

A MULTIPLE CASE STUDY ON STUDENT-CENTERED TEACHING AND  
EDUCATIONAL EQUITY FOR DIVERSE LEARNERS

By

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## **Abstract**

Student-centered teaching (SCT) has been the dominant education philosophy in the U.S. K-12 education. However, the definition and practice of SCT have been rooted in western education contexts. Since students in U.S. schools become more and more diverse, it remains unclear how SCT works for diverse learners. This research delved into the perceptions and implementation of SCT by teachers in elementary charter schools, emphasizing their approach in classrooms with diverse learners. The study also aimed to uncover any disparities in how teachers perceived and applied SCT when educating diverse learners compared to non-diverse learners. Guided by critical reflection for transformative learning and Critical Race Theory, this study employed a multiple-case study research design. It included four participating teachers from two charter elementary schools, placing a special emphasis on the charter school context. These teachers were interviewed to gain insights into their perceptions and were observed to assess their teaching practices. The study's findings indicated that teachers exhibited a predominantly teacher-centered orientation in their understanding of SCT, with their teaching practices primarily reflecting this teacher-centered approach. Importantly, both their perceptions and practices of SCT appeared to overlook the needs of diverse learners within the charter school setting.

## **Acknowledgements**

The genesis of this work was spurred by a research project I undertook under the guidance of my advisor, Dr. Katrina Liu. This project aimed to delve into the perceptions of Chinese teachers regarding student-centered teaching (SCT). In the spring of 2018, during the final semester of my master's program in China, Dr. Liu remotely mentored me in administering questionnaires to about 30 Chinese teachers to gain insight into their SCT. Dr. Liu also provided me with eight articles that critiqued the absence of SCT in China. She emphasized that we should not limit ourselves to the original definition of SCT but should instead seek to understand what SCT meant within the specific cultural and educational contexts of China. The findings of this study were presented at the Association for Teacher Education (ATE) International Conferences in 2019.

In 2019, still under Dr. Liu's guidance, I conducted semi-structured interviews with 18 Chinese teachers to further explore their perspectives on SCT and how cultural and political factors influenced their perceptions. During the summer of 2021, Dr. Liu encouraged me to submit a paper proposal to the American Educational Research Association (AERA), and we subsequently presented our research at the 2022 AERA conference. These experiences not only broadened my understanding of SCT but also motivated me to investigate how teachers perceive and implement SCT for non-western learners. They also contributed significantly to my growing research expertise. My dissertation research was built upon the strong foundation that Dr. Liu provided me. Her guidance was instrumental in helping me discover my passion for this compelling research topic, which ultimately became the focus of my dissertation. Without her mentorship and support, I would not have been able to embark on this significant academic journey.

As an international student, my social connections in the United States were limited, which posed several challenges during my dissertation research. I encountered

discouragement due to the difficulty in accessing participants and initially considered analyzing secondhand data. However, it was Dr. Liu who provided unwavering support and encouragement. She urged me to conduct empirical studies and suggested that I observe American classrooms firsthand. Dr. Liu went above and beyond by leveraging her own social connections to facilitate my access to research sites and participants. Throughout the data collection process for my dissertation, she played a crucial role in interviewing two school principals and guiding me in the art of classroom observation. Her guidance on how to effectively observe a class was invaluable, and these experiences allowed me to gain valuable insights into the American education system.

Dr. Liu's support not only enriched my research but also provided me with a unique opportunity to better understand American education through classroom observations. Before meeting Dr. Liu, I never thought I can get a doctorate degree in my life. It was Dr. Liu who provided me with the opportunity to enroll in a Ph.D. program and pursue my studies in the United States'. Liu's extensive expertise in the field of education, her unwavering commitment to delivering equitable education for every learner, and her boundless enthusiasm and dedication to enhancing the quality of teacher education programs have been a tremendous source of inspiration for my studies and research in the realm of teacher education. Her influence will undoubtedly continue to illuminate my path in the future. Therefore, above all, I express my deepest gratitude to Dr. Liu, who has gracefully overseen all my graduate work.

My research journey was also profoundly influenced by a collaborative project involving Dr. Vanessa Vongkulluksn and Dr. Liu. This project centered around the analysis of TALIS (Teaching and Learning International Surveys) databases to investigate disparities in SCT across countries and explore the impact of classroom factors. In the summer of 2022, we had the opportunity to present our findings at the APA (American Psychological

Association) conferences. Subsequently, we extended our research to examine how teacher-, classroom-, and country-level factors shape SCT in diverse nations. Dr. Vongkulluksn played a pivotal role in equipping me with the skills to conduct advanced quantitative data analysis. Working with data from 48 countries was exhilarating, and the quantitative results reaffirmed our hypothesis that cultural factors, such as individualism, contributed to the differences of teachers' SCT among countries. These findings inspired me to do the qualitative study to explore teachers' perceptions and practice of SCT further.

Every time I think of Dr. Vongkulluksn, there are tears in my eyes. Without Dr. Vongkulluksn, I might have rotten somewhere in the libraries. I remember so many times Dr. Vongkulluksn looked for a slide in her laptop or drew models in her screen or paper to assist me in understanding the statistic concepts, thought the concepts she already taught us in the statistical lessons weeks ago or semesters ago. When I made a big mistake in running the data and got the wrong analysis, Dr. Vongkulluksn said it's great to find the mistakes. She then taught me new methods to run the models to get significant results. I know I disappointed her many times, but she never ceased her support for me. I know that Dr. Vongkulluksn was an exceptional professor who made a significant impact on all her students, and I am profoundly grateful to have been one of them.

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the other participating teachers, and the interventionists. They graciously and patiently answered all my questions. While I will not mention their names explicitly to honor the anonymity I promised, I want to express my gratitude to Darcy, Zara, Irma, and Rosa. They generously allowed me to observe in their classrooms, demonstrating their trust in me and sharing their valuable perspectives throughout this journey.

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## Chapter 1: Introduction

Student centered teaching (SCT) is considered as representing a more effective education pedagogy than teacher-centered teaching since SCT emphasizes the connection between the learner and the content to be learned (Dewey, 1986). SCT focuses on encouraging students to take a role in their own learning and structuring ways to facilitate more student autonomy (e.g., Kaput, 2018; Weimer, 2012). Though no uniform definition of SCT exists (Farrington, 1991; Lea et al., 2003; O'Neill & McMahon 2005), the concept, as well as the teaching practice of SCT, has played a significant role in the discourse about teaching and learning in U.S. K-12 education.

SCT has not been value-neutral but “has social, epistemological and philosophical foundations” (Tabulawa, 2003, p. 9). Especially, SCT has been rooted in western social contexts and “reflects the norms of a liberal Western subcultures” (Tabulawa, 2003, p. 10). Its non-value-neutrality implicates that SCT is more than a teaching method from a technical method perspective; it is “an ideological outlook” reflects how a society is created through education (Tabulawa, 2003, p. 7). The single transformation of the teaching method from teacher-centered teaching (TCT) to SCT cannot guarantee the promotion in teaching quality in nonwestern societies (Tabulawa, 2003). The effectiveness of SCT for non-western cultural learners is questionable since their “indigenous knowledge system” (Tabulawa, 1998, p. 23) is different from SCT reflecting western education philosophies. U.S. was one of the first few countries to widely promote SCT around 1950s through progressive education reforms (Davies, 2002). Over years of development, SCT has been widely accepted and practiced by U.S. K-12 teachers. While SCT was developed primarily for White students (Shah, 2019), K-12 students in U.S. nowadays have become increasingly diverse in terms of race, ethnicity, socioeconomic status, and linguistic backgrounds. Large racial/ethnic/linguistic gaps exist



between K-12 public school teachers and the students they teach while about eighty percent of the teachers are White, nearly half of the students are identified as non-White (NCES, 2019).

Current studies demonstrated that SCT generates more satisfying learning outcomes for non-diverse learners than diverse learners in K-12 education (Andersen & Andersen, 2017). Technical problems such as lack of resources and poorly trained teachers often explain the results of less successful SCT practice for non-western learners (Tabulawa, 1998). Teachers' subjective "assumptions about the nature of knowledge and the ways it ought to be transmitted, their perceptions of students and the goal of schooling" (Tabulawa, 1998, p. 249) were always overlooked. Teachers' perspectives of SCT for diverse learners have implications for their SCT practice, because "teachers' thought, beliefs, judgments, and decisions guide their classroom behavior" (Tabulawa, 1998, p. 252). This study will focus on teachers' perspectives and practice of SCT in U.S. elementary schools. There are insufficient studies about SCT for diverse learners in elementary schools. Existing research (Deaton et al., 2014; González-Carriedo & Ordóñez, 2016; Kelly-Jackson & Delacruz, 2014; Narima & Chrispeels, 2016) were more about how elementary teachers implemented SCT for diverse learners but failed to explore their perspectives of SCT for diverse learners behind their practice. As a result, they did not consider the ethical, socioeconomic and linguistic differences in their SCT practices and their implementation of SCT for diverse learners are no different from non-diverse learners (Nariman & Chrispeels, 2016). Diverse learners in elementary schools may be excluded in SCT classrooms. Thus, this study aimed to figure out how elementary teachers perceive SCT for diverse learners and how such perspectives impact their SCT practice. And it also tried to see whether diverse learners are included or excluded in such SCT practices.

## **What is SCT?**

There are no uniform definitions of SCT. Current studies display five types of conceptualizing SCT. First, SCT is often seen as constructivism that assumes knowledge is built on a student's prior knowledge and experiences. The knowledge they receive is only meaningful if they participate in the process of knowledge construction. Second, SCT is often conceptualized as the opposite of teacher-centered teaching (TCT). While TCT emphasizes teachers' direct lectures and presentations, SCT encourages students to build their knowledge through activities. Third, SCT has been defined from the perspective of learning relationships between teachers and students. Neumann (2013) summarized three types of such learning relationships: students have total control in their study; students' learning autonomy is within teachers' designed curriculum; students and teachers are equal partners in creating the curriculum. Fourth, SCT is about students' decision making for their learning. The critical choices mainly include why to learn, what to learn, and how to learn (Burnards, 1999). Finally, different theoretical foundations shape the definitions of SCT. Assuming students are individual learners (Starkey, 2019), humanists emphasize students as a whole functional person to take responsibility for their study. From the theory of constructivism, SCT focuses on students' learning processes and how students' individual knowledge and skills inform their learning experience (Starkey, 2019).

SCT is a complex concept with many facets. Many scholars have endeavored to summarize the general characteristics of SCT. The American Psychology Association (APA) summarized 14 psychology principles for SCT in 1997 and they have since become the most influential guidance in defining SCT for education reform and policy (e.g., Lambert & McCombs, 1998), school practice (e.g., Meece, 2003), and education research (Hannum et al., 2008). The 14 psychology principles have been categorized in four domains. The first is the "metacognitive and cognitive factors" (APA Work Group of the Board of Educational

Affairs, 1997, p. 8) domain emphasizing how learners' intellectual capacities facilitate the learning process (Hannum & McCombs, 2008). According to the second domain "affective factors" (p. 9), learners' motivation and emotions play a role in their learning. The third domain, "developmental factors" (p. 10), is that learning differs in an individual's different developmental stages and learning is influenced by social interactions. Based on the final domain, "personal and social factors" (p. 10), learners' individual differences and diversity, such as "learners' linguistic, cultural, and social backgrounds" (Alexander & Murphy, 1998, p. 16) should be considered in their learning.

The 14 student-centered psychology principles APA (1997) were created based on extensive research and theory from psychology and education by "an impressive collection of educational researchers [who] contributed their wisdom and years of well-hone insights to a set of 14 psychological principles" (Alexander & Murphy, 1998). The 14 principles emphasized learners' existing knowledge as a basis to acquire new knowledge. Compared to TCT, these principles shifted the focus from "what teachers teach to what students learn" (McCombs, 2003, p. 96). The 14 principles also admit students have the ability to make decisions for their learning through cognitive and metacognitive "strategic processing or executive control, ... intrinsic motivation, attributions for learning, and personal goals" (Alexander & Murphy, 1998, p. 31-33). Though these principles are based on cognitive psychology theories, the emphasis on students' individual differences are identical with Humanism that emphasizes students as individual humans. What's more, it was the first time to add diversity in defining SCT. Based on above discussion, this study will adopt the 14 student-centered psychological principles as foundation to understand SCT. Specifically, this study will use the definition of SCT based on the 14 principles proposed by McCombs and Whisler (1997):

Learner centered is the perspective that couples a focus on individual learners—their heredity, experience, backgrounds, talents, capacities, and needs—with a focus on

learning—the best available knowledge about learning and how it occurs and about teaching practices that are most effective in promoting the highest levels of motivation, learning, and achievement for all learners. Learner-centered is a reflection in practice of the Learner-Centered Psychology Principles—in the programs, practices, policies, and people that support learning for all. (p. 9)

SCT as a general concept has been criticized for several grounds: assumptions about students, assumptions about teachers, assumptions about learning environment, practicality and universality. First, it assumes students are able to take full responsibility of their learning, such as setting meaningful goals (Hannafin et al., 1994) and self-managing their own learning process (Brush & Saye, 2000). SCT is conceptualized for students from western cultures and for students who have SCT experience from their education systems (Shah, 2019). Second, the definition of SCT assumes teachers know how to limit their roles in SCT as facilitators and are capable of designing and measuring different SCT activities (Brush & Saye, 2000). Third, the definition of SCT assumes all schools can provide the teaching resources needed for SCT (Hannafin et al., 1994). The fourth criticism is about its practicality. The definition of SCT fails to provide clear instructions for how SCT can be implemented (Perkinson, 1980). It is not practical to meet every individual student's needs in the classroom (Anderson et al., 1997). Finally, its universality has been criticized. Schweisfurth (2011) pointed out that SCT cannot be a one-size-fits-all pedagogy for students from every culture and every country. Considering SCT is a concept created and developed in western education contexts, it is questionable to conclude that SCT works effectively for students from non-western cultures.

### **Why is it Important to Study SCT for Diverse Learners?**

SCT has enjoyed dominant positions in contemporary educational philosophies as well as pedagogical practices (Schrader, 2015). It has been seen as the essential component for best teaching practice by teacher education professors and influential educator associations (Krahenbuhl, 2016). Most subjects such as literacy education have treated SCT

as roots for learning (McCarthy, 1994). The organization of K-12 textbooks is also guided by SCT (Thompson et al, 1995) and SCT is the main method for evaluating K-12 teachers' teaching (Liang & Akiba, 2015). In addition, it is important to see how teachers perceive and practice SCT for current K-12 diverse students in America. SCT has been assumedly developed especially for White students before 80s (Shah, 2019). While SCT has been the mainstream education philosophy, current K-12 student population have become more and more diverse. In 2018, 52% of U.S. school-age children identified as non-white (National Center for Education Statistics, 2018). Studying SCT for diverse learners is important to learn about how SCT is interpreted and implemented in current diverse educational contexts.

What's more, it is also important to explore whether diverse learners are included in the SCT classrooms. Diverse learners are more likely to live in poverty and study in schools with fewer quality teachers and educational resources (Hall et al., 2016, p.46-48). It remains to know whether diverse learners are included in SCT classroom with less learning resources. While the majority of K-12 teachers are White, the majority of K-12 students are increasingly diverse (NCES, 2019). The diversity gap between teachers and students lead to cultural conflicts in the classrooms and teachers' low expectation for diverse learners (Milner, 2016). Thus, diverse learners are excluded in many learning opportunities (Milner, 2016). Under such contexts, it's important to explore how teachers' implementation of SCT include/exclude diverse learners.

### **What is Charter School?**

The emergence of charter schools was part of a broader educational reform initiative known as school choice (Hung et al., 2014; Jones-Goods, 2015). Beginning in the 1980s, the school choice movement aimed to provide parents and guardians with more options for selecting their children's schools, rather than having students assigned to specific public schools based on their residential addresses (Sartori, 2023). Charter schools come in various

types, each with its own educational focus, including art charters, classical charters, credit-recovery charters, international charters, military charters, no-excuses charters, progressive charters, purposefully diverse charters, single-sex charters, STEM (Science, Technology, Engineering, and Mathematics) charters, and vocational charters (Malkus & Hatfield, 2017). The nature of charter schools can also differ significantly across states and districts due to variations in laws and regulations governing charter schools in different regions (Dallavis & Berends, 2023). For the purposes of this study, I will focus on public charter schools, as these are the most commonly referenced in research (e.g., Barden & Lassmann, 2016; Berends et al., 2010; Dallavis & Berends, 2023; Hung et al., 2014; Jones-Goods, 2015). Throughout this study, the term charter school will be used to refer to public charter schools as the standard reference.

Public charter schools receive most of their funding from public sources but operate independently of traditional public education systems and the associated bureaucratic structures (Dallavis & Berends, 2023; Hung et al., 2014). When defining charter schools, three critical elements come to the forefront: autonomy, accountability, and innovation (Bulkey & Fisler, 2003; Sartori, 2023). Charter schools are exempted from many of the regulations that typically govern traditional public schools (Preston et al., 2012), granting them the freedom to develop their own curriculum, manage finances, establish teacher hiring criteria, and design student assessments (Roch & Sai, 2017; Sartori, 2023). Charter schools are established under local charter school laws and receive contracts from public entities, such as “local school boards, public universities, or state boards of education” (Bulkey & Fisler, 2003, p.318). These contracts usually have a duration of 3 to 5 years, providing charter schools with greater autonomy compared to district-run public schools. In exchange for this autonomy, charter schools are held to higher standards of accountability and must demonstrate their value to secure contract renewals (Bulkey & Fisler, 2003). This

accountability is often assessed through students' performance in high-stakes standardized tests (Sartori, 2023). Innovation within charter schools encompasses both administrative and academic innovations (Preston et al., 2012). Charter schools have greater administrative freedom than traditionally public schools. For instance, charter schools enjoy greater flexibility in implementing incentive pay and bonuses as strategies for attracting and retaining teachers, in contrast to traditional public schools where teachers typically follow a single salary schedule (Podgursky, 2008). In the realm of academic innovations, charter schools have the autonomy to introduce creative educational programs designed to address the unique needs of their students (Preston et al., 2012), such as after-school tutoring and extended-year schooling, which can be tailored to meet the specific requirements of their student body (Preston et al., 2012).

### **Why Conduct Research on SCT for Diverse Learners in Charter Elementary Schools?**

There are not sufficient studies on SCT for diverse learners in charter elementary school contexts. The available literature on SCT within charter elementary schools is notably scarce and lacks depth in terms of both quantity and quality. To illustrate, an extensive literature search only found five studies specifically addressing SCT in charter K-12 education. Furthermore, the existing studies in charter K-12 education produce conflicting findings regarding SCT. While some studies suggest that SCT is prevalent in charter schools (e.g., Dutta, 2014; Hastings & Handley, 2019; Hung, 2014), others assert that direct instruction is more common in charter schools (McDonald et al., 2007). However, studies highlighting SCT in charter schools often rely on teachers' perspectives and lack concrete evidence of its implementation. Furthermore, these studies often overlook the impact of diversity on teachers' perceptions and practices of SCT, despite the fact that charter schools serve diverse student populations, with some enrolling more students of color than traditional public schools (Sartori, 2023). Understanding how teachers in charter school addresses this

diversity in their perceived and practice of SCT and ensures inclusivity for all learners is a critical area that warrants further exploration.

### **Statement of the Problem**

Teachers' perspectives are referred to "...ways in which teachers [think] about their work, e.g., purposes, goals, conceptions of children, curriculum and they ways in which they [give] meaning to these beliefs by their behavior in class" (Tabachnik & Zeichner, 1984, p. 28). Teachers' perspectives of SCT imply their assumptions about students' roles, teachers' role, and relationship between students and teachers during their teaching, and based on such assumptions their attitudes towards SCT (Beck et al., 2000). In addition to these assumptions, teachers' perspectives of SCT for diverse learners involve how teachers' assumptions about diverse learners' ethnic, socioeconomic and linguistic backgrounds, and their learning abilities in their teaching, which further impacts teachers' integration of diversity into their SCT. Student diversity should be considered as assets in teaching; however, "student learning opportunities can be hindered when teachers fail to consider their own and their students' racial backgrounds and think carefully about how race can and emerge in classroom learning opportunities" (Milner, 2010, p. 16). Thus, in addition to general understanding of SCT, teachers should specifically have their perspectives of SCT for diverse learners. However, most current studies directly assumed SCT works well for all learners and explored only K-12 teachers' implementation of SCT in general in diverse classrooms (e.g., Carhill- Poza & Chen, 2020; Rillero et al., 2018), lacking how teachers perceive SCT specifically for diverse learners.

Current studies on teachers' practice of SCT for diverse learners demonstrate that teachers often fail to integrate or only integrate part of students' diversity into their SCT. The way that they conduct SCT for diverse learners is no different from teaching non-diverse learners (e.g., Nariman & Chrispeels, 2016). The reason may be that they did not realize the



importance of considering student diversity in their SCT (e.g., Nariman & Chrispeels, 2016). Even if some teachers realized the importance, the consideration of students' diversity in SCT was very superficial. For example, teachers only see diverse learners' cultural backgrounds as their prior knowledge rather their strength for their learning (Razfar & Nasir, 2019). The integration of students' diversity is to complete the curriculum goals in a constructive way rather than satisfy diverse learners' learning needs (e.g., Hug et al., 2005).

In contrast, some studies tried to address students' diversity in the SCT, mainly considering the ethnic or linguistic backgrounds. Teachers mainly use culturally responsive teaching (Deaton et al., 2014) and make students see their identity (Thompson, 2014) in SCT to address diverse learners' ethical backgrounds. Bilingual grouping (González-Carriedo & Ordóñez, 2016)) and transdisciplinary teaching (La Porte, 2016) have been employed to address students' linguistic diversity in SCT. Only considering partial diversity is problematic because racial, ethnic, socioeconomic and linguistic diversity work systematically to cause achievement gaps for diverse learners (Milner, 2010). Teachers' perspectives are important guidance for teachers' practice (Clark & Peterson, 1986; Fang, 1996). Thus, it is important to figure out how teachers perceive SCT for diverse learners and how such perspectives impact their practice of SCT for diverse learners.

Research about whether diverse learners are included or excluded in SCT is sparse. If diverse learners are included in SCT, they would enjoy the learning opportunities and benefits of SCT as non-diverse learners. Otherwise, achievement gaps would be generated for diverse learners. Current studies show conflicting results about whether SCT brings about achievement gaps for diverse learners. Some studies (e.g., Andersen & Andersen, 2017) demonstrated SCT as an instructional method generates more inequities for diverse learner. Some studies (Secker, 2002) pointed out SCT may bring more equitable achievement for diverse learners. Thus, it remains unknown whether diverse learners are included in teachers'

practices of SCT.

### **Purpose of this Study**

Based on the statement of problem, this study aimed to figure out how teachers perceive SCT for diverse learners in U.S. charter elementary classrooms. This study also tried to explore how they implement SCT in their practice under such perspectives and whether diverse learners are included in such perspectives and practices. As such, this study was guided by the following research questions:

### **Research Questions**

1. What are elementary teachers' perspectives of and perceived practice in student-centered teaching? What are the differences, if any, between teachers' perceived SCT for diverse learners and non-diverse learners?

2. How do elementary teachers actually implement student-centered teaching in their classrooms? What are the differences, if any, between teachers' SCT practice for diverse learners and non-diverse learners?

### **Theoretical Frameworks**

This study was guided through the frameworks of Critical Race Theory and critical reflection for transformative learning. Based on three propositions that “(1) race continues to be a factor in determining inequity in the United States; (2) U.S. society is based on property rights; and (3) the intersection of race and property creates an analytic tool through which we can understand social (and consequently, school) inequity” (Ladson-Billings, 1995, p.116), Ladson-Billings (1995) talked about inequities have been caused by racism in curriculum, instruction, assessment, funding, desegregation, and discipline. “Critical Race Theory helps us recognize the inequities that Communities of Color experience and offers solutions to overcome injustices (Garcia & Mayorga, 2018, p. 238). Thus, critical race theory provides a lens to see whether the diverse learners are included or excluded in teachers' perspectives and

practice of SCT.

Critical reflection for transformative teaching provides a lens to see what teachers' actual teaching practice are based on their beliefs and reflections (Brookfield, 2009; Liu, 2015; Mezirow, 1998), "including a cycle of six steps of assumption analysis, contextual awareness, imaginative speculation, reflective skepticism, reflection-based action, and reflection on reflection-based action" (Liu & Ball, 2019). Guided by theory of critical reflection for transformative teaching, this study will see how teachers perceive their understanding and practice of SCT for diverse learners and how they actually implement SCT under such perceptions.

### **Quick Overview of the Research Design**

This study employed multiple case study research method to explore how SCT was implemented in U.S. charter elementary classrooms from the perspective of teachers' understanding and practice. A case was defined as an individual charter elementary teacher. Specifically, this study adopted a multiple-case study design where "the inquirer selects multiple case studies to illustrate the issue" (Creswell & Poth, 2016, p. 99). Four teachers from four charter elementary schools were selected as cases. To answer research question one, this study conducted interviews to explore participant teachers' perceptions and practice of SCT for diverse learners. To answer research question two, this study conducted classroom observations to explore how teachers actually implement SCT in diverse classrooms.

### **Significance of the Study**

This study contributed to both theoretical understanding and practical implementation of SCT. In terms of theoretical significance, this study helped to gain a better understanding of how teachers in charter schools define SCT for current K-12 students' learning in the United States, especially for the increasingly diverse learners. It is important to understand how teachers define SCT because most definitions and theories of SCT were created for

western students before the 1980s (Shah, 2019), which may not be suitable for today's students. Second, this study contributed to adding pedagogical knowledge of how to implement SCT for diverse learners, especially how to include diverse learners in SCT. In practical significance, the findings of study provided guidance for teachers to be aware of diversity when they apply SCT for diverse learners, which is the basis of including diverse learners in SCT. Finally, this study also provided guidance and strategies for teachers in charter schools about how to integrate diversity into in the United States, as well as for learners in non-western countries.

### **Summary of Chapter One**

Chapter one is a brief introduction of this study that focuses on teachers' perspectives and practice of SCT for diverse learners in U.S. charter classrooms. SCT is a complicated concept involving constructivism, the opposite of TCT, the learning relationship between teachers and students, students' choice and underlying learning theories. Supported by most teacher education programs and influential education associations, SCT has been the mainstream education philosophy that dominates instructional methods, organization of textbooks, and evaluation of teachers' performance. The research gaps in current studies included how SCT was perceived and practiced for diverse learners in charter school contexts. Guided by the frameworks of Critical Race Theory and critical reflection for transformative teaching, this study will adopt a multiple-case study method to answer the research questions identified earlier in this chapter.

## **Chapter 2: Literature Review**

Chapter two first examined the definitions and theoretical foundations of SCT as well as the increasingly diverse education contexts for SCT in U.S. K-12 schools. The second part of this chapter focused on the implementation of student-centered teaching in charter K-12 classrooms, in public K-12 classrooms in general and in diverse elementary classrooms in specific. Based on a literature review of student-centered teaching in diverse contexts, this chapter identified major gaps in the literature regarding theoretical frameworks, methods, and findings, in order to justify the theoretical lens and research methods I adopted in my research to bridge the gaps.

### **What is SCT?**

Student-Centered Teaching (SCT) has dominated education pedagogy, practices, policies, and research for decades; however, its definitions are various and ambiguous (Starkey, 2019). After an extensive review of the historical development of SCT, Chung and Walsh (2000) found more than 40 meanings of SCT, ranging from student interest-based learning, students participating in the decision-making process of their learning, “an emphasis on development stages” to “the development of individual potential” (p. 216).

The ambiguity of the definitions mainly lies in its complexity. SCT is an overused term (O’Neill & McMahon, 2005). It is the most familiar as well as remote concept; in other words, everyone talks about it, but at the same time it can “mean different things to different people” (O’Neill & McMahon, 2005, p. 27). The complex and chaotic nature of SCT produces fundamentally different meanings to different people (Neumann, 2013). As Chung and Walsh (2000) observed, “the term [SCT] has masked complex and contradictory underlying assumptions about children and their learning and development that need to be brought to fore” (p. 229).

SCT has many synonyms, including active learning and participatory learning, which

further reinforces its ambiguity. Moreover, SCT has been continuously redefined by theorists and applied in an ever-changing educational environment (Henson, 2003). Some new concepts such as inquiry-based learning, project-based learning, personalized learning (DeMink-Carthew & Netcoh, 2019), and learner-controlled learning originated from SCT. With the integration of technology into education, game-based learning (Coleman & Money, 2020) and technology-enhanced learning (Wu & Huang, 2007) also fall under the SCT category. Furthermore, the ambiguity of defining SCT also comes from its broad theoretical foundations, such as social constructivism and humanism, making it a multi-dimensional concept (Starkey, 2019).

The many ambiguous definitions of SCT are problematic, resulting in confusion for researchers and teachers in their research and practices. How can researchers conduct true and valid SCT research without understanding its true meaning? How can teachers create real SCT learning contexts for students if they implement SCT based on this ambiguously defined concept?

SCT has often been equated as constructivism (Holt & Willard-Holt, 1995; Matthews, 2003; Yilmaz, 2008). For example, Yilmaz (2008) discussed five principles as the basis of constructivism proposed by Richardson (2003), describing the first principle as SCT—“attention to the individual and respect for students’ background and developing understandings of and beliefs about elements of the domain” (p. 37). Neumann (2013), on the other hand, warned against equating SCT to constructivism, stating “constructivism, however, is a theory of learning, not a theory of teaching” (p. 163). He argues that constructivism impacts SCT but does not define SCT.

Studies frequently define SCT as the opposite of teacher-centered teaching (TCT). For example, Cannon and Newble (2000) defined SCT as ... ways of thinking and learning that emphasize student responsibility and activity in learning rather than what the teachers are doing. Essentially, student-centered learning relies on student responsibility and activity, in contrast to a strong emphasis on teacher control and

coverage of academic content that is prevalent in much of conventional, didactic teaching. (p. 16).

Lunenberg and Korthagen (2005) also wrote that “teacher centered [learning contexts] ... present information that students are supposed to take in [,] ... [whereas] student-centered learning is focused on helping students to develop understanding, to build their own conceptions and knowledge” (p. 4). Though such definitions differentiate the two different types of teaching, they fail to describe the role of the teacher. If teachers are not supposed to present information, what is their role in SCT? These definitions also fail to clarify the role of the student. They do not provide clarity on the responsibility of the students to study and formulate their own knowledge base. Furthermore, they fail to specify the relationship between teachers and students in SCT, which is about who makes decisions about what, how, and when a student should learn.

The learning relationship between teachers and students is one important element in defining SCT. Based on different assumptions about learning relationships between teachers and students, some researchers (Chung & Walsh, 2000; Neumann, 2013) explored the meanings of SCT. For example, Brandes and Ginnis (1986) presented the main principles of SCT that specifies the role of the teacher, the role of the student, and the relationship between teachers and students: “the learner has full responsibility for her/his learning,” “involvement and participation are necessary for learning,” “the teacher becomes a facilitator and resources person,” and “the relationship between teachers and learners is more equal, promoting growth, [and] development” (pp. 12-15). Neumann (2013) provided three contours in defining SCT from the perspective of learning relationships between teachers and students: “centered in”, “centered on” and “centered with” (p. 164). To center learning in students, teachers adopt hands-off approaches for students’ education, and students can self-determine and self-propel their study. In defining the “centered in” aspect of SCT, Neumann (2013) states that “though the teacher offered some guidance to the student, that guidance was only

offered in reaction; the student stimulated, directed, and organized the bulk of the learning process” (p. 165). Students can determine their own learning pace and direction without having to attend class.

“Centered on” is the most common practice of SCT in schools today (Neumann, 2013). To center learning on students, SCT “allow[s] students’ choices within curricular frameworks established by or through the teacher” (p. 166). Based on “centered on”, students can still make choices within the learning process, but the fundamental choices about the learning objectives, outcomes, contents and questions are determined by teachers. Rooted in progressivist philosophy, “centered with” assumes that teachers and students are equal, free human beings, and emphasizes the partnership between them. To center students with, both teachers and students are curricular makers. As Bollnow (1971) put it: “a free human being encounters another [free] individual in a demanding way” that “generally eludes all predeterminations” (p. 522).

Compared to traditional teaching that treats students as passive knowledge recipients, “centered in”, “centered on” and “centered with” are all student-centered teaching. Neumann (2013) proposes these three different meanings of SCT based on three different teacher-student learning relationships expressed by Otto Bollnow: “Centered in”, “centered on” and “centered with” respectively, represent three types of teacher-student learning relationships where the “both teachers and students share the forefront” (Neumann, 2013, p.163).

SCT has also been defined from the perspective that students make choices about their own learning (O’Neill & McMahon, 2005). Students’ choice making is an important part of SCT, as Brandes and Ginnis (1986) put it, “one of the goals of SCT is to enable people to make their own choices” (p. 15). Burnards (1999) stated that “students not only choose what to study, but how and why that topic might be an interesting one to study” (p. 244). When describing the SCT course, Gibbs (1995) emphasized that key decisions in the study should



be made by students, and defined SCT as [that] learner activity rather than passivity; students' experience on the course outside the institution and prior to the course; process and competence, rather than content; where the key decisions about learning are made by the student through negotiation with teacher. (p. 244). Gibbs further provided details about these key decisions: "What is to be learnt, how and when it is to be learnt, with what outcome, what criteria and standards to be used, how the judgements are made and by whom these judgements are made" (p. 1). In defining SCT as a function of student choice, the responsibility and role of the student are emphasized and specified.

Based on different theoretical foundations, the definitions of SCT emphasize different aspects of its meaning. While the goal of SCT from the perspective of the humanist is to educate students as a whole, fully functional person (Cornelius-White, 2007), constructivism places more emphasis on individual students and their learning processes and outcomes. For example, Roger (1951) encouraged students to "take self-initiated action..." stating that they "are capable of intelligent choice and self-direction, ...are critical learners, ...have acquired knowledge, ... adapt flexibly, ...utilize all pertinent experience freely and creatively, ...cooperate effectively...[and]work...in terms of their own socialized purposes" (p. 387-388). However, built on constructivism, the concept of SCT focuses on individual students and their learning processes as well as positive student outcomes (American Psychological Association, 1997; Cornelius-White, 2007; Lambert & McCombs, 1998). For example, the American Psychological Association (1997) provided 14 learner-centered principles focusing on "the learner and the learning process" (p. 3). The principles can be summarized in four domains: "metacognitive and cognitive", "affective and motivational", "developmental and social" and "individual differences factors" (p. 3-6). Different theoretical foundations give different perspectives of SCT.

## **Criticism for the Definitions of SCT**

There are a wide variety of definitions of SCT from different perspectives. First, SCT has been equated to constructivism, emphasizing the student's ability to construct their own knowledge. However, constructivism functions as a learning theory. It has made huge impacts on SCT but cannot define SCT. Second, SCT has been defined as the opposite of teacher-centered teaching (TCT). Though SCT emerged as a way to combat the negative sides of TCT, they present opposite styles of teaching. Defining SCT in comparison to TCT is limiting. This definition fails to identify the role of teachers, the role of the students, and the learning relationship between teachers and students in SCT. Next, SCT has been defined from different assumptions on the learning relationship between teachers and students. Such relationship reflects the balance of power in the classroom: power in the hands of the teacher, in the hands of the student, or equal voices. Different types of relationships shaped different types of SCT. Another definition of SCT involves the perspective of student choice in learning. This results in a more specified role of the student in the learning environment. Finally, based on different theoretical assumptions, the definition of SCT reflects emphasis on its various aspects. While humanism focuses on educating a full, independent, and responsible person, constructivism emphasizes the learning processes and outcomes of the individual student. Though SCT has broad perspectives of definitions, no single perspective is perfect. In addition, SCT as a general concept has also been criticized for several grounds: Assumptions about students, assumptions about teachers, assumptions about learning environment, practicality and university.

### ***Assumptions about Students***

First, the assumptions about students in defining SCT include that student are actively engaged in their learning activities (Brush & Saye, 2000), students are able to set meaningful learning goals, and identify and analyze learning problems (Hannafin et al., 1994), students

can self-manage, monitor and evaluate their learning (Brush & Saye, 2000), and students know how to collaborate with peers and teachers (Johnson & Jonson, 1991). All these indicate students' own choice is key for their learning. However, students' free choice has been criticized as "an illusion" (Cannella, 1997, p. 127). Shah (2019) maintained that SCT approaches "are still concerned with social control and regulation, but this concern is articulated in the discourse of self-regulation, suggesting that freedom and choice are readily available" (p. 32). In fact, students need training and experiences to know how to make self-decisions in their learning (Johnson & Jonson, 1991). Besides, since SCT is "a notion originated from the West" (Shah, 2019, p. 22), the education tradition in some non-western cultures is not identical with SCT (Shah, 2019). Thus, educators should not assume SCT is suitable for students from non-western cultures. Students' belief in SCT are influenced by their education experience. O'Neill and McMahon (2005) stated that "students who value or have experienced more teacher-focused approaches, may reject the student-centered approach as frightening or indeed not within their remit" (p. 33).

### ***Assumptions about Teachers***

The general definition of SCT assumes that teachers are able to transform their roles from delivering contents to facilitating the classroom (Felder & Bereiter, 1996; Scardamalia & Bereiter, 1991). However, teachers' roles do not transform automatically. As Brush and Saye (2000) put it, "the process by which teachers learn to relinquish some control over the classroom and learn the various responsibilities of a facilitator is not readily apparent" (p. 81). The second assumption about teachers in defining SCT is that teachers know how to measure students' learning activities in SCT. The accountability measures in SCT are various, ranging from "group progress reports to teacher-student meetings to student outlines or stories of presentations" (Brush & Saye, 2000, p. 81). It remains unclear how teachers can apply different types of accountability measures to assess students learning processes as well

as learning products (Brush & Saye, 2000). Besides, the definition of SCT assumes the teacher has limited roles in students' learning, thus the importance of teachers' roles is underestimated. As Shah (2019) claimed, "the adult roles of observer and facilitator within this relationship seem to be quite limited" (p. 27). Though knowledge is constructed in social context and influenced by cultural perspectives, "at any historic moment there is a socially agreed upon canon of knowledge that is the best we can offer" (Deboer, 2002, p. 414). Obviously, students themselves cannot organize and learn such knowledge themselves and thus "it is the teachers' responsibility to assess and guide their spontaneous and unguided choices of activity" (Shah, 2019, p. 28).

### ***Assumptions about Learning Environment***

The definition of SCT assumes schools have teaching resources available for teachers to create SCT learning activities for students. Such resources play an important role in determining "a particular approach can or cannot be used in a given learning environment" (Hannafin et al., 1997, p. 177). Shah (2019) also claimed that SCT approaches "require substantial school restructuring and management, more open space, precious resources and small classes" (p. 22). Schools with low teaching resources equipped may have difficulties in implementing SCT.

**Practicality.** Another criticism of SCT lies in its lack of practicality. A general belief about SCT is that "[SCT] is fine in theory but not so fine in practice" (Perkinson, 1980, p. 198). The concept of SCT did not point out clearly how SCT can be implemented. As Osborn et al. (2000) claimed, the SCT theory "does not entail specific practices, and therefore, learner centeredness has to take on many different forms in training ranging from extremely learner centered to not at all child-centered" (p. 141). Besides, it's not practical to meet every individual's learning needs in the classroom. If every student was taught individually, "the complexity of classroom organization can become overwhelming, while, at the same time, it

becomes impossible to develop effective pedagogic means relevant to the needs of children in general” (Simon, 1994, p. 14).

**Universality.** The definition of SCT has been criticized as being a universal instruction method. Since 1980s, SCT has been treated as the legitimate education policy in many developing countries to support their economic and political development (Schweisfurth, 2011). However, there does not exist a one-size-fits all pedagogy approach that effectively works for every culture and every country (Holliday, 1994b; Nykiel-Herbert, 2004; Tabulawa, 2003). The universality of SCT has been criticized by reconceptualists and poststructuralists that both believed that SCT should be reconceptualized. Reconceptualists claimed that the theory “underlying this approach [SCT] developed only in the West and primarily before the ‘80s” (Shah, 2019, p. 24-25) and “knowledge should continually be reconstructed across a variety of individuals, cultures, and contexts” (Shah, 2019, p. 25). Thus, reconceptualists posited a holistic view of children’s learning needs that are affected by sociocultural contexts as well as biological factors (Shah, 2019). The poststructuralists believed that education is different with the change of time and space. Thus, “child-centered education should not be limited to...Western theories of child development but should continually be reassessed and reconstructed” (Shah, 2019, p. 25). Particularly, poststructuralists advocated that the reconceptualizing concept of SCT should “be based on diverse perspectives and that it entails particular attention to underrepresented voices” (Shah, 2019, p. 25).

In sum, the assumptions about students, teachers, learning environment, practicality and universality underlying the concept of SCT have been criticized. Students need trainings to learn how to make their choice in their study. As such, the definitions of SCT should consider the global context and students in non-western cultures. SCT fails to specify teachers’ responsibilities and their roles have been underestimated. SCT also ignores the fact

that resources required by SCT may not be available in every school. If SCT is assumed to be a better instructional approach than TCT, there exist inequity for students in schools with limited resources compared with students in affluent schools with sufficient resources. The practicality of the SCT underlying its definition is also a problem. What's more, the definition of SCT should be reconceptualized to embrace students from different social cultural contexts and their underrepresented voices. Considering the complexity in defining SCT over time and place, one important purpose of this study is to investigate how current U.S. K-12 teachers define SCT. The different studies reviewed in this chapter help provide a comprehensive understanding of the different types of existing definitions and their pitfalls. As such, this study will use the following perspectives to develop interview and observation protocols regarding how participating teachers define SCT: the difference between SCT and TCT, the relationships between teachers and students, students' roles in decision-making, and theoretical foundations for defining SCT.

## **Theoretical Foundations of SCT**

### ***Learning Theories***

SCT has rich theoretical foundations rooted in education learning theory, psychology theory and humanism theory. Focusing on how students learn, many influential thinkers such as Rousseau and Dewey expressed ideas that influenced the development of student-centered teaching. SCT can be traced as early as Rousseau, who advised “let the child do nothing on anybody's word. Nothing is good for him unless he feels it to be so” (Rousseau, 1762/1979, p.178). In his book *Emile*, Rousseau proposed the ideal education for Emile was to follow his intrinsic interests. Rousseau thought the teacher's role is “to be aware that it is rarely up to you to suggest to [Emile] what he ought to learn. It is up to him to desire it, to seek it, to find it” (p. 179). Rousseau presented the type of SCT where teachers adopt a hands-off approach, and the students are the curricular makers. Similar to Rousseau, A.S. Nell's philosophy at

Summerhill expressed the belief that education for students should be driven by the students' intrinsic purposes. Nell (1960) believed that "the function of the child is to live his life, not...according to the purpose of the educator who thinks he knows what is best" (p. 12).

Differing from Rousseau and Nell, Maria Montessori thought that a student's independence should be sufficiently supported by a well-prepared learning environment. Montessori promoted discovery learning, where a student's learning stems from working with materials instead of a teacher's lectures. However, she advocated that teachers should adopt scientific methods to guide students' learning activities. That is to say, the student's choice of activities is framed in a range of predetermined learning goals. Montessori (1912) stated that teaching was "the active help given to the normal expansion of the life of the child" (p. 104) and teachers "must accompany the scientific method" (p. 115). She created a systematic method called Montessori Method and it has been widely applied throughout the world.

Dewey was another influential thinker who explored how students should learn. He not only emphasized the importance of a student's own experiences and intrinsic learning purposes, but also encouraged a collaboration between teachers and students to create a meaningful experience. Dewey (1916) claimed that teachers should have "a sympathetic attitude toward the experience of the learner by entering into common or conjoint experience [with the students]" (p. 160). Dewey did not indicate that students should have absolute freedom in pursuing their intrinsic interests. Rather, he suggested teachers should collaborate with students "in creating and studying meaningful problems" (Neumann, p. 168).

Similarly, Paulo Freire and Carl Rogers argued for the collaboration between teachers and students. In his influential book *Pedagogy of the Oppressed*, Freire (1993) described a teacher's passive transmission of knowledge as simply to "fill the students with the contents of his narration--contents which are detached from reality" (p. 52). He (1993) also stated that "no one teaches another, nor is anyone self-taught. People teach each other, mediated by the

world” (p. 61). Freire encouraged a negotiation between the teachers and students on learning purposes and contents. Carl Rogers was an outstanding representative of humanism theory. He (1951) claimed that the “classroom [is] where all participants are co-learners in the education journey” (p. 189). From Rogers’s perspective, teachers are flexible facilitators and resource providers, collaborating with the learning of the students (Cornelius-White, 2007).

The theoretical roots of SCT are originated from learning theories, cognitive theories and humanism theories. From the perspective of learning, education philosophers throughout history have made different observations that fall into three categories: children as universal agent for their study, children as limited agent for their study, children as co-agent with teachers for their study. These three categories identify with Chung and Walsh’s (2000) summary of the forty different meanings of SCT: “that the student is put at the center of her world, that the student is the center of schooling, and that students should direct their own activities” (p. 229).

### ***Psychological Theories***

Constructivism has been recognized as one of the most important theoretical foundations for SCT. For example, Hannafin and her colleagues (1994) stated that “[SCT] approaches are rooted in constructivist epistemology: knowledge and context are inextricably connected, meaning is uniquely determined by individuals and is experiential in nature, and the solving of authentic problems provides evidence of understanding” (p. 94).

Constructivism is a psychological theory of learning. Its main theoretical root stemmed from cognitive science, particularly later work of Jean Piaget, sociohistorical work of Lev Vygotsky and their followers. What made his constructivism distinctive from its previous cognitive theories was its interpretation of knowledge. Constructivism rejects that one’s knowledge is the representation of the truth of the world. Based on Constructivism, “one cannot draw conclusions about the character of the real world from an organism’s



adaptedness or the viability of schemas of action” (Fosnot, 2013, p. 17). Rather, “what we see, hear and feel—that is, our sensory world—is the result of our own perceptual activities and therefore specific to our ways of perceiving and conceiving” (Fosnot, 2013, p. 17). Thus, knowledge “arises from actions and the agent’s reflection on them” (Fosnot, 2013, p. 17). For learners, they do not “simply mirror and reflect what they are told or what they read. Learners look for meaning and will try to find regularity and order in the events of the world even in the absence of full or complete information” (Bodner, 1986, p.874).

Teacher’s lectures are not ready-made for the students to pick up. Students will construct their conceptual structures that “constitute meaning or knowledge” (Fosnot, 2013, p. 18) through relation to their experience. When teachers teach a new concept to students, their mind experience assimilation and accommodation to reorganize their experience. Assimilation “equates meaningful learning with the learner’s deliberate effort to relate new knowledge to concepts he or she already possesses” (Castelló & Botella, 2006, p. 265). It is a process of “how perceptions are assimilated into existing cognitive structures or schemas” (Bodner 1986, p. 874). This process will also cause conflictions with previous experience, “disequilibrating the structure and causing accommodations to reconstitute efficient functioning” (Fosnot, 2013, p. 29). Accommodation is “comprised of reflective, integrative behavior (reflective abstraction) which serves to change one’s own self and explicate the object, in order to function with cognitive equilibrium in relation to it” (Fosnot, 2013, p. 28). Different individuals have their own previous experience and reconstruct their experience when they learn a new concept.

Constructivism is the opposition of both behaviorism and maturationism. Behaviorism is “the doctrine that regards psychology as a scientific study of behavior and explains learning as a system of behavioral responses to physical stimuli” (Fosnot, 2013, p. 21). It assumes knowledge or skills can be broken into parts and learning is in a sequential and

linear line that learners learn the small part or subskill at first (Bloom, 1956). The goal is to get the proficient skill that “quantify(s) to produce the whole, or more encompassing concept” (Fosnot, 2013, p. 22). Thus, behaviorism assumes learning happens when teachers give clear explanation and feedback to learners. The teachers are to develop “a sequenced, well-structured curriculum and determining how they will assess, motivate, reinforce and evaluate the learner” (Fosnot, 2013, p. 22). The learners are diagnosed as being deficient in their learning and in need of external motivation and reinforcement (Bloom, 1956). What are assessed are observable outcomes such as behaviors on predetermined task. In contrast to behaviorism, the goal of constructivism is students’ cognitive development and deep understandings. The learning process is not a linear process but complex and fundamentally nonlinear in nature.

Maturationism states that learning is a process of individual’s inner consciousness unfolding because of organism and cognition’s maturations. Maturationism is a theory that “describes conceptual knowledge as dependent on the developmental stage of the learner, which in turn is the result of a natural unfolding of innate biological programming” (Fosnot, 2013, p. 22). Instead of seeing learning as stages of automatic maturation, constructivism treats learning as learners’ active reorganization. As Fosnot mentioned, “learning is not the result of development; learning is development. It requires invention and self-organization on the part of the learner” (p. 47).

Jean Piaget and Lev Vygotsky are two prominent scholars in developing the theory of constructivism. While Piaget placed more emphasis on individual cognitive restructuring process, which is seen as cognitive constructivism, Vygotsky emphasized more on the social cultural effects on learning, which is viewed as social constructivism (Fosnot, 1993; Steffe & Gale, 1995). In theory, they are conflicted at “whether learning is primarily a process of active cognitive reorganization or a process of enculturation into a community of practice”

(Fosnot, 1993, p. 53). In teaching practice, they have different views on learning, classroom activity, and the communication between teachers and students. While cognitive constructivism sees learning as an individual's own construction of knowing, social constructivism thinks of learning as being "characterized by the subjective reconstruction of societal means and models through negotiation of meaning in social interaction" (Von Glasersfeld, 1988, p. 39). Fosnot (1993) pointed out that though both admit the role of classroom activity, cognitive constructivism views classroom activity as "students' sensory motor and conceptual activity" (p. 54) and social constructivism sees it as culturally organized practices. Vygotsky (1979) stated that "the social dimension of consciousness is primary in fact and time. The individual dimension of consciousness is derivative and secondary" (p. 30). In terms of teachers' roles, cognitive constructivism thinks the communication between students and teachers is "a process of often implicit negotiations in which subtle shifts and slides of meaning occur outside the participants' awareness" (Fosnot, 2013, p. 56). However, social constructivism sees the communication as the process that teachers help students to link their learning with social practices. Cooperating perspective has been developed to put cognitive and social constructivism together. Individual's understanding and the influence of social cultural practices are seen as been equally important and they complement each other (Saxe, 1991). As Fosnot (2013) stated,

By the same token, the sociocultural perspective complements the cognitive perspective by emphasizing that the novice trader reorganizes his or her counting activity while attempting to achieve goals that emerge in the course of his or her participation in the practice of economic exchange. (p. 63).

Constructivism has deeply impacted the varying definitions of SCT, as well as SCT practice (Starkey, 2019). Constructivism has dominantly informed education practices in the past several decades (Richardson, 2003; Schrader, 2015; Tobias & Duffy, 2009). Under constructivism, the education practices seek to promote a student-centered environment (Krahenbuhl, 2016). Additionally, teacher evaluation in the American education system

emphasizes the educator's practice of constructivism pedagogy, further consolidating SCT in classrooms (Liang & Akiba, 2015).

### ***Modern Humanism Theory***

The origins of Humanism can be traced back to the Middle Ages, promoting the worth and rationality of human thoughts. Modern humanism theory emerged in the 1960's within the field of clinic psychology. It was later applied to education, resulting in a new humanistic education. Humanistic education opposed value-free "technological training for the acquisition of skills" (DeCarvalho, 1991, p.89). Instead, it is dedicated to "educating the whole child and facilitating personal growth" (DeCarvalho, 1991, p. 89-90).

Abraham Maslow and Carl Rodgers advocated for humanistic education. They believed the ultimate goal of education was to "facilitate students' self-actualization" and to encourage the "fulfillment of their full potential" (DeCarvalho, 1991, p. 90). According to Jingna (2012), self-actualization is "people's instinct need and it is the most important inner motility, even the power to promote the society" (p. 32). Based on the growth hypothesis that the "human organism has a directional and actualizing tendency towards the fulfillment of inner potential" (DeCarvalho, 1991, p. 92), humanistic education promotes intrinsic learning that facilitates the student's potential and growth toward self-actualization. Humanistic education also suggests that human beings can self-actualize and reorganize their learning needs within the context of their necessary and sufficient learning conditions (Rogers, 1942). Based on such a belief, Carl Rogers created client-centered counseling and promoted the spread of person-centered approaches to education (Cornelius-White, 2007). Rodgers suggested the theory of SCT in 1953 and emphasized the importance of "self-directed" (p. 35) learning.

### **What is Diversity?**

It is essential to discuss SCT, as it has dominated education philosophy and teaching

practice in the U.S. K-12 classroom from the late 20th century to today. SCT features multiple definitions, however all of these definitions emphasize the importance of understanding student knowledge and needs. In order to apply SCT in K-12 classrooms, we must consider the identities and personalities of the students in addition to SCT theory. In other words, it is crucial to understand who our students are in K-12 classrooms in the United States. Today, students in elementary and secondary schools become more and more diverse in race, ethnicity, socioeconomic status, cultural contexts, home language backgrounds, gender, religion, sexual orientation, ability, and etc (NCES, 2019).

### ***Racial/Ethnic Diversity and Inequity***

Students' racial and ethnic diversity have a profound effect on teaching and learning in the classroom. Race is "the sociohistorical concept based on society's perceptions that differences among people based on the color of their skin exist and that these differences are important" (Hall et al., p. 39). Conversely, ethnicity "is generally determined by the country or countries from which our families or ancestors have come" (Hall et al., p. 38). While Race is usually associated with biology and linked to physical characteristics such as skin color or hair texture, ethnicity is linked with cultural expression and identification (Milner, 2010). The school population of the United States has become more diverse over the past two decades. Between the years 2000 and 2017, statistics on the population demographics of percentages of school-age children (5-17 years old) from National Center for Education Statistics (NCES, 2019) showed a decrease in white students from 62% to 51% and in black students from 15% to 14%. In contrast, the makeup of students from other racial/ethnic groups increased: the proportion of Hispanic and Asian/Pacific Islander students increased respectively from 16% to 25%, and from 3% to 5%. Nearly half of school-age children identify as non-White.

For the percentages of children aged 3-5 years old enrolled in full-day preschool programs in 2018 (NCES, 2019), the statistics showed that 21% were White, 26% were

Black, 21% were Hispanic, 20% were Asian, 17% were American Indian/Alaska Native, and that 19% identified as two or more races. That is to say, in full-day kindergarten programs, 79% were non-White learners. The percentages were similar in part-day preschool program in 2018, with 22% White and 78% non-White learners (NCES, 2019). The statistics demonstrated that the student population in United States K-12 schools is predominantly non-White.

Regarding the racial/ethnic distribution of teachers, it showed that the public K-12 White teachers decreased from 83% in 2003 to 80% in 2015 (NCES, 2019). In the same time period, the public black teachers experienced a 1% decrease: from 8% to 7%. In contrast, in K-12 schools, the percentages of educators identifying as Hispanic, Asian and two or more races were higher in 2015 than 2003, increasing respectively from 6% to 9%, from 1% to 2%, and from less than 1% to 1% (NCES, 2018).

Though the number of teachers of color experienced a slow increase in the past two decades, the increase rate was far less than that of students of color. A large racial/ethnic gap still remains between teachers and their students (Ingersoll & May, 2016; Liu et al., 2017). While nearly half of the K-12 students identified as non-White, the majority of public-school teachers identified as White. Such a vast racial/ethnic divide between teachers and students proved harmful to minoritized students, resulting in cultural conflicts in the classrooms. Milner (2010) claimed that “the [cultural] conflicts, incongruence, and inconsistencies that educators and students encounter in the classroom can limit students’ learning opportunities” (p. 23). Teachers tend to use their own way of cultural thinking to establish classroom codes and interpret students’ learning behavior. Minoritized students usually fail to “think, act, and live as their teachers do or as their teachers’ biological children do” (Milner, 2010, p. 26). In such cultural conflicts, the minoritized students yield to the teachers’ cultural power, and are oppressed to take orders and conform to the teachers’ cultural expectations, similar to the

treatment of “prisoners” in a jail (Noguera, 2003). Milner (2010) commented that “teaching practices that reinforce and prepare students to take orders and to eventually assume roles in the larger society either as prisoners or as those trained to take orders” (p. 26).

Moreover, such cultural conflicts lead teachers to have low expectations for minoritized students (Baron et al., 1985; Tenenbaum & Ruck, 2007), viewing them in a deficit mode (Milner, 2010). Studies showed that teachers perceived Black students as less hard working and less attentive in the classroom (Ainsworth et al., 1998; Downey & Ainsworth-Darnell, 2002). As a result, they had “low expectations and deficit mind-sets” (Milner, 2010, p. 35) for students of color, and fail to develop “learning opportunities that challenges students” (Milner, 2010, p. 35). For example, assuming that some minoritized students may not be capable of acquiring a rigorous knowledge, the teachers may avoid teaching it, thinking they are preventing students from further learning struggles. Teachers’ low expectations and deficit perspectives for diverse learners also “make[s] it difficult for educators to build on the strengths that students bring into the learning environment” (Milner, 2010, p. 36). In other words, these low expectations result in a failure to acknowledge the comprehension and skills that diverse learners possess as assets for the classroom. Studies have also demonstrated that educators underestimate the academic abilities of minoritized youth, causing the low expectations of minoritized students have for themselves (Cherng, 2015). What’s more, such low expectations “coupled with students’ understanding of their ‘deficiencies’ have direct consequences for students’ psychological, social and emotional well-being (Milner, 2010, p. 37). It may take years for underserved minoritized students to rebuild high expectations for themselves.

Hidden cultural battles between white teachers and non-white students fuel the racial/ethnic gaps in schools (Milner, 2010). As a result, these racial/ethnic gaps put the minority students in a disadvantaged learning condition and cause unequal learning

opportunities. Such inequalities are directly embodied in academic performance gaps. In public schools, statistics (NCES, 2019) demonstrated that, from 1992 through 2017, the average reading scores for White 4th- and 8th-graders were higher than those of their black and Hispanic peers. Though the performance gaps have narrowed over time, they still remain large. For example, the White-Hispanic reading performance gap at grade 8 narrowed from 26 points in 1992 to 19 points in 2017. This 19-point gap is still too large. A study on performance in math proved similar. The statistics (NCES, 2019) showed that, from 1990 through 2017, the average mathematics scores for White 4th- and 8th-graders were higher than those of their black and Hispanic peers. Similarly, the White-Black student math performance gap at grade 4 narrowed from 32 points in 1990 to 25 points in 2017. Again, the gap is decreasing but is still large.

