Learning (UDL) and Culturally Responsive Teaching (CRT). Both UDL and CRT are inclusive frameworks that provide access points to meet the needs of all students. Both frameworks are powerful tools for preparing students to succeed in educational environments and equip them to navigate diverse professional environments in the future. In the field of education, it is critical that more studies are conducted that connect the two frameworks of UDL and CRT since when used together they provide ways to address the diversity of learning profiles and backgrounds of students in a classroom.

This study sought to understand how educators could identify barriers that students face to learning. In identifying barriers, educators could utilize the UDL and CRT frameworks to eradicate obstacles and create learning environments that would best support the needs of all the students in a classroom. The findings of the study revealed that many strategies and approaches to prevent learning barriers could be mitigated by the principles, guidelines, and checkpoints of the Universal Design for Learning (UDL) framework. UDL encourages us to design lessons and curricula for students with various learning styles and skills that incorporate various proactive design elements. We should also aim to incorporate this same kind of design structure as it relates to cultural diversity in our classrooms. The components of Culturally Responsive Teaching (CRT) were also used as an essential framework that helped create access points for students and centered students' cultural backgrounds in the forefront. Utilizing UDL and CRT transforms classrooms and creates optimal learning environments for all students.

Even though UDL and CRT have the potential to create inclusive learning spaces that optimize student success, the perspective and insight of teachers highlighted barriers when implementing new teaching practices or frameworks. Teacher participants noted barriers such as time, clarity of priorities, teacher mindset, buy-in, teacher vulnerability, and lack of training or support for implementing new teaching practices and frameworks. Further research also indicated the barriers of teacher resistance to adopting new frameworks and the rigidity of curriculum design. Teachers are aware of perceived barriers that may be present when adopting new practices and frameworks. They are also acutely aware of support systems that could be acquired to help teachers learn, practice, and implement new practices and frameworks. Teachers revealed that having a community of supportive colleagues who can help them collaborate to learn new practices and frameworks was fundamental to building teacher

efficacy. Teachers also need administrative support to clarify school priorities and include a focus on UDL as best practice, along with Culturally Responsive pedagogy. Furthermore, educators need professional development and collaborative learning spaces so they can proactively create learning environments that recognize learner variability and honor cultural differences, which is at the heart of the UDL and CRT frameworks.

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Appendix A
Interview Questions

1. What are some common barriers students face that prevent them from learning?
2. What can teachers do to help students overcome those barriers that prevent them from learning?
3. What barriers may teachers face when implementing new teaching frameworks or practices? Can you provide examples?
4. Are you familiar with any frameworks that may help teachers address those learning barriers with students?
5. *Introduce Universal Design for Learning (UDL)

*Introduce the framework of Culturally Responsive Teaching

6. What do you perceive to be the barriers to implementing the framework of UDL or CRT in your classroom? Or in the larger school community?
7. What would make the implementation of UDL or CRT easier in your classroom? Or in the larger school community?
8. Please give me an example from your experiences of how you have worked effectively as part of a team of educators to foster learning and collaboration.

Appendices B
Copy of Survey Questions

1. How do you engage reluctant learners in meaningful learning experiences?
2. How do you incorporate your student's life experiences into your lessons?
3. How do you prepare for a lesson/unit to ensure that the learning needs of all students are met? Especially students who may have learning differences.
4. Do you plan lessons with students' racial and cultural needs in mind? Please explain.
5. Do you plan lessons with students' linguistic needs in mind? Please explain.
6. What support systems, tools, or strategies do you need to have in place to ensure you can meet the needs of all students?
7. What is the role of technology in your classroom now?
8. How would you use technology to enhance your instruction and provide students with multiple ways to access information or express their understanding?
9. How is learning content presented in multiple formats (verbal, visual, print, video, tangible objects, technology)?
10. How do you utilize assessment results?
11. At the end of the school year, what are the most important things that your students will know and be able to do?
12. Please include how many years you have been teaching.

Appendix C

IRB Acceptance Letter



Jan 23, 2023

Dana Dacus

50 Acacia Ave.

San Rafael, CA 94901

Dear Dana,

On behalf of the Dominican University of California Institutional Review Board for the Protection of Human Participants, I am pleased to approve your proposal entitled The Barriers and Support Systems Teachers Face When Implementing the Universal Design for Learning Framework (IRBPHP Initial IRB Application #[11073]).

In your final report or paper please indicate that your project was approved by the IRBPHP and indicate the identification number.

I wish you well in your very interesting research effort.

Sincerely,

Michaela George, Ph.D.

Chair, IRBPHP

Cc: Katie Lewis

Institutional Review Board for the Protection of Human Participants

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