The performance gap between White and non-White students is generally viewed as an achievement gap. According to the National Governors' Association, the achievement gap is "a matter of race and class. Across the U.S., a gap in academic achievement persists between minoritized and disadvantaged students and their White counterparts" (2005). The prevalence of achievement gap is caused by education debt due to historical, economic and sociopolitical reasons (Ladson-Billings, 2006). In the past two decades, many efforts have been made to reduce the achievement gap, but the progress remains very slow, especially in preparing White teachers to teach non-White students and in recruiting more non-White teachers. As stated by Sleeter (2017), "White teachers who by and large are not prepared to offer racially/ethnically diverse students a strong and culturally responsive education" (p. 163). Several factors have contributed to this situation. First, in teacher education programs, 78% of the teacher educators were White (Milner et al., 2013), which influenced the design of the curriculum, the recruitment and selection of preservice teachers, and the recruitment and employment of new faculty members (Sleeter, 2017). Though many teacher education



programs have designed courses related to racial, cultural and language diversity, the effort was weak, with only one or two separate courses being designated to address these issues (King & Bulter, 2015). After an analysis of multicultural teacher education course syllabi, Gorski (2009) pointed out that the syllabi emphasized differences instead of systematic inequalities.

The racial/ethnic gaps in K-12 public schools are a pipeline issue, as minoritized teachers encounter many professional barriers (Liu et al. 2017). First, these teachers often faced substandard schools and unqualified teachers in their own childhood educational endeavors (Nuby & Doebler, 2000). Thus, they had to overcome those inequalities in pursuit of higher education. Furthermore, the lack of teachers of color in the school system makes it difficult for aspiring teachers to envision a career in education. As a result, students of color do not have the advantage of role models within the education system. Even if students of color decide to become teachers, they have the potential to suffer “low scores on teaching entry tests, economic factors such as the high cost of schooling and lack of scholarships” (Liu et al., 2017, p. 6). After they enter the teaching profession, they continue to face low income, lack of respect, and institutional racism (Liu et al., 2017).

Students of color face structural and sustained inequalities in schools. Their home cultures conflict with the mainstream culture in American public schools. They are more likely to meet White teachers who “live in racially insulated communities that offer limited opportunity for contact of color” (Villegas et al., 2012, p. 287). Similarly, teacher education programs have not provided enough preparation for the white teachers to teach non-white students. Thus, White teachers will have difficulty in understanding needs of diverse learners and will ultimately struggle to deliver relevant and meaningful instructional materials to them. In other words, white teachers cannot instruct non-white students in an effective way and fail to maximize their learning opportunities. With a lack of teachers of color, non-white

students have few opportunities to see successful people in their own racial/ethnic community as role models in schools. Students of color must struggle through all these barriers to compete with their peers.

### ***Socioeconomic Diversity and Inequity***

Socioeconomic conditions exert huge impacts on the quality of education children receive. For example, Hall and his colleagues (2016) mentioned “the lack of family resources affects the quality of housing and environment in which students live, the food they eat, the way they dress, and the educational resources to which they have access” (p. 158). The diverse socioeconomic situations for U.S. K-12 students are mainly revealed by indicators of children living in poverty and the parents’ education levels. Statistics demonstrate that socioeconomic diversity intersects with other types of diversity such as race and ethnicity, causing the multi-marginalization of underserved students and their families. The statistics (NCES, 2019) depicted that, in 2018, the percentage of children under age 18 living in poverty was higher for Black and Hispanic children (32% and 25%, respectively), in contrast to the much lower percentages of White and Asian children living in poverty (10% and 9%, respectively). The rate of poverty is higher in families of color, and students from these families are more likely to live in poverty in their future—“they do not have the same starting point and equitable support” (Milner, 2010, p. 35). These students are more likely to be placed in schools with fewer resources and underqualified teachers, thus failing to move on to institutions of higher education. In 2016, the statistics (NCES, 2019) showed that, of the 16.3 million undergraduate students enrolled in Fall 2016, about 9.1 million were White, 3.2 million were Hispanic, 2.2 million were Black, and 1.1 million were Asian. This systematic inequity creates a vicious cycle, where children of color from socioeconomically disadvantaged families will continue on as impoverished parents to the next generation.

Parental education is a crucial factor influencing children’s access to educational

resources and future economic success. In 2018, statistics revealed significant disparities in parents' educational attainment across racial and ethnic groups, with Asian and White parents having higher rates of college education (69% and 53%, respectively) compared to Black (27%), Hispanic (21%), and American Indian/Alaska Native parents (15%). Income levels are closely tied to parents' education, impacting their ability to provide resources for their children. Lower-income families often face challenges in accessing quality technology and internet services, with disparities in online experiences noted, particularly among economically disadvantaged households. Sharing digital devices and limited internet access are more common in such families. Additionally, schools in these communities often struggle to hire and retain high-quality teachers, contributing to educational inequities, as newer teachers are typically less effective. In summary, Socioeconomic disparities significantly affect the quality of education children receive, as evidenced by variations in housing, nutrition, and educational resources. These disparities intersect with race and ethnicity, leading to a cycle of multi-marginalization for underserved students, who are more likely to face poverty and attend schools with limited resources and less qualified teachers.

### ***Linguistic Diversity and Inequity***

Student diversity is also apparent with the increase of English Language Learners (ELLs). ELLs are “individuals who have sufficient difficulty speaking, reading, writing, or understanding the English language to be unable to learn successfully in classrooms or to participate fully in the larger U.S. society” (de Brey et al., 2019, p. 60). Statistics (NCES, 2019) showed that the number of public students identified as ELs was higher in Fall 2017 (10.1 percent, or 5.0 million students), than in Fall 2000 (8.1 percent, or 3.8 million students). It also showed that, in 2017 Fall, over three-quarters of ELs were Hispanic and Asian students, making up the second largest group (NCES, 2019).

The statistics also revealed a higher concentration of ELs public students in urbanized

areas than in less urbanized areas. In Fall 2017, ELs made up 14.7% of the public-school population enrolled in cities, 9.6% in suburban areas, 6.8% in towns, and 4.1% in rural areas. Additionally, urban schools have fewer education resources and higher education costs than suburban schools (Jacob, 2007). Similarly, urban schools struggle to recruit and retain high quality teachers (Lankford et al., 2002; King, & Butler, 2015). The students of color in urban schools also face the teacher-student racial gaps (Whitaker, 2020). As a result, ELs also face achievement gaps in their education.

Students in disadvantaged learning conditions exist in all racial, ethnic and linguistic backgrounds. They also face disadvantages in power relationships with teachers and with the main school culture that hinder them from reaching their maximum learning potential. These cultural conflicts lead to low expectations from teachers. Furthermore, the lack of teachers with a similar cultural background results in a dearth of reliable role model figures. In turn, students tend to maintain low expectation for themselves (Cherng, 2015). The abundance of less educated parents in low income, disadvantaged communities accounts for a lack of viable educational resources. At the same time, their schools fail to support them with enough educational resources and high-quality teachers. As a result, such inequity has generated an achievement gap that causes a pipeline of impoverished parents for the next generation of students (King & Butler, 2015; Lankford et al., 2002).

SCT is an instruction tool, and it cannot generate satisfying learning outcomes for diverse learners itself. As Darling-Hammond (2000) mentioned, a mere reliance on curriculum standards and instruction method “without paying attention to teacher quality appears to be insufficient to gain the improvements in student outcomes sought” (p. 3). It’s important to figure out how teachers conduct SCT for diverse learners when they suffer systematic inequity existing in the education system.

## **SCT in U.S. K-12 Public Schools**

To compensate for the paucity of research on SCT in charter elementary schools, this study searched the literature the current implementation of SCT in U.S. K-12 public schools. Education Full Text and Eric for peer-reviewed articles between 2000 and 2023 were searched, with the keywords “student-centered teaching/instruction” “learner-centered teaching/ instruction”. After removing the overlapping studies in the two databases, 558 articles remained; and, after a close read of the abstracts, studies conducted in the contexts of other countries, higher education, and vocational education were excluded. At last, 69 studies related to SCT implementation in U.S. K-12 schools were included and analyzed in this proposal. Current studies showed that the SCT classroom shares some common characteristics: personalized activities/tasks, real-world/authentic learning context, collaborative learning experiences, self-regulation and decision-making (e.g., An, 2012; Beyhan & Baş, 2018; Reigeluth & Garfinkle, 1992). However, the implementation of SCT in U.S. K-12 education varies in different schools and classrooms (McCombs & Whisler, 1997), and in different forms (An & Mindrila, 2020). Such differences have been inflected by teachers’ perceptions of SCT (Kaymakamo, 2018; Polly & Hannafin, 2011), students’ characteristics (Hughes et al., 2013; Ikwumelu et al., 2015), learning environment (Çubukçu, 2012; Kalyon, 2020), instruction approaches, and educational technology. Teachers’ perceptions of SCT guide their classroom behaviors, while students’ different characteristics impact teachers’ SCT practices. The learning environment could be more traditional or more student-centered, depending on the influence of elements such as organization of learning spaces and time allocation to different types of activities. The instruction approaches for SCT are various, including inquiry-based instruction, problem-based instruction and project-based instruction; all of which shape the different forms of SCT.

### *Teachers' Perceptions of SCT*

Teachers' perceptions powerfully impact their decisions and actions in classrooms, influencing both students' learning outcomes and achievements (Good, 1987). In terms of SCT, teachers' perceptions include their attitudes towards SCT, and their assumptions about learners and learning. Many studies (e.g., An & Reigeluth, 2011; Yilmaz, 2008) have confirmed that teachers generally have a positive attitude towards SCT and favored constructivist theory-based instruction. The study of An and Mindrila (2017) revealed that 70% of the participating teachers held positive perceptions of SCT. In another study by Kaymakamo (2018), the majority of participating teachers believed in SCT; however, a small portion of teachers' perceptions based on teacher-centered teaching (TCT), or in a mix of SCT and TCT.

Teachers' perceptions in SCT have also been reflected in their assumptions about learners and learning. Teachers who believe in TCT tend to see learners as "resisters", "receptacles", or "raw materials" (Kaymakamo, 2018, p. 30), and learning as transmitting predefined knowledge. In other words, teaching extrinsically motivates students to learn and generates product-oriented assessment (Kaymakamo, 2018). In contrast, teachers who believe in SCT tend to treat learners as "clients", "partners", "individual explorers", or "democratic explorers" (p. 30), and learning as a construct of personal knowledge. Thus, teaching intrinsically motivates students to engage, and generates process-based assessment (Kaymakamo, 2018).

Though the majority of U.S. K-12 teachers believe in SCT, their teaching practice has not been consistent with their perceptions. In other words, teachers may report that they believe in student-centered education, but do not necessarily implement SCT into their actual teaching practice (Becker, 2000). Polly and Hannafin (2011) conducted a mix-method study in two elementary schools, revealing that teachers' proposed practice did not match their

enacted practice. The participating teachers reported that they believed in the importance of SCT and conducted student-centered activities (hands-on activities) in their classrooms. However, they gave their students direct instruction for most of the time in the classroom. Though they employed question strategy to encourage students' higher order thinking, they required the students to post answers without any explanations or justifications. Additionally, two-thirds of the questions were related to low level thinking, and none of the questions required students' problem-solving strategies.

Similar to Polly and Hannafin (2011), Kaymakamo (2018) conducted a qualitative study in order to explore middle school teachers' beliefs, perceived practice, and actual practice. In interviews, the participating teachers expressed a belief in SCT, as well as a perceived practice consisting of a mix of SCT or only TC. The data from observation, however, showed their classrooms were a mix of traditional and constructive characteristics, or more traditional than constructive. The discrepancies between perceptions and actual practice are exactly the challenges that teachers face in their classrooms (Woods, 1996). Teachers may not have enough content knowledge or pedagogical knowledge to support their SCT practice (Billiar et al., 2014). The situational constraints from school and classroom contexts, such as overwhelmingly large class sizes, insufficient school support, and learners' actions and feedback, also influence teachers' SCT practice (Golombek, 1998; Phipps & Borg, 2009; Zheng, 2009).

In addition to belief in SCT, teachers' perceptions of SCT also matter. The perceptions of SCT influence both the definitions and interpretations of SCT. A literature review by Neumann (2014) demonstrated that there exist three different definitions based on students' roles in learning: students have total control of their learning, students' control is framed within teachers' designed curriculum, and teachers and students are partners that share control over students' learning. In actual implementation of SCT, only two general

categories of SCT practices were identified in current studies. In the first category, teachers interpret SCT as putting students at the center of their activities or projects. That is to say, students' freedom of choice was limited by the teachers' designed curriculum and activities. For example, in order to attract students' interests in learning arts, Barbara (2010) recorded a high school art teacher who transformed her classroom from discipline-centered to student-centered. She defined SCT as "putting students as the center of their learning" (p. 41). In the student-centered classroom, she still lectured the art concepts and techniques, but she directed her students to choose their learning goals, directions, and art projects. She communicated with students individually about their projects and provided support and resources. The students conducted their projects at their own pace, and the teacher thought her role changed from lecturer to facilitator. In order to assess the students' performance, she changed the summative assessment that she thought hindered students to one that encouraged them to further explore the arts once they got their desired grades. In essence, she chose a more "collaborative and ongoing process" (p. 45), adopting multiple approaches such as "student portfolios, research, anecdotal records (sketchbooks and journals), and assessment of time on task in class" (p. 45). She did not give students total control of their learning, as she chose the curriculum, assignments, and method of assessment. Students only had freedom within their projects.

Similarly, Barbara (2010) reported teachers' performance of SCT practice based on its definitions as putting students at the center of learning activities. In a music SCT classroom, students were not only required to participate in classroom activities, but more importantly, they were encouraged to develop their own music thinking. After the students received a basic knowledge of a song or several songs from the teachers' lectures, they were encouraged to rethink and describe their own feelings about the songs. Next, students worked in groups to re-compose the song by "rearranging the order and combination of the layers, determining the



number of times each part is to be played, and deciding if and when singers join or when there might be an instrumental introduction, interlude, or coda” (p. 42). The teachers acted as the coordinators and designers of classroom music experiences. They decided what students should learn; however, the students connected their own personal meanings to the music, creating an authentic music experience— “actively creating and performing music, making music decisions, figuring out for themselves how the piece ‘works’” (p. 43). Compared to TCT, where teachers “tell each student exactly what and how to play, explains for the students how piece works” (p. 43), an SCT classroom informs students by what they are doing, and, in turn, what they are doing “informs their thinking” (p. 43). By engaging students in whole and authentic composing projects, instead of creating music in a specific number of notes and measures, SCT helps students to establish and expand their own musical understanding. In this study, students had free choices in their music activities; still, they did not determine what to learn or set their learning goals. Teachers’ perceptions and interpretations of SCT has largely determined the climate of their SCT classrooms.

The second category of SCT establishes teachers and students as partners. Teachers and students cooperatively determine what to learn and what to assess. For example, based on the idea that “perhaps the greatest potential value of classroom assessment is realized when we open the assessment process up and welcome students into that process as full partners” (Stiggins, 1994, p. 18). Skillings and Ferrell (2000) tried to bring students into the creation of rubrics for the assessment in a composition class. The teacher began by using teacher-developed assessment in the first several classes, in order to get students accustomed to the form of assessment. Next, the teacher guided the students to learn how to make criteria. The teacher asked questions that connected to students’ real-life experiences, such as their favorite restaurants. Students were encouraged to note the key elements in deciding on the best place to eat. The students learned to develop these key elements into criteria. Then, the

teacher guided the students to make structural criteria for reading and writing tasks. By doing this, “students gradually became partners with the teacher in developing assessment tool” (p. 453). Next, the teachers worked collaboratively with the students to develop structural rubrics for their class. For example, the teacher asked probing questions, such as what the best paper looked like. The students discussed in groups and continued to add new criteria without the teacher’s leading questions. Finally, the class created a set of standards for a paper considered the best paper. What to assess largely determines what to learn in the class. In this example, the teacher and the students collaborated to determine what to learn and what to assess.

Little research demonstrates implementation of SCT that gives students total control over their learning. Wickstrom et al. (2019) observed three types of mathematic classrooms in kindergarten: “(1) child-controlled (free-play), (2) shared-control (guided play), and (3) teacher-controlled (teacher-directed play and direct instruction)” (p. 289). The study described the child-controlled classroom as limited free choice within the children’s activities. The child-controlled classroom was defined as “[being] entirely controlled by the child as they practiced and explored mathematical ideas through their spontaneous choice of activity, [and] occasionally allowed children to practice skills they acquired from previous experiences” (p. 289). In one classroom, the teacher explained and modeled how to stack figurines in a repeating AB pattern by placing beads on a grid. One child was observed trying the AB pattern at first. Then the child increased the complexity and stacked the figurines in an ABCD pattern. This example gave students freedom in exploring their learning activities. However, they did not choose what they learned. Their learning activities were expanded based on the teacher’s demonstration and modeling.

Wickstrom et al (2019) also analyzed a portion of the three types of SCT in 20 teachers’ classrooms and found that 8% were child-controlled (free-play), 24% were shared-

control (guided play), 68% were teacher-controlled (teacher-directed play and direct instruction). The conclusion is consistent with the finding of this paper: in current U.S. K-12 schools, the common SCT practice allows students freedom within teachers' designed curriculum. A few SCT classrooms embraced the shared control between teachers and students, and no SCT classrooms give students total freedom in making decisions about what they learn, how they learn, and when they learn.

Teachers' perceptions of SCT fall into these two general categories of student control in their learning; however, there are multitudes of variations and complexities under these two categories. For example, DeMink-Carthew and Netcoh (2019) surveyed teachers that embraced constructivism pedagogy. Though the participants embraced constructivism pedagogy and tried to match their practice with the needs of individual learners, they realized student resistance to student-centered learning practice. The students preferred passive ways of learning, finding it challenging to make choices about their education. The teachers balanced meaningful student-centered learning and scaffolded by acting as partners in their students' individual projects. Unlike the first category, where the teachers design curriculum and activities and students make total decisions in their personal projects, this study sees teachers and students as co-decision makers for individual student projects.

Studies showed that K-12 in-service teachers' perceptions of SCT can be shaped through professional development. These programs are generally facilitated through collaboration between a university college of education and K-12 schools. The training sessions can be classified into two categories: building SCT perceptions and modifying SCT practices. Pedagogical training helps teachers shift their perceptions from TCT to SCT (Miranda & Damico, 2015). In terms of SCT practice training programs, some of them emphasize forms of SCT that accentuate practices like grouping students, conducting activities, and using technology (Billiar, et al., 2014; Miranda & Damico, 2015). Some of

them focus on helping teachers to identify students' learning needs and design courses to address these needs. For example, Cutter et al. (2002) described the collaboration between elementary science teachers and university educators to design conversations and small group work for identified students. They first discussed the imagined difficulties of SCT for the identified students and found the solutions to these difficulties together. The result showed that identified children made significant gains in acquiring science content knowledge.

### ***Students' Characteristics***

Students are also important factors in determining instructional practices. As Ikwumelu et al (2015) stated,

The learner occupies a central place in all matters concerning education, ranging from planning, development and implementation of a curriculum to pedagogic methods and strategies. His psychological disposition, socio-economic status as well as the level of his physiological wholesomeness and educational background influence and sometimes even determine what an educational practice is or should be. (p. 140)

The effects of instructional practices varied among different students. For example, highly anxious students exhibit better academic performance in SCT combined with a more informal climate, while low-anxiety students perform better in TCT combined with a faster learning pace (D'Amico & Gallaway, 2008). Thus, teachers should identify and respect these differences, applying the teaching practices and materials appropriately (Ikwumelu et al., 2015).

Studies also demonstrated that SCT may not generate positive learning outcomes if students fail to understand SCT learning practices (DeRouin et al., 2004). Therefore, an intervention for students to learn about self-regulate learning behavior and making decisions in their education should be implemented (Hughes et al., 2013). This intervention implies the use of "formal training design elements to systematically influence and support the cognitive, motivational, and emotional processes that characterize how people focus their attention, direct their effort, and manage their affect during learning" (Bell & Kozlowski, 2002, p. 297).

For example, Hughes et al. (2013) trained 112 young adult students to practice difficult and complex tasks. The training provided difficult tasks for students, and taught them strategies of metacognition, self-valuation, self-efficacy, error framing, general mental ability, and connectivity to prior learning experiences. The result showed that the participating students could make decisions and choices in their learning, such as choosing content, setting a pace and understanding their emotions.

Currently, there is a lack of studies that provide empirical evidence on the influence of student characteristics on teaching practices. Also, current studies about students' characteristics failed to involve students' racial, social economical and linguistical backgrounds. Students are an important factor to consider in SCT practice (Ikwumelu et al., 2015). Future studies concerning SCT should consider how students' characteristics influence teachers' SCT, especially students' racial, social economic and linguistical characteristics.

### ***Learning Environment***

Learning environment refers to the environment and culture in which students accomplish their study, including in-school and out-of-school environments (Kalyon, 2020). Culture here refers to "students, teachers, and other elements in the learning environment. The learning environment includes student-teacher and student-student interaction and what the teacher does to make the educational environment suitable for the student" (p. 156). Hannafin and Land (1997) emphasized that the learning environment has psychological, technological, cultural and pragmatic aspects for students. The psychological aspect focuses on the learner's acquisition and application of knowledge and skills. The technological aspect emphasizes tools that support learning, especially ones that aid with communication in the classroom. The cultural aspect underscores the social values of learning. Finally, the pragmatic aspect refers to situational constraints, such as economic conditions and available technology.

Teachers play a key role in creating the learning environment, as establishing a complete and creative learning environment is part of designing an effective course or curriculum (Bates, 2015). Teachers should consider the “physical elements of the educational institution (classes, laboratories, etc.), the students’ characteristics, the culture to be generated, methods to measure learning, and activities” (Kalyon, 2020, p. 156). Learning environments can be traditional as well as constructivist. For example, Çubukçu (2012) described SCT learning environment as “[being] set up in such a way that they give students the chance to take the responsibility for organizing, analyzing and synthesizing knowledge, and consequently play a more active role in their own learning” (p. 52). The elements of an SCT learning environment include time, place, infrastructure-hardware, and psychosocial environment (Çubukçu, 2012). Time refers to teachers’ instructional time (Fisher, 2009), requiring them to create a sufficient, efficient and flexible environment for learners to construct their own knowledge at their own pace and communication (Çubukçu, 2012). The learning place should “offer access to various information and acoustically convenient” (Çubukçu, 2012, p. 54). Infrastructure-hardware refers to educational technologies present in the learning environment that allow students to construct, apply and synthesize their knowledge (Çubukçu, 2012). Psychosocial environment refers to the real-world context that stimulates students’ intrinsic learning motivation (Çubukçu, 2012).

McDavid et al. (2018) studied the physical learning environment, focusing on the organization of classroom. Traditional classroom organization limited the effective implementation of SCT with fixed desks, a single blackboard, restricted movement of teachers and students, and prohibitive access to technology (Beichner, 2014; Hannafin & Land, 1997; Petersen & Gorman, 2014). In SCT, physical space should include “reconfigurable tables and chairs, space for instructors to move about the room, internet connectivity, power outlet access and workspace to use computers comfortably, and multiple

screens to project media” (McDavid et al., 2018, p. 30). Current studies about SCT learning environments focused on the physical learning space in classrooms, as well as teachers’ instructional time allocation. Few studies exist on the influence of student characteristics and cultural contexts on the SCT learning environment.

### ***Instructional Approaches***

The implementation of SCT in U.S. K-12 schools varies in the instructional approaches to SCT. The most common instructional approaches in SCT classrooms are inquiry-based learning (IBL), project-based learning, and problem-based learning. IBL encourages students to investigate and explore evidence, and to discover concepts and generalize ideas. IBL refers to “a cluster of strongly student-centered learning and teaching approaches in which students’ inquiry or research drives the learning experience” (Levy et al., 2010, p. 6). IBL is rooted in the constructivist premise that learning is a continuous process of the learners’ construction and reconstruction of their own representations of knowledge (Ku et al., 2014). IBL may start with fieldwork, a problem, a case scenario, or a question. After identifying the question/problem/theme, students try to use their prior knowledge and experiences to decide the direction and methods of their inquiry. Next, they employ various methods, such as performing experiments, reading books, and searching the Internet, to look for information and explore evidence for inquiry. Based on the evidence, they will reflect, discuss, analyze, critique, conceptualize, synthesize and create their own knowledge (Levy et al., 2010, p. 6). Finally, they will share their results and receive feedback from their peers and teachers. Though there are different ways to conduct IBL (Albright et al., 2012), the nature of IBL is to encourage students to learn by performing both “hands-on” activities and “minds-on” activities (DiBiase & McDonald, 2015, p. 30).

Project-based learning is another commonly used instructional approach in SCT. Project-based learning is “an active student-centered form of instruction which is

characterized by students' autonomy, constructive investigations, goal setting, collaboration, communication and reflection" (Kokotsaki et al., 2016, p. 267). Project-based learning is based on three principles of constructivism: "[that] learning is context-specific, [that] learners are involved actively in the learning process and [that] they achieve their goals through social interactions and the sharing of knowledge and understanding" (Al-Balushi & Al-Aamri, 2014, p. 214). Project-based learning is a particular type of IBL (Kokotsaki et al., 2016). In both project-based learning and IBL, students are given a question or problem that they must solve. Moreover, they are expected to design methods to answer the question or solve the problem (Al-Balushi & Al-Aamri, 2014). While IBL particularly focuses on students' freedom to choose desirable approaches to define and direct their inquiries, teaching them "the research approaches and techniques of their disciplines" (Levy et al., 2010, p. 6), project-based learning is unique in its end product, as it can serve as a model to solve a set of similar problems (Gülbahar & Tinmaz, 2006). Project-based learning creates "concrete artifacts (a draft of design or an end product)" (Helle et al., 2006, p. 291). Moreover, it could be "the production of tangible, meaningful artifacts" (Barak & Dori, 2005, p. 119). The collected artifacts could be videos, photographs, sketches, or reports (Holubova, 2008).

Problem-based learning is "a student-centered instructional method based on the use of ill-structured problems as a stimulus for collaborative learning" (Yukhymenko et al., 2014, p. 94). An ill-structured problem refers to a real-world problem scenario related to the curriculum or topic that the teacher wants to address. Problem-based learning begins with an ill-structured problem (Savin-Baden & Major, 2004; Walker et al., 2015). Students formulate and analyze the problem by understanding it through the lens of their current knowledge base (Hmelo-Silver, 2004). After this fact-identification step, they postulate possible solutions by generating hypotheses. At the same time, they identify "knowledge deficiencies" (Hmelo-Silver, 2004, p. 236) that make up the learning issues for students' self-directed learning



(Hmelo-Silver, 2004; Walker et al., 2015). To solve the problem, students set their learning goals and strategies in small groups and look for disciplinary and interdisciplinary resources to bridge the knowledge gap. They then apply the new acquired knowledge to solve the ill-structured problem (Hmelo-Silver, 2004; Walker et al., 2015). Finally, students reflect on “what they learned, and the effectiveness of the strategies employed” (Walker et al., 2015, p. 8).

IBL, project-based learning, and problem-based learning are common SCT instructional approaches in U.S. K-12 education. They share many common features that encourage students to take responsibility for their learning and establish a learning issue within a real-world scenario where students learn “by fitting new information into existing cognitive structure and are unlikely to learn if the information has few apparent connections” (Prince & Felder, 2006, p. 123). Each of these approaches ask students to construct their own knowledge instead of absorbing lectures, and to work in small groups in collaborative ways.

### ***Educational Technology***

Educational technology is an integral part of current K-12 education. The National Research Council (2000) noted the use of technology to provide real-world contexts for curriculum, scaffolding for students, opportunities for effective interaction and communication in the classroom, and to build learning communities for students. Education technology has provided opportunities for students. Studies on educational technology frequently use the term “affordance” to refer to the properties of technology that make learning and teaching possible (Norman, 1988). In 2018, the National Academies of Sciences, Engineering, and Medicine (NASEM) (2018) established eight key affordances of educational technologies, including interactivity, adaptivity, feedback, choice, nonlinear access, linked representation, open-ended learner input, and communication with other people (p. 165-p.166).

Educational technology plays a role in influencing instructional method. As Donovan and his colleagues (2007) mentioned, “prior research implies that the use of technology in some way encourages the shift of towards more student-centered or constructivist classrooms” (p. 280). Technology supports SCT in many ways. For example, “some teachers find that technology encourages greater student-centeredness, greater openness toward multiple perspectives on problems, and greater willingness to experiment in their teaching” (Levin & Wadman, 2006, p. 161). With the integration of technology, the classroom emphasizes individual tasks and collaborative tasks instead of textbooks (Buenjes, 2002; Sandholtz et al., 1997). NASEM (2008) provided a framework to see what opportunities technology offers SCT: “learning through game play”, “leveraging stories and favorite characteristics”, “empowering learners as producers and creators”, “making” and “embodied cognition”, and “conversational agents” (p.172-p.179). First, technology enables students’ learning through game play, including serious games aimed at specific academic content (Gloria et al., 2014; Stege et al., 2011), as well as video games that engage and motivate student learning (Prensky, 2001). Second, technology can use multimedia to link K-12 education to students’ favorite stories, personalities, and characters. Third, technology empowers learners to be knowledge and information producers or creators, such as editing information on the Wikipedia. Fourth, technology, such as wearable technology, encourages students to use their hands to “assemble, build, mold or modify” (NASEM, 2008, p. 176) physical or virtual objects. Fifth, technology can mobilize learners’ multiple senses to interact with the learning environment simultaneously. Finally, technology agents can create a dialogue with learners to “promote reasoning, social interaction, conscious deliberation and model learning” (NASEM, 2008, p. 179).

Though technology brings various advantages to SCT, by integrating technology into a classroom does not necessarily make the teaching student-centered. Technology is only a

tool; the application of technology by teachers in their classroom matters most. With a traditional pedagogical belief that teaching is transmitting knowledge, teachers may avoid using technology in their classrooms (Levin & Wadmany, 2006). Teachers who have low expectations for their students may use technology less frequently in their classroom (Warschauer & Matuchniak, 2010). Teachers may grow accustomed to existing knowledge and resist using new technology (Zhao & Frank, 2003).

In summary, research shows that SCT has the potential to improve students' academic performance, learning motivations and attitudes, participation and engagement, and learning ownership (Armbruster et al., 2009; Hains & Smith, 2012; Mason et al., 2013; Oblinger, 2017). The barriers of implementing SCT include organizational structures in classrooms and schools, large class sizes, a lack of resources and technology, time constraints, and standardized tests (An & Reigeluth, 2011; Yilmaz, 2008). Current studies about the implementation of SCT in U.S. K-12 classrooms focuses on teachers' perceptions of SCT, students' characteristics, learning environment, instructional approaches, and education technology. There are some limitations among current studies. First, the majority of the studies did not describe participating students' demographic backgrounds. Second, most studies focused on classroom activities, failing to mention both the school and student family contexts. Third, studies lack a description of teaching materials applied in SCT classrooms.

### **SCT in U.S. Charter K-12 Schools**

To gain insights into research on student-centered teaching in U.S. charter K-12 schools, this study conducted a search in Education Full Text and ERIC for peer-reviewed articles published between 2000 and 2023. However, the search yielded only 5 empirical studies. These limited findings align with the conclusions of Dallavis and Berends (2023), who conducted a synthesis of 200 studies on charter schools between 2014 and 2019,

revealing the presence of only 4 empirical studies specifically focused on student-centered teaching.

Four of the studies utilized a qualitative research design, with a focus on exploring the general use of SCT in charter schools. However, they did not delve into specific classroom practices. They also did not explore how teachers perceive and implement SCT strategies to support diverse learners. For instance, McDonald et al. (2007) employed observation metrics to quantify the extent to which teachers in three charter schools (one elementary, one middle, and one high school) incorporated SCT over two academic years. The findings revealed that, in the elementary school, the proportion of classroom observations in which direct instruction was frequently to extensively observed rose from 67% in the initial year to 83% in the subsequent year. However, there were limited SCT practices such as cooperative learning, individual tutoring, and ability grouping observed in the observed charter elementary school. Notably, the observed elementary charter school catered exclusively to African American students (92% of whom were from low-income backgrounds), and the observation metrics did not address diversity in their evaluation criteria.

The second qualitative study conducted by Dutta (2014) solely focused on teachers' perceptions of how charter schools allowed for flexibility in implementing project-based learning (PBL) practices. This particular charter school served students from kindergarten to eighth grade and had a curriculum that was based on both educational standards and thematic goals. These thematic goals were collaboratively established by parents, administrators, and teachers at the beginning of each academic year. Teachers were given the autonomy to collaborate across disciplines and design cross-curricular lessons as part of their instructional approach. Furthermore, teachers discussed their ability to seamlessly integrate both direct instruction and PBL into their teaching methods. While the school employed formal and informal assessments, they did not assign traditional grades to students but instead provided

reports on students' progress. It's important to note that Dutta's (2014) study primarily addressed teachers' viewpoints, lacking documentation of specific classroom practices to further investigate how their perspectives impact their classroom practices. Additionally, the study did not mention the diversity of the student population, neglecting to consider how diversity might have influenced teachers' perceptions and practices of SCT.

The third study conducted by Hastings and Handley (2019) utilized both interviews and observations within a charter high school. However, the study did not provide specific descriptions of classroom practices. Instead, it relied on teachers' perceptions obtained through interviews, and it simply mentioned that their observations confirmed what the teachers had discussed during the interviews without offering detailed descriptions. Teachers' perceived student-centered approaches included concepts such as the teacher serving as a facilitator, peer-to-peer teaching, hands-on instruction, behavior modeling, and individualized instruction. Notably, the study did not delve into discussions of race and racism within the context of these perceived student-centered approaches. Moreover, it did not address the diversity of the student population, leaving unanswered questions about how teachers implemented SCT within the charter school and whether their SCT practices considered and addressed issues of diversity and equity.

In contrast to the third qualitative study, the fourth qualitative study conducted by Hung et al. (2014) offered more detailed observation data within a secondary charter school. Through interviews with administrators, students, and teachers, the study revealed that instructional approaches in the school encompassed direct instruction, self-learning in online programs, credit by examinations, and SCT. Interestingly, teachers perceived their overall teaching approach as SCT, emphasizing guidance, care, and support, sequential development of academic skills, adaptability, and various methods of assessing students' progress. However, the observation data indicated variations in teachers' instructional styles across

subjects, with math classes leaning towards direct instruction and English classes adopting more student-centered instruction, including activities like cooperative learning, role-play, graphic organizers, and guided practice. Nonetheless, these descriptions were generalized and lacked specific insights into student-teacher and peer interactions, as well as the racial and ethnic backgrounds of students. Furthermore, teachers' perceptions and SCT practices did not address issues of diversity, and their perceived challenges from students reflected a deficit mindset towards their students and families, such as students' deficiencies, students' lack of family support, and violence.

The fifth study (Dobbie & Fryer, 2013) took a quantitative approach and did not specifically focus on student-centered teaching. Instead, its aim was to identify factors contributing to the effectiveness of charter schools, as measured by improved student performance in assessments. It defined SCT as data-driven method to differentiate instruction based on students' performance in their tests. The study conducted regression analysis, which revealed that highly effective teachers tended to employ fewer differentiation strategies in their lesson plans. Additionally, it found that high-achieving schools placed greater emphasis on data utilization compared to other charter schools. For instance, high-achieving elementary schools conducted student assessments 3.50 times per semester, while other charter schools did so 2.69 times. Similarly, high-achieving middle schools assessed students 4.25 times, while other charter middle schools did so 2.16 times. Furthermore, higher-achieving schools were somewhat more inclined to track student progress through data and employ greater differentiation strategies compared to their lower-achieving counterparts. Notably, this study primarily focused on assessing the impact of these factors on students' test scores rather than exploring how instructional methods addressed individual learning needs. It did not address students' diversity either.

In summary, the current body of research on SCT in charter schools is both limited in quantity and quality. These studies yield conflicting results. While McDonald et al. (2007) asserted that direct instruction was the predominant teaching method in charter schools, other studies (such as Dutta, 2014; Hastings & Handley, 2019; Hung, 2014) indicated that charter schools tended to emphasize SCT, allowing teachers more autonomy in implementing student-centered approaches (e.g., Dutta, 2014). However, it is important to note that the studies highlighting SCT as the primary instructional method in charter schools often relied on teachers' perspectives or lacked sufficient evidence to illustrate how SCT was actually implemented by teachers in charter school settings.

Furthermore, it is noteworthy that all the five studies analyzed above failed to take into account the role of diversity in student-centered practices. In fact, current studies indicated that public charter schools often have student populations similar to those of traditional public schools (Seifert et al., 2022). In some cases, charter schools even enroll more diverse student bodies than their traditional counterparts (Sartori, 2023). According to data from the National Alliance for Public Charter Schools for the 2020-2021 school year, 69.3% of charter school students were students of color, as opposed to 53.4% in district public schools (Xu, 2022). Current studies also showed that charters schools struggled with meeting the needs of diverse learners (Jones-Goods, 2015). Given the significant diversity among the students served by charter schools, it becomes crucial to investigate how teachers' perceptions and implementation of SCT address the racial, cultural, and ethnic diversity of their students. Additionally, it is important to assess whether these student-centered learning opportunities are inclusive of all diverse learners or if certain groups are excluded from them.

### **SCT for U.S. K-12 Diverse Learners**

Current K-12 students in the United States have become more diverse regarding their racial, ethnic, socioeconomic, and linguistic backgrounds. These students are more likely to

live in poverty and study in schools with fewer quality teachers and educational resources (Hall et al., 2018, p. 46-48). Thus, the achievement gap which has been defined as “disparities in the academic performance and achievement among groups of students” (Hall et al., 2016, p. 42), has widened. As a result, it is necessary to explore how SCT has been implemented in diverse K-12 classrooms in the United States.

Guided by how SCT is implemented for U.S. K-12 students, the key words of “student-centered teaching” and “diverse learners” have been searched in ERIC and Education Full Text. In addition, “student-centered teaching” has been used in the search interchangeably with “learner centered teaching”, “constructivism”, “project-based learning”, “problem-based learning” or “inquiry-based learning”. The key words “diverse learners” has been used interchangeable with “English language learners”, “students of color” or “minority students”. A total of 529 results were generated. Next, all articles have been scanned through to narrow them down by excluding those about: (1) adult education or higher education; (2) learners of physical or cognitive disability; (3) academic diversity: students with gift or students who struggle with school. Thirty-four articles were finally identified as directly related to implementation of SCT in U.S. K-12 classrooms, including 11 qualitative studies, 10 literature review articles, and 13 quantitative studies. The findings of these studies were classified into four categories in this proposal: teacher instruction, student learning outcomes, different subjects, and achievement gap.

### ***Teacher Instructions***

Teacher instructions in SCT for diverse learners included two big categories: general implementation or taking learners’ diversity into account. The general implementation means that the instruction of SCT for diverse learners were no different from for non-diverse learners. The teachers did not consider diverse learners’ cultural, ethnic, socioeconomic and linguistic diversity when they implemented SCT. In some studies, teachers didn’t realize the



importance of taking students' diversity into account. For example, Nariman and Chrispeels (2016) conducted a case study in an elementary school serving predominately socioeconomically disadvantaged English language learners. Teachers in the sample school were trained to understand concepts and approaches of problem-based learning (PBL) and transform their role from teacher-directed teaching to teacher-guided PBL. After trainings, the teachers applied PBL in their classrooms to address the course standards, such as Next Generation Science Standards. They felt diverse learners learn better through PBL than lecturing, since students have a higher engagement in PBL. The teachers failed to specifically design their teaching by integrating their students' cultural backgrounds and practices. In addition, the PBL was implemented to meet the course standards instead of diverse learners' needs.

Though teachers in some studies realized the importance of integrating students' diversity into their teaching practice, such integration was very superficial. For example, Razfar and Nasir (2019) explored how to use diverse learners' funds of knowledge for scientific practices. The students' fund of knowledge in science was defined as "nonschool cultural practices that can be used to develop formal scientific knowledge, practices and dispositions" (p. 227). The participants, three self-identifying bilingual teachers, asked diverse learners to investigate a community-problem related to science. Then students were required to collect information "by reaching community members using interviews" (p. 232) and family talks. In the class time, students would use their funds of knowledge for peer discussions or answering teacher's questions. The SCT teaching practice tried to integrate diverse learners' in-school and out-school experiences. However, diverse learners' funds of knowledge were only seen as their previous knowledge rather than their strength for their learning. In one case, a student tried to use his funds of knowledge—information from Bible to explain science, but he cannot provide any real evidence to prove his claim. Then the

teacher guided the student to use computer to look for scientific evidence. As a result, the student was convinced that “the computer [is]...a credible source of information” (p. 233). The funds of knowledge were only “a legitimate source for teaching” (p. 228). Teachers did not ask any specific questions about diverse learners’ out-of-school cultural practice that was related the science learning. And the peer discussion was only to share funds of knowledge. The participating teachers realized the importance of students’ funds of knowledge outside school, but their SCT for diverse learners failed to take diversity into real consideration. In another study, La Porte (2016) tried to address the disadvantaged elementary diverse learners by using inquiry and project-based learning. Students collaboratively work in groups to inquire and investigate their projects. Teachers tried to create a classroom that embraced and respected diversity by introducing artwork from artists from other countries, learning about other cultures, teachers’ guidance of reflection on international events and histories, and students’ display works that reflecting cultural diversity. More than half of the participating students were Latinx. However, most artworks the teachers introduced were from Japan and Mexico. The diverse learners saw artworks from other cultures instead of their own cultures. “Many students connected personally with historical events involving cultures other than their own” (p. 473). What the teachers tried to do was to cultivate students’ international empathy and create embracing classroom environment for students. Teachers failed to really empower diversity students through their SCT.

Teachers’ use of technology in SCT for diverse learners was also explored. Current studies found that technology was important but not necessary for supporting diverse learners’ student-centered learning (Rillero et al., 2018). Technology alone cannot guarantee more or better SCT for diverse learners. Technology should be implemented to support “instruction that align with notions of student-centered teaching...multi-turn interactions between peers and with the teacher, and collaborative experiential learning (Carhill-Poza, &

Chen, 2020, p. 64). However, in these studies teachers also failed to take diversity into real consideration. For example, Hug et al (2005) tried to integrate technology into project-based learning for urban middle school diverse students in science learning. It aimed to address the reform call for science for all and assumed that the support of technology for science curricula could eliminate inequalities in classrooms. With two technologies employed in the study: one for designing instructional materials, and one for virtual experience, students in groups came up with their questions and searched information to investigate their topics. Technology provided scaffolds for diverse learners to connect real life with scientific contents, but such scaffolding did not help embody students' racial, socioeconomic and linguistic differences in the classrooms, nor achieve its goals of addressing inequity issues among diverse learners. The application of technology for diverse learners has no difference from for non-diverse learners. In another study, Carhill-Poza (2019) conducted SCT for diverse learners in an urban high school. Teachers integrated iPads into their instruction. The result showed technology can address diverse learners' language diversity in SCT because "the role of iPads as translators of longer texts was particularly divisive within the school community" (p. 97). The technology in the study was only to promote diverse learners' language understanding, but not to their real cognitive growth or other learning outcomes.

In contrast to the general implementation of SCT for diverse learners, some studies did try to address learners' diversity. Theoretically, Glazewski and Ertmer (2020) tried to formulate a theoretical framework to advocate advanced learning (complex problem-solving ability) for diverse learners. It pointed out the pedagogical gap that diverse learners face: no access to advanced pedagogical practices, digital divide and limited access to opportunities for complex problem solving. The promoted theoretical framework combined with cultural responsiveness teaching particularly critical reflection and meaningful action. Critical reflection requires teachers to "explicitly declare how they understand and engage with diversity" (p.

686) when they integrate complex problem-solving practices into their teaching practice. Teachers are supposed to reflect “content”, “learners”, “activities”, and “assessment”. Especially for the activities, teachers should reflect whether they provide opportunities for diverse learners to show their strengths and utilize their out-of-school knowledge and experiences. The second part of meaningful action encompasses disciplinary identity which deliberately design curriculum to unfold students’ self-identity. In summary, it promoted a combined theoretical framework to address how to implement complex problem-solving teaching practice for diverse learners.

Practically, teachers addressed learners’ racial diversity in their SCT mainly through culturally responsive teaching (Deaton et al., 2014; Glazewski & Ertmer, 2020). Critical reflection was an important aspect of culturally responsive teaching (Glazewski & Ertmer, 2020). Deaton et al (2014) explored how White teachers employed critical reflection to bridge the cultural gaps existing between the White teachers and ELLs. The study was conducted in a predominately non-White elementary school and the participating teachers were all White. The participating teachers were asked to watch the videos of their own instructions and write journal entries and analysis of their teaching. A framework of reflective questions was provided for guiding them to analyze their teaching. The findings showed that the reflection helped the teachers realize how cultural differences affected their teaching and they adjusted their strategies to address the diverse learners’ learning needs, such as using different terms familiar to students to explain knowledge and understanding students’ experiences and background knowledge before selecting teaching materials. It also showed it’s necessary to regularly communicate with diverse learners’ parents to understand the students. Students can act as translators during the teacher-parent meetings. Through reflection, the participating teachers continually improved their SCT by “identify[ing] and frame an issue of practice and implement a plan for solving issues” (p. 223). For example,

one teacher examined her teaching practices in the videos and found some students were not engaged in the task. Based on that, she adopted cooperative learning groups and help the struggling students keep on task. In the video, one teacher found her keeping overlooking one shy diverse learner who attempted to participate in class. She reflected that the student can only speak a little English and she ignored the shy student's raising hand during the class. The participants in the study also felt it necessary to address diverse learners' emotional needs. For example, in one case there was a conflict between the school's requirement that students needed to attend school each day and the diverse learners' need to attend a boycott to protect their family members from being arrested. To get the students on learning task, before the lesson began, the teacher addressed the students' concerns and tried to focus them back on the class. Though the study didn't provide many details about how the teachers implemented SCT for diverse learners, it emphasized that teachers should value student's language and cultural contexts in their teaching and try to use reflection to reconstruct teachers' teaching experience and connect instructions to diverse learners' needs.

By making students see their identity in learning, students' sociohistorical diversity has been addressed in SCT. Thompson (2014) explored how to integrate diverse learners' sociohistorical diversity in SCT by engaging their identities in their learning experience where "student's investment of time and effort in negotiating ideas about oneself as a person in history and as a product of interactions with others and in the process authoring oneself to others" (p. 394). The participating students were high school female diverse learners who failed their science class. This study assumed that the identities are often constructed across time and places and students usually have two types of identities in school: school insiders and outsiders. The students tried to identify and learn themselves by "science gleaning content for outside worlds, supporting the group, negotiating stories across worlds, and critiquing science" (p. 392). Especially, the students were encouraged to share their personal

stories and experiences alongside the science curriculum, and their peers would give responses to their stories. After the learning activities, the students identified themselves as helpers for their classmates and advocates for themselves. The findings revealed that diverse learners should see themselves in the work of SCT and “embed a sense of self in the discursive practices” (Brown, 2006, p. 121) in SCT classrooms.

Students’ linguistic diversity were also addressed in some studies, mainly by bilingual grouping and transdisciplinary teaching. González-Carriedo et al (2016) tried to use constructivist approaches for elementary diverse learners. The participating teachers saw themselves as facilitators and encouraged collaborative work among students. Specifically, the students were set in groups of two with one native English speaker and one ELL. The bilingual pairs collaborated to establish group goals and support each other. Such bilingual grouping is helpful since it “facilitates comprehension of subject area by the second language learners, who receives linguistic and academic support from his or her partner, who speaks the language as a primary language” (Gomez, et al., 2005). However, the study didn’t mention the details of the teaching activities and the evidence of benefits brought by bilingual pairs. In other studies, teachers employed transdisciplinary teaching to address linguistic diversity. For example, La Porte (2016) found that teachers encouraged minority students to present the concepts they learn in regular class in the form of arts. The result showed “evidence of creative thinking and its applications learned in the art class expanded in the regular classroom” (p. 475). As a result, the students did not have to use their language when they lacked proper vocabulary.

In summary, for the implementation of SCT in diverse classrooms, some teachers did not realize the importance of considering diversity in their instructions. Though some teachers tried to integrate diversity in their SCT, they only saw diversity as teaching resources rather than students’ strengths. The technology integration in SCT for diverse

learners was also very superficial to address students' diversity. In contrast, some teachers did consider diversity in their SCT. For racial diversity, some teachers adopted culturally responsive teaching in their teaching practices. With identity engagement, the sociohistorical diversity was addressed. Bilingual grouping and transdisciplinary teaching were used to address linguistic diversity in the SCT for diverse learners.

### ***Learning Outcomes***

Four studies explored the learning outcomes of SCT for diverse learners. The method to collect student learning outcome data included quantitative classroom observations (Carhill-Poza & Chen, 2020), participant observation (La Porte, 2016), student surveys (Talbert et al., 2019), student interviews (Braden et al., 2016), large education dataset, and cogenerative dialogues between teachers and students (Braden et al., 2016). The learning outcomes were around students' academic performance, self-confidence, motivation and engagement in SCT.

In terms of academic performance, collecting data across the U.S from 236 elementary schools, Salinas and Garr (2009) designed an experimental study to explore the effect of SCT on the academic outcomes for minority students. The study showed positive relationships between SCT and minority students' academic performance. In fact, minority students have positive beliefs in SCT. Braden et al (2016) explored urban middle school diverse learners' perceptions of SCT in science classrooms. It showed diverse learners identified SCT activities as "best practices" (p. 446). They articulated that compared to traditional lectures, project-based learning was more useful and supportive for them to understand science concepts.

Carhill-Poza and Chen (2020) employed observations and students' surveys to investigate factors influencing high school diverse learners' academic language performance in SCT classroom. SCT was measured by how teachers interacted with students and diverse

learners' growth of English proficiency was scored on the standardized test. It demonstrated that diverse learners' academic performance in SCT was significantly associated with instructional support and students' characteristics.

Diverse learners' self-confidence and motivation have been boosted in SCT. With participant observation, La Porte (2016) tried to discover whether SCT can contribute to the socioeconomically disadvantaged elementary diverse learners' learning. The finding showed that student's self-confidence has been promoted by peer support, "recognition of students' area of expertise" (p. 471), teachers' positive feedback and respect for diversity. Students' motivation for learning has been boosted by giving students choice in their learning. For example, students had the choice in developing and adjusting evaluative rubric for summative presentations and selecting topics that they were interested from a suggested list provided by teachers.

Diverse Learners' engagement in SCT classroom were examined in current studies. They were all measured by student surveys. In terms of academic engagement, diverse learners were asked "how many hours they spend on homework after school, how many times they had been late to class, and how many times they had skipped class in the last week" (Carhill-Poza & Chen, 2020, p. 58). It showed academic engagement was highly associated with SCT for diverse learners. However, the study by Talbert et al (2019) reached contrast results. It collected data from the Mid-Atlantic region's middle and high schools and tried to examine whether ethnicity was a moderated factor in the relationship between SCT and students' academic, behavioral, emotional, and social engagement. SCT was measured by students' authority in their learning. The results showed in term of the four dimensions of engagement, both SCT and TCT were less effective for minority students compared with Caucasian students. When the engagement was measured at school level (including both minority and Caucasian students), SCT were significantly positively related to the four



dimensions of engagement for minority students. However, for minority students only, SCT had a significant negative influence on minority students' engagement in all these four dimensions. Thus, ethnicity played a moderated role in the relationship between SCT and learners' engagement. Talbert et al (2019) mentioned three possible explanations for the diverse learners' negative experience in SCT: diverse learners experience stereotype threat; diverse learners prefer established community- and family-type classroom environments (Howard, 2001); diverse learners' self-efficacy was undermined by teachers. Nganga et al. (2019) also discussed stereotype threat in SCT for diverse learners. Based on student interviews, it explored diverse learners' experience in a majority White high school. Generally, they had favorable school experiences because the schools and teachers cared them. They felt a sense of belonging and inviting in the classroom because their teachers cared. For example, the 11th grade immigrant Hispanic female reported feeling safe because her caring teachers reduced anxiety she felt as an ELL. Another student said he felt he was given the same level of respect as other non-African American, and he kept being an "A" student. Generally, they thought their teachers were sensitive to their individual needs. In terms of instruction, the caring teachers employed SCT through dialogic instructional process. In one case, one student discussed "how having a dialogue with some teachers got them interested in her heritage" (p. 8). Another student said he was happy with his school experience because some of his teachers communicated with him in Spanish and the teachers knew him on a personal level. But they think the school should view diversity as normal. They felt they were seen as "othered" (p. 4) outsiders. Thus, they recommended "normalization" (p. 4) of diversity by implementing culturally responsive education where "educators have a moral and ethical responsibility to implement inclusive education" (p. 7). Besides, some of them felt stereotype threats. For example, a Japanese student said the World War Two was taught in a way that was less disrespectful to Japanese people. And he thought

the textbooks was not accurate about Japanese culture since they failed to mention the good things in Japanese cultures. Another African American student thought he was stereotyped as being good at playing basketball only. And his academic ability was not expected by his teachers and classmates. As a consequence, he did not ask teachers for academic help because he did not want to be seen as being academically weak.

In addition to stereotype, course placements influenced diverse learners' learning outcomes in SCT. With nationally representative data and student surveys, Callahan et al. (2021) investigated whether high school diverse learners' math academic performance and engagement in SCT was moderated by course placements. After math placement tests, students were put in different levels of math courses: advanced math course and lower-level math course. The academic performance was measured not only by math GPA but also scores in classroom engagement performance, such as student-led math discussions. It showed generally SCT was positively associated with academic outcomes for all students. Compared to non-diverse learners, diverse learners engaged themselves more in the SCT. However, diverse learners' higher engagement only happened in low-level math placement. Diverse learners' active participation in low math placements may be caused by several factors, "from teachers' awareness of bilingual EL students' needs for linguistic supports...in low-level classes, to their misguided attempts to protect them against challenges at school, academic, or otherwise" (p. 97). At the same time diverse learners are more likely to be put in below grade level courses (Dabach, 2015; Estrada, 2014; Mosqueda, 2010). Thus, diverse learners' learning outcomes in SCT are more likely to be offset by course placements.

In addition, diverse learners' learning outcomes in SCT also differentiate in different schools' academic performance levels. Lee et al. (2021) tried to figure out the differences in learning outcomes of personalized learning practices between academically high-performance and low-performance SCT schools. The result showed that high performance schools did

better than low performance schools in implementing SCT. And diverse learners are more likely to study in low-performance schools.

Overall, SCT generated positive learning outcomes for diverse learners, such as the increase in their academic growth, self-confidence, and learning motivation. However, it is noticeable that diverse learners achieved such learning outcomes in comparatively low course placements level and school performance level. Diverse learners' negative learning outcomes in SCT may be due to that their learning efforts are counterbalanced by their ethnicity backgrounds, course placement status and schools' academic levels. In the study of Braden et al (2016), diverse learners expressed the challenges they faced during their project-based learning: they felt difficulty in doing projects; they were confused by their teachers' expectations; teachers didn't provide enough support for their individual learning.

Subjects. In terms of the subjects that were researched in the thirty-four studies, sixteen of them were about science, three about English language study, two about math and two about both science and math. There was no specific subject mentioned in the remaining thirteen studies. Science has been the most studied subject in SCT for diverse learners. Compared to non-diverse learners, diverse learners have additional difficulty in learning science. Students do not use science academic language in their daily life (Kelly-Jackson & Delacruz, 2014). As Huerta et al. (2016) mentioned, "science language is also made up of distinctive linguistic features such as technical vocabulary and specific discourse patterns" (p. 507).

To address the gap between science academic language and social language for diverse learners, Kelly-Jackson and Delacruz (2014) combined SCT with visual literacy strategies for elementary diverse learners' science study. Teachers asked students to self-discover pictures that showed the chemical and physical changes and use their own language to describe and explain them. And the students would turn to science vocabulary books to

identify the vocabulary word. Gradually, the ELLs used more science academic language in their science lessons.

In other studies, teachers tried to employ SCT to achieve the science content learning and language learning at the same time (Nargund-Joshi & Bautista, 2016; Rillero et al., 2017; Rillero et al., 2018). However, most teachers haven't received professional trainings to teach discipline-specific language, which may generate achievement gap between diverse learners and non-diverse learners (Braden et al., 2016). Besides, diverse learners have varying levels of English language proficiency in the same classroom. In the study of Braden et al (2016), diverse learners in the project-based learning classroom expressed "various levels of comfort with the four skills, reading, writing, listening and, speaking, in both their home language Spanish, and English" (p. 450). Research showed that in SCT classrooms, diverse learners in good English reading performance benefited more in their science learning than those below average reading grades (Hug & Marx, 2005). Achievement gaps are generated for those who have lower English language proficiency than other diverse learners.

Subject itself is also an essential factor to generate achievement gap for diverse learners. Subject instruction is embedded with certain culture values, thus diverse learners whose cultural backgrounds are conflicted with the subjects' values may have difficulty in their learning. For example, a native Indian high school female student said the description of native Indian history in the textbooks were not identical with the stories her grandma told her as a native Indian (Nganga et al., 2019). In science learning, it is "generally tailored to Western values, thoughts, and traditions...many nonmainstream students find the values and norms of science more unfamiliar than their mainstream counterparts" (Kelly-Jackson, 2014, p.194). In social studies, "vocabulary words are highly abstract and subject to culturally embedded meanings, making a simple explanation or demonstration difficult" (Cho & Reich, 2008, p. 236). As a result, it's not enough for teachers only to combine subject content

learning and language development in their SCT for diverse learners. Teachers should go deep to know the diverse learners' cultural and linguistic needs embedded in their SCT for subject instruction (Collier et al., 2016).

### ***Achievement Gap***

There are three studies about whether SCT generate achievement gaps for diverse learners. Three of the existing studies were directly related to inequity for minority students in the implementation of SCT. Using data from the National Center for Education Statistics and the Center for Education Statistics, Secker (2002) explored teachers' practice of student-centeredness in high school science classes. Secker attempted to discover whether teacher practices that involve interacting with students' ethnic backgrounds will produce more equitable science achievement in some social contexts. The result showed that the SCT may generate an achievement gap for diverse learners.

Two other existing studies were indirectly related with SCT implementation for diverse learners. These studies focused on the relationship between SCT and socioeconomic status. Hwang et al (2018) examined whether SCT was a moderate factor in reducing achievement gaps among students from a less advantaged socioeconomic status. The data comes from the PISA database. Hwang et al. analyzed middle school student achievement levels and their family backgrounds based on data from ten countries including United States. The result demonstrated the achievement gaps may be narrowed or maintained among students from different socioeconomic statuses. Another study (Andersen & Andersen, 2017) analyzed the data of ninth grade students from Statistic Denmark to establish whether the teaching process of SCT produced educational inequity in relation to different socioeconomic backgrounds. Though the participant students were from Denmark, it has implications. The study established that the "first quantitative analysis of the classified sociological hypothesis that the instructional process generates educational inequalities because it supposes

knowledge of cultural codes (p. 535). The findings supported that the “the instructional strategy of schools is an important mechanism in generating educational inequalities” (p. 533).

Of the studies on SCT and the achievement gap, two of the studies concluded that SCT had a negative impact on the achievement gap for diverse students, while one study came to the mixed result that achievement gap may be maintained or narrowed. The current empirical studies are limited, but based on the contradicting results of these studies, it is worthwhile to further explore the impact of SCT on broadening the achievement gap for diverse learners in American K-12 education.

## **Commentary on Current Studies**

### ***Research Findings***

Current studies about SCT for diverse learners provide us many lenses to see how SCT has been implemented for diverse learners. From the perspective of teachers’ instructions, some teachers didn’t consider diversity in their SCT research. Some studies began to see diversity as an element in their SCT but failed to make real difference for diverse learners. Some research really helped teachers to integrate student’s diversity into SCT, mainly racial and linguistic diversity. However, the majority of the studies didn’t define SCT or the SCT approaches they employed. According to Neumann (2013), there are three types of SCT: learning contexts that center in students, that center on students and that center with students. In most empirical studies, diverse learners’ learning autonomy is within teachers’ designed curriculum and activities. Only in one study (La Porte, 2016)), the diverse learners collaborated with the teachers for part of the curriculum design—the rubrics for evaluation.

Besides, current studies are more about teachers’ practice of SCT for diverse learners. Though some studies mentioned teachers’ perceived benefits and challenges of implementing

SCT for diverse learners, there lacks study about teachers' definitions and perceptions in SCT for diverse learners. Teachers' perceptions are important constructs to guide their teaching practice (Nespor, 1987; Pajares, 1992). What's more, in studying teachers' SCT practice, no study analyzed the teachers' roles in the SCT activities for diverse learners. However, it's necessary to know teachers' roles in SCT since "effective implementation of novel pedagogies requires understanding teachers' roles and responsibilities in the transformed classrooms" (Keiler, 2018, p. 2). Thus, in future studies, more attention should be paid to teacher beliefs and roles in SCT for diverse learners. In terms of subjects, the majority of empirical studies are about science, and a few are about English language learning. Although it is a noticeable challenge for diverse learners to learn science contents and science academic language, they may encounter the same challenge in in other subjects in SCT.

### ***Research Methods***

Current studies are more about teachers' practice of SCT for diverse learners, lacking studies about teachers' beliefs and perceptions in SCT for diverse learners. Only one study (Deaton et al., 2014) mentioned how White teachers employed reflections to reconstruct their perceptions of SCT and then reconstruct their SCT practice. It's a multi-cases studies where the participant teachers analyzed the video recording of their own teaching and self-analyzed their instruction. Through reflections they realized the importance of incorporating students' cultures and languages into their SCT teaching. Current studies about teachers' beliefs in SCT were for all learners, not specifically for diverse learners. Among them, most studies (e.g., An & Reigeluth, 2011; Becker, 2000; Stipek et al., 2001; Peterson et al., 1989) employed quantitative method to measure teacher's beliefs in SCT. Surveys or questionnaires have been designed to know whether teachers' philosophy is SCT (Becker, 2000), whether teachers have positive beliefs in SCT (An & Reigeluth, 2011; Rashidi & Moghadam, 2015), and the relationship between teachers' beliefs in SCT with their instruction (Peterson et al.,

1989; Stipek et al., 2001). Those studies enable us to know teachers' general attitudes towards SCT. However, the measured items are more about teacher's perspective of their own roles in SCT and their perceived benefits as well as challenges in their SCT, lacking measurement in their perceived students' roles, the relationship between teachers and students, or studies' choices in their learning. Besides, though some studies (An & Reigeluth, 2011) examined the relationship between teachers' SCT beliefs and SCT practices, the study saw beliefs and practice as two separate variables and measured the statistical relationship between them. The quantitative study cannot specify the details of how teachers SCT beliefs associates with their SCT practice.

Only a few studies (Polly & Hannafin, 2011; Yimaz, 2008) used qualitative method to explore teachers' beliefs in SCT. The qualitative studies enable researchers to have a closer look at teachers' beliefs and their practice. For example, Polly and his colleagues (2011) employed interviews to understand participant teachers' beliefs in SCT. The study also provided a professional workshop to train teachers how to implement SCT. Then the researchers observed participant teachers' teaching practice through video observation and classroom observation. Especially, the observation were around how teachers present new concepts, how teachers implement activities, how teachers ask questions to elicit students' thinking, how students interact with teachers and peers, and whether teachers use technology. The result showed that though the participants thought SCT was an important pedagogy, their teaching practice didn't align with their beliefs.

This study tries to use qualitative method to explore teachers' perceived practice in SCT and their actual SCT teaching practice for diverse learners. Based on above discussion, qualitative method has more advantages to get detailed understanding of teachers' beliefs in SCT and their actual teaching practice. Besides, when conducting studies concerning diverse learners, quantitative studies tend to treat race as a single variable and try to establish the



relationship between race and other variables. However, “race is not a variable”, but a “dynamic power”, and “race is not a stable category” (Gillborn, 2018). As a result, “just measurement of different factors is especially prone to misunderstanding and misrepresentation”. Since “race and ethnicity are socially constructed and manifests itself in varied ways depending on location and who occupies those identified or selected spaces” (Garcia & Mayorga, 2018, p.243). Qualitative study is more powerful to explore the complexity of how race affecting diverse learners’ learning in the social contexts.

### ***Criticism for Current Theoretical Frameworks***

Current studies employed multiple theoretical lens to address SCT for diverse learners from three perspectives: emphasis on cultural and linguistic diversity, teachers’ instruction, and students’ voice. The first type emphasizes the integration of student’s cultural and linguistic backgrounds into teaching, including theory of funds of knowledge, culturally responsive teaching, and theory of instructional congruence. While theory of funds of knowledge and culturally responsive teaching emphasize that students’ cultural knowledge and prior experience are elements of instructions, the theory of instructional congruence underlines the congruence between teaching contents and students’ cultural and linguistic experiences.

The second type is more about teachers’ instructions, such as critical reflection theory, language-based instruction, social cultural theory, and personalized integrated educational system. In critical reflection theory, teachers are supposed to explicitly “understand and engage with diversity” (Glazewski & Ertmer, p. 686). According to the theory of language-based instruction, teachers should know how to employ discipline-specific language in their instruction. The social cultural theory indicates that learning is socially constructed, and teachers should design activities facilitating peer interaction. The personalized integrated

education system is a conceptual framework that guide teachers how to integrate technology into SCT for diverse learners.

The third theoretical type highlights students' voices during the learning process, such as theory of agency and identity theory. The theory of agency underscores the importance of privileging students' opinions and feelings for the instruction method. It encourages students to negotiate with schools and teachers to "access and appropriate resources to use" (Bantis, 2010, p. 440) to the students' advantage. Based on identity theory, students are supposed to make sense of their identity by negotiating ideas about their historical identity during their learning activities and identifying their roles in the classroom through interactions with others. Current theoretical frameworks tried to involve students' diversity in teaching practices and empower diverse learners to speak their voice during their learning activities. However, the efforts of addressing diversity in SCT and highlighting diverse learners' voice may be offset by the systematic racism experienced by diverse learners in their education. They failed to point out how racism influenced teachers' instructions, students' learning outcomes and school inequities.

In summary, current studies lack the perspective of teachers' definitions of and beliefs in SCT for diverse learners. Thus, future studies should pay attention to teachers' perceptions of SCT for diverse learners and their teaching practice under such perceptions. Besides, most studies employed quantitative ways to assess student achievements, such as scores and questionnaires. It is vital to include qualitative data about the details of student performance in SCT classrooms to support the quantitative data. Since "race and ethnicity is socially constructed and manifests itself in varied ways depending on location and who occupies those identified or selected spaces" (Garcia & Mayorga, 2018, p.243), future studies should use quantitative methods and qualitative data to measure how SCT influence diverse learners' learning. Thus, mixed research methods are recommended for future studies. Current studies

lacked the theoretical lens from the perspective of racism to guide the research questions, the data collection (design of instrument), and analysis. Critical Race Theory and Theory of Critical Reflection for Transformative Learning are recommended for future studies. “Critical race theory helps us recognize the inequities that Communities of Color experience and offers solutions to overcome injustices (Garcia & Mayorga, 2018, p. 238). Theory of Critical Reflection for Transformative Learning guides the research to see how teachers transforms their beliefs of SCT into their teaching practices.

### **Theory Framework**

Critical Race Theory (CRT) “centralizes race at the core of analysis and examines issues of power and oppression” (White et al., 2019, p. 55). Ladson-Billings and Tate (1995) establish three tenets of CRT: (1) race as a factor in social inequity, (2) property rights as the basis in U.S. society, (3) and the intersection of race and property as a conceptual framework to see social inequity. Race is an analytical tool used to understand inequities and inequalities in schools. Some theories point to socioeconomic and gender differences to explain the educational achievement differences; however, even under the same socioeconomic conditions, students of color did not perform at the same level as their White counterparts (Oakes, 2005). As Ladson-Billings and Tate (1995) claimed “(the) examination of class and gender, taken alone or together, do not account for the extraordinarily high rates of school dropout, suspension, expulsion, and failure among African American and Latino males” (p. 51). Moreover, property rights stand as a symbol of power in the United States. Property tax determines the primary source of funding for public school system, indicating that students who live in the communities of high value property tend to study in schools that are much better funded. However, the majority of diverse learners live in urban areas, meaning they attend schools with less funding and lack sufficient learning materials. Furthermore, teachers employed by these urban schools are often unprepared and unqualified. As a result, students

of color “have little opportunity to learn despite the attempt to mandate educational standards” (Ladson-Billings & Tate, 1995, p. 55). These issues of property tax also effect the choice and quality of the curriculum. In other words, the curriculum represents the “property values” (p. 54) of schools.

The intersection of race and property provides an analytical framework to view inequalities in schools (Ladson-Billings & Tate, 1995). First, the societal norms regarding white-owned property reward schools with more funding. Students of color performed in the norms of their cultures would be sanctioned. Second, while White students enjoy the socioeconomic and cultural privileges of affluence (White property) within schools, students of color suffered from the feeling of “double conscious” (p. 50) or “divided self” (p. 51). In schools representing the white property, the minority students feel their two ness--an American, a student of color: “two souls, two thoughts, two unreconciled strivings” (Du Bois, 1903, p. 5). Third, the structure of curriculum fails to represent the educational, thinking, and learning aspects of minoritized students’ cultural backgrounds (Ladson-Billings & Tate, 1995). Fourth, the non-white educational programs and schools suffer from poor reputations and lower statuses than predominantly White educational programs. (Ladson-Billings & Tate, 1995). For example, bilingual education as a form of second language learning has a lower status compared to foreign language learning programs (Spener, 1988). Similarly, the term urban, “the root word of urbane, has come to mean black. Thus, urban schools lack the status and reputation of suburban(white) schools and when urban students move to or are bused to suburban schools, these schools lose their reputation” (Ladson-Billings & Tate, 1995, p. 60). Finally, students of color are excluded by “vouchers, public funding of private schools and schools of choice” (Ladson-Billings & Tate, 1995, p. 60).

The theoretical lens of the intersection of race and property provides an analytical tool to better understand the struggles of students of color produced by both structural and

institutional racism, as well as inequities and inequalities in schools. Racism refers to “culturally sanctioned beliefs which, regardless of the intentions involved, defend the advantages Whites have because of the subordinated positions of racial minorities” (Wellman, 1993, p. 42). The tenet of student-centered teaching (SCT) is to satisfy the learning needs of individual students. Important questions need to be answered in include: Who are included in SCT? Who are excluded? Whose needs are met? Whose needs are ignored? Currently there are no studies using CRT to guide SCT research for diverse learners. With the theoretical lens of CRT, it is worth exploring how SCT meets the individual learning needs of diverse learners when the classroom conforms to white norms, the curriculum represents white modes of thinking, and minority students receive less access to learning materials, experience a lack enjoyment in learning, and ultimately receive fewer rights in schools.

Critical Reflection for Transformative Learning (CRTL) emphasizes changes of instructional practices based on critical reflections. It not only focuses about examining teachers’ “personal and professional belief systems, as well as the deliberate consideration of the ethical implications and impact of practices” (Larrivee, 2000, p. 294), but also about “how teachers carry out instructional practice based on reflection” (Liu & Ball, 2019, p. 90). Firstly, critical reflections are essential elements in CRTL. Critical reflections include the content teachers reflect and the reflection process (Liu, 2015). The content of critical reflections aims to check “assumptions of oneself, schools, and the society about teaching and learning, and the social and political implications of schooling” (Liu, 2015, p. 144). The process of critical reflections is to constantly analyze, question, and critique the established assumptions, and implement “changes to previous actions that had been supported by those established assumptions” (Liu, 2015, p. 144). The goal of critical reflections is that teachers continuously update their teaching practices and create just learning environments for all

students (Liu, 2015).

Based on the work of Brookfield (1995) and Mezirow (1990), Liu (2015) synthesized a hermeneutical circle of six stages to guide teachers from critical reflections to transformative learning for students: “assumption analysis”, “contextual awareness”, “imaginative speculation”, “reflective skepticism”, “reflection-based action”, and “reflection on reflection-based action” (p. 148). Assumption analysis requires teachers to identify their assumptions about their values and beliefs in themselves and their teaching practice that they take for granted, and “assess the accuracy and validity of these assumptions against lived experiences” (p. 148). Contextual awareness is to examine the assumptions of their teaching beliefs and practice in cultural and historical contexts. Imaginative speculation asks teachers to think an alternative way “to current ways of thinking and living in order to provide an opportunity to challenge prevailing ways of knowing” (p. 148). In reflective skepticism, teachers try to perfect the alternative method by criticizing the universal validity of the method. Reflection-based action requires teachers to make real actions based on previous reflections in their teaching practice. In the sixth stage reflection on reflection-based action, teachers examine the effect of the alternative method and make decisions for future teaching.

The CRTL is a hermeneutical cycle from teachers’ reflections on their beliefs and practice to real changes in their teaching actions. This model achieves “the systematic movement from rethinking basic assumptions to taking action to transform learning by both teacher and students” (Liu & Ball, 2019, p. 91). With the theoretical lens and steps of CRTL, this study intends to explore teachers’ definitions and beliefs of SCT for diverse learners and how they actually implement SCT for diverse learners in their teaching practice.

## **Summary of Chapter Two**

Based on the extensive review of SCT, diversity, and the implementation of SCT, this proposed research study tried to figure out the current state of SCT in diverse K-12 education

contexts. Current research tends to define SCT as equating to constructivism, in comparison to TCT, or the relationship between teachers and student. The criticism of SCT indicates that the concept is rooted in western educational philosophies and practices; SCT is not a universal instruction method working for all students from all cultures (Tabulawa, 2003). Especially, in current K-12 schools in the United States, students are becoming more and more diverse and students with diverse backgrounds face systematic racism in their learning that led to achievement gaps. The literature review revealed a notable gap in research concerning the teachers' perceptions and practice of SCT within charter elementary school settings.

The literature review also examined the implementation of SCT both in general K-12 contexts and in diverse K-12 contexts in the United States. There were not sufficient studies for SCT in charter schools. Research indicates that compared to the general implementation of SCT, it's more complex to conduct SCT for diverse learners. In addition to the general challenges such as lack of time in SCT, the implementation of SCT for diverse learners has been challenged by students' cultural and linguistic diversity. In current studies, research on teachers' perceptions of SCT for diverse learners and their teaching actions based on their perceptions is sparse. This proposed study specifically addressed SCT for diverse learners through teachers' perceptions and practice through the lenses of Critical Race Theory and Critical Reflection for Transformative Learning.

### **Chapter 3: Methodology**

This chapter provides a rationale for a multiple-case study design to address the problems related to student centered teaching (SCT) for diverse learners in elementary charter schools outlined in chapter one and the literature reviewed in chapter two. The purpose of this study is to discover how SCT is implemented in charter elementary classrooms through the lens of teachers' perceptions and practice. A better understanding of current charter elementary teachers' beliefs in and practice of SCT for diverse learners might reveal the achievement gap and opportunity gap that diverse learners have been experiencing caused by SCT, and further inform how elementary teachers could implement SCT for diverse learners for educational equity. Specifically, this study addressed the following research questions:

1. What are elementary teachers' perspectives of and perceived practice in student-centered teaching? What are the differences, if any, between their perceived SCT for diverse learners and non-diverse learners?

2. How do elementary teachers actually implement student-centered teaching in their classrooms? What are the differences, if any, between their SCT practice for diverse learners and non-diverse learners?

#### **Research Method**

This study employed a case study design to explore how SCT was implemented in U.S. charter elementary schools from the angle of teachers' beliefs and practice. Case study was a rather mature research method and its first application in social science study could be tracked in the 1920s (Creswell & Poth, 2018). Case study has been defined as "an empirical inquiry that investigates a contemporary phenomenon within its real-life contexts, especially when the boundaries between phenomenon and context are not clearly evident" (Yin, 2002, p. 13). Creswell and Poth (2018) identified five core characteristics in case study. First, each case should be clearly defined and identified. A case could be "an individual, a community, a



decision process, or an event” (Creswell & Poth, 2018, p. 97). Second, a case could be an intrinsic case that “has unusual interest in and of itself and needs to be described and detailed” (p. 97), or an instrumental case that supplements information to understand a problem. Third, a good case study should report in-depth understanding of the case. Fourth, the data analysis could analyze multiple perspectives within the case or report the entire case. Fifth, the conclusions of the case study should involve “the overall meaning delivered from the case(s)” (p. 98).

This study explored how SCT was implemented for diverse learners in charter elementary schools by analyzing teachers’ beliefs and practices. A case in this study was defined as an individual elementary teacher in a charter school. Specifically, this study adopted multiple-case study where “the inquirer selects multiple case studies to illustrate the issue” (Creswell & Poth, 2018, p. 99). Four teachers from two charter schools were selected as cases. In multiple-case study, “each case must be carefully selected so that it either: (a) predicts similar results or (b) predicts contrasting results but for predictable reasons” (Yin, 2012, p. 47). These four teachers were intrinsic cases where the researchers not only conducted interviews with them to explore their perceptions but also class observations to figure out their actual teaching practice for diverse learners. Besides, five other teachers were selected from each school to provide supplemental information for the intrinsic cases. They were interviewed about their understanding of their schools’ overall policy and practice related to SCT as well as their perceived beliefs and practice in SCT, which contributed to the researchers’ contextual understanding of the schools in which the study was conducted.

Qualitative methods are not able to grasp the in-depth perspectives from the participants and actual teaching practice in their contexts (Creswell & Clark, 2017). This study intended to understand differences and similarities among teachers’ perceptions and practice of SCT for diverse learners and non-diverse learners. The qualitative case study

enabled me to study “a few individuals and explore their perspectives in great depth” (p. 8). Besides, this study intended to explore how SCT was implemented by teachers in charter schools and how SCT impacted educational equity for students from diverse families and communities. Case study is an effective way to address equity and power issues related to race (Darling-Hammond, 2006). According to Gorski and Pothini (2013), “... by analyzing real-life scenarios based on actual events...we can practice applying theoretical ideas (like educational equity) to on-the-ground professional practice” (p. 6). This multiple case study was guided by theories of critical reflection for transformative teaching and Critical Race Theory to explore whether diverse learners are included or excluded in SCT.

According to Creswell and Poth (2018), there are five steps in conducting case study. The first thing is to determine whether case study will appropriately address the research questions. Second, the purposes, definition of each case as well as the case sampling procedures should be clearly identified. Then the researchers should establish procedures to collect data from multiple sources. The next step is to “specify the analysis approach for developing case description(s) based on themes and contextual information” (p. 100). Finally, combining with the contextual information, the researchers carefully report the case study in written form. There are some challenges in conducting case study. The first concern is the lack of rigor in case study. As Yin (2002) put it, “too many times, the case study investigator has been sloppy, has not followed systematic procedures, or has allowed equivocal evidence or biased views to influence the direction of the findings and conclusions” (p. 10). To address this concern, this study followed the specific case study procedures, collected multiple sources of data from contrasting contexts and reported every case and every evidence fairly. The second challenge lies in that case study provides “little basis for scientific generalization” (Yin, 2002, p. 10). To deal with this challenge, this study avoided drawing generalized conclusions and integrating the contextual information in data analysis as well as

in the findings. The third challenge about case studies “result in massive, unreadable documents” (Yin, 2002, p. 11). To deal with this challenge, the researcher made efforts to create interview questions and observation protocols to ensure clear and readable documentation of the data. Furthermore, the researcher used theoretical frameworks to guide a systematic analysis of the multiple data sources and report the findings in a way to address the research questions.

## **Research Context**

### ***The School District***

This study was conducted in two elementary charter schools in a large school district located in the M County in the southwestern state in the United States. The district educates 75% of students in the state (District Fast Facts, 2017-2018) and suffers from a large diversity gap between the students and teachers. In 2021, the reported enrollment of students of color in the district was 76% of the student body, which is higher than the State public elementary school average of 68% (Public school review, 2021). Hispanic students (46%) are the largest minoritized group in elementary schools, followed by Black (15%) and Asian (6%) students. In contrast, in the academic year 2020-2021, the body of employees was made up of 68.9% White, 11.9 % Hispanic, 10.4% Black, and 3.2% Asian.

### ***The Two Charter Schools***

#### **General Description**

The two charter schools, represented by Twinbrook Academy and Riverside Academy (both pseudonyms), are located in the southeast region of M County. According to Twinbrook Academy’s website, it had a total enrollment of 1,049 students from pre-kindergarten to 8th grade during the 2022-2023 academic year. The school’s minoritized student enrollment stood at 93%, with a breakdown of 77% Hispanic, 9% Black, 6% White, 3% Asian, 1% Hawaiian, and 4% identifying as two or more races. An impressive 95% of the

students were eligible for free lunch. The school employed 45 equivalent full-time teachers along with one full-time school counselor. In the 2020-2021 school year, the school reported that 31% of its students' achieved proficiency in math, surpassing the state average of 26%. Additionally, 46% of students achieved proficiency in reading/language arts, which also exceeded the state average of 42%.

As per the information available on Riverside Academy's website, the school had a total enrollment of 957 students in 2022-2023, ranging from kindergarten to 8th grade. The school's minoritized enrollment accounted for 62% of the student body, with the majority being of Hispanic descent. This percentage is slightly lower than the state average of 71%, where Hispanics also make up the majority. The school's student population includes 38% White, 35% Hispanic, 11% identifying as two or more races, 8% Black, 5% Asian, 2% Hawaiian, and 1% American Indian. In terms of academic achievement, during the 2020-2021 school year, 33% of students achieved proficiency in math, surpassing the state average of 26%. Additionally, 53% of students achieved proficiency in reading/language arts, which also exceeded the state average of 42%.

Charter schools exhibit unique traits that distinguish them from both public and private educational institutions. These attributes include funding variations, greater autonomy, increased accountability, expanded choices, and specialized programs that will be explained below in detail. It is crucial to understand how charter schools' policies impact the decision-making of school principals and teachers in order to fully grasp the complexities within the four cases. The perceptions of charter schools from principals and teachers were gathered from the two researched charter schools. Mrs. Taylor was the principal in Twinbrook Academy, and Mr. Robert was the principal in Riverside Academy.

#### *Principal's Perceptions of Charter School*

Charter schools primarily rely on Per-Pupil funding and other public financing,

supplemented by private contributions. According to insights gathered from two principals in the research, per-pupil funding emerged as the primary revenue stream for meeting various school expenses, including facilities and salaries. The amount of money a charter school receives from the per-pupil funding is determined by the number of students it enrolls. As Mrs. Taylor mentioned, “it’s all about making sure I have enough kids in my building to support what I have to do” (Mrs. Taylor interview, Nov 06, 2022). This type of funding typically originates from the state and is contingent on student enrollment. However, it is essential to note that charter schools generally do not receive funding equivalent to that of their district public school counterparts, as the principals stated that,

It’s or it was either 70 or 75% of the funding that you receive if you’re in the district. So per pupil funding is 70 to 75%. I don’t remember the exact figure, but it’s a significant decrease from what the pupil funding is for the district students. And that poses quite a few issues for us as far as like how we set up salary structure and things like that when we talk about hiring. (Mr. Robert interview, Nov 14, 2022)

The school district gets money to for their buildings, my money to pay for my building comes from my per pupil funding. Right? So my students actually get a little less money than the district student gets because I got to pay for this building... You are going to get this amount of money that’s going to cover salaries, and this will cover so many teachers, right? You get this amount of money for your building, this amount of money for repairs, right? (Mrs. Taylor interview, Nov 06, 2022)

In addition to per-pupil funding, charter schools also access supplementary public funds. In the case of Twinbrook Academy, where a significant number of students come from economically disadvantaged families, and there is a substantial population of English Language Learners (ELLs), the school predominantly receives the Title I Grant and Title III Grant. The Title I Grant is directed at providing financial assistance to students from low-income backgrounds, while the Title III Grant is specifically designed to support ELLs. Riverside Academy also received other public funding such as special education funding for special education students.

The charter schools were primarily funded by public finances and also established partnerships with private institutions. For instance, Twinbrook Academy collaborated with

Turner Agassi, a real estate company. Turner Agassi played a significant role in supporting Twinbrook Academy by facilitating the construction of school buildings. While public funding served as the primary source for charter schools, these schools operated independently of the district board of education. That meant the district board of education had no authority over the charter schools. As Mrs. Taylor mentioned, “there’s no connection. There’s no affiliation” (Mrs. Taylor interview, Nov 06, 2022). This independence allowed charter schools to break free from the bureaucracy and regulations of the district board of education. In comparison to public schools, charter schools typically had fewer bureaucratic layers. As Mr. Robert mentioned,

Comparing our charter school to district public schools, there are notable differences in my role as a principal. In a district, I would report to various levels of leadership, including regional and associate superintendents, with a structured hierarchy of directors and coordinators. However, in a charter school, I have a more direct reporting line to the board, akin to a superintendent’s role in a district. This streamlined structure has fewer layers but lacks specialized support roles found in districts, like coordinators and directors who handle specific areas such as career and technical education, math, ELA, or special education. (Mr. Robert interview, Nov 14, 2022)

Charter schools are accountable for the quality of education they provide, rather than adhering to district and state regulations. They enjoy more autonomy in determining their governance structure and educational approach. In addition, Charter schools have the autonomy to establish their own procedures for hiring teachers and to determine their unique methods of teacher evaluation. For example, both principals opted to utilize the salary scales employed in public charter schools. Instead, they place a strong emphasis on teacher performances when conducting teacher evaluations. As Mrs. Taylor mentioned, “We have a distinct approach to teacher compensation compared to traditional school districts. Instead of a fixed salary scale based on experience and education, we prioritize teacher performance” (Mrs. Taylor interview, Nov 06, 2022). Mr. Robert expressed the same thoughts,

We are aware that the state educator performance framework is a standard practice in every school district. However, charter systems have the flexibility to approve

alternative evaluation systems. In our case, we have chosen not to adopt the state framework, despite its availability. We believe it's a good system, but we've opted for an evaluation approach tailored to our charter school's unique needs and goals. (Mr. Robert interview, Nov 14, 2022)

In particular, charter schools have significant flexibility in selecting and modifying their curriculums. They are not bound by the curriculum designated by the school district. They chose the curriculum based on whether it addressed the subject standards and whether it could provide teacher training. The two researched schools adopted distinct curricula. Twinbrook Academy utilized Wonders for reading and IReady for math, whereas Riverside Academy opted for UFLI in reading and enVision in math. Nonetheless, both schools incorporated IReady online lessons for reading and math. These IReady online lessons operated independently of the teacher's regular instruction and were customized to align with each student's current learning level. Teachers did not assume an instructional role in the students' Ready online programs, as the students themselves completed the lessons provided by IReady and had each lesson assessed by the IReady program.

### Teachers' Perceptions of Charter School

Teachers' perception of charter schools closely mirrored that of the principals. They shared the belief that charter schools benefited from a broader spectrum of funding sources and have a higher degree of autonomy in comparison to public schools. For instance, Irma, a first-grade classroom teacher in Riverside Academy, pointed out that, unlike public schools in the district, her school remained open during the pandemic.

During the pandemic, our schools remained open, and students continued to learn with necessary adaptations. While the district faced initial challenges, our commitment to education persisted. Some students couldn't attend school for extended periods, up to two years, but we worked diligently to ensure their education continued. (Irma, Interview#1, Oct 19, 2023)

Most of the teachers who were interviewed expressed a strong belief that charter schools offer a significantly superior education to students when compared to public schools.

This belief stemmed from the perception that charter schools have greater flexibility in selecting curricula and are more directly responsive to students' specific needs. For example, Zara, a second-grade classroom teacher at Twinbrook Academy mention that,

I believe charter schools offer a more favorable environment with superior strategies and rules compared to public schools. Charter schools prioritize students' growth and development over punitive measures or rigid lesson plans, fostering a more positive atmosphere. Additionally, the curriculum in charter schools, distinct from public schools, proves to be more effective and beneficial for students. (Zara, Interview#1, Nov 20, 2022)

They also believed charter schools provided more options for parents residing within the district. For instance, Bee, a third-grade classroom teacher at Twinbrook Academy, where a majority of students came from economically disadvantaged backgrounds, noted that the charter school served the same student population as the public school down the road. She emphasized that parents in the area had more educational options thanks to the presence of the charter school. Helen, a first-grade classroom teacher expressed the same idea as Bee, as she mentioned,

Our school is a public charter, giving parents the option to choose it instead of their zoned public school. Families apply to enroll in our free public charter school, and we maintain a waitlist. This means that the parents who enroll their students in our school are already invested in their child's education, as they've actively chosen an alternative to their zoned public school. (Helen Interview, Nov 15, 2022)

### ***Participants***

Participants include four participating teachers as intrinsic cases, five other participating teachers as instrumental cases, and two principals. Notably, all the participating teachers, no matter as intrinsic cases or instrumental cases, were classroom teachers. All the participating teachers were selected conveniently from the two sample schools with a method of nonprobabilistic sampling which "involves selecting individuals who are available and can be studied" (Creswell & Clark, 2017, p. 177). Besides, during the selection of participating teachers, I paid special attention to the participants' racial, ethnic, and linguistic backgrounds



and the schools they teach, trying to recruit participants who represented diverse backgrounds.

#### *Intrinsic Participants: The Four Cases*

Four participating teachers from these two charter schools were the intrinsic cases. They were each interviewed twice and observed six times in their classrooms. During the main interview, they were asked semi-structured questions about their beliefs and practice of SCT. The four intrinsic cases were observed about their actual practice of SCT. The observation data collection spanned 50 days in two semesters from 2022 Fall and 2023 Spring. I observed their SCT practice in their classrooms; each of them was observed six times and the length of each observation varied, ranging from one hour to four hours. After conducting classroom observations, I conducted follow-up interviews for each intrinsic case for the participating teachers to reflect on their teaching as well as for the researcher to ask clarification questions regarding events that occurred during the class.

#### *Instrumental Participants*

Five other participating teachers from the two schools were selected as instrumental cases and interviewed once about their perceptions of charter schools, their definitions of SCT, and their perceived SCT practices. The duration of the interview was one hour. As mentioned above, the principals from the two charter schools underwent a single interview session to discuss their understanding of charter schools and the policies and support they provided for teachers' SCT. The duration for the principal's interview lasted 90 mins.

Table 1 displayed the information of all the participating teachers. The majority of the participants in this study self-identified as Mexican American. They primarily taught in the lower grades of elementary education. Among the participants, five had earned a master's degree, while four held a bachelor's degree as their highest educational qualification. On average, these teachers had 5.7 years of teaching experience. All of the participating teachers

were females.

**Table 1: The Demographic Information of the Participating Teachers.**

Faked Names	School	Grade	Intrinsic Case	Ethical Identity	Highest Degree	Teaching of experience
Darcy	T	2	Yes	Hispanic	Master	13
Zara	T	2	Yes	Hispanic	Bachelor	2
Irma	R	1	Yes	Hispanic	Bachelor	4
Rosa	R	1	Yes	Hispanic	Bachelor	7
Bee	T	3	No	White	Master	10
Helen	T	1	No	Hispanic	Bachelor	4
Delia	T	3	No	Hispanic	Master	4
Gloria	R	1	No	Hispanic	Master	4
Lucy	R	3	No	White	Master	3

*Note.* T in the School column represents Twinbrook Academy. R in the School column represents Riverside Academy.

## Data Sources and Data Collection

### *Interview*

Interviews were employed with conveniently selected participants to help the researcher gain a detailed understanding of the participants' perceptions. An interview is "considered to be a social interaction based on a conversation (Creswell, & Poth, 2016, p. 163) and "knowledge is constructed in the interaction between the interviewer and interviewee" (Brinkmann & Kvale, 2015, p. 4). The interview helps to "understand the world from the subjects' point of view, to unfold the meaning of their experience, to uncover their lived world" (Brinkmann & Kvale, 2015, p. 3). All the participants, including the four

intrinsic cases, five instrumental cases and two principals were interviewed once through semi-structured questions. The interview allowed participating teachers to share their understanding of SCT, their pedagogical beliefs, and their perceived SCT practice in classrooms.

Guided by knowledge about SCT gained in literature review, the interview questions focused on their perspectives of teachers' roles, students' roles, the relationship between teachers and students, their practice of SCT in classrooms, and the benefits as well as the challenges they have encountered in implementing SCT practice. The interview questions for the principals included general question about the charter school, school policy for SCT, and school climate for SCT. Participating teachers underwent a single 60-minute interview, while the principals were interviewed for a 90-minute session to address the interview questions. For the intrinsic cases, the participants were also interviewed after each observation for understanding checking and each of these interviews typically ran for about 20-30 minutes. The semi-structured interview took place remotely through Zoom Meeting. The classroom observation follow-up questions were conducted in the teachers' classrooms.

### ***Class Observations***

Observations were conducted in the classrooms of the four intrinsic cases. Observation is "the act of noting a phenomenon in the field setting through the five senses of the observer, often with a note-taking instrument, and recording it for scientific purposes" (Creswell, & Poth, 2016, p. 166). My role in this study was a nonparticipant who is "an outsider of the group under study, watching and taking field notes from a distance..., record[ing] data without direct involvement with activity or people" (p. 168). I observed the participating teachers' "activities, interactions, conversations" in their classrooms (p. 167). On the one hand, guided by the definition of student-centered teaching, the observation protocol specifically focused on the students' characteristics, teachers' instructional

approaches, the interaction between teachers and students, the interaction among students, the learning activities, the learning environment, and the technology employed. On the other hand, guided by the framework of critical reflection for transformative learning, during the observations, specific attention was paid to compare the participating teachers' reflections on their perceptions of student-centered teaching with their actual teaching practice. Finally, through the lens of Critical Race Theory, I constantly asked the question how students with diverse backgrounds were included or excluded in learning opportunities. An observation journal was also established to document my overall reflection of my observation process and thoughts on the observation. The researcher observed the intrinsic case participants' SCT practice in actual classrooms six times in Fall 2022 and Spring 2023 in the two sample schools. Each of the observation lasted between two-four hours, depending on the specific time and topic of the day when observation took place.

## **Data Analysis**

### ***Research Question One***

What are elementary teachers' beliefs and perceived practice in student-centered teaching? What are the differences, if any, between teachers' perceived SCT for diverse learners and non-diverse learners? In order to answer this question, interview data were analyzed. The interview data were transcribed and reviewed for accuracy by replaying the audio recording of each interview. Participants were contacted via email or remote meeting if any responses need further explanation or clarification. Next, all the participants' names and school names were replaced with pseudonyms in the transcripts. Two coders coded the data separately and compare their codes until 100% agreement rates. The researchers read the transcripts and evaluate the most salient phrases. The primary data source for addressing the first research question was the interviews. The data coding process consisted of two stages. The first stage involved coding to understand the teacher's perspectives regarding student-

centered teaching. The first-stage coding was based on four categories: assumption about knowledge, assumption about the teacher's role, assumption about the student's role, and assumption about the learning relationship between teacher and students. In the second stage, the coding was focused on determining whether the teacher's perceptions included considerations for diverse learners. The second stage coding was guided by the frameworks of Critical Race Theory (CRT) and critical reflection for transformative learning. For coding in both stages, it went through three circles: the first coding circle, the transition from first to second cycle coding, and the second coding circle (Saldaña, 2021).

The first coding circle adopted provisional coding to obtain the initial codes. The provisional coding tries to “establish a predetermined start list of codes prior to fieldwork” (Saldaña, 2021, p. 216). They can be “key words, phrases and concepts that spring to mind in thinking about the area under consideration before any data collection or even a literature search has begun” (Layder, 1998, p. 31). The provisional codes could be generated from “literature review”, “studies conceptual framework”, “research questions”, “previous research findings”, “pilot study fieldwork” and “researcher's previous knowledge and experiences” (p. 216). They provide clues to guide the data collection and primary data analysis. This study established provisional codes based on literature review, research questions, critical race theory (Ladson-Billings & Tate, 1995) and critical reflection for transformative learning (Liu & Ball, 2019).

This study adopted “code mapping” (Saldaña, 2021, p. 281) as a transition method toward the second coding circle. The purpose of code mapping is for “manually organizing and assembling the codes developed from the first cycle processes” (p. 281). Based on Saldaña (2021), there are three steps for the code mapping. First, the qualitative data would be mapped with the provisional codes. New initial codes would be generated if there are no matched provisional codes for the data. Second, the provisional codes would be put into

different categories. Third, “code mapping now categorizes the categories even further (p. 284). In the second coding circle, this study would integrate all the categories generated by the code mapping, which “progresses toward discovering the central/core category that identifies the primary theme of the research” (p. 301) and “functions like an umbrella that covers and accounts for all other codes and categories formulated thus far” (p. 314). In the second coding circle, the primary step was to find the central or core category which “consists of all the products of analysis condensed into a few words that seem to explain what this research all about” (p. 314). Then all the categories and concepts were systematically integrated around the central category that “suggests a theoretical explanation for the phenomenon” (p. 314). The second coding circle is not about generating theory, but “an abstraction that models the integration” (Glaser, 2005, p. 17).

### ***Research Question Two***

How do elementary teachers actually implement student-centered teaching in their classrooms? What are the differences, if any, between teachers who teach in diverse classrooms and less diverse classrooms? The second research question was answered by analyzing the observation data and data from interviews during the observation stage. The purpose was to figure out elementary teachers’ actual implementation of SCT in the charter schools. The observation data were at first transcribed into text. The researcher conducted a 15-minute interview for understanding check if necessary. Two coders coded the observation data and compared their codes until 100% agreement rates. The process of data analysis also experienced the two stages with three coding circles for each.

## **Chapter 4: Findings**

In this chapter, I present the findings for the four cases. For each case, I provide a concise overview of the participant's background, teaching experience, student demographics in the class, and how her ethnic identity impacted her teaching before delving into the responses to the two research questions previously outlined in earlier chapters.

### **Case Study Findings for Darcy**

#### ***Darcy- Description and Context***

Darcy is a middle-aged Hispanic woman. She was born in Mexico and came to the U.S. when she was five. Back then, she did not know how to speak English and had to embark on the journey of learning the language. Before becoming a teacher, Darcy tried different things, such as business, but she did not like them. And then, when she attended an education class, she loved it and decided to finish an education program. She had a master's degree in education and curriculum. During my initial interview with her in 2022, she had already accumulated 13 years of teaching experience. She was excited to witness her students' growth from the beginning of the academic year to the end. Currently, she's a second-grade teacher at Twinbrook Academy. She believed in the use of scaffolding in students' learning. The students in her classroom were very diverse: about 90% of the kids were of Hispanic background, 4% were African American, and 1% were White or Caucasian. Moreover, about 50% of them speak a second language. She preferred to teach in diverse areas because she believes her own experience as an English language learner can be beneficial to her students.

#### ***Darcy-Research Question 1***

**What are elementary teachers' beliefs and perceived practice in student-centered teaching?**

#### ***Perceived Definition of SCT***

Darcy learned the concept of SCT in her education program and professional development (PD) training. In Darcy's view, a teacher's role should be primarily focused on teaching and educating their students, and students were expected to take responsibility for completing the assignments given to them by their teachers. Central to her definition of SCT was the idea that students should assume responsibility. They should take charge of their learning process and complete the assigned tasks by the teachers. And the students should also take charge of the amount of talking during class time. Teachers serve as facilitators rather than providing direct answers. The second crucial element in her definition involves peer sharing, where they can learn from each other. Peer sharing serves the purpose of reducing the need for teachers to dominate the conversation throughout the day. As she mentioned,

Student centered means that the kids are in charge, or they're learning. They're in charge of the class. It's where the kids are doing most of the talking. And we're guiding and they're learning or have a guide in their learning. They're responsible for getting their work done. They're responsible for making sure, like even in the classroom, I don't give them the answer, like, I'll call on them. And I'll be like, explain the answer to your classmate. You know, I try to get them to learn from each other, instead of me just giving them the answer. (Darcy, Interview#1, Nov 10, 2022).

Her definition of SCT was limited since her primary expectation for her students during her SCT was that they can explain what the teacher had taught, rather than encouraging them to apply their knowledge or innovate based on what they had learnt. First, she emphasized the importance of students taking responsibility for completing assigned tasks and actively participating by speaking at length during class time, with the ultimate goal of being able to explain their answers effectively. This emphasis on explanation was primarily geared toward students demonstrating their comprehension of the material, as opposed to focusing on their capacity to apply the knowledge or construct their own understanding. Second, she valued peer sharing as a means to minimize teachers' talking time. However, her perspective on peer sharing did not focus on peer interactions



for hands-on or higher order thinking activities but rather students explaining answers to one another. As she mentioned, “I won’t just give him the answer. I’ll be like, okay, ask a friend. First let’s see if someone else can explain it. And then I’ll kind of guide them in the process” (Darcy, Interview#1, Nov 10, 2022). She thought SCT was the most effective way for students to learn since the peer explanation to each other is “the best way for them to learn. I think listening to their peers is a better way to learn than me talking to them all day” (Darcy, Interview#1, Nov 10, 2022).

In her understanding of SCT, it’s not that students formulate questions and construct their own meaning and knowledge, but that students should know how to articulate answers to well-defined questions. As a result, she thought students’ ability to express and explain themselves was a prerequisite for student-centered teaching.

I think it’s kids who, who are able to express themselves have to be able to express themselves and they have to be able to explain, like, some kids can do something, but they can’t explain how they did it. So you have to be able to explain how you do it. You have to be able to talk about what you’re doing and explain what you’re thinking. But I think also, I think all kids are capable. (Darcy, Interview#1, Nov 10, 2022)

Here, she implied students must have the ability to use English to express themselves and explain the answers, as she exclusively spoke and conducted her classes in English. As she said,

I primarily use English because I believe it’s the best way for them to learn the language. I only speak to them in Spanish after school, and they might want to demonstrate that they can speak it too. Sometimes, they get excited about it. (Darcy, Interview#1, Nov 10, 2022)

She demonstrated a misconception about ELLs and believed that their language barriers led to learning disabilities, which, in her opinion, made them unprepared for student-centered teaching. As she mentioned,

I do feel like some students just don’t get it. I do feel like some students will just sit there and stare and let everyone else do the talking. I know a lot of the kids that I see that are like that are for example, if they have some kind of learning disability, just not processing, sorry, Okay. So those kids are sometimes if they’re new to the

country, and they don't speak English. You know, those kids are obviously not ready because they're still trying to learn the language. (Darcy, Interview#1, Nov 10, 2022)

In summary, Darcy held a favorable view of student-centered teaching, but her definition revolved around refraining from giving direct answers and minimizing teacher-dominated discourse. While she acknowledged the teacher's role as a facilitator, she said teachers should instruct and educate students. Furthermore, she stressed the importance of students taking responsibility for their learning, yet her primary expectation was that they could independently explain what the teacher had taught, rather than focusing on higher order thinking or knowledge application and creation. Her emphasis on peer sharing aimed to reduce the teacher's talk time and promote students' ability to explain answers to each other.

#### Perceived Practice of SCT

Darcy's perceived student-centered practice involves scaffolding, providing students with decision-making opportunities, and implementing small group teaching. Darcy believed that at the start of the academic year, she should assist students with a substantial amount of scaffolding for SCT. At the beginning of the academic year, her students didn't know how to discuss and have conversations with others, or how to explain what they're thinking. Without those abilities, they were unable to engage in group or independent work. She gave an example that she asked her students to discuss their recess activities, but the students didn't know how to engage in a conversation with one another. Even when some students spoke, they were not on topic. Darcy stated that she did a lot of scaffolding. As she mentioned "I give them sentence stems to get them started at the beginning of the year so that they're used to using those words" (Darcy, Interview#1, Nov 10, 2022). As the year went on, her students started discussing more, and got better at explaining what they're thinking.

Darcy stated that the second type of student-centered practice was to provide students opportunities to make decisions, allowing her students to decide when to finish certain assignments. At the beginning of the academic year, students would take diagnostic

assessments for each subject. The diagnostic assessments were offered by different educational organizations, such as IReady and the MAP assessment. The students take the IReady assessment three times every academic year for math, and the MAP assessment three times every academic year for reading. The result of the assessment would give them a grade: kindergarten, early first-grade/middle first-grade/first grade, early second grade/middle second grade/second grade, third grade, fourth grade... The IReady curriculum supplied a checklist of online lessons specific to each grade level, meaning students at various grade levels would have different checklists. For example, for reading, the lower kids may have five lessons, and the higher kids have two lessons on the checklist. Though the higher kids have few lessons, their lessons are significantly more challenging than those of the lower kids. However, all students at the same score level would have the same task list. Since students in the classroom vary in their levels and tasks in the checklist, the teacher offered them time flexibility to finish the assignments on the checklist at their own pace.

She also allowed her students to make limited decisions on what to learn. Within the topics provided by the curriculum, the teacher would seek students' preference for a special topic. For example, for a writing lesson, the curriculum asked them to write about animals and provided a list of four animals. The teacher would inquire about the students' preferred animals for their writing by raising hands. And subsequently in her lesson planning, she would prepare some writing pieces about the most chosen animal by her students. During the students' designated writing time, they would conduct further research on their selected animals using their computers. They would also engage in discussions about their writing with their peers and present their work in the classroom. Darcy described an example of how she gave student choices in the writing class.

If the majority of them expressed a strong desire to write about a specific animal, I allow them to choose that topic. However, I don't simply let them run with it without any guidance. I provide a writing prompt related to the chosen animal to help structure their writing. In essence, I strike a balance between letting them choose their

topic and providing them with some guidance in the form of prompts and direction. Once they've selected their topic, I give them time to brainstorm and write about it. We then engage in classroom discussions about their chosen topics throughout the week. They not only write about these subjects but also have the opportunity to present them to the class. Some students may even take on additional research about their chosen animals and present their findings. It's important to note that the students are actively involved in the learning process, conducting research on their computers and taking ownership of their work. (Darcy, Interview#1, Nov 10, 2022)

Small group teaching was the third method that Darcy reported to employ to implement differentiated teaching. The grouping was also determined by their performance on tests mentioned above: IReady assessment for math, and the MAP assessment for reading. Based on Darcy's perceptions, such assessments would identify students' weaknesses in each subject. For example, the MAP assessments would tell the teacher whether the students are lacking in phonics, phonemic awareness, comprehension, or vocabulary. The assessments assist teachers in pinpointing the areas where the students should catch up. Every day, Darcy dedicated specific time slots for different subjects during which she worked with small groups to provide additional support tailored to their specific learning needs. Darcy thought such small group teaching was founded on students' needs, and their needs were based on their academic assessment. As she mentioned, "like whatever groups we pull, we pull them based on whatever their needs are which are based on that assessment that we take" (Darcy, Interview#1, Nov 10, 2022).

In summary, Darcy reported that her approach to student-centered practice included elements such as scaffolding, providing students with decision-making opportunities, and implementing small group teaching. However, these practices had certain limitations. Scaffolding primarily focused on teaching students' basic knowledge to manage classroom operations and did not extend to supporting higher-level learning activities. Student decision-making was confined to selecting when to engage with IReady online lessons, which were separated from the teacher's regular teaching sessions. Students could also choose what to learn in writing, but their options were restricted to choices provided by the teacher. Darcy

reported that she primarily employed small group teaching to target and address students' areas of weakness as identified by their assessment performance, rather than implementing differentiation strategies to advance them to higher levels based on their current learning capacities.

### *Perceived Challenges for SCT*

Darcy mentioned several challenges for her SCT. These challenges were from students, the curricula, and the teachers. In terms of students, she held the belief that teachers can implement SCT for younger age students. The younger students are capable of doing a lot of tasks if the teacher guides them with the procedures and rules. However, she found it challenging to teach in a classroom of students with varying academic levels. She aspired her all her students stayed at the same academic level, which does not fit into the idea of SCT that centered the needs of students at their specific level and pace. As she mentioned, "I think the ideal situation would be, the kids all on grade level... it's hard when a kid doesn't understand something, and then there's a kid at a third-grade level, who stays above them" (Darcy, Interview#1, Nov 10, 2022). There were kids in her classroom who were far below the grade level due to the impact of COVID pandemic. Darcy noted that the current academic year posed particular challenges because the kids in her classroom had experienced Covid-19 during their kindergarten and a portion of their first-grade year. She said "I think it's because their kindergarten year was online. And part of their first-grade year was done online. So I think they have holes, so that we're still trying to catch them up" (Darcy, Interview#4, April 12, 2023).

In addition, Darcy aspired to receive more support from the families of her students. She thought parents' involvement was essential. She said "I tried to get the parents involved. I can only do so much here. So I tried to tell them like, hey, you're the other half of this partnership, we need to work together" (Darcy, Interview#1, Nov 10,

2022). However, Darcy felt it's hard to get some parents involved in their kids' education. Many of her students came from low-income families. Darcy made conflicting remarks on the parents' involvement. On the one hand, Darcy believed parents in low socioeconomic status doesn't necessarily indicate they don't care for their kids. They were busy making a living. As she mentioned "I think a lot of these parents are working multiple jobs. I think that's what's affecting it. I don't think it's that they don't care. I think it's they don't have the time" (Darcy, Interview#1, Nov 10, 2022). On the other hand, she also thought some parents just made excuses:

It's, it's hard, especially in this demographic, it's hard. I tried. And some parents, you know, they'll work with me, but some parents just don't. They always make excuses. They may say, 'I'm busy. I'm working. I can't'. So I try as hard as I can. But the parents' relationships, not always there. Some parents just don't want to be involved. (Darcy, Interview#1, Nov 10, 2022)

She perceived some students' chaotic home life influenced their learning, leading to behaviors characterized by aggression or a need for attention. This, in turn, posed challenges to her teaching.

I think some of the biggest challenges that I've had is that some of these kids come from backgrounds that, you know, their home lives, that their home lives are chaotic. They're a mess. And so it affects them in school. And so they're, you know, they're showing it with aggression or attention seeking behavior. (Darcy, Interview#1, Nov 10, 2022)

The curriculum outlines what topics the teacher should teach, what questions the teacher should ask, and suggested activities the teacher can choose. In her school, they used the IReady for math curriculum, and the Wonders for reading and writing curriculums. Darcy felt that the curriculum prioritized the standards instead of individual students' needs, yet she was obliged to adhere to it in her teaching. As she mentioned "I think it addresses the standards. I mean, the state standards. Yeah, sometimes I think these kids struggle a lot with the curriculum" (Darcy, Interview#1, Nov 10, 2022). She believed that the curriculum was more advantageous for newer teachers, as it offered clear

guidelines and prescriptions. However, it also constrained the flexibility of experienced teachers who were already well-acquainted with the curriculum. As she mentioned,

I think there's pros and cons. I feel like newer teachers, more inexperienced teachers, I think the curriculum is good, because they have something to go off of. But I've been teaching for 13 years. So some of these lessons. I'm like, I could teach, you know, I can teach it without having the curriculum in front of me. So I think it depends. (Darcy, Interview#1, Nov 10, 2022)

In addition, she felt some curriculums were student centered while some were not. In her opinion, the math curriculum was student-centered because it allowed students to do peer work. She mentioned,

Is it student-centered? I like the math one. There's a lot of like, okay, now turn and tell your partner how you solved it. For math, I think there's more time to like, talk about it and work together to solve it. (Darcy, Interview#3, March 27, 2023)

Darcy thought the reading curriculum lacked a student-centered approach. In the reading curriculum, the typical pattern was to lead students through assigned reading materials, with the teacher assisting them to comprehend the contents. Subsequently, students would engage in activities aimed at answering questions related to the reading materials.

As for the teacher herself, she experienced a sense of limitation in her ability to assist all the students. She liked to observe and check around when her students were doing group or independent work. However, she's unable to attend to all the students at a time.

I think some of the barriers might be like, maybe, when they're discussing, I'll walk around to make sure they're on the right page, make sure they do what they should do, like bring them back. But you could always meet with as many kids as we have, you could so I don't get to every group every time. (Darcy, Interview#1, Nov 10, 2022)

### **What are the differences, if any, between their perceived SCT for diverse learners and non-diverse learners?**

#### ***Inclusion of Diversity in Perceptions***

Darcy's classroom was very diverse with only 1% White students. From a Critical Race Theory (CRT) perspective, it is evident that Darcy's perceived definition of SCT lacked a critical examination of the racial, ethnic, and cultural dynamics present in her classroom.

Her technical definition of SCT, which emphasized student responsibility and peer sharing, appeared to be color-blind, treating all students, both diverse and non-diverse, as if they faced the same challenges and had the same needs. This color-blind approach failed to recognize the significance of race as a primary factor of opportunity gaps. Additionally, she had a deficit-oriented mindset as she focused on what students lacked rather than the assets they brought to the classroom. Darcy's perceptions of students' needs were the skills they lacked in their academic performance, so she helped students with the skills they lacked in the ability grouping. Darcy's perception that students who couldn't use English to explain their thoughts were not ready for student-centered teaching raises concerns when viewed through a CRT lens. This viewpoint may inadvertently perpetuate linguistic and cultural biases, as it assumes that English proficiency is a prerequisite for effective participation in SCT. She found it challenging to teach students from chaotic home environments who exhibited aggressive or attention-seeking behavior. 90% of her students had Hispanic backgrounds. Darcy's awareness of her ability to communicate with her students in Spanish due to her Hispanic identity highlights an opportunity for culturally responsive teaching. However, her choice to predominantly use English in the classroom suggests a missed opportunity to leverage her cultural and linguistic assets to support her predominantly Hispanic student population more effectively. As she said, "I can speak Spanish too. And I'm like, okay. Yeah, but I try to stick to English unless it's something that I need to translate really quick for one of them" (Darcy, Interview#1, Nov 10, 2022).

In her perceptions, diverse learners were her burden and challenges in her instruction. When teachers have a negative perception of diverse learners, they may inadvertently reduce the chances for these students to engage in valuable learning experiences, which, in turn, can impede their educational advancement. Students who sense that their teacher regards them as hindrances or difficulties may suffer from



diminished self-esteem and reduced confidence in their own capabilities. Such feelings can have a detrimental effect on their motivation and willingness to actively engage in classroom activities. Diverse learners may also experience feelings of exclusion and isolation, which can contribute to a less inclusive classroom atmosphere. This, in turn, can lead to social and emotional challenges for these students.

Darcy's perceived teaching practice largely focused on subject matters in the curriculum. In Darcy's eyes, the curriculum did address diverse learners' needs and represent their cultural backgrounds. She mentioned that in their reading course, they read stories from different cultures. As she said, "sometimes one of our stories for reading is called baby oh guru, which is like a donkey that carries books. So yeah, there's different, Yeah, we do read books from different cultures" (Darcy, Interview#1, Nov 10th, 2022). She also mentioned another example,

Oh, their cultural background? I think so. Yeah. I think so. Like this last story was about African, you know, African Americans. And then there are stories about, like, Hispanic children. I think there is a variety of cultures represented. (Darcy, Interview#3, March 27, 2023)

Reading cultural stories could only help diverse learners understand certain cultural knowledge or facts but might not help them delve deep into cultural beliefs and values (Gómez Rodríguez, 2015). Besides, as Darcy mentioned, their reading curriculum—the *Wonders* was not student centered and followed the patterns of asking students to read the material, comprehending the key concepts and answering the confined questions. The non-student-centered curriculum can't make the reading materials meaningful to the diverse learners. In addition, for the math curriculum, she thought there's no need to address diverse learners' backgrounds, since math is an objective subject. "The math curriculum, I don't know. I think math is just math" (Darcy, Interview#3, March 27, 2023). She was aware that a significant portion of the diverse learners faced language barriers, but she did not realize the correlation between these language barriers and their math performance. These diverse

learners who struggled to comprehend math problem directions would have subpar performance in math assessments.

Furthermore, in her perceived student-centered practice, she failed to recognize the significance of contextualizing knowledge related to the culture, community, and identity of children and their families as a fundamental aspect of student-centered teaching practice. Thus she missed opportunities to make her teaching more relevant and engaging by not integrating diverse perspectives and experiences into the curriculum. Darcy's view of her student-centered teaching lacked a critical perspective, as her perceptions did not address the broader goal of advancing social justice, as recommended by Theory of Critical Reflections for Transformative Teaching (Liu, 2015). While Darcy did acknowledge certain technical aspects of her student-centered approach, such as fostering student responsibility and peer collaboration, her perceptions did not delve into the larger societal implications of her teaching methods. She did not critically reflect on how she could transform her teaching in order to her approach could contribute to addressing systemic inequalities or promoting inclusivity in her classroom. Liu's (2015) transformative teaching framework emphasizes the importance of educators not only evaluating the immediate outcomes of their teaching but also ensuring that their methods align with principles of social justice and equity. In summary, Darcy's perceptions of student-centered teaching excluded diverse learners. Her approach was color-blind, and she appeared to hold a deficit mindset when it came to these students. Throughout her reflection on her students and her teaching, she did not attempt to challenge these distortions, nor did she leverage her own identity to support and address the unique needs of diverse learners.

### ***Darcy-Research Question 2***

The analysis for the second research question was mainly based on my classroom observations of Darcy's teaching practices. I also made comparisons between their

perceptions of SCT in interviews and their actual teaching practice. The observations encompassed one reading lesson, five writing lessons, three grammar lessons, five math lessons and two social studies lessons.

### **How do elementary teachers actually implement student-centered teaching in their classrooms?**

Based on the first stage of data coding, I found the following important categories to depict Darcy's teaching practice: 1) teaching content; 2) learning environment; 3) instruction style that included typical teaching patterns she utilizes, interactions in her classroom, small group teaching and students' role.

#### *Teaching Content*

As a second-grade classroom teacher, Darcy teaches reading, literacy arts, writing, math, and social studies/STEM. Her teaching time was allocated among those subjects, and she almost followed a consistent daily teaching schedule in every school day. The schedule includes a reading class from 8:00 am to 9am in the morning, Grammar from 11:40 am to 11:55 am, writing from 11:50 am to 12:35 pm, math from 12:35 pm to 1:30 pm, and social studies from 2:15 pm to 2:45 pm. Though she taught so many subjects every day, she didn't plan lessons for every subject. The lesson plans were completed through teacher cooperation with other second grade teachers. In the second grade, the four classroom teachers would hold a weekly teacher meeting to discuss lesson plans for the upcoming week. They would discuss the areas where students are facing the most challenges in each subject based on the results of the diagnostic test. As Darcy mentioned, "And we'll look at the diagnostic and be like, oh, they're struggling in vocabulary. So let's have more vocabulary activities this week or stuff like that" (Darcy, Interview#3, March 27, 2023). Based on their discussion, each teacher would be responsible for planning lessons for one subject. Darcy was assigned to plan lessons for the writing course.

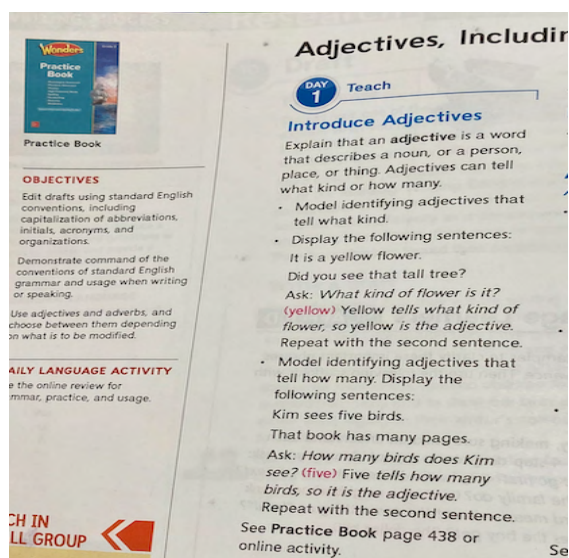
In fact, the so-called lesson plan was to select topics and materials from the provided curriculums and arrange them in the week's teaching schedule. The school chose and purchased the curriculum for the whole school. Teachers can give feedback about curriculum selection, but they were required to adhere to the curriculum provided by the school. Teachers would select teaching content, the recommended lesson plans, the PowerPoint presentations and activities worksheets from the curriculum, and put it in the shared Google Drive. In the teacher meeting, they would also receive shared Google Drive folders from their second-grade colleagues. That meant for the subject assigned to them, each teacher not only plans lessons for students in their own classroom, but also for students in other second-grade classrooms. As Darcy mentioned, "I think we all share the same one. So we all kind of do the same thing with all the second-grade kids" (Darcy, Interview#3, March 27, 2023). In this way of planning lessons, they were unable to provide student-centered instruction for their students, since their lesson preparations don't consider the current learning level for each student as well as their needs, interests and backgrounds. They primarily take into account what students were deficient in according to the standards and tests. This practice was consistent with how Darcy perceived student's needs "their needs are based on that assessment that we take" (Darcy, Interview#1, Nov 10, 2022).

Darcy's teaching content largely adhered to the materials collaboratively planned by the second-grade teachers, and she made minimal adjustments to cater to the unique needs of her students. As she said,

In most cases, we don't make adjustments. However, if there's a clear need for additional lessons, I'm open to it. For instance, if my class is struggling considerably with writing compared to other classes, I might incorporate an extra writing lesson to address their specific challenges. (Darcy, Interview#3, March 27, 2023).

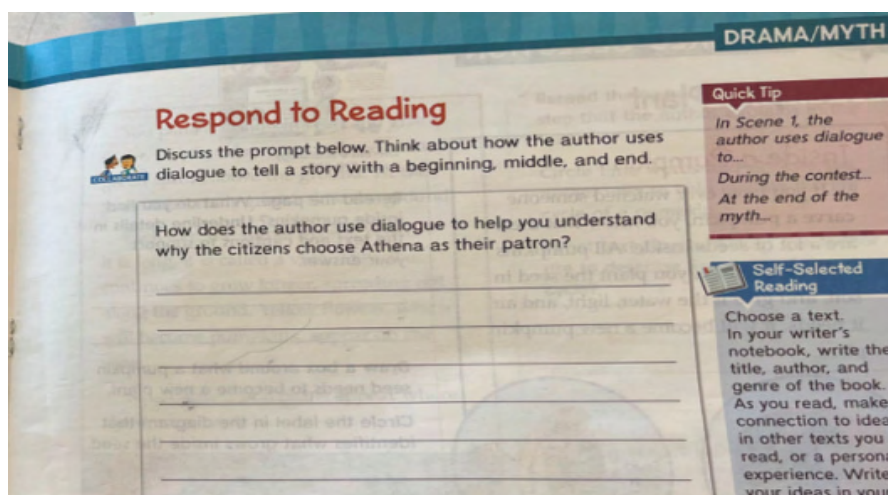
Her teaching practice also corroborated that she didn't make modifications for her students. For example, in a Grammar class, the teaching content was about adjectives. The teacher quickly read the objective shown on the slides and asked students what an adjective

was, saying, “there we go, we’re going to work on adjectives. Adjectives are something you guys learnt in kindergarten. What is an adjective?” (Darcy, Observation, March 27, 2023). She initially asked one student to answer her question but received an incorrect answer. Following that, she turned to another student but received no response either. Then she explained the concept of adjectives to the students and provided several examples. The first example was ‘yellow flower’ and she asked, “So listen, he says it is a yellow flower. Well, which word is the adjective?”. The second example was ‘tall tree’ and she asked, “Because that’s telling us the color. Did you see the tall tree?” and “Tall is an adjective because it tells us what?”. The third example was ‘five birds’ and she asked, “The size, I can see ‘five birds’. Five tells us what?”. The fourth example was ‘many pages’ and she asked, “how many? The book has many pages. Well, many is an adjective because it was?” (Darcy, Observation, March 27, 2023). These four examples about adjectives presented by Darcy were identical to those included in the curriculum (seen in Figure 1). She didn’t provide the examples related to students’ real life or experience but exactly from the curriculum.



**Figure 1: The Image of Suggested Lesson Plan for Adjectives by the Curriculum Wonders in Darcy’s Classroom**

She also made no alterations to the questions posed by the curriculum for students to answer if necessary. For example, in a reading class, Darcy began by instructing students to read the essential question displayed on the screen “How does the author use dialogue to help you understand why the citizens choose Athena as their patron?” (Darcy, Observation, April 24, 2023). She inquired about students’ understanding of what a dialogue was. Then she provided an explanation of the concept of dialogue. Following this, she read the texts to the students, her eyes fully on the screen displaying reading texts. The article consisted of six paragraphs. After reading the first two paragraphs, she asked “what did the king say?” (Darcy, Observation, April 24, 2023). However, none of the students provided an answer. Surprisingly, she didn’t read the rest of the texts, but instructed the students to return to their seats, open their textbook, turn on the designated page, read the article by themselves and write the answers to the question in their books (shown in Figure 2), “How does the author use dialogue to help you understand why the citizens choose Athena as their patron?” (Darcy, Observation, April 24, 2023).



**Figure 2: The Image of a Question Responding to Reading by the Curriculum Wonders in Darcy’s Classroom**

Obviously, most students were unsure how to answer the question, as evidenced by the fact that their question page remained blank until the end of the class. In fact, this lengthy reading question encompassed two issues that the students should answer: why the citizens choose Athena as their patron? How does the author use dialogue to help you understand? The teacher can at least modify this question a little bit by decomposing it into two questions. In summary, Darcy made minimal adjustments to the teaching content selected by her colleagues from the curriculums. As a result, Darcy did not implement any differentiation regarding the content she taught in her classroom. Can the curriculum, without modifications, fit all the second grader' learning needs? I think the answer is no. But Darcy liked to see all the students are on the same page. As she said,

I like that we all do the same thing. That keeps like keeping all the kids on the same level. So all the kids are learning the same things. Yeah. And no kid, you know, not one class is being left behind or getting lost. (Darcy, Interview#3, March 27, 2023, March 27, 2023)

### Learning Environment

The teaching and learning activities in Darcy's classroom mainly took place in two areas: on the carpet and at the students' desks. Typically Darcy conducted lectures or whole-group activities on the carpet, while students engaged in independent practice at their desks. Shown in Figure 3, the carpet was positioned under the teacher's whiteboard, and when the teacher was lecturing, she stood in front of the whiteboard, surrounded by the students seated on the carpet. The students' desks have one group of students' desks parallel to and facing the teacher's whiteboard, while the other three groups were arranged perpendicular to the teacher board. But overall, the setup of the students' desks still faces the teacher board, revolving around the teacher. Occasionally, the teacher and a small group of students would gather at the teacher' table (shown in Figure 4). The teacher's table was semicircular, with the teacher seated in the center of the semicircle, facing the students. Whether it was on the carpet, at the

students' desks, or at the teacher's table, the teacher was positioned at the center, with students surrounding the teacher.

Darcy informed me that she positioned students near her on the carpet based on her estimation of who needed more assistance. "I tried to sit most of my kids that needed more help up closer towards me so I can see them better than those that are more independent or more in the back" (Darcy, Interview#2, March 09, 2023). As for the student desks, the students were mixed in every group, including both those with higher academic performance and those with lower performance. "It's mixed so that they can help each other out" (Darcy, Interview#2, March 09, 2023). Darcy told me that she would rearrange the students' desk seats unless they found that their current seats were not suitable. "This year so far, I've switched them twice just when I see it's not working. If I'm like, oh, this isn't working. I need to switch it up" (Darcy, Interview#2, March 09, 2023). Throughout my observations from March 9th, 2023, to April 28th, 2023, the seating arrangement of the students' desks remained the same.



**Figure 3: The Image of Classroom Organization of Carpet and Students' Desks in Darcy's Classroom**



Notably, the carpet was not large enough to accommodate all the students, so when there were activities on the carpet, some students couldn't sit on it. That's why there was a separate student desk group that was parallel to the teacher's whiteboard and positioned close to the carpet. Those students who didn't secure a spot on the carpet would stay seated at their desks while other students were sitting on the carpet. They were treated differently since their desks directly faced the whiteboard whereas students at other groups of desks faced their peers. That implied students at other desk groups were surrounded by more of their peers. Besides, in the corner adjacent to the teacher's table, there was a single student desk (shown in Figure 4) isolated from the others, facing the classroom wall. It was the desk occupied by an African American girl. During the carpet time, she would join the other students who had a spot on the carpet. However, during independent work time or group work time at desk, she would sit alone, facing the classroom wall. It's evident that neither the special desk group separated from the other three groups nor the single African American girl with a separate desk were treated equally as other students.



**Figure 4: The Image of Teacher Table and a Separate Student's Desk in Darcy's Classroom**

In addition to the teacher-centered classroom organization, there were limited resources for students to explore in the classroom. The decorations on the classroom wall appeared sparse. On the teacher whiteboard, there were several temporary posts displaying recent important lecture points. The teachers highlighted these key points during class, and both teachers and students compiled them. These points would be updated as new lecture material emerged. At the left corner of the teacher board, it showed a C.H.A.M.P. S classroom management model (seen in Figure 5), with C standing for conversation, H for help, A for activity, M for movement, P for participation, and S for success. This model outlined the descriptors of the teacher’s expectations (e.g., voice zero/one/two in conversation) for students’ behaviors (conversation, help, movement, participation, success). The descriptors may vary depending on the types of tasks and/or the location of the activity. For example, voice zero (conversation) for seat work (movement) all by myself (participation). Even though this model was displayed on the teacher board, Darcy hardly made use of it for the classroom management.



**Figure 5: The Image of the C.H.A.M.P.S Classroom Management Model in Darcy’s Classroom**

Adjacent to the left side of the teacher’s whiteboard, near the door, there was a conspicuous area adorned with artificial tree leaves, with the word “Goals” directly above it. Just below the “Goals” area (shown in Figure 6), there was a post. This post contained information about the number of lessons students must complete weekly in the IReady online program, along with the rewards they can earn upon achieving 100% passing for each lesson. The post used four different colors of text to represent four levels of students, with red AA for the lowest level and green C for the highest level. The “Goal” area was to help students to monitor their progress in IReady lessons. There were student profile pictures put in the “Goal” area which signified each student’s current reading level in the IReady online program. If students advanced to a higher level, they had the opportunity to move their profile picture upward. According to this “Goal” area for Iready reading performance, we can see some students were at the lowest level–Level 1, and the majority of the students were at Level 2 which was also quite low.



**Figure 6: The Image of the Goals Area and IReady Lesson Requirement & Rewards Model in Darcy’s Classroom**

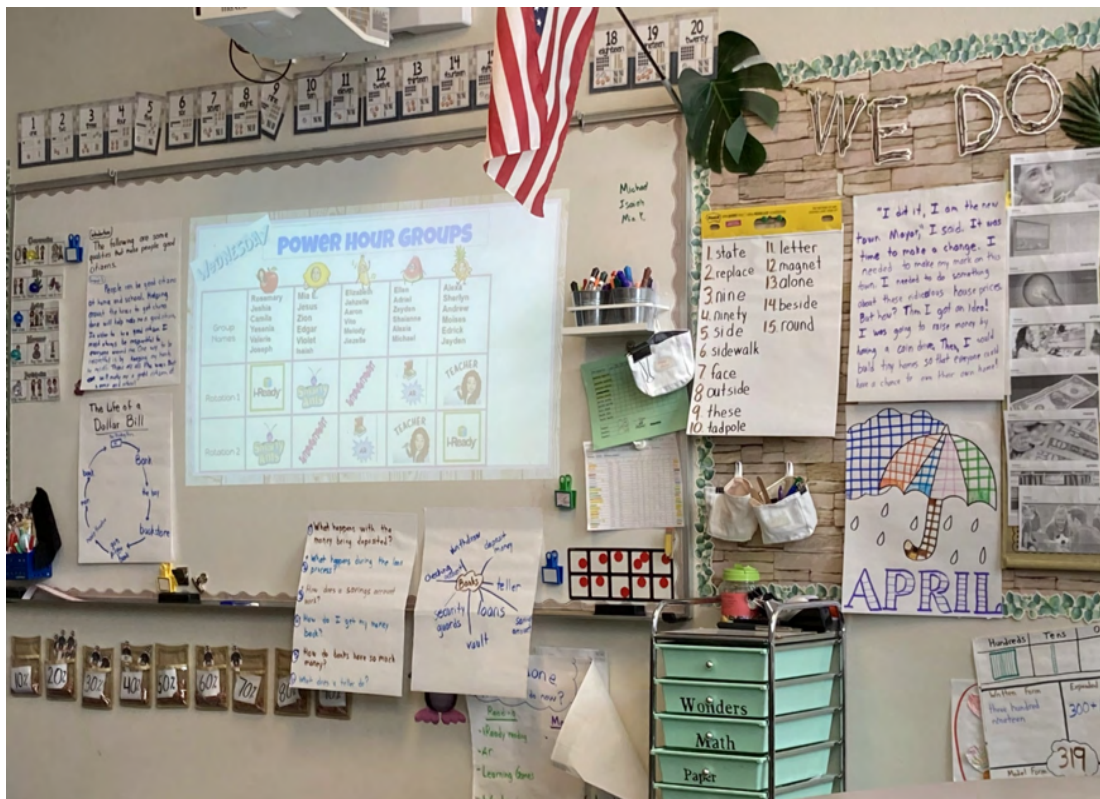
The IReady math performance charter was displayed under the teacher whiteboard. Shown in Figure 7, the percentage label on the ten pockets represented the percentages they passed in their weekly IReady math lessons, with 100% signifying a full score. Students would place their image profile in the pocket corresponding to their levels. Darcy told me that students would move their images forward weekly, “so every week, at the end of the week, on Fridays, usually at the end of the day, they’ll move themselves up to where they need to go” (Darcy, Interview#2, March 09, 2023). Again, based on these IReady math percentage pockets, we can see the majority of them received low scores for their IReady math performance.



**Figure 7: The Image of the IReady Math Performance Monitor in Darcy’s Classroom**

On the right side of the teacher’s whiteboard, there was a wall labeled “We do” (shown in Figure 8). It featured posters that contain lists of key lecture points or high-frequency words that students should master for the week. On the “We do” wall, there’s also a sticker chart with a lot of squares for coloring. This chart was intended to encourage students to finish the IReady online lessons. Each time a student successfully completed a lesson (no matter in math or reading) with a 100% passing grade, they could fill in one of the

squares. The chart would be changed monthly. At the end of the month, if all the squares are colored, the teacher would reward the whole class. As she mentioned, “If they get it all colored in, they get to choose between pizza party donut party or ice cream party” (Darcy, Interview#5, April 24, 2023). As displayed in Figure 8, it was in the shape of an umbrella in April 2023. Up until the day I took the picture on April 12, 2023, only a few squares had been colored. That implied the students struggled in the IReady online lessons.



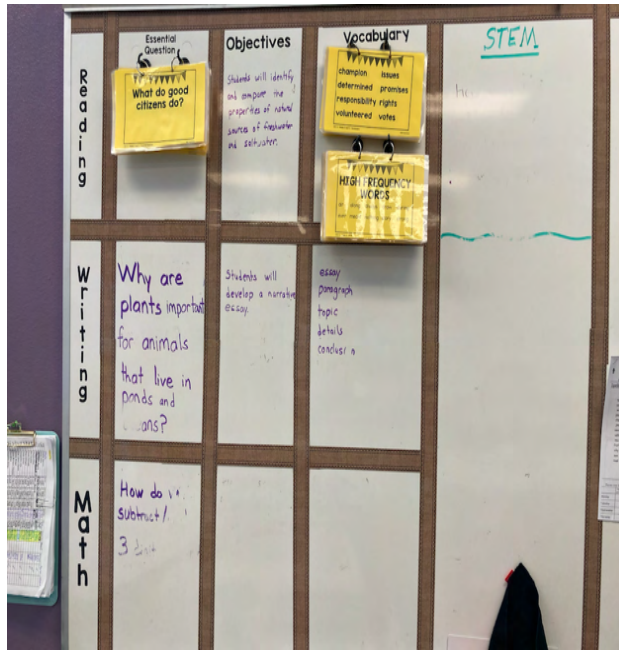
**Figure 8: The Image of the “We Do” Walls & Coloring Charter in Darcy’s Classroom**

The classroom wall that the isolated desk, where the African American girl sat, faced was adorned with a weekly focus wall adorned with groups of small whiteboards, displaying the weekly objectives, essential questions, and vocabulary for reading, writing, and math

(Figure 9). This wall was also embellished with various paper sheets, including students' homework, grade summary report for each subject, and forms of IReady lesson completions (Figure 10). The materials on this classroom wall were predominantly curriculum-based, as they all originated from the curriculums. The classroom wall facing the teacher's whiteboard served as resources for each subject. But actually they were some techniques for solving the subject problems. For example, depicted in Figure 11, Darcy mentioned the cube on the post was just a strategy for solving number line problems. The nature of these resources remained focused on lecture points aimed at helping students remember and comprehend the math strategies. As she mentioned,

This math, like that's the one we're working on making 10 cubes, is how I teach them to do word problems. Circle the numbers underline the question, box the key words, evaluate and solve. So it's just a strategy for solving the problems. (Darcy, Interview#2, March 09, 2023)

There was a photo wall situated near the corner between the subject resource wall and the weekly focus wall, with a few photos of students hanging there. This was the only area in the classroom that related to students themselves. The last wall was hung with sight words specifically intended for helping students to spell words in their writings. As she described, "Like these are for writing. These are our sight words that they if they don't know how to spell it, they'll come up here and they'll grab it and they'll look for that word" (Darcy, Interview#2, March 09, 2023). Beneath the sight word cards, there was a small library corner. In summary, the entire classroom decoration reflected a focus on the curriculum, teaching content, and the completion status of IReady lessons. However, it did not prioritize student-centeredness.



**Figure 9: The Image of the Weekly Objectives & Essential Questions for Each Subject in Darcy’s Classroom**

3rd Quarter	Level	1 lesson passed	2 lesson passed	3 lesson passed	4 lesson passed	5 lesson passed	6 lesson passed	7 lesson passed	8 lesson passed	9 lesson passed	10 lesson passed	Pass
January 2-6												
January 9-13												
January 16-20												
January 23-27												
January 30-Feb 3												
February 6-10												
February 13-17												
February 20-24												
February 27- Mar. 3												
March 6-10												

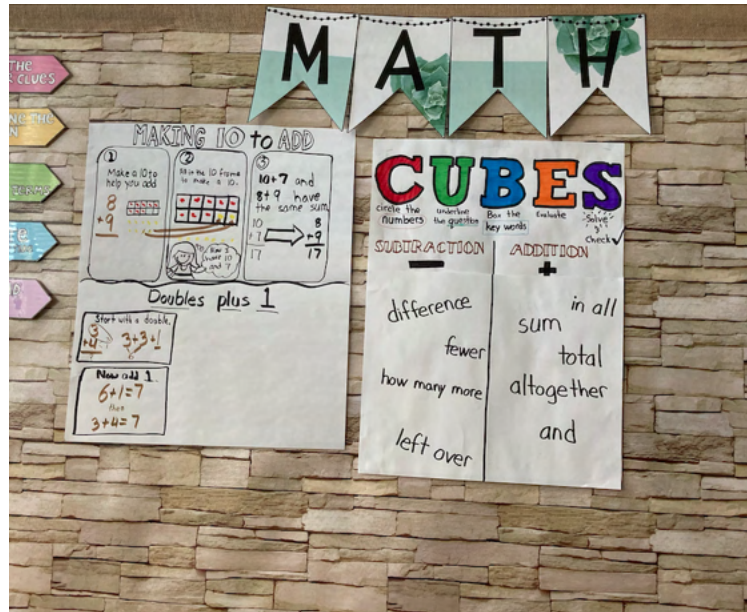
  

	Goal	Score
Diagnostic 1		
Diagnostic 2		
Diagnostic 3		

Name \_\_\_\_\_

i-Ready MATH

**Figure 10: The Image of the Forms of IReady Lesson Completions in Darcy’s Classroom**



**Figure 11: The Image of the Subject Resources Wall in Darcy’s Classroom**

### Teaching Patterns

Darcy’s patterns of teaching practice varied depending on the subjects. In mathematics, a new concept would be introduced every day, and her instruction followed a consistent routine: review– introduction–guided practice–independent practice. In her writing classes, Darcy granted students some autonomy in deciding what they want to write. During reading classes, Darcy preferred using guided questions to aid students in comprehending the reading materials.

The math class usually took place at 12:35 pm every day. Darcy would first ask the students to sit on the carpet with their whiteboards and markers. It always began with a slide titled “Fluency”, displaying four math problems. This segment served as a review to help students revisit previously learned concepts, they might still find challenging. Over the two months of my observation, the first three problems consistently covered three types: clock time recognition, calculations involving dollars, dimes, and quarters, and addition or subtraction of three-digit numbers. The fourth problem was a word problem that may vary a



little bit every day. For each problem, the teacher would initially have the students solve it individually using small whiteboards and pencils. Afterward, she would select one student to write down their problem-solving process and explain how they arrived at the solution to the entire class. This review section typically lasted for about 15 minutes. The next part would begin a new topic for today's math. I would provide an illustration of how Darcy delivered a new math lesson.

I described the math lesson on March 21st, 2023, as an example. After the review section, the slide displayed the objectives and essential questions of that day. As usual, Darcy asked the students what the objective or essential question was for the day, and the answer was shown on the slide. The whole class answered, "how do we compare numbers" (Darcy, Observation, March 21, 2023). She usually asked students to read the essential question together or she read it herself and then quickly turned to the next PowerPoint slide. Darcy did not provide explanations, ask questions, or encourage students to share their thoughts for this essential question. The next slide displayed a math problem. Darcy asked the students to read the directions for the math problem together. "Ready, let's read the example." (Darcy, Observation, March 21, 2023). The math problem was about comparing who was taller between Jonah and his sister. Then Darcy asked a series of questions that broke down the steps of the problem, including inquiries about the method to compare their heights, Jonah's height, his sister's height. When asking the method to compare their heights, Darcy asked, "If I want to know how much taller one is than another, what do I need to do?" "Subtract", the students responded. Darcy continued to ask the height for Jonah, "So how tall is Jonah?" Some students said "52" and some said "55". Darcy lectured and asked the height for Jonah's sister, saying, "52 inches tall, Jonah is 52 inches tall. His sister is how tall?" The whole class answered, "43 tall". Darcy asked what the answer was of 52 minus 43. "9", the students answered. Darcy asked, "Did I answer the question?". "No", the students answered. Darcy

asked, “So how much taller Jonah is than her sister?” The teacher and students said the answer together, “Jonah is 9 inches taller.”

Following this math problem example, they proceeded to the guided practice. The slide showed a new math problem and its corresponding page number in the students’ math book. The math problem was also about using subtraction to compare numbers. Darcy asked the students to solve it on their own. The students went back to their seats, opened their math book and did their own work. Darcy would always walk around, observe how students do their own work, and provide help if she found any students were struggling. She reminded one student: “you should not change the unit of measurement” (Darcy, Observation, March 31, 2023). After two minutes, she asked the students to share their problem-solving process with their shoulder partner: “Turn to the person sitting next to you, your shoulder partner, tell them how you solve your problems. If your answers don’t match, try to figure out why” (Darcy, Observation, March 31, 2023). After one minute, Darcy regained the students’ attention back: “Alright, eyes up”. The students responded, “eyes up”. She called on a student, Student A, to come to the carpet and present his answer: “A, go show us how you solve it, alright everybody on the carpet, so you can watch it clearly”. Student A drew a number line on the whiteboard. Then Darcy turned to student A: “tell us what you’re doing? Read the question first. We don’t know anything.” Student A read out the question. Darcy then asked, “So what’s the question we’re trying to answer?” Student A answered: “What is the difference?” Darcy asked him to explain his problem-solving process: “We want to know the difference. So go ahead and explain to us what you’re doing.” Student A failed to answer. Just like the instructions for the example math problem, Darcy asked Student A a series of questions that deconstructed the problem-solving process. Darcy asked: “So how much is the green one? Write it down. Okay. And how many centimeters is the red one? Okay, now if you want to find the difference in length, what do you do?”. Student A answered: “Minus”.

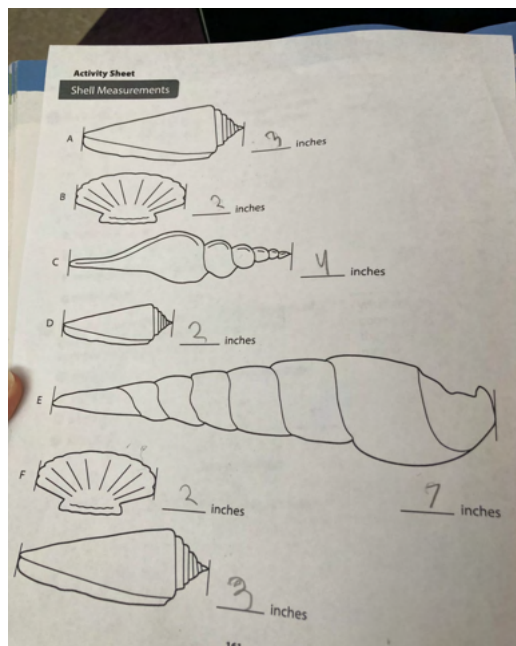
After student A did the subtraction on the teacher board, Darcy asked the students to thumb up if they agree with student A.

Darcy proceeded with the guided practice by presenting additional math problems. Much like the initial guided problem, she instructed the students to work independently before going over the problems collectively. Prior to students returning to their seats, Darcy provided explanations for each problem. She directed the students to read the directions for the second guided problem, and subsequently, she clarified the problem: “So I need to find out how much each one is and then I need to say how much shorter it is” (Darcy, Observation, March 31, 2023). Similarly, the students read the third guided problem together and Darcy interpreted the problem. Darcy gave the instructions: “You are goanna do number two and number three, and then we’ll come up and solve them together” (Darcy, Observation, March 31, 2023). Again, she invited individual students to explain their problem-solving processes for each problem, and asked whether other students agree with their answers. Following these three guided practice exercises, she assigned independent practice on the textbooks for the students, and she would not provide explanations for those practices. She said: “We’ve practiced together, we’ve gone over them. Now it’s your turn to show me that you understand. You have 10 minutes. You’re doing page 587, 588, one through five” (Darcy, Observation, March 31, 2023). After students finished their independent practice around 13:30 pm, they ripped out the independent practice pages from their textbook and handed it in to their teacher. There’s no concluding summary for the day’s math lessons.

That’s the typical structure of Darcy’s daily math class: she began with an example to explain how to solve the type of problem, and guided students with several practice exercises during which she would encourage peer explanation and ask a few individual students to explain their answers, and finally ask students to do independent practice. It reinforces that Darcy’s teaching content was curriculum-based since all the math problems were all from the

textbooks, and she didn't make modifications. Throughout the five math lessons I observed, she didn't do any hands-on activities. On a single occasion, she instructed students to use a ruler to measure the length of different shells on the paper sheet (see Figure 12), which was also an activity provided by the curriculum.

The writing lesson commenced shortly after they returned from their lunch around 11:50 am. The writing lessons were organized by specific topics. It took students several weeks to finish writing one topic. The writing and reading classes used the same curriculum, *the Wonders* that provided the same topic for both subjects. As Darcy mentioned: "So we always tie the writing to whatever we're doing in reading. Based on the reading topic, so that they already read stories about it, we've talked about it, so they should have some idea on what they're writing about" (Darcy, Interview#3, March 27, 2023). Throughout my five observations of writing classes from March 9th, 2023, to April 28, 2023, the writing lessons covered three topics in total: good citizen, bank, and myth.



**Figure 12: The Image of the Measuring the Length of Shells**

Darcy would introduce the topic at the beginning and allow students to decide what they want to write around this topic. After students had decided what to write, Darcy didn't require the students to complete an entire essay at once but rather to write it one paragraph at a time. Before writing each paragraph, Darcy would explain the key points for the paragraph and provide writing examples. Darcy would provide some freedom to students on deciding what they wanted to write. For example, on March 27, 2023, they began the topic of banks. After Darcy asked students to read the essential question on the slide "how people use banks", Darcy informed students that their writing task was to write an expository essay about banks. She asked students what an expository essay was: "Expository means we're giving?" (Darcy, Observation, March 27, 2023). A few students answered: "Information". Darcy lectured: "What are we giving information about? We're giving information about banks." She proceeded to explain what the students would be doing for their writing assignment about banks: "We're goanna write a research report about things. A research report is a kind of expository text that you will need to do research on in order to write your report." She clarified whether they were allowed to invent things in their expository text by asking: "I need to do research. It is nonfiction that means it's real. Can I make things up?" "No" A few students answered. Then Darcy played a video about some concepts about banks and said: "The video will tell you how I think a bank is. Let's find out a little bit about it." The video was a dialogue between two girls about banks. It introduced several key concepts of the banks: loans, saving/checking account, deposit/withdrawal money, tellers, security guard.

Darcy would stop the video if it mentioned one key concept and Darcy asked students to recall what the key word was. It's obvious that the students didn't understand those concepts but tried to memorize them. At one time, the video mentioned the concept of

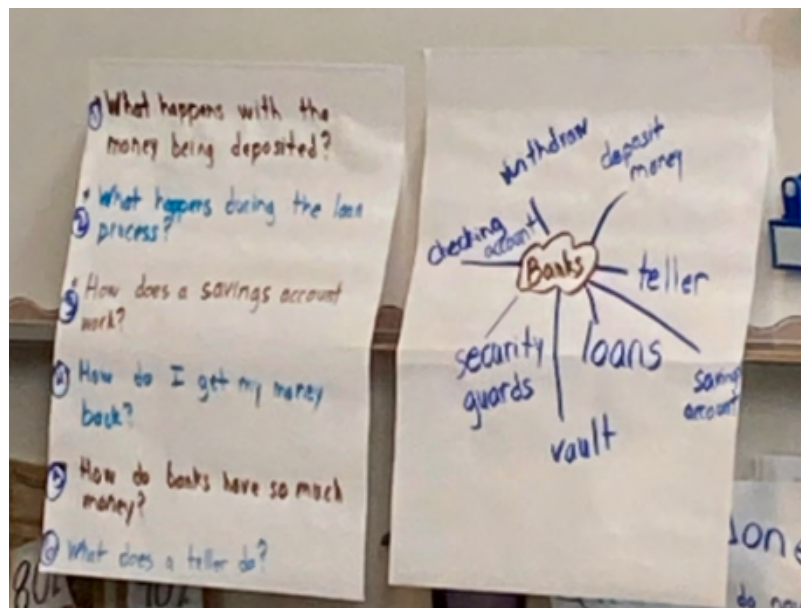
‘discounts’ in the markets and then introduced the concept of ‘savings account’. When Darcy asked them what the key word was about banks, some students said “discounts”. Then Darcy played the video a little bit back, and a few students said “savings account”. At last, the whole class summarized what the bank can do, and Darcy also listed all those key concepts on a post (see Figure 13). Darcy asked students to write down three questions they wanted to research about the bank on their *Wonders* textbook in ten minutes. She provided an example of the three questions she wanted to write about the bank.

Students have some freedom in their writing classes about what they write for a provided topic. That may be because the curriculum didn’t provide many details on how to teach the writing lessons. As Darcy mentioned, “I think the writing part of it [the curriculum] could be improved, the writing is like, it’s there. But it’s not as detailed as I would want it to be” (Darcy, Interview#4, April 12, 2023). She meant that the curriculum only provided prompting questions but didn’t give any writing examples or decompose the writing steps for the students. As she mentioned,

The *Wonders* just mention what to write about. Like, it’ll give them the prompt, and then they write about it, but we’re more detailed.... we’re like, okay, you need to have two paragraphs, and you need to have a topic and a conclusion, where it [the curriculum] just.... gives them what you’re writing about, so we break it down more for them. (Darcy, Interview#4, April 12, 2023)

After students had chosen their topics, Darcy guided them to write the paragraphs in the subsequent weeks. Darcy crafted the writing example for each paragraph. In fact, as Darcy was in charge of the lesson plans for second-grade writing, her examples served as the reference material for all other second-grade teachers. When it came to writing lessons involving paragraph composition, Darcy didn’t lecture too much. She only read out her own example paragraph and broke down the reasons behind each sentence’s inclusion. The guidance for writing each paragraph, albeit brief, remained predominantly teacher-centered, since teachers did the most talking and students only passively responded to the teacher. For

example, in a writing lesson centered around the topic myths, after reading the essential question, the slide displayed a paragraph example titled “Middle/Explains the problem” (Darcy, Observation, April 21, 2023). Darcy first reviewed what has already been done: “So we’re writing a myth. Everyone remembers what your myth is? Either on the sunflower or a cactus or tree. You’ve already written your first paragraph” (Darcy, Observation, April 21, 2023). She continued to mention what they had done, saying “Everybody should be done with paragraph one where all you did was introduce your characters and told me a little bit about those characters” (Darcy, Observation, April 21, 2023).



**Figure 13: The Image of Key Concepts of Banks in Writing Lessons**

After that, she proceeded to explain the task for the day to the students: “Today. We’re gonna start paragraph two, which is the middle. And all we’re going to do with paragraph two is we’re going to explain what the problem is” (Darcy, Observation, April 21, 2023). Then she read out her example paragraph: “Okay, so here’s my example. Remember, I

am talking about a family of God and Goddess, and their neighbors” (Darcy, Observation, April 21, 2023). She gave an explanation or asked a question for each sentence in the example paragraph. “Their names were rainbow, rain, lightning thunder, sun, and those are my characters and then all of our peoples were introduced” (Darcy, Observation, April 21, 2023). “Today I’m going to tell you what the problem they’re facing. So for example, while Pop’s left, and Mama worked, the boys sometimes got into mischief. What does that mean?” Darcy asked. “They did bad things”, a few students answered. “They did bad things. So now I’m telling you what the problem is that I’m having. Will the boys do bad things or things they were not supposed to do?” (Darcy, Observation, April 21, 2023).

The example paragraph had five sentences in total, introducing how rainbow’s brothers fight with each other. After Darcy read her paragraph, she asked students what was her problem: “So what’s the problem? How was the rainbow feeling?” “Sad”, a few students answered. Darcy summarized: “So the problem is that the rainbow is sad. Because your brothers got what?” A few students answered: “fight”. Darcy explained: “So the problem is, the rainbow is sad. Because all her brother’s do is fights and she wishes that she had a power that would make the humans happy instead of sad, like his brothers are doing” (Darcy, Observation, April 21, 2023). Darcy finished her lecture very quickly. The writing lesson began at 11:50am, but the lecture ended at 11:55am. After she explained her example, she gave students 30 minutes to write their own paragraphs. In this short lecture, Darcy didn’t instruct the methods to write the paragraph, but read an example to them. That’s maybe because she didn’t know how to teach students to write the paragraph. As she mentioned, “Writing, I think, is my biggest struggle. That’s the one I’m still working on. For myself, I’m always changing [how to teach] writing because I’m still trying to find what works best” (Darcy, Interview#3, March 27, 2023). That was a typical lesson for writing paragraphs. Darcy read and explained her example paragraph and then asked students to write on their



own.

The reading classes usually took place in the early morning around 8:15 am. Darcy tended to ask guided questions to aid students understand the reading materials and answer the designated reading questions. For example, On March 9, 2023. Darcy asked the students to go to the carpet with their whiteboards and pencils. Darcy handed out one page of reading paper to each student and asked them to read the page by themselves. The reading narrated a story about a child named Mathews with disabilities who received educational assistance from an institution called SMILE CAMPE, leading to a transformation that brought a smile back to his face and enabled him to receive a regular education. As he grew up, he raised funds to support 30 other children, bringing happiness to their lives as well. After two minutes of independent reading, Darcy firstly asked what the article was about: “what’s the article about? What is it about, student B?” (Darcy, Observation, March 9, 2023). “Citizens”, student B answered. Darcy was not satisfied about this answer and asked students to give more specific answers: “would you read it to be more specific. What is it about, student X?” “Smiles”, student X answered. Darcy continued to ask: “What is it about? It’s about smiling. What does that mean?” One student answered: “to be happy.” Darcy didn’t receive a satisfactory answer, so she instructed the students to reread the article by themselves.

After they reread the article, Darcy continued to ask what the article was about, but students still failed to give satisfactory answers. For example, several students raised their hands, and one girl said: “to help people make smiles.” Darcy asked: “What does that mean? What does that mean helping to make smiles?” One student answered: “To make them happy.” Darcy asked: “how do they make them happy?” Another student answered: “make them laugh.” One student said: “they’re telling jokes.” One student said: “with lovely faces.” Not receiving a satisfying answer again, Darcy asked the students to reread the article together. After this round of reading, Darcy still asked questions to check students’

understanding but she decomposed her questions a little bit. Instead of asking what the whole article was about, she asked students what each paragraph was about or what the meaning of a key concept in each paragraph meant. For example, after reading the first paragraph, Darcy asked a question: “What is disability?” One student answered: “someone you have trouble with, but others don’t.” Another student answered: “You have trouble doing something.” Darcy asked: “what is Matthews’s disability?” One student answered: “His muscles are weak.” Darcy asked students to continue to read the rest of the article. Darcy held a pointer and pointed to the screen where the students read. The second paragraph was about how an institution called SMILE CAMPE changed the boy’s life. Then Darcy asked students what the second paragraph was about: “So what does this paragraph about? What does this paragraph say about, student C?” “It’s about how helpful the SMILE CAMPE is”, student C answered. Darcy said: “Okay, but there’s one big thing that they’re talking about in that entire paragraph.” A few students answered: “Smiles.” Darcy said: “Smiles, right, but what’s CAMPE’s smiles?” One girl answered: “Children with disabilities of muscles.” Darcy asked student S: “But what’s the connection between these children and CAMPE? Why do these children have to go to this CAMPE?” Student S failed to answer. Without giving guidance to Student S, Darcy gave a direct explanation: “Because it helps make them happy, right? They created SMILE CAMP so that people who couldn’t typically attend other camps still have a place to go, have fun, and engage in all the activities that other kids get to enjoy.” Following this, she instructed students to read the last paragraph and asked them a question: “What is SMILE CAMPE’s challenge?” One student answered: “Trying to get people to pay money so you can join.” Darcy lectured: “He was raising money so that 30 children that wouldn’t have the money to go are still able to go. So how is a tie back to our essential question, how is Matthew being a good citizen?” Darcy asked the students to turn the reading paper over on the back and write down their answer to the essential question. After five minutes, Darcy

asked students to share their answer with their partner: “Alright, pencil down, to your partner and tell them how Matthew is a good citizen.” After the partner sharing, Darcy asked several students to present their answers in the class and asked other students to agree or not. That’s a typical reading lesson in Darcy’s class: she continues to ask students questions until they can answer the posed questions.

Though Darcy’s teaching patterns varied a little bit by the subjects, her teaching style was teacher centered. Her highest expectation for students was not that they can apply what they learned or create something new based on their learning, but that they can explain what they had learned or replicate the teacher’s explanations, such as explaining math problems, using their own words to answer reading questions, or writing paragraphs as the teacher demonstrated. It’s consistent with her perceptions that students who can explain are prepared for student-centered teaching. For the majority of class time, the teacher-student interactions involved Darcy asking questions to the whole class or directing questions to individual students. Darcy didn’t provide opportunities for students to pose their own questions or construct their own meaning and knowledge. During my observations, I did not hear her inquire whether students had any questions. Darcy typically asked three main types of questions in her class: 1) factual questions directly related to the math problem or reading texts or paragraph examples; 2) yes or no questions, such as agree or disagree; 3) scaffolding questions. In fact, her scaffolding questions were to break down the steps to the final answer. For example, one math problem was that the red rope was 16 inches, and green rope was 5 inches, then what is the difference between the red rope and green rope? Darcy asked three questions for this problem: 1) how to solve the problem of comparing differences? 2) What’s the length of the red rope? 3) What’s the length of the green rope? Scaffolding was one important element in her perceived student-centered teaching, and she defined scaffolding as decomposing the steps for students’ understanding, as she mentioned: “I think we have to

scaffold their learning, since you can't just give them something and they're goanna know it" (Darcy, Interview#1, Nov 10, 2022). However, the purpose of scaffolding was to assist students in finding the answer rather than engaging in higher order thinking which should involve critical thinking, problem-solving, analysis, synthesis, evaluation and creativity (Widana, 2017). These cognitive skills go beyond basic memorization and recall of information.

The primary activity was partner sharing, with Darcy primarily instructing students to share their answers or explain their responses to one another. This aligns with Darcy's definition of student-centered teaching, where teachers shouldn't do all the talking and students should also learn from their peers. However, in her teaching, she primarily delivered the instruction, and peer sharing played a relatively minor role. In addition, the purpose of peer sharing was to enable the students to hear their peer's explanations. For example, in one math class, Darcy asked one individual student to explain his answer, and she told the whole class to be respectful: "Everybody else is listening and being respectful! I want you to listen to more explanation" (Darcy, Observation, March 21, 2023).

### *Small Group Teaching*

Darcy perceived small grouping to be an important student-centered practice in her class, but it happened outside the regular teaching sessions. The small group teaching involved some differentiation in the content tailored to the level of each specific small group. However, it was curriculum-based and primarily focused on addressing the identified deficiencies in their assessments. The instruction style in small group teaching was still teacher centered. Darcy conducted small-group instruction for students who lagged behind in each subject in a fixed time schedule: 9:00 am-10:00 am for reading and 13:30 pm-14:20 pm for math. The small group teaching for reading was required by the school. It's called the Power Hour program. Based on their reading levels identified in the MAP testing, the whole

second graders were rearranged into separate classrooms: one for students struggling in reading comprehension at the second-grade level, one for those struggling in letter sounds and blending words, one for those struggling in reading comprehension but below the second-grade level, and one for those with higher reading levels. Each second-grade teacher would teach the reading corresponding to students' levels. Darcy's classroom was assigned to students who were struggling in reading comprehension at the second-grade level. During the power hour, the students in Darcy's classroom were divided into five groups: the Orange Group, Apple Group, Pineapple Group, Lemon Group, and Watermelon Group. Each group consisted of about six students, and at any given time, one group would receive small group instruction at the teacher table, one group would work on their IReady reading lessons using laptops, two groups would leave with two interventionist teachers, and one group would engage in independent reading in the classroom library corner. During the one-hour power hour, students had two rotations to switch between tasks. The slide displayed the tasks assigned to students during the two rotations. Darcy mentioned that the two interventionist teachers went outside for the small group instruction because it would become too noisy if all the teachers were talking in one classroom. There were tables and chairs for the interventionist teacher in the hallway.

Even though the small groups were learning reading materials tailored to their levels, the teaching method remained teacher directed. Similar to the whole class instruction in reading class, Darcy guided them to read the materials and then tried to answer responding questions. For example, on the power hour of April 24, 2023, Darcy called a group of five students to the teacher table. Each student received a blue book. The teacher guided them to read the cover page and then asked each student to take turns reading one page aloud. An African American boy was the first to read, followed by a Mexican girl, who had some difficulty reading fluently. Darcy patiently waited for her and helped her with the words she

couldn't recognize. A White boy was the third to read, followed by a Mexican boy who was the fourth to read. The teacher would ask intervention questions during their reading. For example, she asked: "Why do you think he's a hero? What do you see in the book?" (Darcy, Observation, April 24, 2023).

However, unlike the whole class instruction, Darcy could spend more time with each student and give them feedback on their answers to the reading questions. After they read the first Chapter of the blue book, Darcy instructed them to write their answers in their notebooks, specifically asking, "What does the book tell you about? Why he is a hero?" (Darcy, Observation, April 24, 2023). The teacher checked the African American boy's answer and encouraged him to be specific and not simply copy from the book. Darcy emphasized, "Don't just copy, please use your own words. You can say the book said...that's why... Don't copy the words directly and don't say anything by yourself" (Darcy, Observation, April 24, 2023). Darcy also addressed the Mexican girl that she couldn't just copy from the book and needed to answer why the character was considered a hero based on what the book told them. Darcy held up the book and read several sentences from it, explaining that the book provided the information they needed to understand why the character was a hero.

The math small group instruction took place immediately after students finished their independent math practices around 13:30pm. The majority of students would take IReady math online lessons on their laptops. Similar to the small group teaching for writing, the math small group instruction was not mandatory, and no interventionist teacher was present, but it's a routine for Darcy that she would do small group teaching during the IReady math time. The IReady math curriculum would provide the teaching content for the small groups based on their performance in the IReady math assessment. Students took the IReady math assessment on their laptops. Then on the teacher's IReady platform, Darcy can see students'

mastery level of specific knowledge points. For example, she can see a few students were still struggling in adding or subtracting on the number line. Then she would call those students to her teacher table for small group teaching. The IReady curriculum would offer the review content specific to help these students with addition and subtraction on the number line. Darcy only needed to print out the content and hand out the paper sheet consisting of 4-5 math problems to each student at the teacher table. The teaching pattern was also teacher-centered since Darcy would lecture first, do guided math practice and then let them do independent practice. During the 50 mins IReady math time, Darcy would call two groups of students to her table.

The small group instruction for writing took place when students did their independent writing task in the regular writing class time. It was more like Darcy guided the small group to do the day's writing task together. Darcy would ask several students to her teacher table. Those students were the ones she thought had struggles in their writing. For example, after the majority of students began their independent writing assignment on March 27, 2023, Darcy asked six students to her teacher table with their Wonder books. On that day, the writing task was to ask students to come up with three questions they wanted to write about banks. The small group writing instruction also revolved around writing three questions about banks. For example, the teacher said: "All right let's get some of these questions down. Open up your wonders book. I'm goanna have you guys share some of our questions" (Darcy, Observation, March 27, 2023). The small group instruction didn't differ significantly from the whole class teaching. It remained teacher-dominated, with students primarily responding to the teacher's questions throughout the process. However, during the small group teaching, Darcy could provide specific feedback on each student about whether their posed questions were appropriate. She asked the teacher table students: "All right, who has a question that they want to research and write about, student M, give me a question?" Student

M answered, “what happens if they don’t have security guards?” Darcy denied her answer: “Well, we’re not going to ask what if questions, right? We want to research more about how things work. Student C, give me a question.” Student C answered, “What happens with the money being deposited?” The teacher affirmed student C’s answer and continued to ask other students: “Student O, what’s another question?” “Why is security protecting the money?” Student O answered. But Darcy thought this one was not proper: “Oh, that’s an easy answer. Right. Why does it stand there? To protect money?”

### Students’ Role

In Darcy’s view, her students have the autonomy to make decisions about when to learn. She mentioned that students were provided with a weekly checklist, and they could decide when to complete the tasks listed on the checklist. However, the tasks listed on the checklist primarily consisted of their weekly IReady online lesson tasks for math and reading and the weekly homework paper sheets. The students received their checklist on each Monday and turned in their tasks on the Friday. Thus students had the freedom to decide when to finish the given tasks during the week. However, in Darcy’s regular teaching sessions, the students had little to no role in deciding when to engage in math, reading, or writing activities. Instead, they followed a predetermined daily learning schedule. Additionally, most of the time, the students did not have the freedom to choose what to learn, as the content was curriculum-based and delivered by the teacher. Consistent with Darcy’s perception, her students can make some decisions in writing since they could choose the aspect that they wanted to write in a given topic. However, the writing topics were confined and provided by the teacher. Furthermore, the students did not have much saying in how they learned. For most of the class time, their activities typically involved: listening to teacher’s explanations or examples, responding to teacher’s questions, reading the article by themselves, reading the article or math problem together with the whole class, writing down



their answers, explaining their answers to the teacher or their peers, and listening to peer's explanations. In summary, students had limited roles in their learning.

**What are the differences, if any, between their SCT practice for diverse learners and non-diverse learners?**

### *Inclusion of Diversity in Practices*

As shown above, Darcy's instruction wasn't student centered, and it didn't attend to the needs of diverse learners. The teaching content relied heavily on the curriculum. The topics covered in the reading and writing curriculum seemed disconnected from students' daily life, focusing on concepts like being a good citizen and how people use banks. Furthermore, the curriculum placed a strong emphasis on Western culture, particularly evident in a unit centered around myths, which exclusively featured stories from ancient Greek mythology, such as the tale of Athena. The reading materials pertaining to being a good citizen also mainly reflected Western values, emphasizing the idea that being a good citizen involves supporting charitable organizations and causes. The curriculum's failure to mirror the racial, ethnic, and cultural diversity of the students in the classroom can hinder the positive development of their identities. This lack of representation may disregard their cultural heritage and individual experiences. Consequently, diverse learners may become disengaged from the educational process as they grapple to discover relevance and significance in the curriculum. This disengagement can result in increased absenteeism, decreased motivation, and waning interest in academic endeavors.

In addition, teachers in the second-grade plan lessons together, with each teacher taking responsibility for one subject. Each teacher planned lessons for the whole second graders, which can make it challenging to accommodate the learning needs of diverse learners. For example, in Darcy's classroom, over half of the students were English Language

Learners (ELLs). Darcy was aware that some of the students had difficulty to understand the math problem directions written in English. As she mentioned,

Sometimes, they can read something, but they're like, "What am I supposed to do with this?" They might understand the words, but they can't figure out the meaning or the task it's asking them to complete. This often happens because they don't have enough vocabulary to fully comprehend the text. So, in my group, a lot of folks are struggling with comprehension because of this vocabulary barrier. (Darcy, Interview#4, April 12, 2023)

During my observations in the math class, I noted that some diverse learners knew how to solve the math problems but had trouble in reading the directions. If I read out the directions to them, they would give the right answer. They would give a casual answer if they read the directions by themselves. The collaborative lesson plans caused all students to use the same math textbook and worked on the same math problems. Some students who faced additional language challenges would be excluded by the teacher who designed the math lessons and did not take this situation into account.

The learning environment in Darcy's classroom did not reflect the racial, ethnic, and cultural diversity of the students. First, the classroom organization seemed to exclude certain diverse learners. It's understandable that the carpet can't accommodate all the students, so the teacher arranged for some students to sit at their desks near the carpet. However, during the two months I observed in her classroom, Darcy did not rotate or change these seating arrangements. The students who were assigned to stay at their desks during carpet time remained unchanged for the entire two months. It was evident that these isolated students were excluded from many learning opportunities. Based on my observations, when Darcy conducted whole-class lectures, her primary attention was directed towards the students seated on the carpet. She rarely engaged with the students who were sitting at their desks, even when she posed questions. Darcy predominantly directed her questions to the students on the carpet. Unfortunately, she seemed unaware that the isolated students at their desks often disengaged from her lecture. They frequently became distracted, engaging in activities

like playing with bottles or pencils, or chatting amongst themselves. During math lessons, when Darcy instructed the students to work on math problems independently or write down their answers on the small whiteboards, the isolated students did not actively participate or write anything on their whiteboards. I have some observation notes recording their performance:

The African American boy and the Latino boy who sat at their desks didn't focus most of the time. And they didn't know how to do the math problems. They didn't have the chance to go to the carpet. But the teacher's eyes were always on students sitting on the carpet. The African American boy was playing erasers. He leaned over the table. (Darcy, Observation, March 21, 2023)

The students sitting nearby the carpet didn't do anything. They didn't write anything on their board. They look around or put their heads on the desk. They didn't get attention from the teacher. When their classmates were at the front to explain their thoughts, they didn't watch or listen to them. (Darcy, Observation, April 21, 2023)

While it's understandable that not all students can sit on the carpet at once, it's essential for teachers to regularly rotate and change these seat arrangements to ensure that all students have equal access to learning opportunities. Darcy's focus on the students on the carpet during whole-class lectures, to the detriment of those at their desks, raises significant concerns about equitable participation and engagement. CRT emphasizes the importance of equitable participation and opportunities for all students, regardless of their diverse backgrounds. The insufficient carpet space, resulting in unequal access to learning opportunities, is a stark illustration of systemic racism embedded in the allocation of educational resources. The limitations in learning resources that some students face can be viewed as a macroaggression, where structural inequities perpetuate racial disparities (Osanloo et al., 2016). Darcy's seating arrangements compounded the issue by creating a group of isolated students, which also highlights a form of color-blindness in her teaching approach. This color-blindness refers to a perspective that overlooks or ignores the racial and ethnic identities and experiences of students. In this case, Darcy's neglect of the isolation and unequal opportunities faced by certain students demonstrated a lack of awareness or

acknowledgment of how structural racism can manifest within the classroom environment. It is crucial to address this issue by implementing strategies that promote inclusive teaching practices, foster engagement, and provide opportunities for all students to participate actively in their learning.

The African American girl named Maya, who was seated at a separate desk facing the classroom wall, remained in the same position for the entire two-month period. According to my interview with Darcy, Maya had been placed in this isolated desk since November 2022 due to her frequent fighting with other students. Maya's grandmother was also a teacher in the Twinbrook Academy. It appeared that Maya was not only physically isolated from the rest of the class, but also socially and emotionally isolated from her peers. On one occasion during a writing class, students at one table were laughing at her, and in response, she threw her notebook in the sky. Darcy noticed the situation and inquired about what had happened. Maya responded by saying, "They all laugh at me" (Darcy, Observation, March 09, 2023). Darcy took Maya by the hand and led her outside, instructing her to retrieve her laptop and find her grandmother. Maya was hesitant to leave and expressed a desire to continue working. One hour later, when someone called Darcy to inquire about Maya, Darcy brought up Maya's problematic behaviors, as she mentioned,

Hello, it is very busy, and I told her to go see her grandma. She's just being rude and disrespectful and doesn't want to do anything, making noises and fighting with the other kids. I was like, you need to do go work with your granny, but she doesn't know where she is. (Darcy, Observation, March 09, 2023)

The peer students also did not like Maya. On another occasion when the students did their independent work at their desk, a Latino girl came to Darcy and told her that: "Maya is bothering me" (Darcy, Observation, March 21, 2023). However, Maya was concentrating on her own work. Darcy told to the Latino girl that: "I know she's not doing anything. Nothing. She's doing her work. I'm sitting right here. She's not doing anything" (Darcy, Observation, March 21, 2023).

The situation involving Maya raised significant concerns and highlighted the complex challenges within the learning environment. Maya's isolation and the absence of friendships in the class would lead to her feelings of marginalization and disconnection. Viewed through the lens of CRT, Darcy's actions towards Maya reveal potential macroaggressions. Instructing Maya to leave the classroom to find her grandmother and describing her behavior as rude and disrespectful can be interpreted as a macroaggression. This action suggested that Darcy may have viewed Maya's presence in the classroom as disruptive or unwelcome, indicating potential systemic biases or a lack of comprehension regarding Maya's specific needs.

Maya's case may also raise concerns about racial disparities in discipline within the educational system. CRT highlights how students of color, particularly African American students, often face disproportionate disciplinary actions compared to their White counterparts (Milner, 2016). The placement of Maya in an isolated desk and her exclusion from the classroom may reflect broader patterns of discriminatory discipline practices. It was imperative to adopt a more comprehensive approach to address Maya's social and emotional well-being, while also nurturing a classroom environment that is inclusive and harmonious. It is essential to delve into the underlying causes of her behavior and explore solutions that promote positive interactions among students. Collaborative efforts among educators and the school community are crucial in establishing an environment where every student is valued, included, and fully supported in their educational journey (Schaffner & Buswell, 2004).

Examined through the Theory of Critical Reflection for Transformative Teaching, it becomes apparent that Darcy held distorted assumptions about diverse learners. She characterized Maya's behaviors as rude and disrespectful, frequently blaming Maya without engaging in critical self-reflection regarding her own teaching practices. Due to the absence of critical reflections, she did not incorporate changes in her teaching practices to promote a

more equitable society. For example, Maya's disciplinary issues persisted from November 2022 to April 2023. However, during this period, Darcy did not engage in a thorough critique or questioning of her own teaching practices. Instead, she chose to isolate Maya from the rest of the class, further causing missed opportunities for meaningful self-examination and transformative teaching. As a result, Darcy failed to create an inclusive and equitable learning environment that foster personal growth and social change.

Additionally, the classroom decorations did not feature any displays, instructional materials, or visuals that reflected the diverse backgrounds of the students. There were no representations of products, props, or elements from the students' families and communities. Instead, the classroom decorations primarily aligned with the curriculum requirements and standardized expectations for the students. The information in the "Goals" section concerning students' proficiency levels in IReady reading and math online lessons unveiled that most of the students in Darcy's class had lower academic levels. It's essential for classrooms to be welcoming spaces that acknowledge and celebrate the rich diversity of the student body. Incorporating elements from students' families and communities can help create a more inclusive and engaging learning environment. The low academic performance displayed on the classroom wall could potentially contribute to low self-efficacy among students. When students were consistently exposed to evidence of poor academic performance, it may negatively impact their belief in their own abilities to succeed academically.

Darcy's instruction also did not effectively address the needs of diverse learners in her classroom. Despite the fact that over 90% of her students were Hispanic, Darcy, who shared a similar background, did not offer additional teaching content that was culturally sensitive or tailored to the diverse racial, ethnic, and cultural backgrounds of her students. She only spoke English in the classroom, and her teacher materials such as the slides were only in English. Her primary expectation was that students could explain what they had learned, and her

instructional approach often focused on fact-based questions rather than encouraging higher-order thinking. When a student didn't provide the expected answer to her question, she would reject the response and not acknowledge the student's input. For example, when she instructed students to come up with questions they wanted to write about banks, one student said she wanted to know why there were security guards. Darcy thought the question was too easy and immediately turned to other students. In the small group teaching, Darcy primarily assisted students in addressing their identified deficiencies from the assessment.

Darcy' instructional approach lacked specific differentiation to accommodate the diverse learning needs of her students, which resulted in reduced physical, cognitive, and emotional engagement in their learning. For instance, during a writing class on March 27th, 2023, Darcy delivered an extensive lecture on key concepts related to banks and requested students to formulate three questions related to banks for their writing. However, an observation on April 12th, 2023, revealed that a significant number of students still lacked a clear understanding of the concept of a bank. In response, Darcy gathered a group of eight students at the teacher's table and provided them with information about banks, instructing them to use their laptops to search for the definition. The students google searched the definition of banks and their screens displayed the query "what is a bank" (Darcy, Observation, April 12, 2023) on the Wikipedia page, and they subsequently copied words from their screens. The African American who sat separately asked me, "what is a bank" (Darcy, Observation, April 12, 2023). It was indeed surprising that, even after two weeks of focusing on the topic of banks in their writing, many students still lacked a clear understanding of what a bank was. During a math class on April 21, 2023, the lesson revolved around a unit review paper comprising eleven math problems. Darcy guided the students through these problems one by one. The purpose of this unit review was to revisit the material they had already covered, and it was quite surprising that, for the most part, only

three students were able to provide correct answers. In summary, Darcy's teaching practice didn't show any differences between diverse learners and non-diverse learners. In fact, the teaching content, the learning environment and her teaching methods excluded the learning opportunities for diverse learners.

### ***Summary of Darcy's Case***

Darcy's perceived definition of student-centered teaching appeared to be somewhat limited and superficial. While she made efforts to reduce the teacher's dominant role by minimizing lectures and refraining from providing direct answers, the ultimate authority over what, when, and how students learn still resided with the teacher. In this framework, students were primarily tasked with completing assignments assigned by the teacher. Peer sharing, rather than fostering extensive peer interactions, primarily involved students listening to their peers' explanations. Darcy's expectation for students was that they could independently articulate and explain their answers.

Darcy's teaching practice can be characterized as teacher-centered rather than student-centered, despite her perception that students should take on a more active role in classroom discussions. In practice, it was predominantly Darcy, the teacher, who dominated class interactions and discussions. The content and collaborative lesson plans she used were more aligned with the curriculum's requirements rather than being tailored to her students' individual needs. The learning environment primarily revolved around meeting subject standards and curriculum mandates, rather than prioritizing the students' diverse backgrounds and specific needs. Darcy's teaching often revolved around factual-level questions, and her expectations for her students were primarily centered on their ability to independently explain what she had taught, without much emphasis on higher-order thinking or hands-on activities. Both her perception and implementation of student-centered teaching lack consideration for



the racial, ethnic and cultural backgrounds of her learners, reflecting the color blindness and deficit mindset towards these students.

## **Case Study Findings for Zara**

### ***Zara-Description and Context***

Zara is a Mexican American born in the United States, with both of her parents being Mexican. She strongly identifies with her Mexican heritage. Her career in education spanned approximately seven years. She began her journey as a teacher's aide and worked as a literacy specialist for the first five years. Just two years ago, she transitioned to become a second-grade classroom teacher after obtaining her teaching license from a state college. Initially, her path into teaching was marked by uncertainty. Teaching was more of a job she stumbled upon rather than a deliberate choice. However, her experience as a teacher's aide, where she engaged with children and gave them lessons, transformed her perspective. She discovered a profound passion for working with children and found herself filled with enthusiasm while being around them. This newfound passion solidified her commitment to the field of education. One aspect that truly excited her about being a teacher was the daily adventure of encountering something new. She took pride in the knowledge that her guidance and support empowered her students to learn, and she enjoyed witnessing their excitement when they learnt something new.

### ***Zara-Research Question 1***

In this section, I provided an analysis of her definition for student-centered teaching and her perceived student-centered practice in her classroom.

## **What are elementary teachers' beliefs and perceived practice in student-centered teaching?**

### ***Perceived Definition of SCT***

Zara's classroom was very diverse. As she mentioned "I have a lot of ethnicities

and racial diversities in my class, I feel like it's, I don't really have a number. But overall, we do see a lot of Hispanics in our charter schools" (Zara, Interview#1, Nov 20, 2022).

Close to 80% of the parents in her classroom can only speak Spanish. Furthermore, during the fall of 2022, a new student joined her class who exclusively spoke Spanish. Drawing from her own challenges as a non-native English speaker, she believed that her background could facilitate a stronger connection with her students. She was confident that her students could excel once they conquered the language barrier. As she mentioned,

I'm a Spanish speaker, and when I was growing up, I struggled with reading. I see many kids today facing similar challenges, especially those who speak both English and Spanish. I relate to them because I don't think they're incapable of reading; they just need more time to catch up with those who speak English fluently at home. I remember my own struggles as a student, and now as a teacher, I know it's possible to overcome these challenges. I understand the difficulties of not being able to read or complete schoolwork independently because I've been there. When I see kids struggling, I can relate to them, even though I'm older. I feel like I was once in their shoes, so I understand what they're going through, what they're thinking, and how they're feeling. This relatability helps me connect with and teach them effectively. (Zara, Interview#1, Nov 20, 2022)

As Zara perceived, due to the language barrier, the parents were not able to help their kids with their studies. It was often the older siblings of the students who came to the classroom and communicated with the teacher regarding their siblings' learning. These siblings were also enrolled as students in the same school, typically in higher grades, either at the elementary or secondary level. They couldn't fully assume the role of the parents, as they were children themselves who also needed care and attention. As Zara described,

I do have a lot of parents that tell me that they don't speak English, or they can't read in English. So most of the time, it's very hard for them to help their kid with their homework because they don't know it. (Zara, Interview#1, Nov 20, 2022)

But his older sister has to come into my class every other day asking, 'hey, did he do good?' 'Does he have his homework?' Just because his mom doesn't know any English, the mom is more kind of not involved just because she doesn't know the language or what we're speaking about. So it's more of the sister's job to take over homework and schools...It's not just one of my students, I see older brothers coming in trying to see how their little brother is doing because again, the language barrier at home is difficult for the parents to come here and talk about the students' work and how they're doing. (Zara, Interview#1, Nov 20, 2022)

Since the students cannot receive much academic support from their families, Zara perceived that she played an important role in students' education to impart all the knowledge, as she was the primary source of information for them. As she mentioned,

And my roles in my students' studies, I think it's very, very, very big, just because I'm the one that teaches them everything. I'm the one that teaches them how to do two-digit addition or two-digit subtraction regrouping. Again, I feel like I'm the first one that introduces everything to them. (Zara, Interview#1, Nov 20, 2022)

She held the perspective that her students' role was to follow and meet the expectations set by the teacher, such as asking questions, ensuring that they completed their assignments, and actively participating by raising their hands during class. She thought it was her responsibility to teach students to become independent, and her perception of independent learners was that they had the capability to complete tasks and assignments expected by the teacher without constant guidance. She would use school money as incentives for students exhibiting expecting behavior. Her school employs a system of providing fake money as a form of reward for students' good behavior. They can then use this school currency to purchase snacks or toys of their choice within the school. As she mentioned,

I feel like I tried to teach them to be independent, not just in their studies, but in life in general. Let them know, hey, your desk has to be clean. If your desk is not clean, then you don't get paid for the week. We use school dollars in our charter school. So it's kind of like we pay them for their good behavior, we pay them for cleaning their desk. And they also have to talk, they have to be involved in group work, they have to make sure their work is done. We tried to have them be independent. So when they do a test or when they do take the State test, they can just know what we're talking about. Because as time progresses, we have to be like, 'hey, this is your responsibility. It's not my responsibility. No more, you have to be independent. And you have to see what work you have to finish and what work you don't'. So I think the responsibility for students is just as large as the teachers. (Zara, Interview#1, Nov 20, 2022)

Zara acknowledged that her students had diverse learning abilities and styles. As she mentioned, "I think it's unfair if I have everyone do this same thing with their learning abilities different" (Zara, Interview#1, Nov 20, 2022). However, during whole-class teaching, where she was obligated to follow the curriculum, there were limited

opportunities for students to make their own decisions. As she mentioned, “Because we have whole group reading, and we have small groups reading so for a whole group reading, I don’t give students choices just because it’s one curriculum, and there’s nothing else” (Zara, Interview#1, Nov 20, 2022). In contrast, during small group instruction, when she worked with a small group of students, she offered more flexibility to the other students in the class. Here, students were allowed to choose their activities, such as completing IReady lessons, reading electronic books on the Epic website, or using other designated websites for learning. She mentioned that when it came to writing, some students preferred using a whiteboard while others preferred paper. In the small group sessions, she permitted them to make their own decisions as long as they were engaged in their assigned tasks. However, these autonomies were still within the framework of the teacher’s expectations and the choices she provided.

I’ll let them do however they want the work as long as I get it turned in, or as long as I see they’re completing it. But if I start seeing kids, or just standing up on my back table not doing the work that I know, they’re not learning. So they’re goanna go back to their seats. So if I see them getting their work done, then I’m honestly flexible for them to do whatever they want, as long as they’re doing the work. (Zara, Interview#1, Nov 20, 2022)

Zara taught in the same school as Darcy. In line with Darcy’s perception, their school encouraged student-centered teaching but did not make it mandatory. Zara admitted that when she initially embarked on her teaching journey, she had little knowledge of what student-centered teaching entailed. Her school encouraged her to be adaptable in order to facilitate students’ learning. She primarily acquired the skills of student-centered teaching by observing other teachers’ classes and learning from the strategies they employed. The school provided resources such as books, examples, and tips to assist in this process. She even noted that a significant number of teachers in her school were unfamiliar with the concept of student-centeredness.

I think that initially, I wasn't really sure what "student-centered teaching" meant. When I asked about it, I was told it's all about focusing on the students and finding ways to engage them in the learning process. I thought, 'Okay, that sounds easy.' Many teachers might not be aware if they're practicing student-centered teaching; it often happens naturally. For me, during my student teaching experience, I didn't know the term 'student-centered teaching', but I found myself on the carpet with students, providing materials they could touch and interact with while learning. Looking back, I realize that was a student-centered approach. Observing other teachers using similar strategies was also incredibly helpful. As a new teacher, I didn't have a clear sense of what was expected, so being around experienced teachers and seeing them use effective teaching strategies rubbed off on me. It made me think about which strategies I could use in my own classroom and adapt to fit my students' needs. (Zara, Interview#1, Nov 20, 2022)

Zara was aware of students' diverse learning abilities and their preferred learning styles. In her own definition of student-centered teaching, she emphasized SCT was that the teaching was adapted to each students' individual abilities and conducted in a manner that students find acceptable and physically engaging for their learning. She identified her teaching was student-centered. As she mentioned,

To put it simply, student-centered teaching means that the learning process revolves around the individual student's abilities and preferences. It's about adapting the way we teach to match how each student learns best. For instance, if I notice that the students aren't engaged while going through a lesson, I might change my approach, maybe by singing or doing funny dances to make the material more appealing and easier to grasp. In essence, student-centeredness is all about the students and how they learn. It's about recognizing that every student has their own way of absorbing and processing information. It's not about the teacher; it's about tailoring the learning experience to suit each student's unique needs and learning styles. (Zara, Interview#1, Nov 20, 2022)

To clarify, by "physically engaging" I mean that most of her examples pertained to students making choices related to their physical actions to enhance their focus and engagement in their learning, such as deciding whether to sit at a desk or stand up while learning or choosing between writing on paper or using the whiteboard. Based on Burch et al. (2014), physical engagement was more about behavior engagement. As he mentioned, "Physical engagement can be seen through the physical effort that is exerted on the task" (p. 207). Zara's examples didn't necessarily encompass cognitive engagement, which relates to the mental effort invested in learning (Burch et al., 2014), or emotional

engagement, which concerns the affective feelings associated with the learning process (Burch et al., 2014). Zara mentioned her discussions with her colleagues about how to implement student-centered teaching. These discussions also primarily centered on strategies aimed at encouraging students to sit attentively and become more physically engaged in the teacher's lectures. As she mentioned, "This student-centered learning, we also get talked about how to sit them at their desk, kind of allowing them to be closer to the board and being more engaged" (Zara, Interview#1, Nov 20, 2022).

Based on the above analysis, we can see Zara perceived the teacher's role as more prominent than that of the students in the learning process. Her expectation for students was that they can learn the given material more effectively or listen to the teacher more attentively. While she acknowledged that SCT should address diverse learning abilities, her personal definition of student-centered teaching primarily focused on aspects related to students' physical engagement.

### Perceived Practice

Zara perceived that teachers in her school did not have much say in choosing the curriculum and it was the teachers' responsibility to adhere to the curriculum provided by the school. Teachers generally have little influence over the choice of curriculum unless there is a widespread consensus among teachers against it.

Um, in charter schools, we don't (have a say in the curriculum). But if there are a lot of teachers that kind of agree with a teacher, for example, if we have a writing curriculum that we don't really like, we tend to start talking with our admin. And our administrators actually do listen to us. And it might not be right away where they change it, but it will get changed eventually, just because they don't see progress. Or they're hearing our complaint. (Zara, Interview#1, Nov 20, 2022)

When she planned lessons, she actually didn't make much decision in what to teach. She just read the curriculum and picked materials from the curriculum and put them on the slides.

Our teaching schedule isn't something we decide on; it's already structured in the curriculum. It's organized by weeks and lessons, and it's all in the computer system. Right now, for example, we're in Unit Five, Week Five. The lessons for each day are

already predetermined. So, we simply follow that schedule and transfer the content onto our slides accordingly. (Zara, Interview#2, Mar 14, 2023)

Zara encountered challenges in her student-centered practice due to the provided curriculum. One major issue was that the curriculum was not conducive to English language learners. Since the curriculum was only in English, students with limited English proficiency were unable to comprehend the textbook on their own. Besides, the learners' textbooks contained a lot of words with limited visual aids, making it overwhelming for students to comprehend the content on their own. They even cannot understand the directions for the problems, since they don't know the meaning of the sentences. As a result, they heavily relied on the teacher's explanations to understand their textbook. As Zara mentioned,

They don't know the meaning (of the directions). That's why I always read the question to them, because they don't know. Yeah, so it would be better if the questions were more straightforward. And last, and if they had like pictures and examples. But because this is a second-grade book, and it looks kind of like a fourth-grade book. Yeah. And a lot of the kids again, they have language barriers. So they see it and they're like, oh, no, we're not reading that. So they just get overwhelmed (Zara, Interview#3, March 31, 2023)

Another issue was that the curriculum was not aligned with the current learning levels of her students. She observed that the content was more advanced than what the majority of her students were presently capable of mastery. As she mentioned, "I'm not sure how other grade levels work. But as a second-grade teacher, I look at a lot of these books, and they're a little bit too advanced for second graders" (Zara, Interview#1, Nov 20, 2022).

She expressed the hope that the curriculum could be more accommodating by offering differentiation to cater to the varying levels of learners in her class. As she mentioned,

I also think it would be nice if we had different books as well as different levels. For those who struggle, having simpler texts would be helpful, and for the more advanced students who can work independently, we could offer more challenging materials. Because like I said, like I do have seven kids that are able to do this on their own, like seventh thing, but that's it. Like the other 20 kids. I have to be up there, and I have to do it for them. (Zara, Interview#3, March 31, 2023)

Despite the two issues, she held the assumption that the curriculum was related to the learners' daily life. However, her understanding of daily relatedness was focused on what

occurred in her students' everyday lives rather than what was personally meaningful to her students. For example, she noted that students could establish a connection between the topic of banking and their daily lives, for instance, by recalling experiences like accompanying their parents to the bank. However, students can not relate some concepts of a bank such as loans and saving account to their 7- year-old child world.

In addition, she did not assume that conflicts between the values advocated by the curriculum and the values inherent in the cultural backgrounds of the students would affect the students' learning. And the curriculum was very universal and did address the cultural backgrounds of all the learners by covering topics related to various cultures.

I don't think it (the cultural conflicts) really affects it (their learning) with the culture and stuff. The curriculum, especially, they tend to still talk about stuff that's universal. The curriculum is very universal, which I like. We have stories that come from Colombia, from like different parts of China, from Europe, and we learn about everything. For example, we read different civil Renaissance stories from Greece, from Japan, and I believe from Italy. So they get exposed to different cultural backgrounds as well. So the curriculum does help a lot of the students learn about other cultures. (Zara, Interview#1, Nov 20, 2022)

In her view, whether the curriculum was student-centered or not depended on how the teacher delivered it. She saw the curriculum as a substantial textbook for teachers to reference, and it was the teachers themselves who had the responsibility of making the lessons more student-centered. For example, she found the curriculum to be boring, so she actively sought out interesting videos or real-life materials related to the lessons to better engage her students.

I think the curriculum can and cannot be student centered just because it is kind of big. It is kind of a lot. So I think it comes down to the teacher, to become a student-centered teaching environment. Because most of the time, if you give a teacher a big lesson plan, and they don't know how to do the whole student teacher centered teaching, they're just going to go ahead and just kind of go off of it as a textbook. So it could be complicated because the book is for us teachers to read. So it is kind of like a textbook. So it's up to us to make it friendly for the students. I'm pretty sure you've seen that our curriculum is just boring books. So it's up to us to make it fun for them. So every time I'm looking for, I'm like, right now we're teaching them about money and math. So I think about how they will learn about math and about coins. So I tried to look for fun videos for them, and I tried to look for real money for



them so they could touch. So anything that they're able to do by themselves and help them learn. I feel like that's what student centeredness is. Like we're looking for the students' ability to do stuff on their own and interact. (Zara, Interview#1, Nov 20, 2022)

In line with her concept of student-centered teaching, her interpretation of student-centered practice primarily focused on facilitating students' physical engagement in their learning. And her expectation for her students was again that they can learn the given material or complete the given tasks more effectively. She provided four examples to illustrate this perspective. Initially, she discussed how students had the choice to sit next to the teacher or stand up while learning. Secondly, she highlighted that students could choose between reading the material from their textbooks or accessing it on their laptops. Thirdly, she mentioned the option for students to decide whether they wanted teachers to read materials aloud or preferred using headphones to listen to the computer. Additionally, she mentioned that while her preference was to conduct word work lessons, such as word spelling, on the teacher boards, she granted some students the option to do it on their computers, as it was a more suitable approach for them. As she described,

So what when I use a student teaching, it's basically, again, for every subject, I use it, it's more for the students. So for example, let's say we're coming in, and we're doing reading, that's the first thing we do in the morning. A lot of the kids know that we're going to be reading and writing at the same time. So a lot of the time, if they get overwhelmed, I have a friend that sits next to me that would rather stand up at the back table. So I let them go ahead, go to the back to stand up as long as you're able to read or if I have a student that doesn't like reading inside their textbook, because the words are too small. Then I let them open up their computer and access the book online. As long as they're doing the work. I'm honestly flexible. That's you could come in my class, and I have four kids standing on my back table. I have three kids with their computer open, but it's more for them to learn. So I'm again, I feel like just being flexible is already student-centered teaching because you're being flexible to their learning, because they're the ones grasping the lessons. (Zara, Interview#1, Nov 20, 2022)

Her perceived definition and practice of student-centered teaching were in harmony with her educational philosophies, which prioritized both the teacher's comfort in teaching and the students' comfort in learning. As she mentioned,

It's more like, whatever you feel comfortable, do it. So I think I just came to learn that, if I feel comfortable, if my kids feel comfortable, that's what I'm goanna do. I think that's my philosophy. If it feels right, you're doing a good job. (Zara, Interview#1, Nov 20, 2022).

This can explain why she made efforts to ensure her students were physically comfortable in their learning process. She perceived the benefits of SCT to be related to her students' increased engagement. However, her overall attitude towards SCT was somewhat indifferent, as she considered it to be acceptable but not necessarily exceptional. Her primary motivation for implementing SCT was for the benefit of her students rather than for her own personal gain or satisfaction.

My attitude, honestly, is, I'm okay with it. It does not look to me. I'm a teacher. For the kids. I'm not a teacher for my own benefit. I like it. I do like my job. But it's more, I like teaching the kids. (Zara, Interview#1, Nov 20, 2022)

Based on the analysis provided, it is apparent that both her perceived definition and practice of student-centered teaching were heavily centered on students' physical engagement. Her teaching materials were predominantly based on the curriculum, which posed challenges due to its language and content not being particularly friendly to her students. While she offered language assistance to her students, she did not mention implementing differentiation in her teaching content. Although she made some adjustments, such as incorporating fun videos and real-life materials, these adaptations did not extend to higher-order thinking. For instance, her provision of real money when teaching students about coins in math primarily addressed factual knowledge rather than higher-level conceptual understanding. Lastly, her primary method of motivation for students' learning mainly involved external incentives like school currency or rewards.

**What are the differences, if any, between their perceived SCT for diverse learners and non-diverse learners?**

### ***Inclusion of Diversity in Perceptions***

Zara's assumptions of SCT did not specifically address the needs of diverse learners. In fact, her understanding of SCT appeared to resemble teacher-centered teaching, with teachers taking a prominent role while students had limited decision-making power. The limited autonomy granted to students in their physical engagement was primarily aimed at helping them attentively listen to lectures and complete assigned tasks efficiently. Her classroom was very diverse, with close to 80% of the parents speaking Spanish only. Her identity as an English language learner did help her to be related to her students more since she knew exactly their struggles. However, she mainly attributed her students' struggle to language barriers. Ironically, these language barriers reinforced the teacher's prominent role in student learning, as she served as the primary source of information and explanation. Language barriers were also treated as reasons why most parents in her class cannot actively participate in their children's learning. As she said, "Due to the fact that their parents don't speak English and aren't able to be involved in their education, it falls more on the responsibility of their siblings to take on that role." (Zara, Interview#1, Nov 20, 2022).

Furthermore, it appeared that her students' language barriers may have prevented Zara from recognizing other underlying factors related to their struggles. Analyzing through the CRT lens, it's clear that Zara's potential failure to recognize underlying factors, such as unequal access to educational resources due to racial, ethnic, and cultural differences, can be considered a form of microaggression. Microaggressions, defined as subtle, often unintentional acts of discrimination or bias, can manifest in various ways (Sue et al. 2008). In this context, microaggressions occur when Zara unintentionally overlooked or underestimated the challenges faced by students from diverse backgrounds, often attributing their struggles solely to language barriers. By not taking into account the

broader socio-cultural and systemic factors contributing to disparities in educational resources, the educator may inadvertently convey the message that these students' experiences and needs are not fully acknowledged or understood.

In essence, her definition of SCT seemed to lack consideration for these broader dimensions of diversity. For example, she believed her students could have as good a performance as the native speakers as soon as they overcame their language barriers. As she mentioned, "I don't think they're low or they don't know how to read. I just think they just need a little bit more time to catch up to the kids that are already English speakers at home" (Zara, Interview#1, Nov 20, 2022). It's also color blind to only recognize language barriers as the main explanation for racism and social inequalities (Walton, et al. 2014). Particularly, Walton and his colleagues (2014) identified this type of color blindness as procedure-justice color-blindness. As they mentioned, "with a procedural-justice color-blind approach, racism and social inequalities were seen as anomalies relegated to the past or explained by other reasons such as language barriers, and 'insular' communities" (p.177). In summary, her perception of SCT appeared to be color-blind, as it primarily focused on language barriers and did not fully acknowledge the broader range of needs related to her students' racial, ethnic, and cultural backgrounds.

In terms of her perceived teaching practice, it also appeared to be not very student-centered. While she recognized that the curriculum was not language and content-friendly for her students, her approach mainly involved providing language translations for those who could only speak Spanish. She did not offer substantial scaffolding to support students in grasping the challenging content.

Additionally, as discussed above, she believed that the curriculum was related to her students' daily life, but this connection seemed to be more on the surface rather than deeply personally meaningful. Furthermore, her perspective could be described as color-

blind in the sense that she believed the cultural conflicts between the curriculum's values and her students' cultural backgrounds did not significantly impact their learning. Instead, she appreciated that the curriculum covered universal topics and stories from various cultures. According to Walton et al. (2014), this approach could be characterized as "egalitarian color-blindness" (p. 119) acknowledging racial, ethnic, and cultural differences in a non-confrontational manner that does not challenge the existing status quo.

Overall, it is apparent that her perceived SCT primarily centered on students' physical engagement in learning activities, particularly their efforts to enhance focus. However, this perspective not only omitted critical elements like cultural knowledge, community engagement, and acknowledging the identities of students and their families as fundamental aspects of a genuinely student-centered approach. She also failed to consider the broader societal impacts on both student learning and her own teaching practices. Moreover, she reflected that their language deficiency was the primary barrier for her to communicate with the students and their families, demonstrating the sign of blaming the students for instead of critically analyzing how her teaching and the overall schooling did not embrace the languages, literacies and identities of these students. She thus missed the opportunity to engage in critical self-inquiry about her own teaching methods that could potentially lead to actively search for alternative solutions to better support these students. In summary, her perception of student-centered teaching was limited in its scope, as it primarily centered on physical engagement while overlooking the broader cultural, community, and identity aspects that are integral to creating a truly student-centered educational experience.

### ***Zara-Research Question 2***

The data used to address this research question consisted primarily of observations and interviews conducted during various classroom activities spanning from March 14,

2023, to April 27, 2023. These observations covered three reading lessons, five grammar lessons, five writing lessons, four math lessons, one reading assessment and one STEM (Science, Technology, Engineering, and Mathematics) lesson in Zara’s classroom. There were 27 students in Zara’s class. It’s worth noting that her classroom exhibited significant diversity, with only one White student, four African American students, and a majority of Hispanic students.

### **How do elementary teachers actually implement student-centered teaching in their classrooms?**

I would provide a description of her classroom practices, focusing on three key themes: the teaching content, learning environment, and instruction.

#### *The Teaching Content*

Zara taught second grade in the same school as Darcy, and like Darcy, her teaching content was primarily based on the curriculum. During my observations, the reading lessons covered three unities: why are rules important, banks and myths. Each unit involved several reading stories. For example, the unit on myths featured stories like “King Midas and the Golden Touch”, “The Contest of Athena and Poseidon”, and “The Starry Asters”. The writing lessons covered banks and myths. The math lessons involved number lines, recognizing cubes, and line plots. The observations confirmed that all second-grade students were learning the same content. For example, in the writing lessons, Zara used example paragraphs that were identical to those used by Ms. Darcy in her class. Zara even made it clear to her students that these examples were written by Ms. Darcy. Figure 14 displayed Zara’s slide of an example paragraph that I also analyzed in Darcy’s case. Furthermore, both teachers offered their students the same topic choices. For example, for the writing task of creating a myths story, the choices included sunflower, cactus, and palm trees. This consistency in content and teaching materials validated that the lessons were collaboratively planned, with

each teacher taking responsibility for a specific subject. Zara was in charge of planning the reading lessons for all the second-grade students, and she believed that this collaborative approach eased her teaching workload:

It's easier because it doesn't have everyone doing all the subjects. So it saves me time because all I have to do is reading and since I only do the reading, then my other coworker does math. So we hold each other accountable that the slides should be on there already the day before or the week before. So we ourselves don't have to do that. So it's more like we depend on each other to get it done. For example, when I do the reading lesson, I put all of the things that we have to do for reading. And then the other teacher, she does the math sides, so she does all of the math. So we collaborate in that way. So we all take a subject, and we talk about it like, 'hey, today for reading, and we're doing this, this and this'. You can find it on Wonders. And then for math, we do IReady math, and she picks all of the stuff we need for that lesson. And then for reading, it's the same. We kind of divide it and we work collaboratively. So all of the subjects are in for the day. (Zara, Interview#2, Mar 14, 2023)

Zara also mentioned that it's the school requirement that every teacher should teach the same content every day. The school admin would come to inspect whether their teaching was on the same page from time to time.

Everyone should be on the same page. Yeah. So if like, for example, all I did for reading today, they're doing it the same. So if like, admin is supposed to walk in the classrooms, everyone should be on the same topic or almost on the same page. (Zara, Interview#2, Mar 14, 2023)

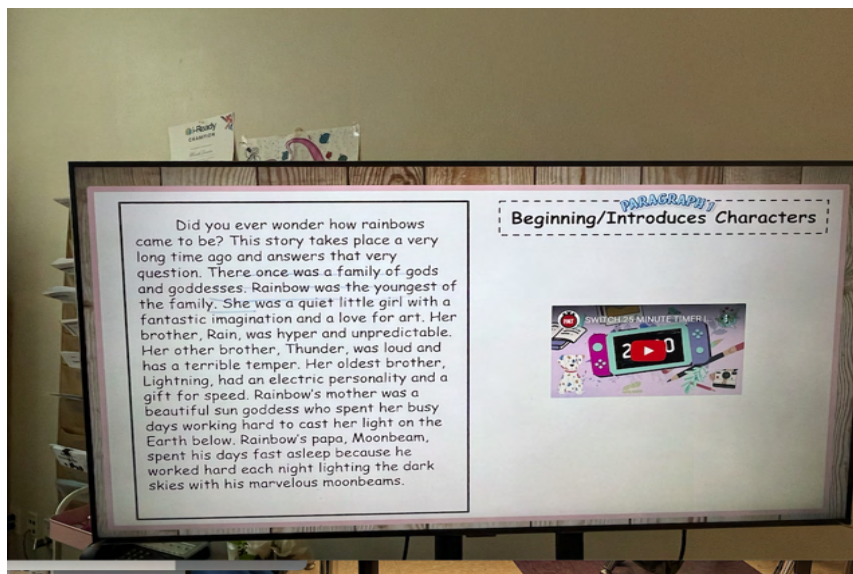
Consistent with her perception, an administrator did visit her class on April 27, 2023, for a brief observation and asked Zara several questions when she was available. The administration required all the second-grade teachers to teach the same content at the same time to ensure that no students fell behind. As Zara mentioned,

The woman that came in earlier to ask me questions to see what I was doing, she was writing on her computer, she also goes into their class, as soon as she's done with me. So if she came to me first, she already went with Lucy, Lily, and after me, she went with Darcy. So she makes sure that we're all doing the same thing. And if one teacher is off, then we get in trouble. Because we have to stay within the same, the same timeframe, or the same lesson so that kids don't fall behind. Or so one class is not behind. They want all of us to be on the same topic at the same time. (Zara, Interview#4, April 27, 2023)

As a result, when Zara's teaching progress was slower than that of other second grade teachers, she would ask them to slightly adjust the pace of their lessons to ensure they

remained aligned. Conversely, if Zara was ahead of other teachers, other teachers in the second grade would request her to slow down. Surprisingly, if one class failed a test and needed to retake it, students in other classes were also required to redo it. Although the administration's initial goal was to prevent any students from falling behind by keeping everyone on the same page, the result was that the students who were academically advanced were also constrained from progressing ahead.

That's why sometimes if I don't finish my lesson, I let them know like, 'Hey, I couldn't go over my lesson. Is there a way we could push back?' Just so they're not ahead of me. If I'm ahead, maybe they could ask me like, 'can we slow down? Or can we redo it?' Most of the time, if the kids don't understand or if the kids take a quiz and they fell, then we talked about it. And we were like okay, instead of us moving on, we're going to retake the test again. Oh, yeah, we all have to be on the same page, because that's what they're looking for in administration. They all make sure that we're working on the same pages, they make sure that we're doing the same thing. Just because they want all the second graders to move up on the same level to the next grade, they don't want one class to be more advanced than the other one. They kind of want to keep everything the same. (Zara, Interview#4, April 27, 2023)



**Figure 14: The Image of an Example Paragraph Shared by the Teachers in Zara's Classroom**



Additionally, Zara also insisted that students' learning should also adhere to the content of the curriculum and did not encourage them to have their own opinions. For example, in one writing lesson, the task was to write the introductory paragraph about how people use banks. The teacher instructed that the students' writing should include a topic sentence, two facts about the bank, and a concluding sentence. The first fact had to describe what the bank was, and the second fact had to detail the services provided by the bank. When one girl asked if she could write about the bank's operating hours, her request was not encouraged. The teacher replied to her:

We are not talking about that. I should not be hearing your opinion. I do not want to hear about a safe place where my mom goes to get money. No, I should not hear that. We talked about what a bank is, and you have it in your first sentence. A bank is a business that accepts and holds money for people. Remember, it's not about what you think, it's about what the papers say. (Zara, Observation, March 30, 2023)

At that writing class, she distributed a handout to each student at the start of the writing lesson. It contained reading material about banks, with certain sentences highlighted. The content of the handout was also projected onto half of the slide. On the other half of the slide, examples for the topic sentence, fact one, fact two, and the conclusion sentence were displayed. The teacher permitted the students to replicate the topic sentences as well as conclusion sentences, but the two facts were expected to be drawn from the provided reading materials. As she said, "If you do not have a conclusion, you may go ahead and copy mine... You may go ahead and copy that as well. That is your topic sentence" (Zara, Observation, March 30, 2023). When the students engaged in independent writing, I noticed that they were simply copying words from the handout as well as the slide.

In summary, Zara's teaching content was primarily derived from the curriculum. She also made efforts to align her teaching with the content taught in other second-grade classes within the same timeframe, as per the school's requirements. Additionally, in Zara's teaching,

she didn't encourage her students to make a learning decision that went beyond the curriculum.

### Learning Environment

The classroom arrangement remains teacher-centered, as the students' desks and chairs were essentially arranged in a semi-circle around the whiteboard. There was carpeting beneath the whiteboard, and next to it, there was a television where the teacher's slides were exclusively displayed (see Figure 15). The teacher primarily conducted the lessons between the whiteboard and the television. Similar to Darcy, in Zara's classroom, the learning activities took place at the carpet or students' desks. Most of the time, students stayed at their desks because they had a lot to write in all the lessons. They moved to the carpet when the teacher conducted the whole class lectures. Or whenever the teacher wrote down answers to math problems or reading comprehension questions, or displayed example writing sentences on the slide, she permitted them to move to the carpet to copy the answers or sentences for a clearer view. For example, when the teacher had written her answers to a comprehension question on the board, she instructed the students to move to the carpet so that they could have a clear view of the answers, saying, "make sure you guys are writing small since you guys do not have enough space on the line. If you cannot see you may go to the carpet" (Zara, Observation, March 30, 2023). In a math lesson, following the teacher's presentation of the answers to a math chart problem on the board, she said: "I hope you guys are also writing small, so you need to put that on that one chart. If you cannot see you may come to the board" (Zara, Observation, March 14, 2023). During a writing lesson, she may instruct them to come to the carpet to copy sentences from the slide, saying, "you may go ahead and copy that as well. That is your topic sentence. If you cannot see you may go ahead and go to the carpet" (Zara, Observation, April 20, 2023).



**Figure 15: The Image of Zara's Classroom Overview**

The reason why some students couldn't see the teacher's board, or the slides clearly was primarily because their desks were positioned a bit far from the board. Furthermore, as indicated in Figure 15 the television screen that the teacher used to display her slides was quite small and not well-suited for presenting content. Similar to Darcy's classroom, a portion of the students were assigned to sit in the desks and chairs closest to the carpet. To be precise, a total of eight students had to remain seated at their desks and chairs throughout all the instructional activities. When I inquired why some students were allowed to come to the carpet while others were not, Zara explained that this arrangement was made to ensure that students had a better view of the board and to capture their attention. She felt students sitting at the back were easily distracted. The eight students who were seated near the carpet had a clear view of the board and the slides. As she mentioned,

So the reason why they come to the carpet is because they're far away. And since I use the TV, they really can't see or a lot of the time if I have been sitting in their seats, as I'm teaching, I feel like they're not going to pay attention. I feel like they get easily distracted. So I have the pupil in the back to sit on the carpet. And the kid in the front,

I don't make the move, since I'm able to see them and they're able to see the TV. Yeah, the TV is really small. (Zara, Interview#4, April 27, 2023)

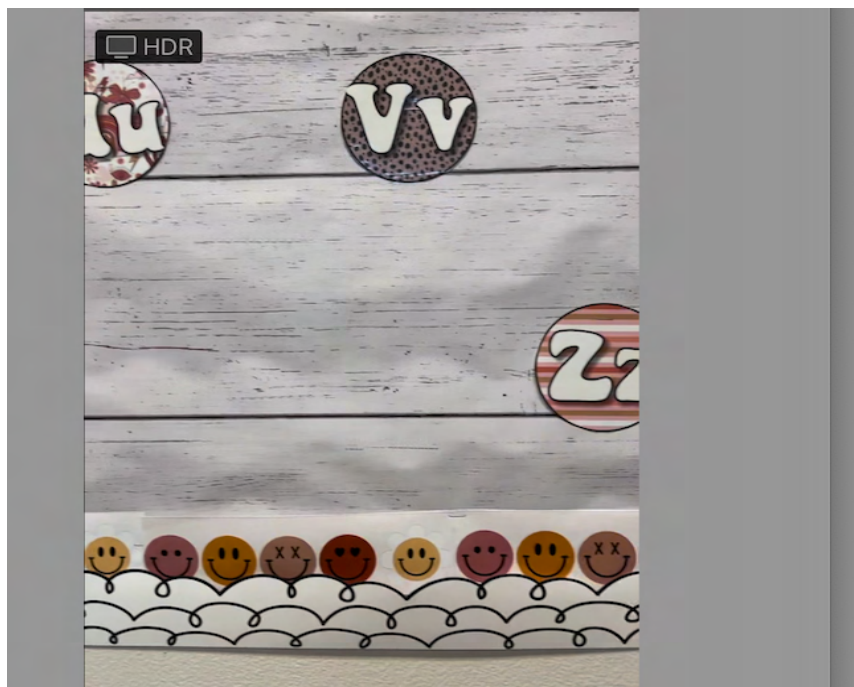
In line with Zara's perceptions, students sitting far away from the teacher board were easily distracted. The group of six students whose desks were near the classroom door, but far from the television, had a tendency to get easily distracted. Sitting at their seats, they could only see a portion of the television in the corner. In one reading class, when the teacher instructed them to copy comprehension questions into their notebooks, three girls in this group of desks were engrossed in playing with small toys, letting them roam across their notebooks. On their desks, there were seven rubber toys, resembling either cake shapes or fruit shapes. In another reading class, when the teacher requested that students return to their seats and listen to a video lecture, two girls from the group of desks near the door were engaged in conversation and playing with toys. However, the teacher's attention was fully focused on the video and didn't notice that some students were not paying attention. What contradicted Zara's perception was that even the eight students whose desks were close to the carpet were easily distracted. During a grammar lesson, when the teacher asked the students to work on words using their small whiteboards, five of these eight students didn't write anything. This was not an isolated incident. When the teacher was delivering a lecture and other students were seated on the carpet, the students sitting at their desks near the carpet weren't attentive. They played with water bottles, read books, and didn't pay heed to the teacher's lecture. Meanwhile, the teacher was occupied with lecturing or writing on the board. Math class had the worst situation; apart from being fully focused when copying answers, often two-thirds of the students were not paying attention, sitting there listlessly. In the math class, you could frequently hear students yawning. In summary, she recognized that using the TV had limitations, as students seated far away struggled to see the screen and stay focused. To tackle this issue, she asked those students to come closer to the carpet for better visibility. She

initially believed that students seated in the front were attentive during her lectures, but in reality, even those students were not as attentive as she had thought.

In terms of the classroom decorations, Zara's classroom was even more barren than Darcy's classroom. The classroom's one wall was primarily used as a whiteboard for teaching, while another wall had a large whiteboard where the teacher wrote down the "today's focus" for all subjects (seen Figure 15). Next to the "today's focus" were stickers related to vowels (seen Figure 15). The third wall (seen Figure 16) was equipped with subject tools, similar to Darcy's classroom, primarily used for posting important points or questions for each subject. On the fourth wall (seen Figure 17), there was a decorative sticker displaying all 26 letters, serving no substantive purpose. In the corner of this decorative wall and the subject tools wall, there was a small library (seen Figure 18). The only area in the entire classroom related to students was behind the door next to the teaching whiteboard, where there was a birthday graphic (seen Figure 19) displaying students' birthdays. Next to the birthday graphic, there was an area showing students' IReady completion status. Each student has their own small square for placing stickers, one for math and one for reading. When they achieve 100% in their lessons, they can receive a small sticker from the teacher. When their squares are filled with stickers, they have the opportunity to receive candy. In summary, we can see Darcy's classroom decoration was much curriculum-based instead of student-centered.



**Figure 16: The Image of Subject Tools Wall in Zara's Classroom**



**Figure 17: The Image of the Decorative Wall Without Substantial Purposes in Zara's Classroom**



**Figure 18: The Image of the Library Corner in Zara's Classroom**



**Figure 19: The Image of the Birthday Graphic and IReady Stickers in Zara's Classroom**

### Teaching Pattern

In alignment with Zara's perception, her daily teaching schedule closely mirrored Darcy's, as they both taught nearly the same subjects during the same time periods. Each day began with a Reading lesson from 8:15 am to 8:50 am, followed by a Power Hour for Reading from 9:00 am to 9:50 am. Specials took place from 10:00 am to 11:00 am, followed by Lunch from 11:00 am to 11:35 am, and then Grammar from 11:45 am to 12:00 pm. However, contradicting Zara's perception that all second-grade teachers must cover the same content at exact the same time, there were variations in the duration of Zara's Writing and Math lessons compared to Darcy's. Zara's Writing lesson lasted about 20 minutes longer than Darcy's, running from 12:00 pm to 1:00 pm, while Darcy's class was held from approximately 11:55 am to 12:35 pm. Although they occurred during the same time period, Zara's Writing lesson had a total duration of 60 minutes, whereas Darcy's was 40 minutes in total. Similarly, Zara's Math lesson was 15 minutes shorter than Darcy's. Zara's Math class took place from 1:00 pm to 1:40 pm, while Darcy's was held from approximately 12:35 pm to 1:30 pm. Zara's Math lesson lasted 40 minutes, while Darcy's spanned 55 minutes.

Furthermore, after the main math lesson, both teachers allocated time for students to work on their IReady math online lessons. However, Zara provided her students with 20 minutes less for IReady online lessons, scheduling it from 1:40 pm to 2:10 pm, whereas Darcy allotted time for IReady online lessons from 1:30 pm to 2:20 pm. Unlike Darcy, Zara didn't engage in small group teaching for math during the IReady math session. Instead, she was consistently seen playing on her phone. She also didn't conduct small group teaching for writing as Darcy did. I often saw her sitting at the teacher's table, holding her phone with both hands and staring at the screen while students were engaged in their own activities. Throughout my observations, these differences between Darcy and Zara's teaching schedules were not isolated incidents.



Zara's teaching approach was highly teacher centered. Her instruction patterns exhibited a few differences across subjects. In reading and math lessons, her typical instructional routine involved showing the answers, either directly or indirectly, and then instructing the students to replicate those answers. In her writing lessons, Zara typically began with extensive lectures, followed by allocating 45 minutes for students to work independently on their writing tasks. I would first describe one of her math lessons as an example. Zara's math lesson began with the Fluency part which helped students to review what they had learned. During my observations, this Fluency section covered various topics such as calculations involving dollars and coins, reading time on a clock, addition and subtraction of three-digit or two-digit numbers, number line usage, and solving word problems that involved measuring inches. Students were asked to gather on the carpet with their textbooks and whiteboards. A timer displayed on the television screen counted down for five minutes while four math problems were shown, labeled as "Fluency". Zara instructed students to solve these problems individually, and she selected four students to solve them on the teacher's board. When the time was up, instead of having individual students explain their answers, Zara compared answers with the whole class, provided direct instruction on the steps to solve each problem, and gave the correct answers. For example, for a problem like " $14+52+37=?$ ", she lectured on the solution process:

Moving on to the next 14 plus 62 plus 37, so 4 plus 7 plus 2 is 13. You put the 3 at the bottom you carry the 1, 5 plus 3 plus 1 and plus your 1 that you regroup it is 10. So your total is 103. (Zara, Observation, April 18, 2023)

She did not engage students with questions or assess their understanding during the Fluency instruction. The Fluency session concluded at 1:12 pm, which meant after the five minutes of independent work by students, Zara spent approximately seven minutes explaining all four problems. The day's new concept was about features of line plots. Similar to Darcy, Zara showed the new math concept with video lectures and solving math problems on the

textbooks. The day's new lesson encompassed a total of eight math problems, each progressively more challenging. The first five problems focused on fundamental concepts related to line plots. The sixth problem introduced the practical application of line plots, demonstrating how to use them to calculate the frequencies of numbers. The seventh and eighth problems delved into more advanced applications through word problems. During the whole instruction process, the students did not show any sign of engagement. This was primarily because Zara showed indifference towards her teaching.

For example, after the Fluency part, she skipped the slide displaying today's objectives and the essential question. The following slide presented a video about line plots. While the video explained the definition of line plots and their key features, Zara was occupied with her phone. This was not an isolated incident; she often checked her phone while her students watched instructional videos. During the video lecture, over half of the students did not pay attention to the screen. At the carpet, some were engaged in side-conversations, some were doodling on their small whiteboards, and others were simply looking around. Among the eight students sitting at their desks, some appeared disengaged, not actively listening to the video content. Zara did not ask any probing questions related to the video's content. For the video lecture segment, the teacher failed to realize that her students were disengaged, primarily because of her lackadaisical approach to teaching. The second reason for the students' lack of engagement was Zara's failure to create opportunities for meaningful learning. She even did not check students' understanding after each math problem. Throughout most of the class, the teacher simply provided answers directly or directly, and the students were occupied with copying these answers from the chalkboard. For the first to the fifth math problems which were related to fundamental understanding of the line plots, Zara gave the answers directly. For a more challenging problem, Zara would give the answer in an indirect way.

For example, following the video, Zara instructed the students to turn to page 647 in their textbooks. The screen displayed the same math problem as found in the textbook, with one math problem per slide. Zara explained the directions for the first problem and asked the question showed on the screen:

Then at the bottom of 647, Number one, it says look at the picture, how is the number line like a measuring tape? How is it like a measuring tape? So, how is the measuring tape and the line plot the same? (Zara, Observation, April 18, 2023)

Only a few students answered her question: “the same number” (Zara, Observation, April 18, 2023). Obviously, the students’ response was not complete for the question. The teacher drew a line plot on the teacher board and gave the answer directly:

They have the same numbers, you are goanna say for number one, you are goanna say they are alike because they have the same number order, that’s for number one, they are alike because they have the same number order. (Zara, Observation, April 18, 2023)

The next slide showed a new problem. The teacher read the directions and asked a question: “For number two, of things to look at modeling? How do you know what the line plot is about? What is it about here?” A few students answered: “about measuring”. The teacher didn’t give feedback on students’ responses and continued to ask: “How do we know then on the topic? What is usually called?” A few students answered: “It has the title”. Then the teacher gave the answer directly:

It has a title, right? So you are goanna say how do you know what the line plot is about because the line plot has a title and then you are goanna write the title of the line plot with the measurements. That’s for number two. (Zara, Observation, April 18, 2023)

Similarly, Zara read the directions of the next problem and asked the students a question. However, the students were so busy copying answers for the last math problem that they did not give a response to the teacher. As a result, Zara gave the answer directly. Her behavior was just like self-asking and self-answering. As she said during the time,

Numbers three, it says what do the numbers along the bottom of log stand for? what do these numbers stand for? 48 49 52 What is it? What are they stand for? So for

number three, I'm going to put it over here number three, the number stands for the length. (Zara, Observation, April 18, 2023)

Zara observed this and informed the students that they could copy the answers at a later time. For all the math problems, Zara did not allocate time for students to contemplate or solve these questions independently. Instead, the students were primarily occupied with copying down answers from the teacher. As Zara said at the beginning of the sixth problem:

When you are done, move on to page 648. Okay, I'm moving on. On page 648. I need you guys there. Now if you have not finished copying, you could go back later. I'll do that on the board. I'm moving on to go to page 648. (Zara, Observation, April 18, 2023)

The sixth problem consisted of three sub-questions. Its directions provided an empty line plot and a table of numbers with their frequencies. The first sub-question inquired about the title and measuring unit of the provided line plot. The second question asked students to label the numbers on the empty line plot. The third sub-question instructed students to label the frequencies of numbers on the line plot. During this sixth problem, Zara initiated some interaction by posing questions:

Teacher: "Okay, number one, the first thing you have to do is you see the dotted lines. What goes here? The dotted lines."

A few students: "The title."

Teacher: "Title, what's my title".

A few students read the title to the teacher.

Teacher: "That's what you are goanna write."

Teacher: "What goes in the bottom?"

A few students: "The length and the inches."

Teacher: "What's my first smallest number?"

A few students: "Two."

Teacher: "Two, what's next?"

A few students: "Three, four, five, six."

Teacher: "What do I put at the bottom?"

A few students: "Inch."

Teacher asked one individual student: "Inch, we're measuring in inches. Once I have everything labeled What do I do now? Student N?"

Student N: "You start."

Teacher: "I started doing my data, I started putting the axis. How many tools do you see on the table?"

A few students: "Two"

Teacher: "Two, so now you do axis. What about three?"

A few students: "One"

Teacher: “What about four?”  
A few students: “One.”  
Teacher: “What about five?”  
A few students: “One.”  
Teacher: “What about six?”  
A few students: “One.” (Zara, Observation, April 18, 2023)

As we can see in the above dialogues, though it seemed she asked several questions, she, in fact, provided the answers in an indirect way. For example, for labeling the numbers on the line plot, she did not explain that the line plot should start with the smallest number and that all the numbers should be displayed in order. Instead, she asked students what the smallest number and the following numbers were, and at the same time, she wrote these numbers on the line plot that she drew on the board. The video played at the beginning of this math lesson highlighted important features of line plots, such as starting with the smallest number and displaying data in order. Regrettably, most students did not pay attention to the video at that time. Moreover, the teacher did not reemphasize or clarify these key points during the subsequent instruction.

Throughout the process of solving the sixth math problem, she did not explain the steps to solve the problem but rather demonstrated the solution and expected students to remember the process. As she said at the end of the sixth problem: “Right, number six, all you have to know is how to do a chart, you should keep it in your mind, because that’s what is on your test. That’s what you are goanna have to do. Can we move on?” (Zara, Observation, April 18, 2023). Throughout the entire class, only a few students actively engaged by responding to Zara’s questions. Zara neither assessed the students’ understanding nor offered them opportunities for independent practice. As a result, it is uncertain whether the students were able to gain meaningful knowledge from this math lesson.

In the writing lesson, she usually began with an extended lecture without students’ talking and then gave students an extended period for independent practice. I would describe one of her writing lessons as an example. The main teaching material was the slide. The first

slide displayed two video images. Zara started her writing lesson by playing these two videos. She gave some brief introductions of the videos, saying,

For writing we are writing a myth. It is a made-up story on how something he came to be. I want to go ahead and play a video. Please hear, now that you know what we're doing for writing. Please listen to the video because this is a story. Your story has to have sounds similar to here, or the ones you read in the morning about asteroids. (Zara, Observation, April 18, 2023)

The initial video narrated an ancestral tale set in Ghana, a West African country, while the second video recounted the narrative of Asgard, a god from Northern Europe. Zara did not ask any follow-up questions before, during, or after the two videos to gauge students' understanding of the video stories, and she was aware that the majority of her students may did not grasp the video content due to language barriers. She offered limited clarification regarding the second narrative: "so if you guys didn't know the movie, the movie story is a myth, because he was a god from Asgard. We do not know if it was true or not. It's a myth" (Zara, Observation, April 18, 2023). Right away, she launched into an extensive lecture, primarily reading the content on the second slide, which presented the writing templates. The templates included keywords for the writing: magical elements, main characters, other characters, and setting. For each keyword, there were accompanying explanations provided on the slide. As she read through the slide, she also gave examples and clarified the tasks students were expected to complete for each key word. For instance, after she lectured that the myth should be a story told long ago and must contain magical elements as supernatural beings, she gave an example: "Thor and Loki, they are supernatural beings. And the magical element is that Thor has a magical hammer, right? It attracts with his supernatural powers. So you have to make something like that in your story and myth" (Zara, Observation, April 18, 2023). She also made a slight connection to the morning's reading when she provided an example for writing about settings:

Setting, where is your story taking place. For example, the one we read earlier in the morning, where did that take place? It took place on Earth, but then it took place in

the sky. So you could have two settings if you would like to have that happen. (Zara, Observation, April 18, 2023)

Without assessing the students' comprehension of the key concepts, she proceeded to read an example story about Rainbow and her brothers written by Darcy. She read the three example paragraphs to the students simultaneously: the introductory paragraph, the middle/explanatory paragraph, and the conclusion/resolution paragraph. The three paragraphs were displayed in three slides. Without asking any questions, she proceeded to explain the reason for writing the myth story in three paragraphs. She emphasized that this practice was essential as preparation for the third grade, where the expectation was to compose at least three paragraphs. She reminded them that they would soon be entering the third grade in just one month, leaving behind their second-grade status. She informed the students that they had a two-week period to complete their myth story. In conclusion, she inquired if the students had any queries about their writing and clarified that she wouldn't be available to answer questions during their independent writing. However, during the whole lecture she did not ask students a single question.

Then students were commencing their independent practice. For most of the independent writing period, she did not offer substantial assistance to the students, and I observed her checking her phone multiple times. Reflecting on this entire writing lesson, it's evident that she spent a considerable amount of time talking, from 11:58 am to 12:18 pm. Throughout the 20-minute lecture, she did not offer any chances for students to express their opinions. Additionally, she did not pose any questions to assess their comprehension. Following the lengthy lecture, students typically had 45 minutes allocated for independent writing.

In alignment with Zara's belief that the teacher played a significant role in students' learning and served as the primary source of information, she maintained a constant stream of dialogue and did not offer many chances for students to voice their own ideas, engage in

exploration and the construction of meaningful knowledge, or interact with their peers.

Despite her definition of SCT as adapting instruction to suit students' diverse abilities, Zara's actual teaching did not reflect this perception. Instead, she taught the same content to the entire class without considering the varying levels of student abilities. Even though the curriculum encompassed some ranges of knowledge levels, including both factual knowledge and higher-order thinking word problems, her teaching methods remained largely consistent across these different levels of questions and problems. In what she considered a student-centered practice, Zara aimed to provide students with some flexibility to help them stay focused and engaged in their work. This flexibility included allowing students to make choices, such as deciding whether to write on paper or a whiteboard, or whether the teacher read the material, or the computer read the reading material. While the teacher may have demonstrated this flexibility in her classroom, the students did not appear to be focused or engaged in their learning. Instead, the students seemed to passively follow the teacher's instructions. It was evident that they were eager to engage in conversations, as they would engage in side-conversations whenever they had the chance. The teacher had expressed her view that the curriculum was boring and that she would find fun videos to make the class more engaging. However, in practice, while she did incorporate videos into her lessons, she failed to make them meaningful or engaging for the students because she did not provide any follow-up or interventions. For instance, in the math lesson discussed earlier, she did not reinforce the key points covered in the video, seemingly assuming that the students could comprehend the material without further guidance. In conclusion, her teacher practice was highly teacher centered.

**What are the differences, if any, between their SCT practice for diverse learners and non-diverse learners?**



### ***Inclusion of Diversity in Practices***

Based on the analysis provided, it is clear that Zara's instruction did not cater to the varying needs of diverse and non-diverse learners. This was evident in her approach, which lacked awareness of diversity, and her low expectations for students. Her disregard for diversity was apparent both in the content she taught and the methods she employed.

Firstly, the instructional content, much like Darcy's approach, heavily relies on a curriculum that doesn't inherently consider the racial, ethnic, and cultural backgrounds of diverse learners. For instance, the curriculum's unit on myths exclusively features Western gods and goddesses, neglecting diverse perspectives or mythologies from other cultures. This curriculum omission reflects the concept of Whiteness as Property in CRT, where whiteness is often treated as the default or norm, marginalizing other racial and ethnic identities. Such exclusivity perpetuates the idea that white cultural elements are the standard, reinforcing a racial hierarchy (Dixsan & Anderson, 2018). Similarly, the math curriculum's word problems lack diversity, failing to incorporate elements related to the racial, ethnic, and cultural diversity of the students. Zara did introduce some supplementary videos that touched on diverse cultures, such as African American and Northern European, for tasks like creating myth stories. However, given that the majority of her students were Hispanic, it would have been beneficial to also incorporate videos about myths from their own cultures. Zara's teaching approach did not facilitate discussions or allow students to express their opinions about the content, rendering these videos somewhat meaningless to the students.

Second, Zara's teaching method did not address diverse learners' needs either. For example, Zara was aware that 20 of her students could not read the textbook by themselves due to language barriers, but she did not make an effort to adjust her instruction to assist these learners. All the videos she used in her teaching were in English. Zara also

recognized that they did not fully comprehend the content presented in the videos because of language barriers. Given this awareness, it raises questions as to why she didn't choose to play videos in Spanish, which could have helped bridge the language gap and support their learning. She exclusively used English for her instruction and conducted a lot of lectures at a rapid pace. She acknowledged that her students had raised concerns about her fast-paced reading. Consequently, she offered them the option to have the computer read the text to them. As she mentioned: "I have kids that really can't hear me read, or they think I'm reading too fast. So I let them use their headphones, and the computer reads it to them" (Zara, Interview#1, Nov 20, 2022). Her fast-speaking pace led to students easily missing points of what she said. I observed a lot of times when the teacher was lecturing about the contents of a new page, the students were still asking each other what the page was.

Additionally, Zara was aware of her students' language barriers. However, she did not transform such awareness into actionable changes in her teaching approach to offer a more equitable education for the diverse learners in her classroom. In *Critical Reflection for Transformative Teaching* (Liu, 2015), teachers are encouraged not only to recognize challenges and barriers but also to actively engage in critical reflection and take concrete actions to address them. Instead of addressing the language challenges, she usually did a long lecture without checking students' understanding. As a result, the students often failed to complete the task as the teacher required. For example, on April 18, 2023, she did a long writing lecture about composing the introductory paragraph of a myth story, which should include elements such as myth (a magical element), main character, other characters, and setting. However, two days later, during another observation of the writing lesson, Zara commenced by quick reviewing all the students' writing. To her surprise, only three students had completed the first paragraph as per the teacher's instructions. While most

students had written one paragraph, they had presented an entire story within that single paragraph. Consequently, they needed to rewrite their work. The students became confused because, after the teacher had lectured about the key points for the introductory paragraph, she proceeded to read all the example paragraphs for the entire story and explained why they needed to write three paragraphs. She failed to assess her students' comprehension during and after her lecture, resulting in the majority of her students becoming confused. Ironically, the teacher only realized her students' misunderstanding two days after the lecture had taken place: "So we're goanna start from the beginning because you guys were rushing these two days" (Zara, Observation, April 20, 2023).

Zara frequently cited students' language barriers as a rationale for not prioritizing a student-centered approach. When I asked her why she wrote down answers onto the teacher's board and had students engage in substantial copying, she clarified that she recognized speaking alone would not adequately communicate information to the students, given their language limitations. She acknowledged that some more proficient students did not need the written answers, but she continued the practice as a precautionary measure to ensure that everyone had the chance to learn. As she mentioned in two interviews,

Yes, I go on the board, and I always write it on the board. Because if I just speak it out loud, yeah, they won't understand. A lot of the times they prefer to learn by seeing everything on the board. I do have really high kids, those high kids, I could just say it and they're able to write it like no problem. But I do have really low kids that if I say a word, and they don't know how to spell it, then they get stuck. So I don't want those kids to fall behind. So I just put everything on the board. If they need it, it's there. If they don't need it, it's there. (Zara, Interview#3, Mar 31, 2023)

The teaching method she employed, which treated all students, regardless of language barriers, in the same manner, aligns with the procedural justice color-blindness approach. Procedural justice color-blindness operates on the premise that social equity can be achieved by treating all individuals equally, regardless of their individual differences or backgrounds (Walton et al., 2014). This approach emphasizes providing equal treatment and opportunities

to all students, operating under the belief that such fairness will result in equitable outcomes, regardless of the diverse needs or characteristics of the students involved. It was unfair to the diverse learners that they might not have required the teacher to provide answers on the whiteboard. In doing so, the teacher missed the chance to encourage them to participate in more advanced learning.

Zara did not contextualize knowledge of students' family and community in her instruction. She concentrated solely on delivering curriculum content to her students and failed to recognize the potential value of involving students' families and communities as educational resources. Instead of viewing the students' non-English-speaking home environments as valuable assets, she regarded them as hindrances to their learning. As she mentioned,

I do have a lot of parents that tell me that they don't speak English, or they can't read in English. So most of the time, it's very hard for them to help their kid with their homework because they don't know it. So it is kind of hard for that parent to help their student when it comes to their homework or just being at home because the kid talks English at school but speaks Spanish at home. So it's a very big challenge when there's two languages involved. (Zara, Interview#1, Nov 20, 2023)

In summary, her teaching method failed to cater to her students' language needs, even though she was aware of them. Usually, she delivered lengthy speeches at a pace that exceeded the diverse learners' ability to keep up. Following these speeches, she overlooked assessing her diverse learners' comprehension, leading to confusion among them and incorrect completion of tasks. Furthermore, she used the learners' language barriers as an excuse for not adopting a student-centered approach, viewing it as an obstacle to their learning. All of this demonstrates her lack of awareness regarding the significance of race in her teaching, and her instruction remained color-blind.

Zara's low expectations for her students were conveyed in careless teaching behaviors. Indeed, her careless teaching behaviors were evident in her underprepared lesson plans, lackadaisical instruction, and the uninspiring state of her classroom environment. First,

she did not plan her lessons carefully. For example, in the writing lesson analyzed above, after she lectured the key points, she asked the students to write the first introductory paragraph on a graphic organizer. Surprisingly, Zara had not prepared printed graphic organizers for the students. Instead, she tasked them with creating their own graphic organizers using notebook paper, saying,

Everyone is going to go get a sheet of paper from my back table. This is going to be your graphic organizer because I don't have a printer and I can't put it out right now. So you are goanna get a paper, you are goanna make sure it's the way it's supposed to be. (Zara, Observation, April 18, 2023)

Then Zara instructed the students to line up and retrieve the paper from her desk. After each student got a paper sheet, she then took a sheet of paper herself, demonstrating the step-by-step process of folding it into four sections. After the students folded the paper, they were instructed to label these sections with key words: intro, detail1, detail2, and detail3. However, Zara suddenly realized that there were five key words in total, and an additional section was needed. Then Zara directed the students to write the conclusion sentence on the reverse side of the paper. The entire process of creating this graphic organizer consumed 9 minutes, which appeared to be an unnecessary waste of time.

It was not a single case. In another instance at the end of a writing lesson, the teacher instructed the students to put away their writing materials and gather with their math materials on the carpet. She reminded them that there were only two minutes left for the math lesson. However, even after all the students were ready on the carpet, the teacher remained engrossed in her phone at her desk, and the slide still displayed the writing paragraph. In another math class, she changed the teaching goals during the class. At the beginning of a math class, she informed her students that they would be going through a unit review paper in preparation for a unit test scheduled for the following day, saying, "Before we start math, we are not working in our math books because tomorrow you guys do have a test on...I'll be passing out papers what we will be working today" (Zara, Observation, April 20, 2023). She

distributed the review papers to each student while they were engaged in their Fluency math exercises. However, after the Fluency session, Zara directed the students to put away the unit review paper and retrieve their math books, saying, “Please put your name on it; you will take it home to study because you do have a test tomorrow” (Zara, Observation, April 20, 2023). This suggests that as the class had already started, she had not yet figured out whether this lesson would be a review of the unit or an instruction of the material from the textbook.

In addition to her careless lesson plans and instruction, Zara’s lackadaisical attitude was also apparent in the organization and decoration of her classroom. She was aware that the screen was too small for students at the back to have a clear view of the content displayed on it. She only used the screen for displaying her slides. As a result, students had to move to the carpet to get a better view, leading to unnecessary transitions from their desks to the carpet for improved visibility. The classroom decorations lacked elements representing the students’ community, family, racial, ethnic, and cultural backgrounds. These decorations didn’t contribute meaningfully to the students’ learning experience. For instance, the subject tool wall featured key points for each subject, but these materials remained unchanged throughout the two months I observed. The reading post focused on the unit of good citizenship from March 14, 2023, to April 27, 2023, even though the reading unit had progressed through topics such as good citizens, rules, banks, and myths.

Most of the time in the classroom, the students displayed good discipline, with no one wandering around or requiring the teacher’s special intervention for their behavior. They obediently followed the teacher’s instructions. They refrained from side conversations when the teacher was giving a lecture. Side conversations only occurred when the teacher was not actively monitoring them, and if the teacher cautioned them against it, they would promptly stop. However, it was clear that they were not fully engaged on cognitive, emotional, or physical levels in their learning.

### ***Summary of Zara's Case***

Zara had a limited understanding of student-centered teaching, and she believed that her primary focus should be on teaching to different abilities and ensuring students' physical engagement. However, contradictory to her perception, her teaching practices lacked any elements of student-centered learning, even the elements she mentioned. In essence, she did not adapt her instruction to suit varying levels of student knowledge, and she taught different levels of knowledge in the same manner.

Despite facing challenges as an ELL during her own schooling, she did not make significant efforts to support her students, many of whom shared her racial, ethnic, and cultural background. She failed to consider her students' racial, ethnic, and cultural backgrounds when defining and implementing student-centered teaching. Instead, she used diverse learners' language barriers as excuses for not adopting a more student-centered approach. It appeared that she lacked a strong sense of responsibility for effectively educating her students and demonstrated low expectations for her students. In conclusion, both her perceptions and teaching practices were predominantly teacher-centered and lacked an awareness of the racial, cultural and linguistic diversity among her students.

### **Case Study Findings for Irma**

#### ***Irma-Description and Context***

Irma, a Mexican American woman, was born in the United States. Her father was from Mexico, while her mother was a Mexican American born in the western United States. She grew up with four siblings. In 2018, she earned her bachelor's degree in elementary education, a source of immense pride for her as she was the second person in her family to achieve this milestone. Her decision to become a teacher was made way back in fifth grade. While she briefly considered switching her major or exploring fields like medicine, she ultimately returned to teaching because she found it the most fulfilling way to contribute to

society. Irma derived great satisfaction from witnessing her students' mental, social, and physical growth under her guidance. She considered herself successful when her students successfully completed assigned tasks and felt a profound sense of accomplishment when she helped them grasp concepts through her explanations. Currently, she serves as a first-grade classroom teacher at Riverside Academy Elementary School. The fall of 2022 marked her first academic year teaching first grade, following three years as a kindergarten classroom teacher.

### *Irma-Research Question 1*

#### **What are elementary teachers' beliefs and perceived practice in student-centered teaching?**

I conducted an analysis of her beliefs and perceived implementation of student-centered teaching. The analysis for her beliefs compassed her views on the teacher's role, the student's role, and her own understanding of student-centered teaching. The analysis for her practice of her student-centered teaching mainly involved the content she taught and her perceived student-centered practice.

#### *Perceived Definition of SCT*

Irma worked at a different school from Darcy and Zara. Her school, like Darcy and Zara's, encouraged but did not mandate student-centered teaching. Administrators evaluated new teachers thrice annually and those with over three years of experience once annually. Irma believed her school's teacher evaluation rubrics, known as Charlotte Danielson, were student-centered. Like Darcy and Zara's school, Irma's school standardized grade-level content from the curriculum but granted teachers flexibility in their instructional methods.

And my school does support. I wouldn't say require support because they are respectful of our philosophies. And what we want to do. Our curriculum is the same on every grade level. But the way we present the information, the way we teach, it does not have to be the same. (Irma, Interview#1, Oct 19, 2023)



Irma's classroom exhibited less diversity compared to Darcy and Zara's. According to her perception, the class consisted of two African Americans, three Asian Americans, two Hispanic Americans, and one Indian American, with the majority being Caucasian students. In her first year of teaching first grade in the fall of 2022, Irma was still in the process of becoming familiar with the curriculum. As she mentioned, "This is my first year in first grade, so there are some things that I'm still not super great at that I'm trying to figure it out still" (Irma, Interview#1, Oct 19, 2023). Regarding the teacher's role, Irma acknowledged the importance of being a facilitator, but in practice, she found herself primarily delivering lectures. She expressed her ongoing efforts to learn and improve her skills as a facilitator. As she mentioned,

Like I said, in a perfect world, I would be more of a facilitator. I wouldn't say that something that I'm still working on is not something I always feel like I do. But I have seen the benefits of when that happens. So like, from what I think and what actually happens, is, I think I should just be a facilitator, what actually happens is, I see that they're not getting it, then I tried to get them like, okay, we need you to understand this, this and this, and this, and this and this in this. And it's like, I tried to like, teach them again. (Irma, Interview#1, Oct 19, 2023)

In addition, teaching, for Irma, extends beyond academics to encompass the holistic development of students, including problem-solving, behavior, and social skills, making it a comprehensive role. As she mentioned,

It's more than just going beyond teaching. I mean, because for me, teaching could be like, how to teach them how to be a person, how to teach them how to, like, do math, teach them how to do reading. So teaching to me is like an all-around job. It's not just like I taught you how to read, I taught you how to do math, like I taught you how to problem solve, when you were fighting with your friend, I taught you how to like, get in line quietly, I taught you how to be respectful. (Irma, Interview#1, Oct 19, 2023)

Regarding the students' role, Irma expected her students to provide feedback on her teaching and take the initiative to self-motivate their participation in the learning activities instructed by the teacher. Irma's primary concern was students giving feedback to teachers. She sought

student feedback to ensure her effectiveness, particularly feedback on whether they understood the teacher's lecture and accepted the way the teacher instructed it. As she mentioned,

I would say I feel like my students' role is to give me feedback. What I mean by that is like, based on their behavior, based on what they're working on, that shows me how effective I was. And that can be a good and a bad thing. Because some of them are like, great. We learned and we did awesome. And then sometimes when I see that, and I personally get discouraged sometimes because I'm like, oh, man, like, I didn't do a really good job at this. And so I would say their primary role is to give me feedback, so that I can be a more effective teacher...And that's what I mean, like, by giving feedback like, 'teacher, I didn't understand this, I didn't get how you explained it'. Like, they should be able to vote, like, say that comfortably. And their teacher did not like, oh, it's because you weren't paying attention. It's like, you know, it's even more apparent that there's something I missed. Maybe I didn't make sure he was fully engaged or something like that. (Irma, Interview#1, Oct 19, 2023)

In their role as students, Irma also emphasizes the significance of their willingness to put in effort and self-motivation for active participation in the learning activities instructed by the teacher. She acknowledged that she cannot compel them to engage, and their lack of effort not only hampers classroom learning progress but also their integration within the community. As she mentioned,

For them, it's essential to at least make an effort because if they're not willing to try, I can't push them or force them. They have to find the motivation within themselves. If they don't try, it's like they're not contributing. It's about being a part of the class, integrating into the community, and not isolating themselves. Right now, they're distancing themselves, and we need to bring them back because we want to see them actively engaged. (Irma, Interview#1, Oct 19, 2023)

Based on Irma's perspective, student-centered teaching entails that after students receive the foundational knowledge from the teacher, they are capable of independently explaining and applying that knowledge. As she motioned,

Student centeredness to me is like the students once they have a knowledge base, they are the ones that kind of show you how they learned it, what they learned it, they should be able to talk about it, they should be able to share it, they should be able to teach each other, they should be able to advocate for themselves. (Irma, Interview#1, Oct 19, 2023)

In reality, Irma placed a strong emphasis on students' ability to explain their understanding of the knowledge. She highlighted that her teaching goal was achieving student-centered teaching, which she believed would simplify the teaching process by enabling students to explain the material to each other. As she mentioned,

But then once you have it (SCT), I think it makes teaching easier, because you as the teacher, there's one of you but 26 of them. So if you can have 26 teachers, instead of just one, like, more students are going to learn and more students are going to have a better foundation, because now they have to explain it. Knowing how to do it AND explaining how to do it are two different skills. (Irma, Interview#1, Oct 19, 2023)

Based on the analysis, we can see her definition of student-centered teaching was more akin to students' active listening. The teacher acts as the knowledge resource, and the students self-motivate themselves in the teacher's lecture and give the teacher feedback on how she conveys the knowledge. As a result, the students can explain the knowledge by themselves. In her view, students who failed to actively participate in the teacher's instructions, provide feedback, or share their knowledge with peers were often hindered by a lack of self-confidence or a perfectionist mindset aimed at avoiding errors. As a result, these students were considered unprepared for the student-centered teaching approach. As she mentioned,

I would say students that lack self-confidence, or students that appear not to be ready for it. I say 'appear' because they're the ones that don't want to give you feedback, that don't want to share their work with their friends, and that don't feel confident enough to make a mistake, because they're perfectionist and things like that, or they're just like, 'Oh, if I get it wrong, my friends are goanna make fun of me'. I don't know what their little first grade brain thinks. I would say that's especially true for students who might initially feel unprepared or those who exhibit challenging behaviors. (Irma, Interview#1, Oct 19, 2023)

Conversely, students who displayed self-motivation and a readiness to embrace their mistakes were well-prepared for student-centered teaching. As she mentioned,

I would say it's easier for students that are self-motivated, that are okay with making mistakes, that just are self-motivated and okay with making mistakes, and that want to

learn, because I know some students that do things like imperfectly, but they just like want to learn. So they're like, 'okay, I'll try it'. You know, kind of thing. I would say those are the ones that gravitate more towards it (SCT). (Irma, Interview#1, Oct 19, 2023)

### Perceived Practice

Irma believed in data-driven teaching, primarily based on student test results.

Compared to Darcy and Zara's school, there were more tests every academic year in Irma's school which included three benchmark tests each for reading and math from Maps, three benchmark tests for reading and math from IReady, and three benchmark tests for reading and math from Dibble. Darcy and Zara's school, on the other hand, had three benchmark tests for reading from Maps and three benchmark tests for math from IReady. Irma used these various tests to monitor and compare students' performance and classify them into higher-level and lower-level students. She realized the need for differentiation in instruction, where educators adapt their teaching methods to suit the varying needs and readiness levels of their students. When advanced work was given to students who are ready, it was essential to strike a balance between providing them with challenges and offering support when they encounter difficulties. On the other hand, for students who are at a lower level, explicit instruction and scaffolding are crucial to build their foundational knowledge and skills. Once they have a strong foundation, encouraging them to apply what they've learned can help them progress.

In my opinion, teachers should tailor their teaching based on data, often referred to as data-driven instruction. I do agree with this approach, to some extent. If you notice that your students are ready for more advanced content, like challenging vocabulary or more complex reading materials, it's a good idea to provide them with those materials, even if they're not explicitly covered in the curriculum. It's a way to push and engage them further. However, there's a catch to this approach. When you give advanced work to students who are ready, they might struggle because they might assume they should excel without much guidance. On the other hand, for students who are at a lower level and need more support, you have to teach them explicitly, step by step. Once they understand the basics, you can encourage them to apply what they've learned. Sometimes, students may question, 'What do you mean?' or 'What do I know?' when faced with new challenges. (Irma, Interview#1, Oct 19, 2023)

Irma's teaching content did not vary based on the different student levels. Instead, it was aligned with the curriculum's guidelines. For reading, she predominantly used explicit teaching methods, adhering closely to the words provided in the curriculum. In the case of math, the curriculum permitted some flexibility, allowing students to employ different problem-solving strategies. As she mentioned,

Now, when it comes to reading and stuff like that, we do believe in explicit teaching. So I'm less flexible. When it comes to the actual curriculum, I kind of stick to the words and things like that that I've chosen, because I usually do it for a reason. And it's more for academic purposes. Now, when it comes to math, the curriculum does allow them time in different spots to make their own choices about their strategy they're going to use or how they solve it. (Irma, Interview#1, Oct 19, 2023)

However, when the directions for a particular math problem specified a specific strategy, Irma would instruct the students to follow those directions.

Despite the data-driven method and no differentiation in the teaching content, Irma acknowledged that there were certain student-centered elements in her teaching, and she committed to further enhancing them. She identified these student-centered elements as follows: refraining from providing direct answers, establishing connections with her students, and implementing student-centered strategies. Firstly, she did not offer answers outright but instead guided students through the thought process and saw whether students get stuck. As she mentioned,

I make an effort not to simply provide the answer outright. Instead, I guide the students through the thought process. For example, I might say, 'These are the two numbers. Remember, when we encounter this, we need to find the sum, right? Are these two numbers, correct? When we see this sign, what does it mean? Plus or minus? It's a plus. So that means we have to add these numbers together.' I prefer to engage in a dialogue and talk them through the problem, paying attention to where they might be getting stuck. (Irma, Interview#1, Oct 19, 2023)

Additionally, she endeavored to establish a connection with her students by engaging in morning conversations. During these interactions, she would discuss topics unrelated to the subject matter but of clear interest to her students. She sought to integrate these personal backgrounds and interests into her teaching.

For instance, we discussed a Mexican dancer and choreographer named Amelia Hernandez during our morning meeting. It was a brief conversation, but it turned out that some of the girls in the class were involved in dance. I mentioned, 'This is a choreographer,' and they may respond with, 'Oh, my teachers knew the choreographer.' It's moments like these that make me realize they might never have come across this knowledge if it had just been in a book or some formal source. I'm a strong believer in integrating real-life experiences and topics that are relevant to their daily lives into the curriculum. It makes learning more relatable and engaging for them. (Irma, Interview#1, Oct 19, 2023)

Furthermore, Irma discussed the strategies she used to foster student-centered teaching, highlighting the Kagan strategies as a key component. Kagan strategies are designed to enhance student engagement and encourage collaborative learning within the classroom. As an example, she mentioned the "quiz trade" technique, in which students partner up to exchange their sight word cards, provided they can both read the sight words effectively. These strategies provided students opportunities to work together in peers or small groups to enhance their learning experiences. However, Irma did not mention that she employed these strategies to facilitate students in constructing their own knowledge or engaging in challenging learning activities.

In addition to the teaching content and teaching method, Irma frequently addressed students' behavior management in her teaching. She had a set of behavior management strategies for students who lacked self-motivation to participate in classroom activities. The first strategy involved praising peer behaviors. For example, if a student isolated themselves from classroom activities, she would redirect their behavior by praising the good behaviors of other students sitting around them. She explained that she used this approach because she understood that students craved positive feedback from the teacher. The second strategy was the establishment of explicit classroom rules. One of these rules was to follow directions quickly. The third strategy involved the use of a puzzle chart, primarily for students who faced significant challenges in participating in classroom activities. This served as a form of positive reinforcement. When a student completed a task or made an effort, the teacher would

reward them with an additional minute of playtime. The fourth strategy focused on emphasizing to students that they were integral parts of the classroom activities. However, she also mentioned that these strategies did not yield the desired results directly. Even when students promised her that they wouldn't engage in unanticipated behaviors again, they often quickly forgot their commitment. One example she gave to me was that she asked students to sign a contract at the beginning of the semester, promising not to engage in certain behaviors, but they frequently broke their promises. As she mentioned,

In the very beginning it is like our classes, our family. And so we made like a contract where it's like, how I want my teacher to treat me, how I want my students to treat themselves, and how I want them to treat me and like they just all suggested things. So whenever we have a problem, I go back to that. And I'm like, okay, you guys said that we're going to be respectful to each other. So that's something that we're working on. And we show it this way. And so it's just reminding them about things that they already understood that were good, and just making sure it's happening. (Irma, Interview#1, Oct 19, 2023)

Irma also identified some obstacles to her student-centered teaching. The first one was the young age of her students. She believed that the first-grade students required a substantial amount of background knowledge before they could engage in independent work. Consequently, she focused on more explicit instruction and primarily expected her students to fully comprehend the material she presented during her lectures. As she mentioned,

Because it's hard, because in first grade, they're still learning a lot of background knowledge. In a perfect world, I would be more of a resource to them. What I mean by that is like, I would be able to, like teach them something. And then they should be able to go and figure it out in their own groups. And if they do get stuck, I can kind of help push that forward. So in a perfect world, that's what it would look like. Right now, it's not 100% there, but it's more like, I teach them and then I try to make sure that they're learning it. And once I know that they've learned it, I let them go. (Irma, Interview#1, Oct 19, 2023)

Irma did a lot of lectures to introduce the background knowledge for her students and Irma felt frustrated when her students had difficulty understanding her lessons. She kind of assumed that students would inherently understand how to solve math or reading problems after her instructions, which aligned with her perceived definition of student-centered

teaching. In her view, once students possess the necessary background knowledge, they should be able to independently explain or apply it. After her lectures, she believed it was the students' responsibility to take on the remaining tasks.

I believe that if I've already taught them and provided guidance, they should be able to figure things out. However, if I just tell them to do something without any prior instruction or communication, then I can understand their frustration as students. But in many cases, we've already discussed these matters, and it's ultimately up to them whether they choose to follow through or not. (Irma, Interview#1, Oct 19, 2023)

Also due to the young age of her students, it took Irma some time to teach them how to handle independent work. She provided examples to illustrate what independent work entailed. The first example was that students understood the procedures for being reassigned to different classrooms and receiving instruction tailored to their individual levels, which resembled the small group teaching method Pour Hour in Darcy and Zara's school. The second example involved students autonomously adhering to the classroom rules outlined in CHAMPS, encompassing aspects like conversation, help, activity, movement, participation, and success. The third example of independent work was that students could independently tidy up their work areas after participating in small group teaching. Students were considered ready for this type of independent work once they could comprehend the teacher's expectations and the related procedures.

Another challenge was the constrained class time. Irma adhered to fixed schedules for each subject, with designated time slots for various classroom activities. If students couldn't grasp the content within the allocated time, she lacked the flexibility to extend the duration for further explanation. She would expect them to take the unfinished tasks home for review. As she mentioned,

The challenge is that you can't make the school day longer, but you also can't make it shorter. So it's tough in that regard. I wish I could allocate more than five minutes for certain activities because, as it stands, I have a strict five-minute limit. When the timer goes off, it's time to gather on the carpet. For me, five minutes has been a kind of sweet spot because it allows them to complete one or two tasks, and I can assess whether they've understood the material. However, it's not enough time for them to



start chatting and lose focus. That's why I'm strict about sticking to the five-minute limit. But it's important to note that if they don't finish all the tasks within that time, I won't force them to rush. I'll encourage them to go back and complete the work, but I believe it's essential to finish what you can in the classroom. If they don't finish, they can take it home and review it there. (Irma, Interview#1, Oct 19, 2023)

From the analysis provided, it's evident that while there were certain student-centered elements in her teaching, Irma's teaching practices were primarily teacher centered. The student-centered elements were confined to teaching strategies and did not incorporate students' active construction of their own knowledge or higher-order thinking. Her focus was primarily on students' academic growth, as identified through test performance. She recognized that the curriculum might not fully cater to the academic needs of higher-level students, yet her teaching content mainly adhered to the prescribed subject matter. Given the young age of her students, her primary expectation was for them to master the material she presented through her lectures. Irma believed in teaching students independence, which, in her view, meant that students should be able to automatically fulfill the teacher's expectations. She primarily utilized positive reinforcement to assist students in developing expected behaviors, with the expectation that offering rewards or incentives would motivate students to exhibit the behaviors she anticipated. Such positive reinforcement was to guide students to follow the teacher's instructions instead of reinforcing their student-centered learning behaviors.

**What are the differences, if any, between their perceived SCT for diverse learners and non-diverse learners?**

### ***Inclusion of Diversity in Perceptions***

According to Irma's perception, 8 out of the 26 students were diverse learners, constituting a significant portion of the class. In fact, she was aware of the diverse learners' struggles in her class. For example, When I inquired about Irma's perception of the performance of an African American boy, she indicated that the boy was typically quiet,

did not ask questions, and did not seek help when facing difficulties. Additionally, she noted that the boy struggled with reading comprehension.

He's a very quiet student and does quite well academically. He's already a fluent reader, but his main challenge lies in comprehension. I'm currently working with him on developing the habit of asking for help when he doesn't understand something. Sometimes, he gets stuck but doesn't vocalize it, so I've been encouraging him to communicate more about what he understands. Earlier today, before you arrived, I had a conversation with him. He's proficient in reading and understands letters and sounds quite well. However, we're focusing on improving his comprehension, as that's the area where he faces some difficulties. (Irma, Interview#2, Oct 28, 2022)

In another instance, Irma shared her impression of a Hawaiian girl among her students. She believed that this student could be highly engaged at times but tended to become easily distracted when encountering difficulties. Irma felt that when the Hawaiian girl was distracted, she missed out on a significant portion of the instruction.

Her level of focus can vary greatly. Some days, she can be incredibly distracting in the classroom, while on others, she's fully engaged. It really depends on whether she understands the material or not. When she grasps it, she's like, 'I've got this.' But when she doesn't, she becomes easily distracted, and I have to redirect her attention. Her behavior tends to fluctuate from day to day, and it has a significant impact on her learning. She's generally a good student, but when she loses focus, she misses out on important instructions. Sometimes, she'll go to her desk and do something completely unrelated to the lesson, and when I ask her about the instruction, she's unable to recall them. It can be a bit perplexing, to say the least. (Irma, Interview#2, Oct 28, 2022)

However, the analysis above indicated that she did not address the needs of these diverse learners in her perceived definition and practice of student-centered teaching. In Irma's definition of SCT, she envisioned students as active listeners who could self-motivate to listen to the teacher's lecture, provide feedback on the teaching, and independently articulate and share their knowledge with their peers. In her definition, she assumed that learners were inherently able to motivate themselves to learn and articulate clearly their thoughts to the teacher and peers. Analyzing the situation through a Critical Race Theory perspective, it is evident that the African American boy and the Hawaiian girl mentioned above experienced exclusion from SCT opportunities due to Irma's lack of awareness regarding diverse learners who had not yet mastered English. This lack of

awareness and understanding of the unique challenges these students faced in comprehending information, providing feedback, and communicating with their peers in English can be seen as a form of colorblindness.

Additionally, she was not aware that self-motivation and the confidence to embrace mistakes were not inherent in students but rather cultivated in the learning environment (Milner, 2016). In her school, academic achievement was highly valued, leading to the establishment of implicit academic hierarchies based on test scores that categorized students as high, middle, or low achievers (Milner, 2016). This school culture may not align with the diverse learners' cultural contexts for understanding academic success (Milner, 2016). However, instilling self-motivation and confidence in diverse learners requires an environment that values their diverse backgrounds and allows students to shape, adapt, reform, and redefine their identities as they progress in knowledge, ability, and skill (Milner, 2016). Irma's data-driven approach evidently did not succeed in creating an inclusive learning environment that encouraged diverse learners to develop intrinsic motivation.

Furthermore, when I inquired about the potential impact of her identity on her teaching, though she was aware of her Hispanic roots, she primarily emphasized her identity as someone who has a passion for travel and a deep interest in learning about diverse cultures worldwide. She made efforts to integrate a wide array of cultural elements into her teaching, aligning them with special calendar events like Hispanic Heritage Month, Pacific Islanders Month, and Black History Month. Her goal was to provide her students with exposure to various cultures and cultivate in them a sense of global citizenship. As she mentioned,

It's evident that my cultural identity has a significant influence on my teaching approach. This year in my classroom, we're exploring various cultural aspects, such as Day of the Dead in November. Integrating different cultures into the curriculum is something I've been striving for, and it's particularly meaningful to me since it

aligns with my Hispanic heritage. For instance, we recognize Hispanic Heritage Month from September 16 to October 16, and I take this opportunity to share my Hispanic roots with the students. However, it's not just about my culture; I'm also eager to teach them about Pacific Islanders, Women's History, and Black History during their respective months. It's a learning experience for me as well because I want all my students to be exposed to diverse cultures and histories, even if I may not know much about some of them myself. This teaching approach resonates with who I am as a person. I'm passionate about traveling, learning about different cultures, and embracing new experiences. Incorporating these elements into my classroom not only excites me as a teacher but also motivates me to share these experiences with the students. I hope that these lessons stay with them throughout their school years. So, my cultural identity and love for learning have a profound impact on my teaching, and it's something I'm truly passionate about. (Irma, Interview#1, Oct 19, 2023)

Her efforts to expose students to diverse cultures were important. However, she did not deeply consider how her own background as a Mexican American, including her racial, ethnic, and cultural experiences, could be harnessed to benefit diverse learners. She was not aware of how race and diversity would shape her teaching experience and diverse learners' learning opportunities.

Her perceived student-centered practice also failed to cater to the needs of diverse learners. Her primary focus was on the curriculum's subject matter, viewing knowledge primarily through the lens of curricula and subjects, and believing that young children lacked the background knowledge to become independent learners. She assessed students' needs based on their test scores, resulting in more explicit teaching for those with lower scores, reflecting a deficit mindset that focused on their deficiencies rather than recognizing the value of students' diverse racial, ethnic, and cultural backgrounds in contributing to the curriculum. While she acknowledged that the curriculum might not fully meet the learning needs of some high-achieving students, she did not proactively challenge them to reach higher levels. Her concept of independent learners was limited to those who could automatically follow teacher expectations and instructions, failing to appreciate the experiences of students actively creating and constructing their own

knowledge. Furthermore, her interpretation of student-centered practice was confined to avoiding direct answers and employing specific teaching strategies.

When viewed through the lens of Critical Reflection for Transformative Teaching, similar to Darcy and Zara, in Irma's perceptions, she did not realize how power dynamics, social contexts, and cultural factors impact her students' learning outcomes. She assumed that an ideal student-centered approach hinged mainly on students' self-motivation and their confidence within the learning environment. She did not critically examine her own beliefs and teaching methods, which may be not in alignment with SCT. Her lack of awareness regarding the sociocultural implications of her teaching on her students indicated she might not actively explore and implement alternative approaches in her teaching. Not surprising, her reflection on her practice of student-centered instruction did not explain how addressed the needs of diverse learners.

### ***Irma-Research Question 2***

To answer this question, the data were primarily analyzed based on the observation of one math lesson in the fall of 2022 and a total of seven lessons in spring 2023, including three literacy lessons, three reading lessons, three math lessons, and one writing lesson.

### **How do elementary teachers actually implement student-centered teaching in their classrooms?**

In Irma's classroom, there were 26 students in the fall of 2022, and a new student with a Mexican background joined the class in the spring of 2023. However, it appears that Irma's perception of her classroom's diversity differs from the observed reality. While she believed that the majority of her students were Caucasian, with a total of 8 diverse learners, my observation revealed that in the fall of 2022, 15 out of the 26 students came from diverse backgrounds. Moreover, in the spring of 2023, there were 16 out of 27 students from diverse backgrounds, indicating a higher level of diversity than Irma had initially described. The

analysis of Irma's teaching practice would encompass five main dimensions: the teaching content, the learning environment, teaching pattern, student-centered elements, and small group teaching.

### Teaching Content

Irma followed a consistent daily teaching schedule. Her first session involved literacy small group teaching, which ran from 8:15 am to 8:55 am. Following this, she conducted a literacy lesson from 9:05 am to 9:55 am. Reading lesson was scheduled from 9:55 am to 10:25 am, followed by a math class from 10:40 am to 11:50 am. After lunch, she held a math small group teaching session from 12:25 pm to 12:55 pm. The afternoon classes included writing from 1:45 pm to 2:15 pm and social studies or science from 2:15 pm to 2:40 pm. Like Darcy and Zara, Irma's teaching content was primarily based on the curriculum. However, Irma's school used different curricula compared to Darcy and Zara's school. For literacy, reading, and writing, Irma used the UFLI Foundations curriculum, while for mathematics, she employed the enVision curriculum.

Similar to Darcy and Zara, Irma and other three first grade teachers collaboratively plan lessons, with each one responsible for one subject. As she mentioned: "Yeah, you're in charge of a subject. So I'm in charge of math, Amy's in charge of science and social studies, and Rosa is in charge of writing" (Irma, Interview#5, Feb 22, 2023). But every teacher planned lessons for reading by themselves. As Irma mentioned, "Who is in charge of reading? Also, like, just because it's like if we didn't work on it together, like I would have to do my own plans for reading my own website and that's like a lot longer" (Irma, Interview#5, Feb 22, 2023). They would convene for a weekly teacher meeting to deliberate on the teaching schedules for the upcoming week. For subjects that had already been planned by her colleagues, Irma typically delivered the content as her colleagues had prepared. As she said:

We place our trust in our fellow first-grade teachers, believing that they have a good understanding of what we're teaching. They might inform us, saying something like,

‘We’re focusing on long vowels and editing.’ In such situations, we tend to rely on their planning and teaching decisions, allowing them to take the lead in organizing the curriculum, and we proceed to teach what they’ve outlined. (Irma, Interview#5, Feb 22, 2023)

In the subject area for which she was in charge of planning lessons for the entire first-grade class, she indicated that she reorganized the content and activities from the curriculum and incorporated them into the time schedules. As she mentioned,

It seems like the curriculum provides the activities, but it doesn’t necessarily offer a detailed teaching method. There’s usually more content in the curriculum than can be covered, so it’s crucial to determine what’s essential. That’s where lesson planning comes in. Lesson plans help organize and structure the curriculum content effectively. They serve as a guide, specifying what needs to be taught and how to allocate time for it. So, in a given timeframe, whether it’s 20 minutes, 10 minutes, or 40 to 55 minutes, teachers can pick activities from the curriculum and fit them into that allotted time. (Irma, Interview#5, Feb 22, 2023)

As she also had to plan reading lessons for her students, I asked about her approach to this task. She clarified that she selected materials from the curriculum based on her personal preferences and the time available for teaching the chosen content. She admitted that if she had a deeper understanding of the standards, she could have had more specific preferences when selecting content from the curriculum. As she mentioned,

It’s like we focus on what we consider essential to teach. While the curriculum may contain multiple standards and components, we don’t cover everything. If I were to dive deeper into it, perhaps I’d have more specific preferences, like what I like and what I don’t. However, for the time being, we select the content that fits within our available time and resonates with our teaching approach. So, I don’t have any significant complaints about it at the moment. (Irma, Interview#6, April 03, 2023)

In addition, Irma acknowledged her preference for the reading curriculum—UFLI Foundations Curriculum—as it offered pre-designed slides that significantly reduced her workload. As she mentioned,

The reading curriculum already provides all the prepared slides and materials, which is like a teacher’s best friend. When everything is ready in advance, it ensures consistency in teaching. For instance, if I happen to come in late one day, having the materials readily available allows me to seamlessly continue with the lesson. It eliminates the need for extra preparation and ensures that the content is consistently delivered. (Irma, Interview#6, April 03, 2023)

After her colleagues selected the teaching content and activities, Irma still had the freedom to choose how to deliver the content. However, Irma acknowledged that she did not invest much time in meticulously crafting lesson plans or creating custom activities. Instead, she opted to peruse the materials from her fellow teachers or the curriculums the evening before her classes. Crafting detailed plans demanded an additional two hours after school, but she eventually discontinued this practice. The reason being that there was no compensation for the extra effort, and she aimed to strike a balance between her professional responsibilities and personal life.

I make an effort to read through the curriculum the night before a lesson. However, there's a common challenge in teaching, which is that we often don't have enough time for thorough lesson planning. Staying after school for extra hours is an option, but it's unpaid, and it can be exhausting. Initially, when I started teaching, I was very eager and dedicated to putting in extra hours. But as time went on, I realized that getting home at 5 PM and feeling tired doesn't allow me to be at my best for the students. Finding a balance is crucial. Some teachers manage to do it all, but I've come to realize that I have a life outside of teaching, and I need to maintain that balance. So, I try to read through the curriculum the day before to familiarize myself with it and ensure I'm not going into the lesson completely unaware of the content. However, I do find that some parts of the curriculum repeat themselves, like visual drills and phonemic awareness, which I'm already proficient in, so I can quickly address those aspects. (Irma, Interview#5, Feb 22, 2023)

In line with her perceptions, Irma's teaching did rely heavily on the curriculum. In her literacy and reading lessons, Irma typically positioned herself in front of the students, holding the teacher's textbook with both hands and reading passages directly from the textbook. Irma's teaching in literacy remained fairly consistent from day to day. This consistency was a reflection of the structured nature of the literacy curriculum, which encompassed various components within each lesson, including phonemic awareness, visual drill, auditory drill, blending drill, new concept, word work, irregular words, and connected text. For instance, the lesson on April 3, 2023, closely mirrored the content outlined in the teacher's textbook (Figure 20). During the phonemic awareness segment, Irma read a word aloud and then asked students to tap out the individual sounds of the word and subsequently blend them together.



The visual drill primarily involved revisiting and reinforcing previously learned pronunciation rules. In this segment, students were prompted to recite the sounds of letters displayed on the slides. As she instructed during the class,

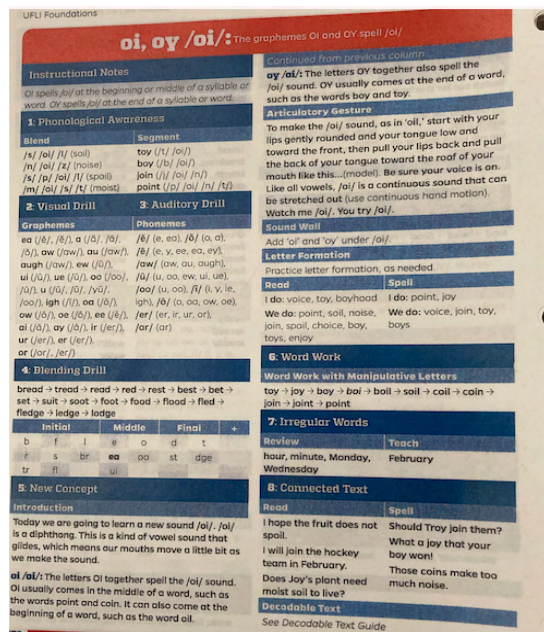
For our visual drill, ok remember you're going to look at the letters. You're going to give me its sounds. So as long as you're looking at the letters and saying the sounds okay, and we're fine. All right. Ready? (Irma, Observation, April 3, 2023)

During the auditory drill, students were instructed to retrieve their whiteboards and markers to write down letter combinations that produce specific sounds. For example, she said: "I told you to write down all the letters that spell 'er' now I should be seeing on your board. The different ways we spell 'er'" (Irma, Observation, April 3, 2023). In the blending drill, Irma modified prefixes, letter combinations, or suffixes in words, prompting students to sound out the resulting new words. Those words were the same as the textbook showed. In the new concept segment, the teacher introduced a fresh sound and its associated letter combinations, 'oi' and 'oy'. She focused on teaching students how to correctly pronounce these sounds, while emphasizing the significance of mouth shape and tongue movement, in line with the textbook. In the Word Work section, students were exposed to words containing 'oi' or 'oy' as indicated in the textbook. However, the irregular words and connected text segments detailed in the textbook were not addressed in the lesson on that particular day. Irma explained that typically, they would cover those remaining sections the following day. They planned two days' lessons for teaching oi and oy.

In her reading class, Irma also followed her textbook closely. The textbook provided clear guidance, instructing her when and where to pose questions to the students. For instance, during a reading lesson on April 3, 2023, Irma read a fairy tale story to her students and expected them to reflect on the problems that arose in the narrative. The slides complemented her narration, showing character images and plot visuals that matched the story. She would pause at certain slides to engage the students by asking them questions.

Since my observation revealed that Irma’s focus fully on the textbook, I suspected that the textbook furnished the questions she should ask. Irma admitted the questions were from the textbook. As she explained,

We have stories, and we’re in fairy tales right now. So there’s like different parts of the story. It [the textbook] tells me what the story is. There are questions on the side, which is why I was like questioning them”. (Irma, Interview#6, April 03, 2023)



**Figure 20: The Image of the Structure of One Lesson on the Teacher’s Literacy Textbook in Irma’s Classroom**

Irma also confirmed this by showing me her textbook, which featured the primary text in the center, and shortcuts for the PowerPoint slides and questions on the side (shown in Figure 21). These shortcuts served as reminders for when to advance to the next slide and when to pose questions. As a result, Irma tended to direct her attention to the textbook, with limited eye contact with the students.

In her math instruction, Irma also had a strong orientation toward the curriculum which included slides and videos. Irma typically began by playing the video, pausing it to

highlight key points, and providing additional explanations. Following this, she would lead the students through guided math problems and then assign independent math problems for the students to work on after her lectures. Both the guided and independent math problems were found in the students' textbooks (shown in Figure 22). In summary, Irma's teaching content was predominantly based on what the curriculum provided, and she did not tailor the content to match the individual levels of her students.

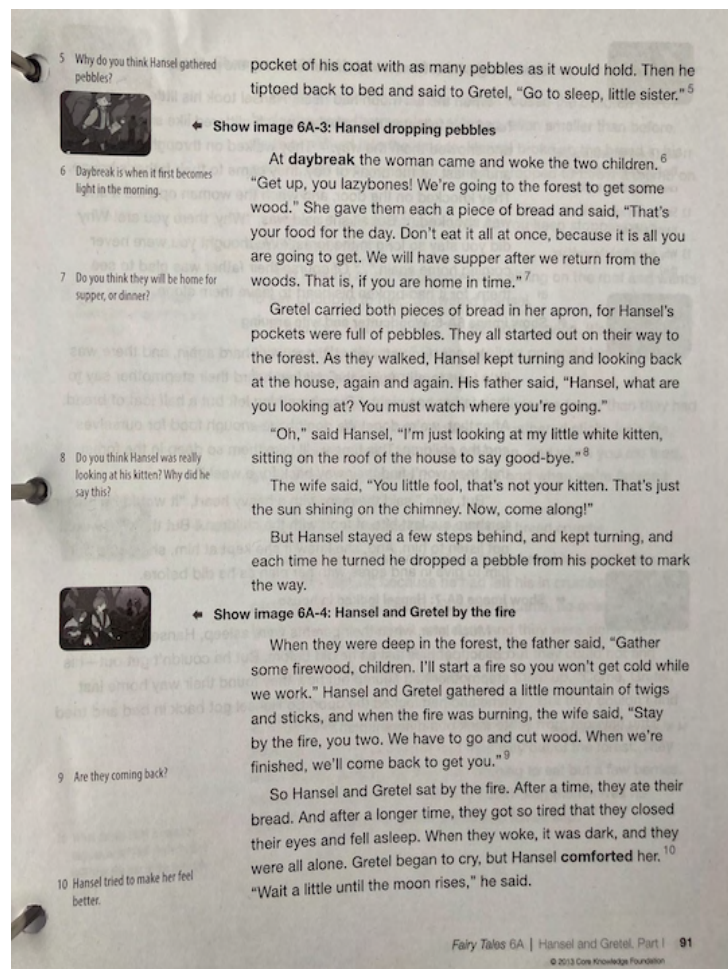
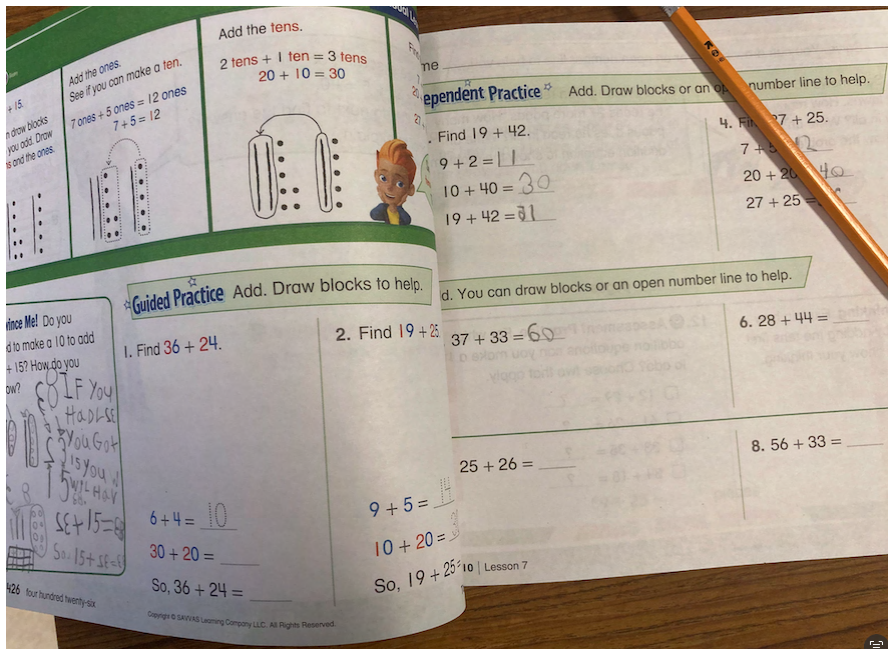


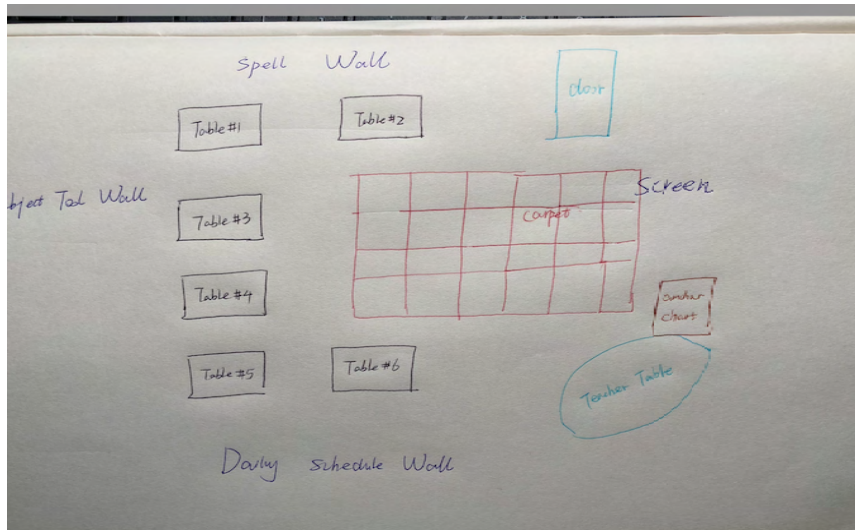
Figure 21: The Image of One Page on the Teacher's Reading Textbook in Irma's Classroom

## Learning Environment

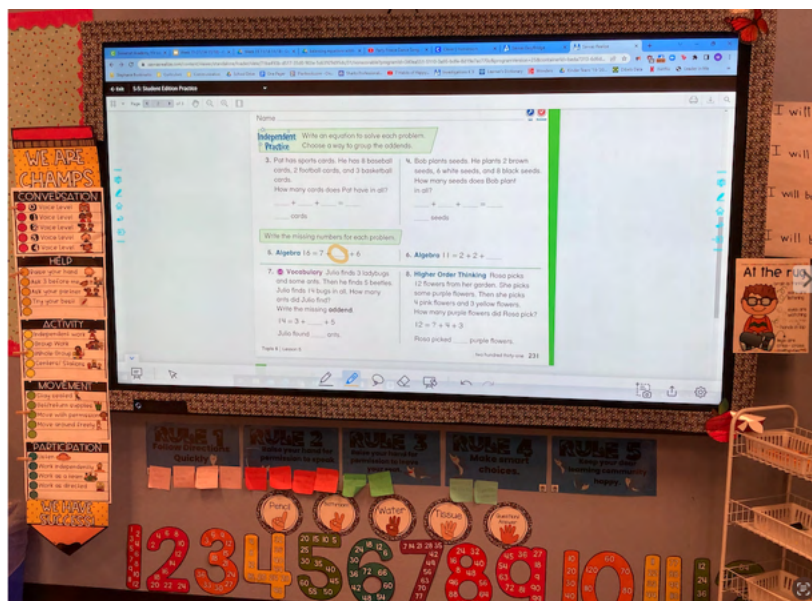
Similar to the classroom setup observed in Darcy and Zara's case, in Irma's classroom, students primarily engaged in their learning activities on the carpet and at their individual desks. The carpet served as the focal point during whole-class lectures, while the students worked at their desks when completing independent assignments. Positioned at the center of the classroom, the carpet was situated beneath the electronic screen that was displaying teacher's slides. Students' desks were arranged around the carpet, as depicted in Figure 23. Groups of four, five, or six students' desks were combined to form a table. The teacher typically stood in front of the carpet, facing the students. The arrangement of the carpet and desks continued to reflect a teacher-centered approach, as they were configured in a semicircular fashion with the teacher and the electronic screen at the center.



**Figure 22: The Image of the Guided and Independent Math Practice on the Students' Textbook in Irma's Classroom**



**Figure 23: The Image of the Irma’s Classroom Organization**



**Figure 24: The Image of the Electronic Screen and the Classroom Rules in Irma’s Classroom**

In the middle of the wall that the students faced while listening to the teacher’s lectures, there was an interactive electronic screen, as depicted in Figure 24. This screen was equipped with touch functionality, allowing the teacher to use their fingers to write and draw

on it. Additionally, the teacher had the option to select different colors and thickness settings for their writing. Adjacent to the screen, you could find the CHAMPS, which was similar to what we discussed in Darcy's case. Every day, a student took on the role of the student leader and led the entire class in reciting the CHAMPS guidelines before each lesson.

Beneath the screen, there were stickers displaying the five classroom rules. These rule reminders under the screen were designed to encourage students to regulate their classroom behavior during class time. The rule one emphasized the importance of promptly following directions. Rule two emphasized the need to raise one's hand for permission to speak. Rule three highlighted the necessity of raising one's hand for permission to leave their seat. Rule four stressed the importance of making smart choices, and rule five focused on contributing to a harmonious classroom environment. As she described,

In our classroom, we establish and enforce five fundamental rules. Rule number one emphasizes the importance of following all directions promptly. To clarify this rule, we provide specific examples and visual cues to help students understand what it means in various situations. Rule number two, 'Raise your hand for permission to speak,' is particularly relevant when we're gathered on the carpet, discouraging students from calling out. Rule number three encourages students to raise their hand when they need to leave their seat, whether it's for a bathroom break or getting a drink. Nonverbal cues are used to maintain a quiet and orderly classroom environment. Rule number four, 'Make smart choices,' is a reminder for students to exercise self-control and choose their actions wisely. This rule helps manage behaviors like excessive talking, especially among friends, without having to move every student for minor infractions. Instead, we encourage them to stay focused and make responsible decisions while sitting next to their friends. This approach allows us to strike a balance between maintaining discipline and fostering a positive classroom atmosphere. (Irma, Interview#2, Oct 28, 2022)

In line with her prescription, Irma frequently used these rules to manage student behavior in the classroom. For instance, during one literacy class, the teacher instructed the students to put away their whiteboards after the auditory drill. However, some students failed to comply with this directive. In response, the teacher addressed the situation, saying, "Now, my friends, I still see some of our whiteboards. They haven't been put away as they should be. Remember, what's rule number one?" (Irma, Observation, April 3, 2023). Rule number

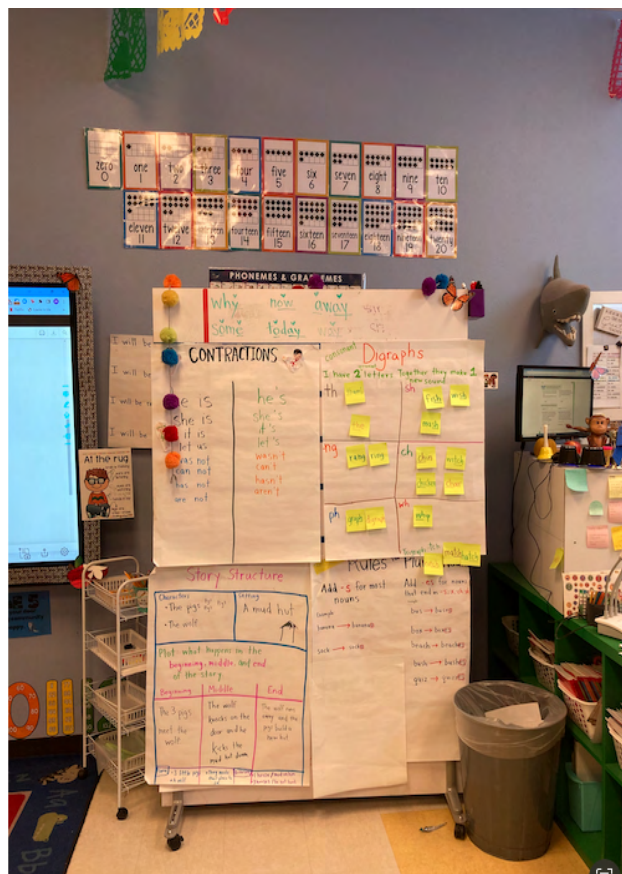
one stipulated that students should follow directions promptly. Following this reminder, she commenced her lecture on blending drills. However, she also noticed that one student on the carpet was not participating in tapping out and blending the words. She further remarked,

Can you please go to your seat to make smart choices? We're focused right now; we're reading, we're learning. If you are not, then I need you to do something. Okay ready friends and XX, you are welcome to turn around and tell him to make smart choices. Thank you. (Irma, Observation, April 3, 2023)

Rule number four, making smart choices, was a guideline frequently emphasized by Irma when dealing with individual students or small groups who were not actively participating in their designated learning tasks. Also during this blending drill activity mentioned above, when the teacher prompted the students to sound out and blend a word, one student preemptively called out 'oi' immediately after the teacher spoke the word 'boil'. In response, the teacher reminded him, saying, "Remember to call out, please remind yourself number two to raise your hand" (Irma, Observation, April 3, 2023). These rules underscore the teacher's authority, and the students were supposed to follow the teacher's directions. In reality, these rules aided the teacher in guiding the students' behavior towards meeting the teacher's expectations.

Facing the screen, to the right of it, there was a substantial anchor chart serving as the teacher's whiteboard, as seen in Figure 25 and Figure 26. This chart was a sizable board covered in posts that highlighted the key points from Irma's lectures. Above the anchor chart, on the wall, there were stickers depicting ten frames for numbers 1 through 20, aligning with the math concepts the students were learning—specifically, using ten frames for solving addition and subtraction problems. Adjacent to the anchor chart was the teacher's projector desk, where she kept her computer and files. This area allowed the teacher to display her documents to the students on the electronic screen or have students present their own paperwork through the projector. Next to the projector desk, there was the teacher's table, which was semicircular in shape, with the teacher seated in the center, facing a group of

students. This table was utilized for small group teaching and individual assessments. The wall behind the teacher’s table served as the learning schedule wall, as illustrated in Figure 27. This substantial whiteboard featured the daily schedule on the left side and the weekly objectives for each subject in the center and right sections. Most of the whiteboard was filled with various instructional materials for writing. In the middle, there were four pictures displaying a student’s example of storytelling through drawings. These images were surrounded by stickers that outlined the six steps for effective writing: choosing an idea, planning it out, writing, revising, editing, and illustrating the narrative.



**Figure 25: The Image of the Anchor Chart on Nov 17, 2022, in Irma’s Classroom**



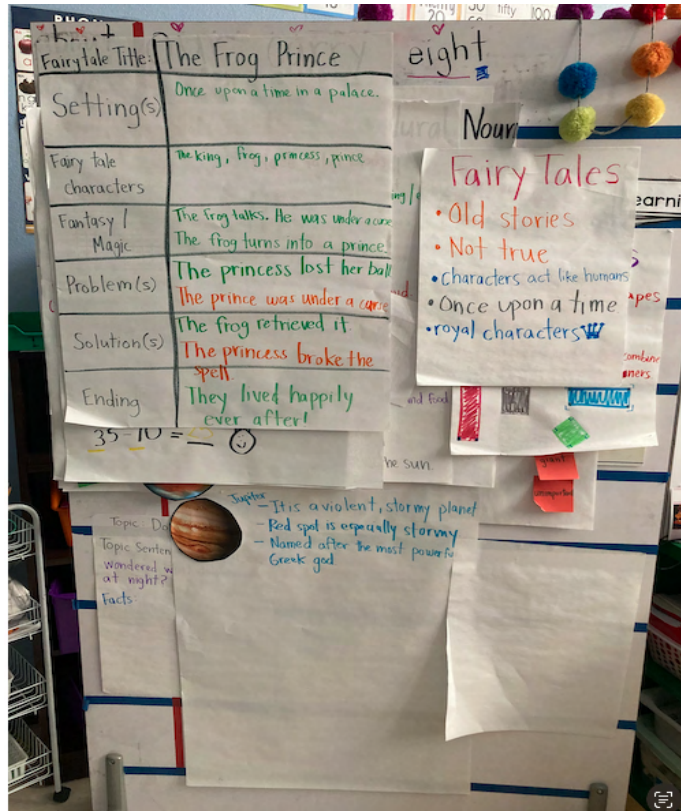


Figure 26: The Image of the Anchor Chart on April 3, 2023, in Irma's Classroom



Figure 27: The Image of Daily Schedule Wall in Irma's Classroom

In the right corner of the learning schedule wall, there were file cabinets (seen in Figure 28). One of these cabinets featured various colors of paper detailing group information, including the names of different student groups: Teachers Crew, Tidy Crew, Technology Crew, Supply Crew, and Flight Crew. These papers listed the students' names along with their respective responsibilities within each group. Irma established these groups with the aim of fostering a sense of responsibility among the students for their class duties and to promote mutual assistance among them. As she described,

Class jobs, I have crews, I call them crews because it's like four or five kids that are on the same team. And like I asked them to do a different task. And if somebody's not there, somebody else could fill in from that crew and so they all kind of work to help each other for the common good. (Irma, Interview#1, Oct 19, 2023)

For instance, if students encountered problems with their laptops, they could reach out to the technology crew for assistance, while the supply crew assisted the teacher in distributing paper sheets to each student. Adjacent to this colorful group information display, there were photographs of students categorized under the labels 'cold', 'hot', and 'absent', which tracked whether students had experienced illnesses or absences during the semester. The wall adjacent to the learning schedule wall served as the subject tool wall, as depicted in Figure 29. Similar to Darcy and Zara's subject tool walls, this was a large whiteboard adorned with posts containing key points for each subject.

At the top of the subject tool wall, there was a designated section titled 'Our Class is a Family', featuring three distinct posts. The central post depicted a house, symbolizing the classroom, with each student representing themselves as a family member using individual stickers. On the right side, another post emphasized the existence of rules within our class family, setting clear expectations for behavior. The left-side post displayed the family contract within the classroom, outlining the rules how students should interact with the teacher, how they should treat their classmates, and how the teacher should treat the students.

These rules were come up with the students at the beginning of the academic year. There were signed students' names in the family contract. The family contract also featured the names of students who had signed it. This area was to remind the students to be respectful to the teacher and their classmates.



**Figure 28: The Image of Different Colors of Paper Representing Group Information in Irma's Classroom**

On the left side of the subject tool wall, there was a chart that tracked students' progress in their IReady online lessons (seen in Figure 30). They received a sticker on this chart when they successfully completed a lesson with a 100% score. This chart served as an incentive to motivate students to advance in their IReady online lessons. The last wall was the Spell Wall (seen in Figure 31), featuring a vibrant green background and adorned with images of students' month-shaped illustrations for specific sounds. Occasionally, during literacy class, Irma would refer to this Spell Wall if students had difficulty spelling out a particular sound clearly. In summary, it is evident that the classroom decorations were

designed with a strong focus on both subjects and rules. The anchor chart, learning schedule wall, subject tool wall, and spell wall all emphasized key points for various subjects. Additionally, the presence of CHAMPS, the five classroom rules, student groups, and the family contract played a vital role in assisting the teacher in managing and shaping the students' classroom behavior in line with her expectations.



**Figure 29: The Image of the Subject Tool Wall in Irma's Classroom**



**Figure 30: The Image of the IReady Process Record Chart in Irma's Classroom**



**Figure 31: The Image of the Spell Wall in Irma's Classroom**

### Teaching Pattern

In general, Irma's teaching approach was centered around the role of the teacher. Regardless of the subject, her instructional pattern typically involved delivering lectures on new concepts, providing guided practice (although not always), and subsequently expecting students to independently explain these concepts or apply them to solve specific questions in their textbooks. In cases where students fell short of her expectations after her lectures, she tended to attribute this to their lack of focus. Although there were instances of student-centered elements in her teaching, such as connecting lessons to student's daily lives, utilizing more visual aids in her explanations, and encouraging students to give feedback, these elements primarily aimed at enhancing students' comprehension of her lectures rather than nurturing the cultivation of their own knowledge and understanding, fostering higher-order thinking skills, or facilitating the application of new concepts to solve real-life problems. Additionally, she utilized incentives to steer students' behavior in a manner that aligned with her expectations, rather than encouraging the cultivation of an inherent interest in learning. In the following section, I described two complete lessons as examples.

Consistent with her perception, Irma utilized a direct instruction to teach reading. For instance, during one reading lesson focused on the Earth's history, she instructed students to return to the carpet, offering rewards in the form of \$1 toy money to those who did so promptly. That was an example that Irma used incentives for students' desired behaviors. Simultaneously, the student leader of the day led the students in reading the CHAMPS rules. Irma then ensured that everyone was seated in their designated carpet spots and provided a gentle reminder to one student to sit in the correct location on the carpet. She began the reading lesson by posing factual questions, such as "how many planets are in the solar system?" (Irma, Observation, Feb 15, 2023), related to what the students had previously learned about the solar system. The following was the dialogue to recall students' previous

knowledge.

Teacher: “Okay friends, I thought I’ll start talking about our home. But not our moment in the house you deal with your mom and your dad. I’m talking about our home on the planet. So how many planets are in the solar system?”

Students: “Eight.”

Teacher: “Yeah, we learned that the planet Earth is part of a solar system with how many other planets? but we’re part of a board system with eight planets and we will orbit around what?”

Students: “the sun.” (Irma, Observation, Feb 15, 2023)

Next, a slide displayed a world map, and the teacher encouraged students to share personal stories related to the world map; for instance, one boy mentioned he had lived in China when he was born, while another boy shared that he had resided in Africa, and the teacher verbally commended their responses, saying, “Oh, very cool. Friends, that’s an awesome story, so people can be born in different countries and still live in the United States today” (Irma, Observation, Feb 15, 2023). Subsequently, Irma endeavored to introduce the new reading material for that day. She said,

A story that is called ‘The History of Earth, we’re trying to figure out what’s the story of earth, and we’re going to be talking about what happened in the past. Now a lot of scientists discover new things about the Earth and our universe. And it’s really interesting and fascinating. So I’m hoping that I’ve learned a lot more about it. (Irma, Observation, Feb 15, 2023)

Following this, Irma held a globe model and prompted the students to reflect on their experiences walking in their local communities, emphasizing that the Earth is round, and their walking did not give the sensation of walking on a curve. She directly provided the explanation for this by stating, “So when we’re walking, it doesn’t feel that way. We didn’t feel like we’re walking on a curve. But because the earth is so big, and the curve is so little that it doesn’t seem like we’re walking on” (Irma, Observation, Feb 15, 2023). She then guided the students to observe the array of colors displayed on the globe, prompting them to consider and articulate what each color might represent, stating,

Teacher: “What is the light blue color? Does anybody know what it is like?”

Students: “Water.”

Teacher: “There’s lakes, there’s rivers, there’s ocean. So that’s when you can use a water digger. There’s all kinds of water aid and they’re made out of continent, continent, or the different pieces of land that go together. For instance, South America is a continent represented by the color green on the globe, distinct from North America, which includes countries like the United States, Canada, and Mexico — that’s another continent. Each color you see here designates a separate continent. A continent is a large landmass that encompasses various countries. Asia, for example, is its own continent as well. (Irma, Observation, Feb 15, 2023)

After introducing the concept of water and continents with different colors, Irma proceeded with the introduction of the concepts of atmosphere and gravity. Following this, she read a story about the Earth to the students and instructed them to listen attentively. As she said,

Teacher: “When I’m reading this story, okay. I want you to meet an interesting scientist who knows a lot about our earth. Now, when you listen carefully, we’re goanna learn more about the earth. This is Jerry, the geologist. What’s his name?”

Students: “Jerry.” (Irma, Observation, Feb 15, 2023)

While displaying a slide with images related to the story, Irma read the entire story while her eyes were fully on her textbook. The story introduced the concept of geology, geologists, rocks, pebbles, and stones. During the reading, three students attempted to ask questions. In response to the first question, the teacher deferred it, stating, “It doesn’t matter right now. So thank you” (Irma, Observation, Feb 15, 2023). For the second question, the teacher assured the student that the answer would be covered in the reading, saying, “We’re going to learn about that. That’s part of the history of the Earth. That’s a good question” (Irma, Observation, Feb 15, 2023). When the third student inquired why there were rocks on Earth, the teacher struggled to provide a satisfactory response, stating,

Okay so why are rocks on our planet? Well friend, as we study the history of the earth, we will understand what the earth is made of. It’s made out of rocks and beings and that’s probably why they’re here. So we’re goanna stop right here. (Irma, Observation, Feb 15, 2023)

The reading lesson lasted for just 25 minutes, and after the teacher completed reading



the entire story, the lesson concluded. Subsequently, the students left for their recess, and upon returning to the classroom, the teacher did not revisit the reading lesson but instead directed the students to prepare for the upcoming math lesson. Looking back on this entire reading lesson, it's apparent that the teacher primarily dominated the discussion, with students mainly responding to a few factual-level questions posed by the teacher. It also appeared that the teacher might not have possessed a strong command of the subject matter, as evidenced by her difficulty in providing satisfactory answers to students' inquiries. Her knowledge of the subject seemed to be primarily centered around the content of the reading material itself.

Consistent with Irma's perceptions, her math instruction method relied on the curriculum provided. In math lessons, while Irma posed more questions to students than in reading lessons, her approach still remained predominantly teacher centered. The teacher was the primary speaker, and if students struggled to comprehend her explanations, she often reiterated the same information without adapting her approach. On occasions, she attributed this to the students not paying sufficient attention, which resulted in her having to repeat herself. Furthermore, the main learning activity consisted of solving math problems in their textbooks. For instance, one math lesson focused on adding two two-digit numbers. It commenced with a review of the previous day's content through a video demonstration and students' solving a math problem. The video showcased how to use ten frames to solve two math problems:  $46 + 3$  and  $37 + 8$ . Irma then summarized what had been learned the previous day and introduced the day's objectives. A new slide presented a math problem: "Nicolas is solving  $35 + 8$ . First, she adds  $35 + 5$ . What should she do to complete the answer, and please draw a model to explain" (Irma, Observation, Feb 10, 2023). Students were instructed to return to their seats, take out their whiteboards, and work independently on the problem with their whiteboards. While students were engaged in their tasks, Irma explained what a model

was and simultaneously moved around the classroom, awarding toy money to students who performed well on the math problem. When the timer went off, she asked students their answers directly. Their interactions were as follows.

Teacher: “So Nicolas already added five, how many more? What did you add on to five? Hey class, how many do you add on to five?”

Some Students: “Eight.”

Some Students: “Five.”

Clearly, the correct answers had not come from any of the students. Irma prompted the students to concentrate more on the question and went through the directions once again.

After this, the students provided the correct answers. The following dialogues illustrate their interactions.

Teacher: “Listen to the question, my friend, stop calling out please. That’s not the question I asked. But I’m going to ask again. What did she have to add to the five? She already added 35 plus 5, and that makes 40. What did she have to add to the five to find her sum?”

Students: “Three.”

Teacher: “Three more. So he made a group of five and added three more to it from there he counted on to from thirty-five, and that gave him?”

Students: “Forty-three.”

Teacher: “Forty-three.” (Irma, Observation, Feb 10, 2023).

Following the review, Irma initiated the new lesson by asking a student about the day’s objective, stating, “Remember, we went over our objective first thing when we started, my friend M, what did I say we were going to learn today?”. Student M answered, “add two numbers.” She then proceeded to explain the concept of adding two two-digit numbers and the importance of understanding this mathematical operation. The below dialogue showed the teacher and individual students’ interactions.

Teacher: Okay, you’re in the right neighborhood. But remember, we’re going to add two two-digit numbers, right? So what does that mean? Yeah, what does it mean to

add two two-digit numbers? Think about it. I'm going to ask a friend. What does it mean to add two two-digit numbers, H?

Student H failed to answer. Then Irma asked Student J.

Student J: "Add numbers with two digits."

Teacher: "Yeah, so we're going to learn how to add numbers with two digits in and for example, 42 and 32, is it a two-digit number?"

Students: "Yeah."

Teacher: "Both of them are two digits because they have two numbers in them and we're going to learn a little bit more about how to add these. We are learning this because we want you to understand what ways are to use tens and ones to add. So if we can add up two two-digit numbers, are we able to add using standard ones? Yes, we are." (Irma, Observation, Feb 10, 2023)

One student raised his hand and attempted to ask a question. In response, the teacher suggested that they watch a video that might answer his question, saying, "after the video please take me over, because maybe it might answer in the video" (Irma, Observation, Feb 10, 2023). The video demonstrated how to solve the math problem 27 plus 15 by breaking down the tens and ones in the two two-digit numbers and adding the ones first. The video also posted a question: "how many ones are there at all?" (Irma, Observation, Feb 10, 2023). Irma paused the video and reiterated its explanation. She further clarified the steps for adding two two-digit numbers by engaging the students with questions. Similar to Darcy, she posed questions aimed at breaking down the steps required to tackle the math problems. In addressing the sum of 27 and 15, she started by having the students combine the numbers 7 and 5. Then, she questioned what would be left in the ones place once a ten was taken from the total of 12. Finally, she asked the students to count up all the tens and ones to arrive at the complete sum. The instruction was delivered to the entire class, requiring them to respond collectively. To ensure the students' thorough comprehension, the teacher continued the video lecture that reiterated the problem-solving steps. Below were dialogues illustrating the interaction between the teacher and the whole class about solving the problem 27 plus 15.

Teacher: "So when you're dealing with two two-digit numbers, you always add the ones first because you need to decide if I am going to have to make it into another ten, or if I didn't have enough ones. Okay, so I have 7 plus 5, 7 plus 5 equals?"

Students: "12."

Teacher: "Hey friends, look at the number 12, looking at the number 12, friends, is there any change in the number 12?"

Students: "Yeah."

Teacher: "Well, yeah, so now this one group of 10 is getting added to the tens. How many are left after I take 10 out of the number 12? How many are left?"

Some students: "2."

Video: "See if you can make a 10, five ones, and five ones is ten ones. There are two extra ones. Seven ones plus five ones equal 12 ones, 12 has one ten and two ones. How many tens are 27 and 15?"

Teacher: "Now looking at it, knowing what we just did, how many tens are in 27 plus 15. 1,2,3, and remember the one ten we made when we added it together with 12."

Some students: "Four."

Teacher: "Four, there are 4 tens, and how many do they have leftover?"

Some students: "Two."

Video: "27 has 2 tens and 15 has 1 ten, how many tens are in 27 and 15 together? How many 2 tens plus 1 ten equals? 3 tens. 3 tens plus 1 ten equals 4 tens, find the sum by adding the tens and ones, there are 4 tens and 2 ones."

Teacher: "Now friends, for 27, 2 is at the tens place, 7 is at the tens place. For 15, 1 is at the tens place, 5 is at the tens place. Now friends, if I needed to add these together, I look at my tens place in this twelve and I look at my tens place in the number 30, three tens and one ten equals?"

One student: "Forty-two."

Teacher: "Three tens and one ten equals?"

Some students: "Forty."

Teacher: "Four tens or forty, now friends if I had two ones here and zero ones here how many ones is me?"

Some students: "Two."

Teacher: "Those together that make the number?"

Some students: “Forty-two.” (Irma, Observation, Feb 10, 2023)

Subsequently, Irma inquired if any of the students had questions, and several students raised their hands. In line with Irma’s perceptions, she always asked students’ feedback to check their understanding during her instruction. But students can only ask questions related to what she lectured. For example, before instructing student C to speak his question, Irma reminded him that the question should be specific to adding two two-digit numbers, stating, “does that really add two-digit numbers, you need to be more specific what you don’t understand, you don’t understand how to make them? You don’t understand how I add, what part of it?” (Irma, Observation, Feb 10, 2023). Student C then asked about the meaning of the equal sign, to which the teacher provided an explanation. Irma encouraged students to ask her questions during her instruction time. For example, after asking Student C, Irma asked if student A had any questions. Student A responded that she did not have any questions. She told to Student A that,

Student A, what I want you to recognize is that you actually understand what I’m teaching you. Because if you do not, then now is a good time to ask the question. I need you to understand that here on the carpet, a lot of other people probably have the same question you do, but maybe they’re not asking. We can add and clarify so we go back to repeat and do our work. (Irma, Observation, Feb 10, 2023)

Irma then requested that student A explain how to solve 15 plus 30, and student A proceeded to demonstrate her understanding of the math problem. Subsequently, the teacher confirmed student A’s understanding and repeated the lecture again on the process of adding two two-digit numbers. As she lectured,

When you’re adding two-digit numbers, always start with the ones column - the digits all the way on the right. See, if they add up to more than nine, you’re goanna have to carry over to the tens column. If you do the tens first and then the ones, you might end up having to go back and change the tens. It’s just messier that way. So, hit the ones first, carry if you need to, then tackle the tens. It keeps things simple and straight. Got it? Great, let’s keep going! (Irma, Observation, Feb 10, 2023)

In a similar fashion, she provided step-by-step explanations for solving two problems: 23 plus 15 and 36 plus 24. For these problems, Irma didn’t encourage students to attempt

solving them on their own but instead delivered direct instruction. Despite the teacher's lengthy lecture on the math problems, the anticipated outcome wasn't achieved, as many students were still left puzzled. For example, after explaining the two math problems mentioned above, she inquired if any students had questions again. One student expressed confusion about creating a new ten. As a result, the teacher clarified it with an example of 36 plus 28. Subsequently, Irma asked if the students wanted to see another example, and more than half of the students indicated their need by giving a thumbs-up. Irma then proceeded to explain how to solve 19 plus 45. Following the explanation, Irma instructed the students to return to their seats and complete independent practice exercises in their textbooks. During this phase, she encouraged students to seek assistance from their peers if they had questions and to attempt solving the problems independently at first. After approximately five minutes of independent work, it was time for lunch, concluding the lesson. Irma advised students to continue their independent practice during recess if they hadn't finished it.

This math lesson served as a typical example of Irma's teaching style when introducing new math concepts. She offered a thorough explanation of the problem-solving steps such as the steps of adding two two-digit numbers and reiterated these explanations during the problem-solving process. Consistent with Irma's belief that she employed positive reinforcement to guide students toward the desired classroom behaviors, she implemented a reward system in her classroom. This system involved distributing toy money as a form of positive reinforcement for students who followed her instructions or exhibited good performance. The reward system included various incentives, such as \$20 for eating pizza, \$30 for a game involving Pokemon cards, and \$35 for having lunch with the teacher. Irma treated this reward system as a strategy for motivating students to manage their classroom behaviors. As she mentioned, "So it's like a strategy or like a teaching. It's not a curriculum, it's just kind of something that you add on to your teaching. And that's just kind of helped me

with classroom management” (Irma, Interview#3, Nov 18, 2022).

### *Student-Centered Elements*

While her instructional approach was predominantly teacher-centered, consistent with her perceptions, there were still some student-centered elements present in her teaching. The first element was the incorporation of real-life relevance into her lessons, which was particularly evident in reading and writing lessons. For instance, during a writing lesson where students were tasked with composing sentences about animals, Irma presented four animal options for students to choose from. Initially, she read materials about each of the four animals and encouraged students to share their thoughts or personal experiences related to these animals. Due to time constraints, only a few students were selected to express their experiences. Notably, Irma did not encourage students to write about their own experiences with the provided animals in their research papers. Instead, she expected them to incorporate information from what she had read to them. As she mentioned,

But I’m goanna stop you right there because that sounds like something that you could not write in your research paper. I would love to hear more about it after school. Okay, so yeah, but yeah, maybe that’s not something we should add into our research paper though. (Irma, Observation, Feb 22, 2023)

The second element was the use of visual aids in her explanations, a practice that extended across all subjects. These visual aids were usually teaching materials that helped students’ understanding. They were served as student-centered elements, because they enhanced student engagement by expanding their visual and imaginative capacities (Mascolo, 2009). For instance, in a reading lesson focused on comparing the differences among planets in the solar system, Irma encouraged the students to envision themselves as the sun, while she, holding the globe model, represented a planet. She moved around the students, who were seated on the carpet, simulating the orbital process of planets around the sun. In a math lesson centered on equal shares, she cut a rectangular piece of paper into two triangles and demonstrated to the students that these two triangles were of equal size. All these

visualizations contributed to the students' enhanced understanding of the topics being lectured by the teacher. However, to make her teaching more student-centered, she could involve the students themselves in activities like cutting paper into equal shares.

The third element involved her frequent solicitation of student feedback. Seeking students' feedback is a student-centered element because it provided opportunities for teachers to address the students' needs and make adjustments accordingly (Keiler, 2018). It also encouraged students to become active participants in their learning process rather than passive recipients. As discussed above, after delivering a new concept, she often inquired whether the students had grasped her explanation. If most students indicated they didn't understand, she was willing to reiterate the concept. However, on occasion, she displayed impatience and directed blame towards the students, urging them to pay closer attention during her instruction. For instance, during a math lesson on employing various strategies for adding two two-digit numbers, students consistently struggled. In response, the teacher requested that they focus more attentively on her explanation. As she said,

The video is only two minutes long. And we've taken five minutes on just this problem alone. So it's supposed to go quickly. But it only goes quickly if we're paying attention and asking questions when you really don't understand. Now, if I already explained it, and you're asking me the same question. Again, we've already talked about it. So then we have to talk about it again. And again. And again. And again. Notice that we would have paid attention, the person would be happy to keep talking about it. (Irma, Observation, Feb 15, 2023)

### *Small Group Teaching*

Similar to Darcy and Zara's school, Irma's school required teachers to implement small group teaching for reading and literacy lessons. These sessions took place early in the morning, from 8:20 am to 8:50 am. During these small group teaching sessions, a select group of first-grade students was redistributed to different classrooms based on their performance in assessments. These students were categorized based on the specific aspects of literacy where they did not perform well in the assessment. For instance, Irma was



responsible for teaching students who did not perform well in their word pronunciation. In each classroom, a group of six to eight students sat at the semicircle teacher table. The teaching content for the small group literacy teaching was more tailored to individual student's learning levels. However, the teaching approach in these small group sessions remained teacher-centered, aligning with Irma's perceptions that she employed a direct instructional method for students in lower-level groups. The majority of students remained in their own classrooms to complete their IReady online lessons. Students in the first grade in Irma's school were expected to spend 45 minutes on math and 45 minutes on literacy each week, which they could complete either at home or at school throughout the week. If they finished before Friday, they were rewarded with a game time on the carpet on Friday.

Irma also conducted small group teaching sessions for math every day after lunch, from 12:40 pm to 1:00 pm. These sessions did not involve classroom rotations. Irma would select a group of her students and invite them to gather on the carpet to review what they had covered in that day's math class. These students were the ones she felt did not fully comprehend her instruction during the math lesson. With their textbooks in hand, she would guide them through the math problems, working together to ensure their understanding. The math small group teaching primarily aimed to provide additional support to students who were falling behind in the mass lesson. The main teaching approach in these small group sessions continued to be teacher-centered explanations.

In summary, Irma's instructional style was primarily teacher centered. She dominated the class with her explanations, and the students largely played a passive role by listening to her lectures. Interactions were initiated by the teacher, who directed questions to the entire class or individual students. These questions typically focused on factual-level knowledge and did not stimulate higher-order thinking. She relied on incentives as a form of positive reinforcement for behaviors that aligned with the teacher's expectations, rather than nurturing

students' intrinsic motivation for learning. Although there were some student-centered elements in her teaching, these elements primarily served to enhance students' understanding of the teacher's lectures instead of constructing their own knowledge or meaning.

**What are the differences, if any, between their SCT practice for diverse learners and non-diverse learners?**

### *Inclusion of Diversity in Practices*

In Irma's class of 27 students, the number of diverse learners was actually 16, a reality that contradicted her perception of having only 8 such students. This revealed that, contrary to her belief that the class was predominantly Caucasian, the majority were, in fact, diverse learners. Based on the Critical Race Theory, the discrepancy between Irma's perception of having only 8 diverse students and the actual count of 16 diverse learners reveals a form of microaggression. This discrepancy highlights how educators like Irma may unintentionally underestimate the presence and needs of students from diverse racial and ethnic backgrounds. Such underestimations can be seen as a microaggression because they can contribute to feelings of invisibility and marginalization among racially diverse students.

Based on the above analysis, it's evident that her teaching practices did not address the needs of these diverse learners. First, her instructional content was predominantly focused on the curriculum and did not incorporate differentiation to cater to the varying learning levels among students, nor did it consider the different racial, ethnic, and cultural backgrounds of these diverse learners. The content covered during my observation in the reading class included topics such as the planets in the solar system, the history of the earth, and a fairy story. The literacy lessons primarily focused on teaching students how to read and write English words. In math, the lessons revolved around concepts like equal shares, adding tens and ones, adding two two-digit numbers, and using various strategies

for adding two two-digit numbers.

Additionally, in the writing lesson, students were tasked with writing sentences about the four provided animals. It's important to note that Irma did not make any specific accommodations to meet the needs of diverse learners. In fact, she only followed a set curriculum or materials provided by her colleagues without additional modifications. Based on the lens of CRT, Irma's failure to make specific accommodations to meet the needs of diverse learners can also be considered a form of microaggression. This omission highlights how educators may unintentionally neglect the unique needs and experiences of students from diverse racial and ethnic backgrounds, perpetuating systemic inequities. By solely following a standardized curriculum or materials without making necessary modifications to address the diverse needs of her students, Irma may have conveyed the message that the educational system prioritizes the experiences of a dominant cultural group while marginalizing those of racially diverse students.

The teaching content doesn't acknowledge or affirm the varied cultures present in a classroom, which can lead to feelings of detachment or a lack of motivation among the diverse learners. They might find it challenging to engage with a curriculum that are irrelevant to their lives, potentially exacerbating educational disparities (Allen et al., 2013). Research in education has repeatedly demonstrated that diverse learners benefit academically when the curriculum is inclusive of their cultural backgrounds and personal experiences (Austin et al., 2019). A lack of representation can make students feel overlooked or excluded, contributing to a weakened connection with the school environment and potentially impacting their sense of self-worth and the development of their personal identity (White, 2011).

The learning environment was also predominantly centered on the curriculum and subject matter. It lacked decorations or elements that would reflect the diverse learners'

racial, ethnic, and cultural backgrounds. Additionally, the presence of numerous classroom rule reminders in the classroom indicated a culture primarily focused on following the teacher's directives. The classroom rules emphasized the need for students to follow directions and seek permission from the teacher, while the family contracts outlined the expected behaviors when students interacted with their classmates and the teacher. These rules were designed to shape students' behavior in accordance with a classroom culture defined by the teacher. Irma did not recognize that her perception of acceptable behaviors might differ from what students from various cultural backgrounds deemed appropriate. As highlighted by Milner (2016), "at the core of these cultural conflicts is what it means to be 'normal'" (p. 25). These cultural conflicts hindered the teacher from forming meaningful connections with the students, ultimately leading to these students being excluded from learning opportunities (Milner, 2016).

In addition, she relied on external rules to regulate students' behavior rather than facilitating the development of students' internal values in learning that would encourage them to appreciate the importance of learning and doing well in school. Establishing students' internal values necessitates the teacher's close collaboration with students' families and communities, incorporating their values and assets into the classroom environment. This integration facilitates a more profound link between students' learning experiences and their real-life contexts, bolstering their sense of connection with the educational content. Consequently, students can better understand the practical applications and significance of the school curriculum. However, Irma did not have the integration of values and assets from diverse learners' backgrounds into her instruction. In fact, in her instruction, there were instances where she overused the classroom rules. For example, during a literacy lesson, a student spontaneously spoke out 'oi' after the teacher said 'boil'. In response, Irma immediately invoked rule number two, which required

students to raise their hands before speaking out. This may have been a situation where the students were actively participating in the learning activities and might not have been fully aware of these rules. Irma's response may hinder this student's active participation in the future.

Her instructional approach predominantly relied on delivering lectures and explanations. Recognizing that her students faced language barriers in reading and comprehending math problem directions, she opted to read these directions to them, both in guided and independent practice, in order to alleviate their cognitive burdens. She failed to translate her awareness of the challenges faced by diverse learners into concrete transformations in her teaching practices aimed at creating more equitable learning opportunities for her students. Throughout the entire academic year, her primary concern was ensuring students' comprehension of math concepts, but she did not devote significant effort to helping them develop the ability to independently read and understand directions. Consequently, this approach could potentially lead to underperformance among diverse learners in math assessments due to language barriers. As she mentioned,

Math requires a deeper engagement than some other subjects; students must read the problem, comprehend what's being asked, and then solve it, which inherently involves several steps. That's why, to reduce their cognitive load, we sometimes read the problems to them. If I articulate the problem clearly and they understand it, they can then demonstrate the solution, which is ultimately what matters — their ability to 'show' the math comes from understanding it. Earlier in the year, we did a lot of this reading out loud because many students were struggling with the reading comprehension aspect or just not grasping the problems. Now, as we approach the end of the year, it's crucial to gradually pull back that support. We're focusing on strengthening those skills, allowing students to become more independent and seeing whether they can handle the problems on their own. (Irma, Interview#6, April 03, 2023)

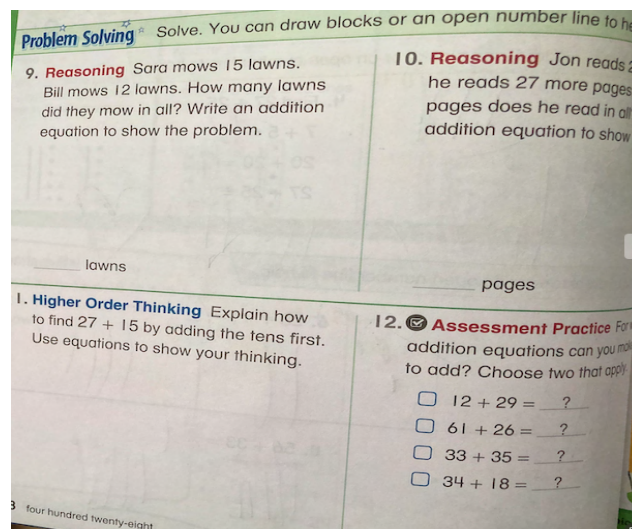
Additionally, Irma did not hold uniformly high expectations for all of her students. As previously mentioned, in her math lessons, she predominantly focused on guided practice and independent practice from the textbook, while each math lesson also included a higher-level problem-solving section. As illustrated in Figure 32, this section encompassed

reasoning, higher-order thinking, and assessment practice, encompassing items #9 to #12.

When questioned about her decision not to include this section in her teaching, Irma clarified that some students, particularly those she considered to be lower performing, might become frustrated when attempting the problem-solving section. Therefore, she preferred to engage them in covering basic math problems such as items #3, #6, and #7.

For the problem-solving section, she selectively assigned students whom she believed were capable of working on it independently and did not evaluate their performance in this particular portion. As she mentioned,

Problem-solving is inherently challenging, and working solo could lead to frustration. In pairs, they accomplish more effectively. Our ultimate objective is to build their capacity for independent work. For my students who are struggling, I plan to scale down the workload; I'll assign them just a few problems—perhaps three, six, and seven—to manage. This way, they won't be overwhelmed. As for the rest, who are more capable, they will be given the full set of problems. It's about balancing expectations with their ability levels. (Irma, Interview#6, April 03, 2023).



**Figure 32: The Image of Problem-Solving Page in the Math Textbook in Irma's Classroom**

It was clear that these low-achieving students were unequivocally excluded from the teacher's expectations and learning opportunities. Her low expectations for lower-achieving students, along with her lack of responsibility to challenge higher-achieving students, could contribute to the emergence of opportunity gaps. These gaps will result in academic disparities and hinder students' future achievements. Her absence of critical reflection concerning how systemic factors influence diverse learners was evident in her teaching practice, which likewise did not create more equitable learning opportunities for this diverse student population.

### ***Summary of Irma's Case***

Irma's concept of student-centered teaching aligns more with students' active participation. In this approach, the teacher serves as the primary source of knowledge, and students engage with the teacher's instruction, providing feedback and gaining the ability to independently explain the concepts. In her perceived student-centered practice, while some student-centered elements were present, they were limited to teaching strategies and lacked a focus on active knowledge construction and higher-order thinking. Irma's main priority was students' academic growth, often assessed through test performance, and she generally adhered to the prescribed curriculum. Her primary expectation was for students to master the material as presented in her lectures.

Consistent with Irma's perceptions, the majority of her teaching content was drawn directly from the curriculum, and her lessons were largely predetermined rather than individually planned. She did not differentiate the content to cater to the varying levels of her students. The physical arrangement of the classroom desks exemplified a teacher-centered approach, reinforcing the importance of respecting the teacher's authority and adhering to her instructions. The classroom decorations primarily revolved around the curriculum and rules.

Consequently, the overall classroom culture appeared to prioritize the teacher's guidance. Furthermore, Irma's teaching style predominantly reflected her perceptions, with her taking on the primary role of delivering content and explanations during class. Notably, there were some elements of student-centered teaching, but the core of her instruction remained teacher centered. Her approach did not involve students' construction of their own knowledge and higher order thinking. Crucially, Irma's perceptions and teaching practices did not account for the diverse backgrounds of her students, as she seemed unaware of how factors such as race and diversity could influence her teaching and her students' learning outcomes.

### **Case Study Findings for Rosa**

#### ***Rosa-Description and Context***

Rosa was born in the United States to parents who had immigrated from Mexico. She identified herself as Mexican American and maintained strong connections with her family in Mexico, often visiting them. Rosa pursued her education, earning a bachelor's degree in elementary education and a master's degree in teaching English as a second language. Her passion for teaching stemmed from a deep connection with children, which she had developed while taking care of her younger cousins during her own upbringing. This connection continued as she now cared for her nephew and niece. Rosa found that teaching was more challenging than she had anticipated, but her passion for teaching remained steadfast. At the time of our initial interview in the fall of 2022, Rosa had six years of teaching experience, including three years at a private school before joining the charter school. Her greatest pride came from witnessing students as they started to grasp concepts that had previously eluded them. It's akin to a "wow" moment when they finally grasp it.



### *Rosa-Research Question 1*

#### **What are elementary teachers' beliefs and perceived practice in student-centered teaching?**

My primary approach to answering this question involved an analysis of the interview data. This analysis uncovered her beliefs and practices related to student-centered teaching. Her perceived definition of SCT involved her perception of the teacher's role, students' role, her own definition of SCT and her attitudes towards SCT.

#### *Perceived Definition of SCT*

Rosa, a first-grade classroom teacher at Riverside Academy and Irma's colleague, shared similar perceptions with Irma regarding the importance of SCT in teacher evaluations using the Charlotte Danielson rubrics. According to Rosa, these rubrics included distinct criteria for evaluating the student-centered aspects of lesson planning, classroom instruction, and teacher assessments of children. New teachers with less than three years of experience were evaluated three times a year, while more experienced teachers with over three years of experience were evaluated once annually. Rosa emphasized that these evaluations pertained to formal teacher evaluation. There were also informal evaluation instances when administrators observed classrooms without prior notice. In line with Irma's perception, Rosa also believed that her school encouraged teachers to adopt a student-centered approach but did not compel them to strictly adhere to it. She held the belief that every teacher in her school incorporated elements of student-centered teaching in their methods. As she mentioned, "I think to a certain extent, I guess it does kind of require us to teach with student centered teaching. Obviously, they can't make us. And I think generally mostly I think everyone does teach with student centered teaching" (Rosa, Interview#1, Oct 12, 2022).

In Rosa's estimation, her classroom consisted of 20% to 30% diverse learners, and she made efforts to create a safe and nurturing environment for all her students. In fact, Rosa was not sure the exact percentage of diverse learners in her classroom. As she mentioned, "I can say for my classroom, approximately diverse backgrounds, so I think maybe like oh, gosh, I don't have an exact percentage. Maybe like, a little less than half" (Rosa, Interview#1, Oct 12, 2022).

Rosa's perception of the teacher's role encompasses being both a leader and a facilitator. In the capacity of a leader, the teacher was responsible for presenting the knowledge that students should acquire in the classroom. As a facilitator, the teacher played a role in guiding and supporting students' learning processes and aiding them in applying the knowledge they've gained. As she mentioned,

A good chunk is like leading them by showing them what to do in class. Like, for example, like we're learning short vowels, so like, I would show them with a short vowel. Another role would be facilitating their learning. So then they're learning about the short vowels and that they're applying what we've talked about. (Rosa, Interview#1, Oct 12, 2022)

She believed that students' roles were varying based on the learning activities. When the teacher was lecturing, the students were responsible for listening and following the teacher's instructions. But during their individual work or group work, they were given some leadership. As she mentioned,

The students in the class have roles that are somewhat similar yet distinctive, mainly varying in scope. For instance, during a lesson I'm facilitating, the students will pay attention and follow along, and afterward, they'll engage in individual work where they can also practice leadership. This might involve leading the class in a song, stating the learning objective, or presenting their work to their peers. (Rosa, Interview#1, Oct 12, 2022)

Rosa couldn't recall where she first encountered the concept of SCT, possibly during her bachelor's program. When I inquired about her understanding of SCT, she made an effort to recall the terminology to define SCT in the textbook. She mentioned that SCT felt like a concept she was familiar with. As she mentioned,

No, I was familiar. I think just when I saw the term student centered teaching, I'm familiar with it. And I've learned about it and probably in college, and it's just like remembering exactly what it means. No, I don't remember exactly what it means. But yeah, I learned about it in college. (Rosa, Interview#1, Oct 12, 2022)

In contrast to her previous perception of teachers having the leading role, she defined SCT as a model where students play a driving role in the teacher's instruction. She illustrated this with an example, suggesting that teachers shouldn't keep students seated for extended periods because some high-energy students may struggle to sit still for too long.

Okay, my own definition. So let's see, I think student centeredness means that our students are driving what our instruction looks like. So, for example, like I know, in my classroom, I have very, like high energy students. So I plan for high energy students. And I know that, and I keep in mind, they can't sit still for so long. We need a brain break for them or something like that. So that's what I think. (Rosa, Interview#1, Oct 12, 2022)

Rosa regarded her teaching as student-centered because she taught in the United States and she believed that education in the United States prioritized student-centeredness, considering it a fundamental value within the education system. However, she admitted that she did not possess a clear, well-defined understanding of what exactly student-centeredness entailed.

The schools in the United States are more student centered. So I'm like, I guess I'm like, I probably need to like, look up more. What is student centered? I guess it is, I mean, because they are at the core of like, you know, when we're planning lessons, we have to see whether they are ready for it? Yeah. So, yes. (Rosa, Interview#1, Oct 12, 2022)

Overall, Rosa had a positive attitude towards SCT because it served as a valuable reminder for her to prioritize her students when planning and reflecting on her lessons. It encouraged her to assess whether her students truly understood the material she taught and whether any adjustments to her teaching were necessary. Simultaneously, SCT instilled a sense of value in students, motivating them to exert greater effort in their learning. She identified the primary challenge of SCT as the time-consuming nature of personalizing instruction to each student. As she mentioned,

I think I have a positive attitude towards it. I think it's good because you're keeping in mind your students from the beginning, from when you're planning the lesson, to when you're doing the lesson to then like reflecting afterwards. Like, I know all the time. I'm like, oh, did they really get it? Or was it just not like, not a good lesson and I need to go back and fix what he did...I think the benefits are that the students feel valued in their learning, that they feel that they are, have a voice in their learning, that they are excited about their learning. When it's more student centered, they are more invested in their learning. The major barriers are, I mean, depending on how much you do, you know, if you make everything you know all about the student or you try to personalize everything for them, then it can be very time consuming. (Rosa, Interview#1, Oct 12, 2022)

We can observe a contradiction in her perspective. While she perceived her own teaching as student-centered, where students play a significant role in guiding instruction, she also believed that teachers should take the lead in imparting the knowledge, with students listening to the teacher and follow the teachers' instructions. Her conception of the teacher's role as a facilitator and the idea of student-centered teaching seemed to stem directly from textbook definitions rather than a deep, practical understanding of these educational concepts. In fact, she did not have a clear understanding of what student-centered teaching truly entailed. Her belief that her teaching was student-centered didn't stem from her instructional methods but rather from the fact that she taught in the United States and assumed that education in the United States should inherently follow a student-centered approach. She even extended this belief to think that every teacher in her school employed a student-centered approach. In summary, in spite of her positive attitude towards student-centered teaching and her awareness of its potential benefits for both her teaching and her students, she had not delved deeply into the true meaning of being student-centered.

#### Perceived SCT Practices

In contrast to her perception that her teaching was student-centered, when I asked about her approach to student-centered teaching, Rosa acknowledged that her teaching leaned more towards being teacher-led because she assumed the role of leading the class for the majority of the time. She attributed her leading role to the young age of her students. Her

general teaching process consisted of the teacher delivering knowledge initially, followed by collaborative practice involving both teacher and students, and finally, students engaging in independent practice. As she mentioned,

Since I teach a little bit younger. I think it probably falls more into the majority of the time I am leading. Most of the time, I mean, we kind of follow the teaching model like the teacher does, then we do it together. And then we practice like you do, and then they do it by themselves. (Rosa, Interview#1, Oct 12, 2022)

However, she highlighted some instances of student-centered practices, including data-driven instruction, students' autonomy, students' independent work time and peer work. Firstly, assessment played a vital role in her data-driven instruction. Prior to her instruction, she considered students' learning levels based on diagnostic assessments conducted at the beginning of each academic year. These diagnostic assessments, limited to reading and math, provided insights into her students' struggles and existing knowledge levels. Rosa also preferred to use informal assessments or quizzes to check her students' understanding of what she taught. For example, she mentioned a daily review component at the beginning of each math lesson, which assessed what they had learned the previous day. Based on their performance in this daily review, she would provide small group instruction for students who still faced difficulties.

Additionally, students were granted some autonomy across subjects. For example, in the context of reading, while she openly acknowledged her use of a more direct teaching method, there were instances of student-centered learning such as the independent reading time, known as reading centers. During the independent reading time, students had the autonomy to choose whether they wanted to read a book or work independently on their IReady online lessons, granting them control over their own learning. In the realm of writing, students enjoyed great freedom to decide what to write. Besides, Rosa viewed the instances when students worked independently, such as when they solved math problems on the textbook by their own, as reflective of student-centered teaching. Furthermore, she

considered the times when students collaborated with their peers as another facet of student-centered teaching. For example, students had to opportunity to review each other's writing work or solve a math problem together. As she mentioned,

During the reading portion of our day, the activities are predominantly led by the teacher. However, there is room for student-centered approaches, such as pair work or individual thinking exercises using whiteboards. And we have our reading centers and it's very student led. Then for math, math starts out more student centered in that one of the parts I already talked about was that they solve the problem on their own, using the things that they know, in their brain, and so I can see. In math, part of the lesson is devoted to working in groups where they collectively tackle a problem. And then like writing, writing is very student centered because they're deciding everything that they want to write. During writing sessions, they also might pair up with a writing buddy to review each other's work. (Rosa, Interview#1, Oct 12, 2022)

Rosa's conception of student-centered practices was restricted. The data-driven approach was mainly to address students' academic needs as identified through assessments. Thus, similar to other three participant teachers, her identified students' needs were what students lacked in their assessments. Students' autonomy was narrowly defined, limited to selecting the format of learning activities or writing topics, not including determining what they can learn. Independent work was simply completing exercises in their textbooks by their own, and peer interactions were confined to reviewing each other's work, lacking in opportunities for higher order thinking or hands-on learning. Her examples of student-centered practices shared a common theme: they often happened when the teacher was not physically presented in the students' learning activities.

In summary, Rosa regarded her teaching practice as primarily teacher-led, a perspective she attributed to her students' young age. She relied on assessments to predict her students' current learning levels and to gauge whether her students had comprehended the material she presented. In addition, her perception of student-centered moments during her instruction encompassed instances where students had opportunities for peer collaboration, where students could exercise some freedom in deciding their tasks, and where students had the chance to engage in independent work. Her concept of student-centered teaching was

confined to situations where teachers were not physically present in students' learning, such as peer collaboration or students making some of their own decisions within tasks or engaging in independent practice. However, it's important to note that even in these scenarios, the activities students participated in were predetermined or directed by the teacher.

**What are the differences, if any, between their perceived SCT for diverse learners and non-diverse learners?**

### *Inclusion of Diversity in Perceptions*

From the analysis above, it's evident that Rosa did not incorporate diversity into her perceived definition and implementation of student-centered teaching. She had limited knowledge of the precise percentage of diverse learners in her classroom but estimated that approximately 20% to 30% of her students came from diverse backgrounds, which still represented a substantial portion. Rosa prioritized her Mexican identity over her American identity and recognized the significance of bringing diversity into the classroom. She also noted that, in comparison to the private school where she had previously worked, her current school allowed her less freedom to address racial issues in the classroom. In her current school, when it came to subjects like social studies that inherently included discussions about racial issues, Rosa opted not to explore these topics beyond the scope of the curriculum. She made this choice due to the sensitivity of racial matters to her students' families and the necessity of adhering to school guidelines. As a result, she tended to refrain from explicitly addressing diversity in her instructional approach. As she mentioned,

I definitely identify myself as Mexican American, or you can just put the Mexican first because. For me, I grew up here, you know, I grew up here. So for me, it's important to remember where my family came from, and what my background is. This aspect of my identity becomes especially poignant when I encounter students who share a similar background or even those from different cultures, like my Japanese students or others from various origins. I believe it's vital to incorporate this diversity into the classroom environment. Reflecting on the differences between private and charter schools, I recall having more leeway in a private setting to design

and teach lessons that delve into social studies, race, and cultural issues. In my current position, I can still cover these topics, but I'm more cautious. It's not that such discussions are off-limits; rather, they require a delicate balance between being mindful of the families' perspectives and adhering to the school's policies. (Rosa, Interview#1, Oct 12, 2022)

She was cognizant of the sensitivity surrounding racial issues in her teaching environment. However, instead of confronting and addressing these critical matters, she chose to avoid them altogether. In doing so, she failed to grasp the profound and pervasive influence of inequity on the lives of her students. Her unwillingness to critique her school's lack of inclusiveness and engage in critical self-reflection regarding her own beliefs and actions represented a significant oversight, highlighting her reluctance to confront systemic issues and actively contribute to a more equitable educational setting. Under the CRT, Rosa's reluctance to tackle racial issues also reflected her color-blindness, which may lead to her overlooking crucial aspects of her students' identities that educators should consider when seeking to understand their students and create learning opportunities for them. While she recognized the sensitivity around discussing race and racism in her school, her response to what constitutes a favorable school culture for SCT was limited to a positive, reassuring, and loving school culture. She did not seem to acknowledge the importance of fostering a more inclusive school culture, particularly for her student-centered approach aimed at diverse learners. As she mentioned, "school culture I guess is positive and reassuring. Loving school, like a loving school, encourages the student centered (teaching)" (Rosa, Interview#1, Oct 12, 2022).

She recognized that her diverse students hailed from various cultural backgrounds, including Japan, Russia, and Mexico. Because of their language barriers, Rosa opted for a more explicit teaching approach to tackle their language challenges, such as offering visual aids to assist in learning new vocabulary during her lessons. As she mentioned,

So honestly the school has some diversity, but it's not like, like, super, super diverse. So I know I do have some, like Spanish speaking, I also have a child who speaks



Japanese. Last year, I had a student who spoke Russian. I think the ways to overcome those challenges are just being very explicit. In my teaching. We have our visuals and like first grade this grade level to like a lot of it is new vocabulary anyway. So like the vocabulary like academic vocabulary, like the way that in first grade we talk about it also helps like our ELL learners. (Rosa, Interview#1, Oct 12, 2022)

Through a Critical Race Theory lens, Rosa's approach to addressing her diverse students' language barriers is seen as well-intentioned but potentially reinforcing a deficit-oriented perspective. While her use of visual aids and explicit teaching methods accommodates diverse learning styles, CRT would encourage her to go further by providing materials in multiple languages and creating a multilingual classroom environment that celebrates different cultures and languages. Furthermore, CRT highlights the importance of recognizing and valuing the contributions of marginalized groups, suggesting that Rosa should not solely focus on language deficiencies but also integrate her students' rich cultural perspectives and experiences into the curriculum and classroom dynamics for a more inclusive and equitable educational experience. As also previously discussed, her teaching approach aimed to compensate for the students' shortcomings in their assessments.

Her deficit mindset was also evident in her perspectives on students who she deemed not ready for SCT. According to her, students requiring more guidance and those who were easily distracted in the classroom were viewed as lacking the necessary academic abilities for SCT. It was evident that students facing language barriers or whose cultural backgrounds clashed with the predominant White school culture required additional guidance from the teacher. These students could also become easily distracted due to their difficulties in understanding the teacher's instructions or their sense of not belonging due to cultural conflicts, which ultimately resulted in a disconnection within the learning environment. As she mentioned,

So like students like that I have a few other students who are not quite to the extent that he will need a lot of guidance in doing tasks. So they're usually students who do get easily distracted. They don't fully have the academic capability to do so. So that

they fall back on needing more teachers help or needing more classmate help. (Rosa, Interview#1, Oct 12, 2022)

Rosa's deficit mindset posed the risk of systematically marginalizing diverse learners from student-centered learning experiences. Students labeled as unprepared for SCT could find themselves deprived of engaging in the student-centered practices, which might impede both their academic growth and social development (Hammond, 2014). In addition, a perspective that focuses on deficiencies, particularly among students contending with language challenges or cultural disparities, could unintentionally perpetuate entrenched biases and educational disparities within the school system (Howard, 2019).

In summary, Rosa's understanding and application of student-centered teaching appeared to inadvertently marginalize diverse learners. Her approach was marked by a lack of awareness concerning the impact of race and racism on students' learning, along with a deficit mindset toward these students.

### ***Rosa-Research Question 2***

The data used to address this question primarily consisted of the interviews conducted post-observation, alongside observations from three literacy lessons, three reading lessons, four math lessons, two writing lessons, and two small group lessons for reading. Additionally, insights were derived from the observation of one teaching meeting. The depiction of Rosa's teaching encompassed the instructional material, the educational setting, and her instruction. Her instruction involved teaching pattern, classroom management, and small group teaching.

### **How do elementary teachers actually implement student-centered teaching in their classrooms?**

In Rosa's classroom, there were 26 students. Contrary to her perception, the classroom exhibited greater diversity. Among the students, more than half were classified as diverse learners, including four African American boys, two African American girls, one

Asian American girl, one Asian American boy, four Latino boys, three Latino girls, and one Indian American girl. There were 16 diverse learners, and their ethnic identities were confirmed with Rosa in a follow-up interview. Rosa followed a daily teaching schedule similar to Irma's. This routine included picking up students from the school gate at 8:05 am, conducting small group reading sessions at 8:15 am, teaching a literacy lesson at 9:05 am, delivering a reading lesson at 10:00 am, providing an outdoor recess break at 10:25 am, leading a math lesson at 11:10 am, scheduling lunchtime at 11:50 am, conducting a writing lesson at 1:50 pm, and concluding the day with a social studies or science lesson that started at 2:20 pm.

### Teaching Content

Like the other three participating teachers, Rosa's teaching content was predominantly derived from the curriculum provided. Since she and Irma taught in the same grade and the same school, their teaching content closely aligned. Rosa shared one of her weekly lesson plans for literacy lessons with me (seen in Figure 33), and it followed a structure similar to Irma's. The weekly lesson plan demonstrated that for a specific concept, such as two closed syllables, it spanned two days of instruction. The first day included phonemic awareness, visual drill, auditory drill, blend skill, and introducing the new concept. The second day encompassed word work, irregular words, and connected text.

During my observations, I typically observed both Irma and Rosa within the same week. Consequently, the topics I observed in Rosa's reading class covered the solar system, the history of the earth, and fairy tales, which coincided with what Irma was teaching. In math, the teaching content was also primarily based on the curriculum and aligned with what Irma taught. Rosa shared one of her weekly math lesson plans with me, which had two pages (seen in Figure 34 and Figure 35).

Time	Lesson 67b Pt. 1	Lesson 67b Pt. 2	Lesson 68 Pt. 1	Lesson 68 Pt. 2
9:05-9:10	Phonemic Awareness: - Heggerty week 24	Phonemic Awareness: - Heggerty week 24	Phonemic Awareness: - Heggerty week 24	Phonemic Awareness: - Heggerty week 24
9:10-10:00	<p><b>Objective:</b> I can read and write words with two closed syllables.</p> <p>Page 214:</p> <ul style="list-style-type: none"> <li>-Phonemic Awareness</li> <li>-Visual Drill</li> <li>-Auditory Drill: <b>add long o, long a, long e, long i vowel teams</b></li> <li>-Blending Drill</li> <li>-New Concept (Introduction, sound wall, practice letter formation, read words, spell words)</li> </ul>	<p><b>Objective:</b> I can read and write words with two closed syllables.</p> <p>Page 215:</p> <ul style="list-style-type: none"> <li>-Word Work</li> <li>-Irregular Words: <b>Introduce heart words for the week (four, none, put, large, only, round)</b></li> <li>-Connected Text (read sentences, sentence dictation, fluency passage)</li> </ul>	<p><b>Objective:</b> I can read and write words with open and closed syllables.</p> <p>Page 216:</p> <ul style="list-style-type: none"> <li>-Phonemic Awareness</li> <li>-Visual Drill</li> <li>-Auditory Drill: <b>add long o, long a, long e, long i</b></li> <li>-Blending Drill</li> <li>-New Concept (Introduction, sound wall, practice letter formation, read words, spell words)</li> </ul>	<p><b>Objective:</b> I can read and write words with open and closed syllables.</p> <p>Page 217:</p> <ul style="list-style-type: none"> <li>-Word Work</li> <li>-Irregular Words: <b>Review heart words for the week (four, none, put, large, only, round)</b></li> <li>-Connected Text (read sentences, sentence dictation, fluency passage)</li> </ul>

**Figure 33: The Image of Weekly Lesson Plan for Literacy Lessons in Rosa’s Classroom**

Envisions Topic 11 Sections 11.1-11.4

<p>11:10-11:35</p>		<p><b>Visual Learning:</b> Watch the video online with the class following the promptings. Find places to pause so you can elaborate on the concept.</p> <p><b>Convince me! :</b> Located on left side of page 454. Use this as a check in with your students to see if they understood the Visual Learning Video. If students can't answer go back to the video.</p>	<p><b>Visual Learning:</b> Watch the video online with the class following the promptings. Find places to pause so you can elaborate on the concept.</p> <p><b>Convince me! :</b> Located on left side of page 458. Use this as a check in with your students to see if they understood the Visual Learning Video. If students can't answer go back to the video.</p>	<p><b>Visual Learning:</b> Watch the video online with the class following the promptings. Find places to pause so you can elaborate on the concept.</p> <p><b>Convince me! :</b> Located on left side of page 462 . Use this as a check in with your students to see if they understood the Visual Learning Video. If students can't answer go back to the video.</p>	<p><b>Visual Learning:</b> Watch the video online with the class following the promptings. Find places to pause so you can elaborate on the concept.</p> <p><b>Convince me! :</b> Located on left side of page 466 . Use this as a check in with your students to see if they understood the Visual Learning Video. If students can't answer go back to the video.</p>
		<p><b>Guided Practice:</b> Complete with the class guided practice on pg.454 of their work book. If you feel they understood the Visual learning video and convince me question move onto this section.</p>	<p><b>Guided Practice:</b> Complete with the class guided practice on pg. 458 of their work book. If you feel they understood the Visual learning video and convince me question move onto this section.</p>	<p><b>Guided Practice:</b> Complete with the class guided practice on pg. 462 of their work book. If you feel they understood the Visual learning video and convince me question move onto this section.</p>	<p><b>Guided Practice:</b> Complete with the class guided practice on pg. 466 of their work book. If you feel they understood the Visual learning video and convince me question move onto this section.</p>

Figure 34: The Image of Weekly Lesson Plan for Literacy Lessons Part One in Rosa’s Classroom

**Envisions Topic 11 Sections 11.1-11.4**

		<b>Independent Practice:</b> Located on pg. 455 of their work book. Have them work on a few problems before they go to the check for understanding questions #5	<b>Independent Practice:</b> Located on pg. 459 of their work book. Have them work on a few problems before they go to the check for understanding questions #11	<b>Independent Practice:</b> Located on pg. 463 of their work book. Have them work on a few problems before they go to the check for understanding questions #5	<b>Independent Practice:</b> Located on pg. 467 of their work book. Have them work on a few problems before they go to the check for understanding questions #3
		<b>Problem Solving:</b> Complete as many as they can using their peers as a resource if you still have time. Check for understanding is #9, #10	<b>Problem Solving:</b> Complete as many as they can using their peers as a resource if you still have time. Check for understanding is # 23, 24	<b>Problem Solving:</b> Complete as many as they can using their peers as a resource if you still have time. Check for understanding is #8-9	<b>Problem Solving:</b> Complete as many as they can using their peers as a resource if you still have time. Check for understanding is #9, 10
11:35-11:50		<b>Assess and Differentiate:</b> Asses students check for understanding. Give them the designated page that goes with their work.	<b>Assess and Differentiate:</b> Asses students check for understanding. Give them the designated page that goes with their work.	<b>Assess and Differentiate:</b> Asses students check for understanding. Give them the designated page that goes with their work.	<b>Assess and Differentiate:</b> <b>Exit Ticket 11 Topic 1</b> Each question is worth 3. One for each part. Building each addened and getting the correct sum.3: six correct 2: 5-4 correct 1:3-1 correct Students can go on I-ready when they are done with their test.

**Figure 35: The Image of Weekly Lesson Plan for Literacy Lessons Part Two in Rosa’s Classroom**

Figure 35 presents the first page of the weekly lesson plan, which encompasses Visual Learning, the Convince Me, and Guided Practice. The Visual Learning segment instructs teachers to use videos to introduce new concepts, pausing the video for prompting or explanations as needed. The Convince Me portion directs teachers to utilize one math problem from the textbook to assess whether students grasped the content presented in the video lecture. The Guided Practice section closely mirrors the Convince Me part, requiring teachers to use math problems from the textbook to gauge students’ comprehension.

Figure 36, the second page of the weekly lesson plan, includes Independent Practice, Problem Solving, and Assessment and Differentiation. The Independent Practice segment prompts students to independently complete several math problems from the textbook to assess their understanding. The Problem-Solving part also involves math problems from the textbook, although it is not mandatory for students to complete. The Assess and Differentiation session for the first three days follows the same schedule, using designated paper assessments to evaluate students' comprehension. On the fourth day, teachers are encouraged to employ an exit ticket as an alternative means of assessing students' understanding, which functions as a different format of assessment. Based on the teaching content outlined in the weekly math lesson plan, it was evident that each day's teaching schedule closely resembled the others. The primary teaching materials used were videos, textbooks, and paper assessments, which were provided by the curriculum. The guided practice, independent practice, problem solving, and assessment segments all share the common goal of assessing students' understanding of the video or teacher's lecture, rather than fostering higher order thinking or encouraging the application of their knowledge to create meaningful work.

For the writing lesson, contrary to Rosa's perception that students had significant flexibility in choosing their writing topics, in reality, they had the freedom to choose from options provided by the teacher. For instance, during a writing lesson where the objective was for students to write and edit to express their opinions, the teacher presented three choices: pizza, cheese, and macaroni. Students were expected to select their preferred food item and write opinion sentences such as "I prefer pizza" (Rosa, Observation, April 04, 2023).

Similar to the other three participating teachers, Rosa collaborated with her first-grade colleagues to plan lessons. During one observed teacher meeting, which took place on February 23, 2023, at 1 pm while the first-grade students were attending their art or special

classes, all four first-grade teachers gathered in Rosa's classroom, as she was the first-grade leader. The four teachers sat in a circle format. Initially, they engaged in casual conversation, discussing topics such as the day's poor internet connection, a particularly bright student, and a math activity. They also shared details about interesting places they had recently visited.

Subsequently, Rosa, as the leader, displayed the meeting's agenda on the classroom's electronic screen. The agenda consisted of two main items. First, they engaged in a free discussion where each teacher shared their feelings about the week's teaching, using descriptors like good/tired/doing good/awesome/sad. The second item involved planning for the following week's teaching schedules. They used a shared Google document also shown on the screen with a table that featured three columns for each subject: contexts, prep content, and assessment. All the teachers had access to and edited this document. Each teacher was responsible for planning lessons for one subject for all the first graders. During the meeting, they introduced the teaching content, methods, resources, PowerPoint slides and the shared folders for the subject they were responsible for. They also engaged in discussions about the teaching content, teaching methods, how to communicate with the students in their teaching, and anticipated students' reactions to the teaching content. Rosa helped to adjust the lesson plans based on their discussions. Rosa held the belief that this collaborative effort among teachers was highly advantageous for her teaching. She emphasized its significance in exchanging teaching strategies, ensuring uniform progress, and addressing classroom issues effectively. As she mentioned,

Oh, I think it's definitely beneficial because, like, one person doesn't know everything, you know. So that's good for us to collaborate, like see what's working or what's not working if we're all on track. So it keeps our pacing. I mean, it helps like, share ideas, like whatever we're doing in our classroom. If it's not working, and that's also the time we can share what is working in your classroom. Or if we have a problem, then we can ask them to like, 'Oh, I'm having this problem.' Or 'my kids aren't understanding how to subtract yet. What did you do to help them get it?' So yeah, that's a good time to stretch to think all together. (Rosa, Interview#5, April 5, 2023)



In light of the analysis provided, it's clear that Rosa's teaching predominantly adhered to the curriculum. Her collaborative lesson planning approach meant that she taught content similar to that of her colleagues.

### Learning Environment

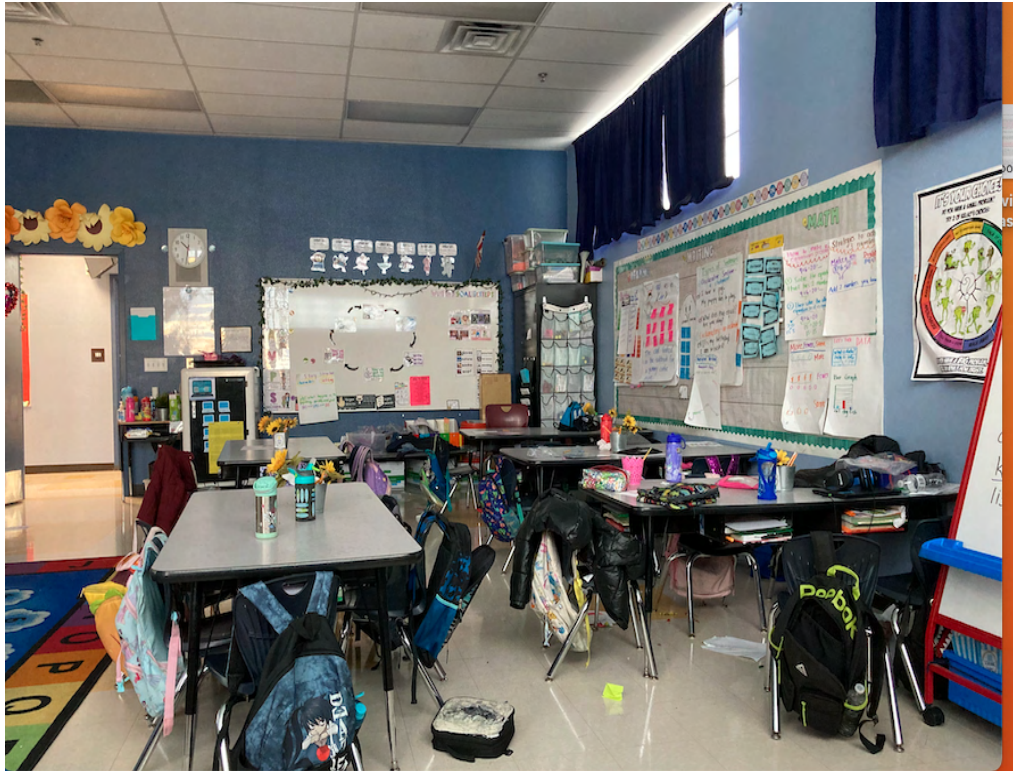
Much like the other three participating teachers, Rosa's classroom predominantly hosted learning activities either on the carpet or at students' desks. When conducting whole-class lectures, students gathered on the carpet, whereas they worked independently at their desks. The setup was illustrated in Figure 36, with the carpet positioned under the electronic whiteboard, which resembled the one in Irma's classroom. Students' desks were arranged behind the carpet, as seen in Figure 37. The semicircular-shaped teacher's table was positioned on the left side of the carpet. Adjacent to the electronic whiteboard was the Spell Wall, adorned with images of students' mouth shapes representing vowel and consonant sounds. Below this, a Creep Chart with small squares served a purpose akin to Darcy's Umbrella Chart in tracking student progress in IReady online lessons (seen in Figure 38). For each lesson completed with a 100% pass rate, a square was filled, and the class received a reward from the teacher once all squares were occupied. Positioned under the electronic whiteboard were stickers displaying the five class rules, although Rosa did not actively use these for classroom management. On the other side of the whiteboard, the Focus Wall prominently displayed weekly objectives for each subject.

Clockwise, the adjacent wall to the Focus Wall featured a wooden whiteboard, as depicted in Figure 40. This whiteboard was adorned with number charts and stickers that kept track of the date and the number of days the students had spent in first grade. Positioned on the right part of the wooden whiteboard was a white puzzle chart, segmented into non-colored parts. The teacher frequently employed this chart for managing classroom behavior. During class, when students met the teacher's behavioral expectations, the teacher would

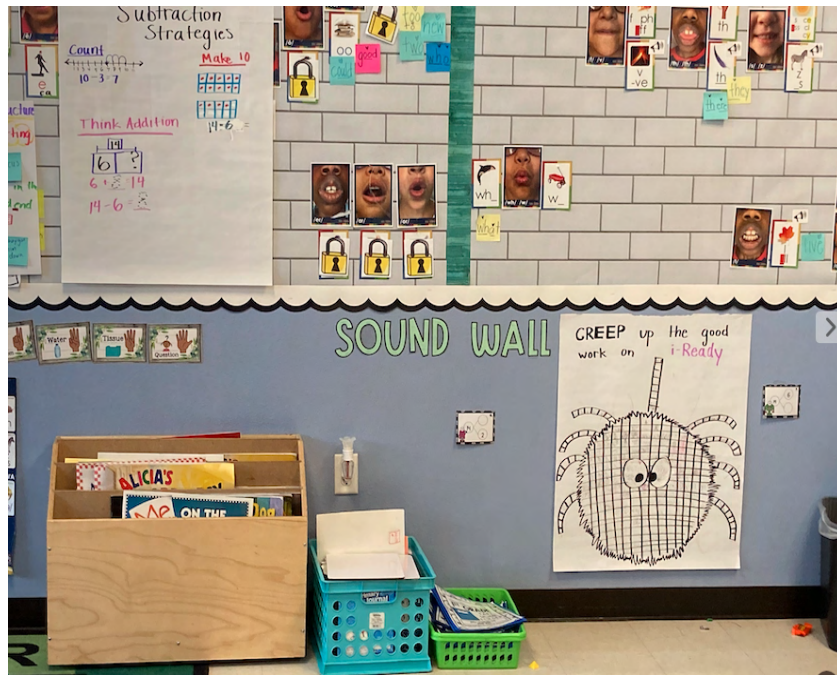
mark one point on a small whiteboard. Once students accumulated five points, one puzzle piece was filled with color. Upon completing all the puzzle pieces, the class would earn a reward from the teacher. We can see the same puzzle chart affixed to the electronic whiteboard in the lower left corner.



**Figure 36: The Image of the Carpet in Rosa's Classroom**



**Figure 37: The Image of the Students' Desks in Rosa's Classroom**



**Figure 38: The Image of the IReady Record Chart in Rosa's Classroom**



**Figure 39: The Image of the Wooden Whiteboard Wall with Number Charts in Rosa’s Classroom**

Like the other three teachers’ classrooms, the wall facing the electronic whiteboard served as the Subject Tool Wall (see in Figure 34), adorned with posts of important points and materials for each subject. In the corner where the Wooden Whiteboard Wall met the Subject Tool Wall, there were file cabinets adorned with students’ drawings on their surfaces (seen in Figure 40). Close to the classroom door, the fourth wall (visible in Figure 41) was also a wooden whiteboard. In its center, stickers formed a circle, outlining the six steps of the writing process. To the left of the whiteboard, the CHAMPS rules were displayed, though they were rarely utilized during class. On the right side, a poster labeled Ending Blends was affixed, and above the whiteboard, stickers representing the seven habits were placed, albeit infrequently used during class. From the provided description, the classroom decorations in Rosa’s classroom were designed to complement the curriculum. However, a significant

portion of these decorations saw infrequent use during her teaching sessions.



Figure 40: The Image of the Students' Drawings in Rosa's Classroom



Figure 41: The Image of the Wooden Whiteboard Wall with the Writing Steps in Rosa's Classroom

### Teaching Pattern

In line with Rosa's perceptions, Rosa predominantly employed a teacher-centered approach. Her teaching involved a large bulk of teacher's direct lectures and whole class interaction for most the time. The main activities were guided questions or exercises to solidify student understanding. Contradictory to her perception, she did not provide much opportunity for peer work. In her reading classes, she typically sat in front of the students gathered on the carpet and began by reviewing what they had learned in previous lessons, using factual-level questions. For example, in a reading lesson centered on a fairy tale, she asked questions like, "What do we remember from the story of Hansel and Gretel, who are the characters?" (Rosa, Observation, April 05, 2023). In another reading lesson concerning the history of the Earth, Rosa initiated the class by inquiring, "Do you remember what 'geologist' means? We discussed it yesterday" (Rosa, Observation, Feb 16, 2023). Following these review questions, Rosa would guide students to read the day's objective, and then she herself would read a substantial passage of material to the students, interspersed with factual level questions. For example, in her lesson about the History of the Earth, she inquired after reading various rock types, saying: "Do you know the names of any other of the planets?" After completing the reading, she would pose several factual-level questions to summarize the lesson. For instance, in the lesson about the History of the Earth, she concluded by asking individual students summary questions related to geology, the use of rocks in art, Earth's shape, its axis, the concept of north and south poles, the location of the equator, and three important Earth-related terms.

In terms of math lessons, Rosa's instruction closely mirrored the content outlined in the previously discussed weekly lesson plan. The new lesson started with video lectures, during which the teacher intermittently paused for interventions. This was followed by the "Convince Me" segment, designed to assess students' comprehension of the video material.

Afterwards, the lesson transitioned to guided practice led by the teacher, focusing on the students' textbooks. The final part of the lesson involved students working independently on exercises from their textbooks. As an example, I described my observation of the math lesson on Feb 23, 2023. With the slide showing the objective, she guided students to sing out the objective: "What's the target for today, for today, for today, I'm learning" (Rosa, Observation, Feb 23, 2023). Then the students repeated after the teacher about the objective: "I can/subtract with tens/using an open number line" (Rosa, Observation, Feb 23, 2023). The lesson commenced with a daily math review problem, which involved using a number line to solve 50 minus 20. Each student was given one minute to work on the math problem independently at their desks. Following this, the teacher engaged the students with questions such as "I'm here at 50 and go backwards, how many times I should go backwards?" and "Why am I going backwards?" She also asked, "Why am I going back two times?" (Rosa, Observation, Feb 23, 2023), and provided direct explanations for the math problem, saying,

Because on my number line, I'm taking away. I'm goanna start on the opposite side. And go backwards now. And put minus not plus, are we adding anymore? No, well, I'm subtracting, taking away what is 50 minus 20? What is it going to be? (Rosa, Observation, Feb 23, 2023)

After this review, the teacher instructed the students to return to the carpet with their books and pencils, which took two minutes to achieve as she had to address disruptions. During this time, two students repeatedly touched the electronic screen, requiring multiple interventions from the teacher. Once order was restored, Rosa proceeded to play a video to lecture on the key points for the day's class. The video focused on using a number line to solve the math problem 70 minus 30. Rosa paused the video to emphasize key concepts, stating, "Here's my 70, the video did it just like we did. Well, we had marked our 70 on the open number line. If I want to take away 30, How many lines Am I goanna make?" (Rosa, Observation, Feb 23, 2023).

Considering that more than half of the students were not attentive to her lectures, Rosa asked students to repeat after her regarding the key points, saying “use place value/use place value/think of thirty/ as three groups of ten/one two three/ ten, twenty, and thirty/thirty is three tens” (Rosa, Observation, Feb 23, 2023). Rosa lectured that the problem 70 minus 30 was similar to 7 minus 3. And then again, she asked students to repeat after her, saying, “subtracting three/ subtracting three ten/ is the same/ as subtracting 30” (Rosa, Observation, Feb 23, 2023). It was obvious that she told students 70 minus 30 was similar as 7 minus 3, but she then asked a question: “What does this looks like without the zeros? Without the 10? Isn’t this just like me saying seven minus three equals four? Does they look the same?” (Rosa, Observation, Feb 23, 2023). Student’s response to her: “No.” Despite her explicit teaching, the students’ response was incorrect. Rosa continued the video to demonstrate the process of subtracting 10, 20, and 30 from 70, asking questions at each step: “From 70 to 60, what is that minus what?”, “What is here after two hops back?”, and “It’s three hops, do you see that?” (Rosa, Observation, Feb 23, 2023). Subsequently, she lectured the two guided practice exercises from the textbook, following the same instructions she had given earlier. Once these were completed, she allotted five minutes for the students to engage in independent practice. In Rosa’s perception, this independent practice was considered a student-centered moment, as students worked on their own. However, these activities were confined to the textbook, and the primary requirement was to understand the teacher’s or video’s lecture content rather than engaging in higher order thinking or hands-on activities.

### Classroom Management

During her teaching, the classroom often lacked control, with more than half of the students not paying attention to Rosa’s instruction. A significant portion of the class time was disrupted, since students were engaged in chatting, playing toys or walking around. These students frequently failed to follow the teacher’s instructions. I observed multiple occasions



when Rosa repeatedly instructed her students not to bring toys into the classroom, but many students still played with small toys during the class time. I also witnessed her confiscating toys from some students. This may be due to Rosa' conflicting attitudes towards students playing with toys during class time. She believed that allowing students to play with toys during class time might prevent them from talking to each other. Nevertheless, she also recognized that toys themselves could be distracting. As she mentioned, "I understand that sometimes it's beneficial for them to have something to occupy their hands, as it keeps them quiet. However, many of them struggle to do so without just treating it as play." (Rosa, Interview#5, April 5, 2023). Though some students did not bring toys, they fiddled with their peers' hair, or found other distractions during the class time.

During my observations in the spring of 2023, I initially perceived that Rosa's classroom management was quite poor during my first observation on February 9th, 2023. Subsequently, I observed her making efforts to improve the situation, primarily through the use of incentives, during my observations in the middle and later part of February 2023. Unfortunately, it appeared that these incentives did not yield the desired results. As my observations continued into April 2023, she began to rely less on incentives and more on punishments, such as taking away students' recess time, but this approach also proved ineffective. The incentive system was in the format of the puzzle chart and stickers. The puzzle chart was described in the learning environment section. During class, the teacher maintained a small whiteboard with two columns: one for recording teacher points and one for class points. If the students behaved as expected, the class received one point, and conversely, the teacher received one point. When the students accumulated five points, they earned one colored puzzle piece on the puzzle chart. If the teacher accrued five points, the record should reset, even if the students had earned some points. Once all the puzzle pieces were colored, the class was rewarded with the opportunity to bring toys to school for one day

or to have a day without wearing school uniforms. The teacher gave individual students stickers when they behaved as the teacher expected.

The entire semester was characterized by classroom management challenges. For example, during my observation of Rosa's classroom management in the literacy lesson on February 16th, 2023, I noted that she had to remind the students not to engage in side-conversations 27 times throughout the 50-minute lesson. Most of the chaos occurred during transitions from one activity to another, like moving from auditory drills to blend drills, or when transitioning between the carpet and the desks. Additionally, some students continued side conversations even during the teacher's lectures. The longest classroom management time recorded was six minutes to calm the students during their transition from auditory drills to word work, and another instance took five minutes to restore order. There were also several three-minute periods required for classroom management. The incentives did not motivate students to engage in the learning activities, as we can see in the bellow teacher's instructions cited from my observation notes.

Teacher: Okay, let's take a look. I'm waiting. Oh, I don't want to do this again. I don't want to do this. Student D, can you please stand up and go sit on this?

Teacher: It's goanna be another point for me. If I get to up to five points, let me restart. It's another point for me. I have lots of people who are not focused. Some people just look down at the ground. Some people just aren't even looking here. Focus.

Teacher: You're getting distracted over and I'd rather not have to give me another point for you talking.

Teacher: We're still not ready. That's going to be a point for me. And we're not ready or unseen for me. And 321 Okay, that's the point for me. I said, we need to be ready. And you guys are still just talking. And I have one person who just shouted out that I need a marker. You're supposed to ask. No, that's the point for me. That means now we're restarting. Okay, does that now need to be another point for me? Because I still hear talking.

Teacher: Looks like it's goanna have to be a point for me because we wasted so much time.

Teacher: I love how I see Student J writing. Thank you so much for actually making that easier. I'll give you a point.

Teacher: Thank you so much. I'm looking for a table that has respectable words and I'll get another point there. Student A, drop that whiteboard if you don't have one, okay, are we ready to move on? Okay we're not ready, I hear too much talking.

Teacher: Hello. Do you know we're working? Please follow the directions. Next one, okay, that's goanna be a teacher point because I have too much talking.

Teacher: Okay I will give you guys a point if we are all sitting, and we are all listening, and I had to restart the point. (Rosa, Observation, Feb 16, 2023)

Although she frequently used the puzzle chart in the middle and later part of February 2023, she stopped using it in April 2023. On April 5th, 2023, the puzzle chart had been placed on her desk rather than being displayed on the teacher's whiteboard. When I inquired about its location, she initially didn't know where it was, but eventually found it in some files on her desk. During my observations in April 2023, she tended to rely more on punishment as a means of classroom management. This included taking away minutes of the students' recess time and threatening to take pictures of student's poor behavior to show to their parents. The below was examples of teacher's directive to curtail recess time drawn from my observational notes.

Teacher: "Okay one minute of your recess is mine, because you're playing."

Teacher: "Oh my goddess, everyone's one minute recess is mine, everyone because we are so loud. Literally so loud. Go sharp and quick. Okay, now it's two minutes of your recess in mine."

Teacher: "Thank you so much. People will still get their regular recess, but some people may not because they are wasting time right now."

Teacher: "Someone is talking, another one minute of recess on my page." (Rosa, Observation, April 05, 2023).

During the 45-minute math lesson on April 5th, 2023, Rosa had to address classroom management issues on 21 occasions, as indicated in Table 2. This mainly involved issuing warnings about recording students' names for disciplinary purposes. These students had their recess time reduced due to their behavior. These interruptions happened roughly every two to

three minutes, highlighting a considerable challenge for Rosa in maintaining discipline and keeping the classroom focused.

**Table 2: Rosa’s Classroom Management During the Math Lesson on April 5th, 2023**

<b>Time</b>	<b>Teacher’s actions or words during the class time</b>
10:59am	The teacher emphasized the discipline and threatened to call parents
11:02am	The teacher emphasized the discipline
11:03am	The teacher said, “I’m still hear someone talking.”
11:04am	The teacher said, “I’m waiting for two people.”
11:10am	The teacher threatened to write down names
11:12am	The teacher stopped the video and wrote down three students’ names
11:14am	The teacher wrote down another two students’ names
11:15am	When a boy was about to talking, the teacher raised her small note that recorded names
11:17am	The teacher wrote down names
11:19am	The teacher read out all the names wrote down on her notes
11:20am	The teacher wrote down another name
11:22am	The teacher wrote down another names
11:25am	The teacher said, “I still hear talking from one table.”
11:27am	The teacher said, “I write down more names.”
11:30am	The teacher said, “I can hear so many talking right now.”
11:31am	The teacher said, “I’ll wait, I’ll write down someone’s name.”
11:33am	The teacher said, “I’m waiting.”
11:35am	The teacher said, “I should add more.”
11:36am	The teacher said, “I heard another one’s name.”
11:37am	The teacher said, “Thank you for your students not talking and listening
11:43am	The teacher emphasized the discipline

### Small Group Teaching

In the early morning, from 8:15 am to 8:55 am, Rosa conducted a small group teaching for literacy. Similar to the small group format utilized by other participant teachers, also in line with Rosa's perceptions, these groups were determined based on diagnostic test results. Rosa's group consisted of first-grade students who struggled with blending sounds to form words. During these sessions, students sat around a semicircular teacher table with Rosa positioned in the center, facing them. The teaching content was tailored to the students' diagnostic test results but maintained a teacher-centered approach. Rosa guided students in blending words and provided each student with a list of words to blend individually. Each small group session lasted approximately 15 minutes, and around 8:30 am, students from other classes joined Rosa's classroom for the second small group session of the day.

While Rosa conducted teaching sessions for the small groups, the other students engaged in independent activities, either working on their IReady online lessons for reading or reading books on their own as part of their designated reading center time. Rosa viewed this reading center time as student-centered since it involved activities led by the students themselves. However, it's important to note that the IReady online lessons were not directly connected to her regular classroom instruction, and Rosa did not provide any intervention or guidance for the students' independent reading. As a result, the reading center cannot be seen as her instruction part.

Rosa conducted small group math instruction after lunch, from 12:40 pm to 1 pm, exclusively for her students. There were no classroom rotations during this time. In the small group setting, students gathered around the semicircular teacher table to receive instruction from Rosa. She typically provided them with worksheets containing math problems, and they worked on solving these problems together. While Rosa's small group received direct instruction, the other students were engaged in IReady online lessons for math.

The IReady computer-based lessons were adaptive and tailored to each student's individual level. Based on my observations on students' work on their screens, the range of math tasks varied significantly among students. Some higher-performing students, represented by two African American boys, were working on complex problems like  $697 + 127$ . Several students, including both White and Asian students, were at a lower level, tackling problems such as  $5 + 3$ . A few students, including those of Latino and White backgrounds, were in the lowest category, working on counting within the range of 1 to 10. The majority of students fell into the middle level, dealing with math problems like  $8 + 5$  and  $16 - 5$ . This diversity in math task difficulty reflected the varying levels of students' math proficiency as assessed by their performance in the IReady online lessons. Rosa's small group teaching specifically targeted lower-achieving students and did not address the needs of higher or middle-level students. As she mentioned, "We mostly focus on the lower kids like that need to make the growth in the small group teaching" (Rosa, Interview#4, April 4, 2023).

In summary, Rosa's instruction was teacher centered. It was mainly her talking during the class times. During her lectures, she predominantly used whole-class, and there was limited interaction among the students themselves. The questions she posed were primarily at the factual level, often reiterating the content of her lecture rather than promoting higher-order thinking. The learning activities in her classroom primarily consisted of paper-based work for all subjects, with a notable absence of hands-on or interactive activities. Unfortunately, her classroom management was quite ineffective, resulting in a considerable amount of time being wasted on redirecting students' attention. Rosa primarily employed incentives and punishments as methods for managing classroom behavior, instead of cultivating students' inner interests in study. Her small group teaching mainly focused on the students who had lower performance in the diagnostic tests.

**What are the differences, if any, between their SCT practice for diverse learners and non-diverse learners?**

***Inclusion of Diversity in Practices***

From the analysis above, it's evident that Rosa's teaching did not adequately consider diversity among her students. In reality, a larger percentage, approximately 62% of her students, were diverse learners, a much higher figure than her perception of 20-30%. As analyzed above, this discrepancy was a form of microaggressions. Furthermore, the teaching content she used for literacy, reading, math and writing was largely influenced by the curriculum and did not sufficiently address the racial, ethnic, and cultural backgrounds of the diverse learners. Instead, the content primarily focused on the subject matter itself. Indeed, the overemphasis on standard-based curriculums, as mentioned in the previous case, can be viewed through a Critical Race Theory lens as a form of macroaggression.

As Rosa perceived, the social studies did address the diversity. One instance was a social studies lesson dedicated to Black History Month. Illustrated in Figure 42 was a weekly lesson plan with the objective of "students will be able to describe influential leaders and why they are important" (Rosa, Observation, Feb 23, 2023). The entire week's theme centered on introducing influential Black leaders to the students, aligning with social studies standards focusing on the importance of culturally, racially, and ethnically diverse individuals in building a strong and equitable community, as well as comparing and contrasting different approaches people use to enhance their communities (Rosa, Observation, Feb 23, 2023).

Rosa's approach to teaching social studies was limited to presenting subject matter related to the contributions of Black leaders, without delving into deep discussions about race and racism. In a social studies class observed on February 23, 2023, she began by having students review the Black leaders they had learned about, and then showed them a six-minute video about Stevie Wonder's life journey. Then Rosa guided the students to read the content

presented in the slides that emphasized Stevie Wonder’s spirit in pursuing his goals as an African American musician with a visual disability. The last slide showed the sentence that “just because a man lacks use of his eyes doesn’t mean he lacks vision” (Rosa, Observation, Feb 23, 2023). The teacher asked the students what they were thinking of this sentence.

While the lesson highlighted Stevie Wonder’s achievements, it did not directly address the broader issues of race and racism. The focus was on the individual’s accomplishments rather than a broader discussion about the challenges and struggles faced by Black leaders in their efforts to create a more equitable society. The lesson started at 2:20 pm and concluded at 2:40 pm with a quiz to review the content. The overall teaching approach did not engage students in critical discussions about race and racism in society, which might have provided a more comprehensive understanding of the topic.

**Social Studies Lesson Plans- Black History Month 2/20-2/24**

**Standards:**  
 SS.1.14-Discuss the importance of culturally, racially, and ethnically diverse people in building a strong and equitable community.  
 SS.1.18- Compare and contrast the different ways people work to improve the community.

Tuesday 2/21	Wednesday 2/22	Thursday 2/23	Friday 2/24
<p><b>Objective(s):</b> Students will be able to describe the Influential leader and why they are important.</p> <p><b>Materials and Technology Resources:</b> influential leaders journal &amp; slides</p> <p><b>Instructional Procedures:</b> Introduce black history month- watch/read about leaders, then reflect on learning in their journal.</p> <p><b>Motivation/Engagement:</b> We will learn about some influential leaders!</p> <p><b>Developmental Activities or Learning Experiences:</b></p>	<p><b>Objective(s):</b> Students will be able to describe the Influential leader and why they are important.</p> <p><b>Materials and Technology Resources:</b> influential leaders journal &amp; slides</p> <p><b>Instructional Procedures:</b> Introduce black history month- watch/read about leaders, then reflect on learning in their journal.</p> <p><b>Motivation/Engagement:</b> We will learn about some influential leaders!</p> <p><b>Developmental Activities or Learning Experiences:</b> Read about the influential leader <b>Hattie McDaniel</b></p>	<p><b>Objective(s):</b> Students will be able to describe the influential leader and why they are important.</p> <p><b>Materials and Technology Resources:</b> influential leaders journal &amp; slides</p> <p><b>Instructional Procedures:</b> Introduce black history month- watch/read about leaders, then discuss and review for the quiz tomorrow.</p> <p><b>Motivation/Engagement:</b> We will learn about some influential leaders!</p> <p><b>Developmental Activities or Learning Experiences:</b> Read about the influential leader Stevie Wonder</p>	<p><b>Objective(s):</b> Students will be able to describe the influential leader and why they are important.</p> <p><b>Materials and Technology Resources:</b> Matching Quiz</p> <p><b>Instructional Procedures:</b> Read every name and definition to S. Explain how to match the person to their accomplishment.</p> <p><b>Motivation/Engagement:</b> We will learn about some influential leaders!</p> <p><b>Developmental Activities or Learning Experiences:</b> Matching Quiz</p> <p><b>Closure:</b> Review quiz together/ Not for a grade</p> <p><b>Accommodations, Modifications, and Differentiations for Diverse</b></p>

**Figure 42: The Image of Weekly Lesson Plan for Social Studies**



Consistent with Rosa's perspective, she refrained from addressing race and racism in her teaching as she considered these subjects to be sensitive to her students' families. Despite the social studies curriculum covering topics related to race and racism, she didn't create opportunities for students to openly discuss issues of inequity, nor did she encourage them to actively contribute to a more equitable society. Consequently, students in her classroom might miss opportunities to develop an appreciation and respect for their own racial and ethnic backgrounds, as well as those of their peers, potentially leading to the perpetuation of racial insensitivity, stereotypes, and biases.

In addition to her color blindness, she also exhibited a deficit mindset in her approach to teaching diverse learners. As previously discussed, despite the significant variation in her students' learning levels, Rosa did not differentiate her regular teaching content. She focused solely on addressing their deficiencies as identified by assessments in the small group teaching. In Rosa's classroom, there were a significant number of diverse learners who struggled with reading the instructions for math word problems independently. These students faced language barriers, which hindered their comprehension of the teacher's instructions and often led to distractions. Rosa was fully aware of this challenging situation. However, she did not transform such awareness into teaching actions to offer equitable learning opportunities for her students. For instance, there was a Latina girl named B, whose parents both came from Hispanic backgrounds. B frequently found herself easily distracted or even falling asleep during class. Rosa was aware that the language barrier caused her distraction during the class time. As she mentioned, "The language was her difficulty. I think that might be causing some of her delay. She's just not fully, like understanding everything. So, I think that parents probably speak Spanish the majority. But she probably either does or doesn't" (Rosa, Interview#3, Mar 22, 2023). While she acknowledged their challenges, her

interventions and support primarily focused on surface-level adjustments and did not delve into more comprehensive strategies for accommodating their unique needs. For example, she seated the Latino girl B in the front row during carpet time to improve her focus. As she mentioned,

So like my little one B with curly hair, she's very low so she has to always sit there and like she always has to be by me because she does not focus, and it was like the lowest in my class so like her seat she is prime seating. (Rosa, Interview#2, Nov 4, 2022).

She only provided additional assistance to address their language barriers during small group literacy sessions required by the curriculum. As she mentioned, "The ones who are generally lower will go in the small group that's on their level. These kids are all working on separating the sounds and writing the words" (Rosa, Interview#2, Nov 4, 2022).

She did not make efforts to help them to address the language barriers during her regular teaching sessions. This deficiency in support undeniably led to pronounced disparities in opportunities for diverse learners in the lower ability group. These learners found themselves at a distinct disadvantage, lacking the essential resources and guidance necessary to fully engage and excel in the educational setting. For example, the Latino girl B made small progress during the 2022 Spring semester. As Rosa mentioned,

And she's (student B) trying before at the beginning of the year, she only wrote one letter in our spelling test. So actually, this is an improvement for her because she's at least writing more than one letter, but you can see like she's writing pretty much the same letter. So she's just writing letters she knows. (Rosa, Interview#2, Nov 4, 2022).

Rosa had a group of highly proficient diverse learners in her classroom, but she did not challenge them to higher levels. These students included a Japanese boy who faced no language barriers in his studies. This student excelled in completing tasks with exceptional speed and quality, but once he finished, he had to wait for other students. Rosa was well aware that this Japanese boy required more challenging assignments, but she did not provide any. As she mentioned, "He has to be challenged, because he just does things so fast" (Rosa,

Interview#3, Mar 22, 2023). When I informed Rosa about the exceptional performance of two African American boys in their IReady math lessons, as they consistently solved problems involving adding and subtraction of three place values, she was taken by surprise. She had not previously noticed their remarkable performance in their IReady lessons. Failing to challenge higher-ability students can hinder their intellectual and academic growth, potentially affecting their future educational and career opportunities. The lower-achieving students were frequently distracted by language barriers, while the higher-achieving students lacked motivation to engage, as the content didn't challenge them. These dual challenges can explain why Rosa's class faced persistent discipline issues, regardless of the methods she attempted to implement to address them.

Furthermore, Rosa consistently endeavored to tackle the significant behavioral issues in her classroom. Initially, she employed incentives as a means to encourage student positive behavior. However, when this approach proved ineffective, she made a shift in her teaching practice, transitioning from incentives to punitive measures to address students' behaviors. Regrettably, she did not engage in critical reflection regarding her own teaching practices, especially how her teaching might have led to students' disengagement. Researchers such as Mezirow (1990) and Liu (2015) pointed out that critical reflection is mandatory for transformative action. Without critical reflection on the impact of her teaching on student behavior, not surprising, Rosa did not undertake efforts to transform her methods to foster student engagement in her instruction; instead, she blamed her students for their behavioral issues and thus integrated increasingly harsher punitive measures.

In summary, Rosa failed to adapt her instruction to suit the distinct needs of diverse learners, opting for a uniform approach for both diverse and non-diverse students. She refrained from addressing issues of race and racism in her teaching, adopting a color-blind perspective. Furthermore, she held a deficit mindset toward lower-ability diverse learners,

neglecting to address their racial, ethical and cultural needs such as language support during regular teaching sessions. Conversely, she missed opportunities to stimulate the growth of higher-ability diverse learners, thus impeding their growth. Rosa did not regard the diverse backgrounds of her learners as valuable assets in the learning environment and neglected to incorporate these assets into her instructional approach.

### ***Summary of Rosa's Case***

Rosa did not have a clear understanding of what student-centered teaching meant. While she thought in student-centered teaching the student should take a leading role in the instructional process, she also believed that teachers should be the leaders in the classroom. She assumed that education in the United States was student-centered and the teachers in her school were teaching in a student-centered way. Her perception of SCT did not include diverse learners. Rather, she felt race and racism was a sensitive topic to talk about.

Rosa's instruction was far from student-centered. Her teaching content failed to accommodate the varying levels of students in her class. She did not leverage the learning environment as a resource for student learning. Her teaching was predominantly teacher-centric, with limited opportunities for student interaction. Classroom activities primarily centered on paper-based work rather than hands-on experiences. Furthermore, she did not encourage higher order thinking or the construction of students' knowledge. Due to the disengaging nature of her instruction, she encountered significant challenges in maintaining classroom discipline. Her main method for addressing student behavior was through the use of teacher authority, often relying on incentives or punishments. Unfortunately, her teaching did not take into account the diverse racial, ethical, and cultural backgrounds of her learners.

## Chapter 5: Discussions

### Chapter Overview

In this chapter, the initial section conducted cross-case discussions for the four cases, which served the purpose of identifying shared themes and distinctions between the four cases. Situated in the context of current literature, the discussion also attempted to find out how these findings confirm or contrast with existing research. This chapter then proceeded to present several key conclusions derived from the research findings. Additionally, the chapter delved into the implications of this study for charter schools and educators employed in charter school settings. Finally, the chapter offered recommendations, acknowledged the study's limitations, and outlined potential avenues for future research in this field.

### Cross-Case Discussions

This cross-case discussions aimed to shed light on the shared perceptions and implementation of student-centered teaching among teachers within the unique contexts of charter schools across the four cases. Furthermore, the cross-case analysis sought to uncover the common elements that influenced teachers' views and instructional practices within their specific teaching environments. The analysis presented in this chapter is structured to directly address the two research questions.

#### *Cross-Case Discussions to Questions 1*

*While their definitions of SCT included some elements that aligned with student-centered approaches, there was a prevalent teacher-centered orientation to varying degrees in their understanding of SCT.*

When we compare and contrast the findings regarding the perceptions of student-centered teaching across the four cases, a significant observation emerges. Despite the use of certain technical terms (e.g., teacher's role as facilitators) to describe their understanding of student-centered teaching, it becomes evident that, to varying degrees,

their interpretations of SCT predominantly reflected a teacher-centered orientation. Reflecting on the definition of SCT presented in Chapter One, it underscores four pivotal domains (APA, 1997). The initial domain is cognitive and metacognitive, which places significance on students' active knowledge construction, goal establishment, and strategic thinking. Subsequently, the motivational and affective domain delves into the profound impact of emotions, beliefs, and intrinsic motivation on the learning process. The developmental and social domain recognizes the significance of individual developmental variances and the role of social interactions in learning. Lastly, the individual differences factor domain addresses learners' distinctive strategies, preferences, and their diversities in linguistic, cultural, and social backgrounds, underscoring the critical importance of adapting to these distinctions within the instructional setting.

Based on these criteria, it is evident that Darcy's understanding of student-centered teaching predominantly centered around avoiding direct answers and reducing teacher-dominated interactions. While she acknowledged the facilitative role of the teacher, her teaching methods remained largely teacher-centric, with traditional lectures being the primary mode of information delivery. Her emphasis on students taking responsibility for their learning, although important, appeared to be centered on students' ability to independently regurgitate what the teacher had presented, rather than fostering critical thinking and active knowledge creation. Furthermore, her approach to peer interaction, which aimed to reduce teacher talk time and promote peer clarification, may have missed the broader potential of student-centered teaching, which encourages collaborative problem-solving and more profound, inquiry-based learning experiences. In essence, Darcy's interpretation of student-centered teaching seems to reflect a somewhat traditional teaching approach rather than fully embracing the principles of active, student-driven learning.

In Zara's interpretation of student-centered teaching, the teacher played a more prominent role in the learning process compared to the students, as she viewed teachers as the primary source of knowledge and learning for students. Her main expectation for students was that they could learn the provided material effectively and listen attentively to the teacher. While she acknowledged the importance of student-centered teaching accommodating diverse learning abilities, her personal definition of student-centered teaching mainly revolved around aspects related to students' physical engagement, such as being attentive in class. Zara's perspective on SCT appears to lean towards a more traditional, teacher-centric approach, where the teacher is the central figure responsible for imparting knowledge to the students.

In the case of Irma, it's apparent that her understanding of student-centered teaching was closely aligned with the notion of students being active listeners. In her perspective, the teacher served as the primary source of knowledge, and students were expected to self-motivate and actively engage in the teacher's lecture. The students' role was not so much in constructing new knowledge but rather in explaining the information conveyed by the teacher. From her viewpoint, students who struggled to actively participate in the teacher's instructions, provide feedback, or collaborate with their peers were often hindered by issues such as a lack of self-confidence or a perfectionist mindset aimed at avoiding errors. Her perception remains teacher-centered despite some elements of active listening and self-motivation among students. This is primarily because the teacher still serves as the central knowledge resource, and students' roles revolve around responding to the teacher's instruction and conveying the provided knowledge. In this scenario, the teacher maintains control and authority over the learning process, while students' actions are contingent upon the teacher's guidance. The emphasis on students' self-motivation is commendable but does not alter the fundamentally teacher-centric nature

of her approach, as the teacher continues to hold the primary role in imparting knowledge and structuring the learning experience.

Rosa's perception of student-centered teaching remains teacher-centered because it reflects an inconsistency in her understanding and practice. While she believed her teaching is student-centered, her description of teachers taking the lead, students listening, and completing designated tasks aligned more with a traditional, teacher-directed approach. The contradiction stemmed from her lack of a clear and comprehensive understanding of what student-centered teaching entails. Her belief in her having a student-centered approach was based more on her context, where she teaches in the United States, rather than a deep understanding of the core principles of SCT. She assumed that because she's teaching in the U.S., her approach must inherently be student-centered, which is not necessarily the case.

Overall, while the four teachers may use various technical student-centered terms to articulate their interpretations of SCT, their definitions primarily leaned toward a teacher-centered perspective to varying degrees. They all assigned a central role to the teachers rather than the students. Students' autonomy in learning was confined within the framework of teacher-designed learning activities. The teachers anticipated active student engagement in their lectures and the ability of students to independently explain what was taught by the teacher. This discovery shares both commonalities and distinctions when compared to prior research. In alignment with earlier studies, teachers' interpretations of SCT encompassed teacher-centered aspects or were exclusively teacher-centered (e.g., as seen in Barbara, 2010, and Kaymakamo, 2018). For instance, participants in Barbara's study (2010) perceived SCT as students making choices within the parameters set by teachers in terms of curriculum and activities. This could potentially be attributed to teachers limited pedagogical knowledge or content knowledge required to effectively implement SCT (Billiar et al., 2014), as well as



contextual factors in school and classroom settings, such as exceedingly large class sizes, inadequate institutional support, and the actions and feedback from learners (Golombek, 1998; Phipps & Borg, 2009; Zheng, 2009).

In contrast to earlier research, this study introduced additional viewpoints. In this study, all participants anticipated that their students would primarily focus on explaining or reproducing the content taught by the teacher, as opposed to applying or innovating upon what they had learned. This situation might be primarily attributed to the intense emphasis placed on student assessment performance in two researched schools. This pressure has had the effect of causing teachers to prioritize meeting the requirements of tests over catering to the unique needs of their students in their teaching approach.

***Diverse learners were excluded from the teachers' conceptualization of SCT, and this exclusion extended to the learning opportunities that SCT was intended to offer.***

From the analysis in Chapters 4, we can see diverse learners were excluded in the teachers' perceived definition and perceived practice of SCT, as evidenced in the dominant White school culture, color-blindness, deficit mindset, and macroaggressions across the four cases. The influence of White school culture is subtly implied through various contextual cues and indicators in the teachers' perceptions. In Darcy's classroom, where a significant portion of the students were Hispanic, her expectation that students must express themselves in English to be ready for student-centered teaching signifies the dominance of English and White cultural norms.

Critical Race Theory underscores the role of language as a tool for cultural dominance (Curtis & Romney, 2019). Therefore, a teacher's preference for English language proficiency may result in the marginalization of students whose primary language differs, reinforcing the idea that English-speaking norms are superior and that other languages are deficient (Ladson-Billings, 2020). Zara's case also showcased how she

perceived language barriers as justifications for not adopting a student-centered approach. In Irma's case, her alignment with traditional curricula and assessment practices implies a White-centric school culture. These practices may not fully account for the diverse needs and experiences of learners, emphasizing conformity to standardized norms (Lechtenberg, 2021; Turner et al., 2023). Rosa's acknowledgment of the importance of diversity, coupled with her reluctance to address racial issues, indicates the presence of a White-centric culture. The avoidance of sensitive topics within the classroom environment underscores how certain discussions are bypassed due to their potential to disrupt the existing cultural norms (Milner, 2016).

Across the four cases, it becomes evident that the teachers failed to recognize the significant role of race and racism in shaping the outcomes of their student-centered teaching. Instead, they tended to adopt a color-blind perspective, primarily focusing on individual factors like language barriers as the primary explanation for disparities in education (Bradbury, 2020). This approach often led to an oversight of more profound systemic issues and racial disparities affecting diverse learners (Milner, 2016). By attributing struggles exclusively to language barriers, these educators inadvertently perpetuated a color-blind approach to education. Darcy's belief that students who couldn't articulate and elucidate their thoughts in English were not prepared for SCT reflects a color-blind perspective. She overlooked broader diversity dimensions beyond language. Zara held the similar belief that diverse learners could catch up once they overcome the language barriers. In Irma's case, her emphasis on curriculum and standardized assessments also led to a color-blind approach that overlooked systemic issues impacting diverse students. Rosa's reluctance to address racial issues and focus on language deficiencies also suggested a color-blind approach that failed to consider broader diversity dimensions (Milner, 2016).

Additionally, a recurring theme in these cases is the presence of a deficit mindset, particularly concerning diverse learners. Teachers frequently regarded students from non-dominant racial or ethnic backgrounds as lacking in certain areas, such as language proficiency or academic capabilities. This mindset resulted in teaching practices designed to compensate for perceived deficiencies, rather than recognizing the valuable contributions that diverse learners bring to the classroom (Austin, 2019; Milner, 2016). For instance, in both Darcy and Zara's classrooms, over 90% of the students were from diverse backgrounds. Darcy considered the students from the local neighborhood as disruptive to her teaching, while Zara viewed language barriers as a hindrance to her communication with parents who did not understand the academic content she taught. Zara also perceived that her students who spoke Spanish at home might struggle to navigate between Spanish and English. In Irma and Rosa's classrooms, approximately 60% of the students were diverse learners. Irma believed that students lacking confidence and self-motivation were not prepared for SCT. Ironically, many of these students who were perceived as quiet and self-reliant were also diverse learners. Rosa favored White culture because she believed that schools in the United States inherently embraced a more advanced and student-centered approach. She, as a Mexican American with parents who had migrated from Mexico, her preference for White culture over her own Mexican American culture reveals a deficit mindset. This implies that she perceived her own cultural heritage as potentially less valuable or less conducive to success within the educational context, especially in contrast to White culture, which she associated with student-centered teaching.

Moreover, when it came to the teachers' perceived teaching practices, they often emphasized a heavy reliance on the standardized curriculum to structure their teaching approaches. When standardized curriculums prioritize a one-size-fits-all approach, they often fail to consider systemic factors disproportionately affecting marginalized groups,

which was a form of macroaggressions from the perspective of CRT. This standardized approach can perpetuate inequality by implicitly valuing one dominant culture and marginalizing others. It's essential to recognize that these macroaggressions, while not necessarily intentional acts of discrimination, can have significant and lasting negative impacts on historically disadvantaged groups. The teachers' assumption that the curriculum catered to the needs of diverse learners through the inclusion of stories from various cultures appeared to be rather superficial. They failed to take into account the contextual knowledge derived from students' families and communities and did not integrate such valuable insights into their curriculum. This curriculum-driven approach resulted in a uniform educational experience that detached classroom teaching practices from the rich knowledge and skills that diverse learners possessed within their own families and communities (González et al., 2006). Viewed through the lens of critical reflection for transformative learning (Liu, 2015; Mezirow, 1990), it becomes evident that all the participants shared a common blind spot. They failed to recognize the profound influence of social, political, and cultural factors on the learning outcomes of diverse students. Moreover, they overlooked the potential impact of their own teaching practices on shaping students' equitable learning opportunities. Due to this absence of critical reflection, these educators missed crucial opportunities to transform their teaching methods and classroom environments to foster greater equity. Transformative teachers actively engage with the complex interplay of societal and cultural factors, constantly questioning their own assumptions and practices, and striving for transformative action for the purpose of educational equity. In the absence of such critical reflections, the participants did not take the necessary steps to create a more inclusive and equitable educational setting.

It is noticeable that Darcy, Irma, and Rosa obtained their degrees from the same College of Education at the state university. Darcy earned a master's degree in education

and curriculum, while both Irma and Rosa completed the elementary education program, earning bachelor's degrees. Despite their education degrees, they seemed to lack a comprehensive understanding of SCT. For instance, Rosa mentioned her uncertainty about SCT. While various factors may have contributed to their teacher-centered practices and the exclusion of diverse learners, it's astonishing that even their perceptions were limited, and they exhibited a teacher-centered orientation in their beliefs. It's evident that the educational programs for preservice teachers did not adequately prioritize the concepts of SCT, race, and racism.

### ***Cross-Case Discussions to Questions 2***

***Teachers' teaching in their regular teaching sessions was primarily teacher-centered in terms of their teaching content, their arrangement of learning environment, and their instruction styles.***

All four cases exhibit a prevailing theme of teacher-centered teaching. Teachers are central figures in the classroom, with students expected to follow their instructions and explanations. The concept of student-centered teaching, as understood by these educators, does not entail a fundamental transformation in terms of the teaching content, the learning environment, and the instructional styles.

In all four cases, the four classroom teachers taught a series of subjects such as reading, writing, math and STEM/social studies. The teaching content for all the subjects during their regular sessions primarily revolved around the prescribed curriculum, with little customization to cater to the individual needs of their students. For example, in the reading class, all the four teachers were found to ask the specific questions provided by the curriculum. In the math class, all the four teachers taught exact the same thing shown in the textbook. Based on the perceptions from the two principals and all the four teachers, the school administrations had chosen the curriculum, and the teachers were responsible for

strictly adhering to it. This curriculum, in essence, prioritized meeting subject standards, rather than tailoring the education to the specific requirements of the students.

Notably, teachers did not engage in preparing individual lessons; instead, they embraced collaborative planning with their colleagues. Within their respective grade levels, each teacher took charge of planning lessons for a particular subject, covering all students within that grade. For instance, in Twinbrook Academy, Darcy was responsible for designing writing lessons, while Zara concentrated on mathematics instruction for all second graders. In Riverside Academy, Irma took the lead in creating math lesson plans, and Rosa was in charge of teaching writing to all first graders in their respective schools. Their lesson plans typically involved the selection of materials and content from the prescribed curriculum, with the goal of meeting the mandated standards and enhancing areas they believed their students needed improvement in. Furthermore, they adhered closely to fixed time schedules for teaching subjects within their respective grade levels. For instance, at Twinbrook Academy, students in both Darcy and Zara's classes were observed to be using the same writing paragraph examples for identical writing topics. These writing examples were authored by Darcy, who was responsible for planning writing lessons for the entire second grade. At Riverside Academy, it was observed that Irma and Rosa often taught the same reading materials. This approach ensured that all students in the same grade received the same information simultaneously. The teachers viewed this uniformity as a way to prevent any student from falling behind in their educational journey. As a result, there was a lack of differentiation in the teaching content during regular instructional sessions, regardless of individual students' learning levels. Earlier SCT in both charter schools and traditional public schools lacked an examination of the teacher's lesson planning process. This study effectively addressed this gap by offering comprehensive insights into how teachers collaboratively craft lesson plans for their

students in charter schools.

The learning environment also primarily addressed the curriculum requirements rather than addressing students' needs in all four cases. Learning activities were predominantly conducted on the carpet or at students' desks, and the classroom organization was teacher centered. During whole-class lectures, students sat on the carpet with the teacher standing in front of them. During independent practice, students were seated at their individual desks, arranged in a semicircle around the teacher. The classroom decorations in all four cases were quite similar, featuring subject-specific posters or charts on the walls, teachers' expectations for student behavior (such as CHAMPIONS rules), daily teaching schedules, and charts to track and motivate student progress in IReady online lessons. However, there was a noticeable lack of decorations related to the students themselves in all four classrooms. The elements of an SCT learning environment include instruction time allocations, classroom organizations, infrastructure-hardware, and psychosocial environment (Çubukçu, 2012). Previous studies on SCT learning environments primarily concentrated on the physical classroom spaces (e.g., McDavid et al., 2018) and how teachers allocated instructional time (e.g., Fisher, 2009). This study contributed additional insights by conducting a detailed analysis of classroom decorations and their alignment with curriculum standards, rather than catering to the specific needs of the students.

Their teaching method was primarily teacher centered. The common themes across the four cases: misalignment between beliefs and practice, teacher dominance, limited student engagement, and external control in classroom management. In Darcy's perception, her teaching was student-centered, emphasizing scaffolding, peer sharing, and small group teaching. However, her actual teaching did not align with these beliefs. Her scaffolding focused on breaking down the steps of answering questions rather than guiding

students toward higher-order thinking.

In practice, Darcy primarily delivered instruction herself, with limited peer interaction. When students did engage with their peers, it was often in the form of peer explanations, where students explained answers to each other. Students predominantly listened to her instructions and explanations, assuming relatively passive roles in the classroom. Peer sharing mainly served the purpose of hearing explanations rather than encouraging active student-to-student discussions and collaborative problem-solving. The small group teaching did not belong her regular teaching sessions. Darcy maintained strong authority in the classroom, which contributed to fewer students' disciplinary issues. However, during independent practice time, students frequently engaged in small chats. When disciplinary problems arose, Darcy primarily relied on external incentives and punishments to regulate and guide students' behavior, rather than promoting intrinsic motivation or self-discipline. For example, she used additional recess time as an incentive and the loss of recess time as a form of punishment.

Zara's belief that the teacher should serve as the primary source of knowledge was consistent with her teacher-centered teaching approach, where the teacher played a central role in the classroom. In Zara's class, the predominant mode of instruction was her own monologues, with minimal interaction between the teacher and students, as well as among the students themselves. The primary activity for students was listening and transcribing answers from the teacher's whiteboard to their textbooks. Zara's actual teaching practices do not align with her belief in adapting instruction to suit students' diverse abilities, as she taught the same content to the entire class.

Furthermore, Zara thought that she provided students with choices to encourage students' engagement in their work. Her perceptions of engagement focused on physical engagement which meant that students could better follow teacher's instructions and finish



their designated tasks more effectively. In practice, her students do not display evidence of physical, cognitive, or emotional engagement in their learning. Zara's teaching approach lacked opportunities for students to express their own ideas, engage in exploration, or construct meaningful knowledge. In all four cases, Zara maintained the highest level of authority over her students, resulting in a consistently quiet classroom atmosphere during most of the class time. Occasionally, students engaged in side-conversations or played with toys discreetly, careful not to attract Zara's attention. This was because students were reluctant to defy her instructions, and a warning from Zara was enough to ensure compliance. Zara effectively used her external authority to manage student behavior, obviating the need for additional incentives or punishments.

Irma's teaching practice mostly aligned with her own perceptions. Corresponding to her views, while there were some elements of student-centered teaching in her approach, her overall teaching style remained teacher centered. The student-centered aspects encompassed the incorporation of real-life relevance into lessons, the use of visual aids during explanations, and seeking student feedback after her instruction. However, these elements primarily served to improve students' comprehension of the teacher's lectures rather than actively encouraging students to construct their own knowledge. Her predominant teaching style was teacher-centered, with the teacher taking on the primary role in delivering explanations during class. Interactions were mainly initiated by the teacher, who posed questions to the entire class or individual students. The types of questions primarily focused on factual-level knowledge. Irma heavily relied on external classroom management control such as classroom rules and incentives as a means of positively reinforcing desired student behaviors. This approach was used to maintain discipline and encourage adherence to her expectations, rather than fostering intrinsic motivation for learning among the students.

In contrast to Rosa's perceptions, her teaching approach was predominantly teacher centered. This could be attributed to her lack of a clear definition of student-centered teaching and her belief that her teaching style was inherently student-centered because she taught in the United States. Similar to the other three cases, in Rosa's classroom, a significant portion of class time was devoted to Rosa's lectures, where she primarily employed whole-class responses. There was limited interaction among the students themselves, indicating a lack of peer-to-peer engagement and collaborative learning. The questions posed by Rosa mainly focused on factual knowledge, emphasizing rote memorization and content repetition. The learning activities in her classroom primarily consisted of paper-based assignments for all subjects, with a notable absence of hands-on or interactive activities. Rosa's classroom management appeared to be ineffective, resulting in wasted time redirecting students' attention. Her use of incentives and punishments as methods for managing behavior suggested a focus on external motivation rather than intrinsic interest in learning, a characteristic often associated with teacher-centered approaches.

Across all four cases, teacher dominance is a common theme. In each case, the teacher plays a central role in delivering content, controlling the classroom, and directing most of the learning activities. Students often have limited opportunities for active participation, and the teacher-initiated interactions are a central feature in these classrooms. This theme highlights the teacher's central role in traditional teacher-centered instruction. In addition, across the cases, limited student engagement and external control in classroom management are also very common. In each case, students play relatively passive roles, primarily listening to the teacher's explanations, and interactions are often initiated by the teacher. Teachers tend to use external control methods like incentives and punishments for managing students' classroom behavior.

Teachers' mainly applied teacher-centered teaching. This may be firstly caused by the fact that the curricula they used primarily focused on meeting subject standards rather than catering to the individual needs of learners. Teachers across all cases also expressed that some of their curricula did not prioritize student-centered approaches. In the context of reading curricula, some teachers believed that it lacked differentiation, resulting in all students receiving the same-level reading materials. Zara, a second-grade classroom teacher in Twinbrook Academy, mentioned that,

I feel like for Wonders (the reading curriculum), it's really not student-centered. It's really not differentiated. It's just kind of this is what we have. And that's it. Yeah. Like the story that we read today, which is the money madness, one that we read about money. It comes in just one level. So if there's a kid that doesn't know how to read, that's the only thing we have. (Zara, Interview#3, Mar 31, 2023)

Regarding the math curriculum, some teachers perceived it to be focused more on paperwork than on engaging exploration activities. As Irma, a first-grade classroom teacher in Riverside Academy mentioned,

Like what I feel is that the (math) curriculum, as you said, is quite direct and does not leave much room for students' self-exploration. It involves a heavier focus on paperwork and a noticeable lack of interactive activities or opportunities for exploration. This curriculum seems to prioritize traditional pen-and-paper tasks over hands-on learning experiences, such as using cubes for building or problem-solving. (Irma, Interview#4, Feb 22, 2023).

In addition to the standard-based curriculum, the school may not provide enough trainings for teachers to be student-centered. Drawing from interviews with the principals, it became evident that there was an insufficient availability of training opportunities for teachers. At Twinbrook Academy, there were mandatory teacher training sessions aimed at familiarizing teachers with all the school programs. Teachers also received training on implementing positive reinforcement strategies to encourage desirable behaviors in students. Regarding instruction, the school administered surveyed to teachers three times a year to assess their professional development (PD) needs. Then they arranged trainings to address their PD needs. In Riverside Academy, the two instructional coaches, who were

experienced teachers, played a primary role in training new teachers. They did so by observing the instruction of new teachers, modeling lessons for them, and providing constructive feedback. Moreover, teachers had the option to seek assistance and guidance from these instructional coaches for any instructional challenges they faced. However, it's worth noting that the availability of these coaches was not immediate, mainly because they were responsible for the entire campus, which included elementary, middle, and high school teachers. Their responsibilities also encompassed a wide range of subjects. Due to their tight schedules, teachers were required to initially request instructional support from the principal, who would then assign training tasks to the coaches.

The schools' efforts to provide support and training for teachers are commendable; however, there appear to be availability challenges that need attention. At Twinbrook Academy, they have implemented compulsory training and utilize teacher surveys to identify professional development needs. However, the system appears to lack immediate responsiveness to teachers' professional development requirements. In Riverside Academy, the presence of instructional coaches is valuable for teacher development. Nevertheless, the availability issues are evident, given the coaches' responsibilities spanning the entire campus and a variety of subjects. Teachers needing assistance may face delays in accessing the support they require, which could impact the effectiveness of the training program.

***Teachers' small group teaching outside their regular teaching sessions was also primarily teacher-centered to address what the students lacked in their subject matters.***

In all four cases, the teachers engaged in small group teaching sessions outside of their regular teaching sessions, in compliance with the explicit requirements of both schools for reading and literacy programs. In Twinbrook Academy, the program was named Power Hours, while in Riverside Academy, it was referred to as Response to Intervention (RTI). Each school employed a range of diagnostic assessments to identify

students struggling. Consequently, students who did not perform well on these assessments in reading or literacy were selected for participation in the small group program. In essence, the small group program primarily targeted students who were falling behind in specific areas, as indicated by their diagnostic assessment results.

These diagnostic assessments provided detailed reports indicating the specific areas where students were struggling. Within each grade level, individual classroom teachers took responsibility for instructing these students in their respective areas of reading and literacy. For example, Darcy focused on teaching reading comprehension, Irma on word pronunciation, and Rosa on blending words within the small group program. As Darcy mentioned,

And that's why we switch because we try to get all the kids that were struggling on the same things in one class together for that hour. And that's why we switched classes so that all the kids are kind of on the same level during power hour. (Darcy, Interview#4, April 12, 2023).

A fixed time schedule was established for the daily small group teaching program for reading and literacy. The small groups of students moved to different classrooms to address their specific gaps in reading and literacy areas for lower students. For example, Zara in Twinbrook Academy mentioned the classroom rotations during the small group instruction,

Because we divide the classrooms. So my classroom, I have all the little kids, so the little kids that could barely read and then we have the next group that have the little bit higher than the ones I have... Yes. So depending on how they test, we divide them that way. And my class, we have all the low kids. (Zara, Interview#2, Mar 14, 2023)

Rosa in Riverside Academy also described similar pattern of small group instruction, as she said,

They go to another classroom like we rotate and switch kids. So all the kids go not all of them but the ones who are generally lower will go in the group that's on their level so like these kids are all working on separating the sounds and writing the words. (Rosa, Interview#2, Feb 17, 2023)

Additionally, each classroom had interventionists who assisted with the small

group teaching alongside the classroom teachers. The teaching content was provided by the curriculum that tailored to address the specific learning gaps of these students. The teachers only had to download the teaching materials from the website, print the materials and share the materials with the interventionists. The remaining students, who were not part of the small group program, were occupied with their IReady online lessons or engaged in independent reading activities.

Nevertheless, there were no specific mandates for conducting small group teaching in other subjects. Consequently, teachers were encouraged to organize small group sessions for additional subjects during their available time. Among them, Darcy, Irma, and Rosa opted to conduct small group teaching sessions for mathematics within the regular math instruction period, coinciding with the majority of students engaging in independent practice. There were some distinctions observed during these small group math sessions. Darcy downloaded teaching materials from the curriculum to address the specific learning gaps identified in the diagnostic math assessments of the small group students, while Irma and Rosa primarily revisited the material taught on the same day for these students. Darcy also organized small group teaching sessions for writing, which involved bringing together a selected group of students to collectively work on the day's writing tasks. However, I did not witness Zara conducting small group teaching for subjects that were not mandated. During all the small group teaching sessions, the teachers would gather the select group of students to sit in a semicircle around a table, with the teacher positioned in the center. Although the teaching content was tailored to the students' learning levels, the teachers' teaching style remained predominantly teacher-centered, as the teachers primarily provided direct instruction.

***Diverse learners' racial, ethnic, and cultural backgrounds were excluded from teacher's teaching practice.***

Across all cases, a common theme emerges: the teaching content, learning environment, and instructional methods did not adequately consider the racial, ethnic, and cultural backgrounds of diverse learners. In Darcy's case, her teaching heavily relied on a curriculum that appeared disconnected from the students' daily lives. The reading and writing curriculum, which primarily focused on Western values like philanthropy culture, failed to acknowledge the diverse cultural backgrounds of the students. This lack of representation in the curriculum could hinder the positive development of students' identities and make it challenging for them to find relevance and significance in their studies. CRT emphasizes that this Eurocentric approach perpetuates systemic racism by marginalizing and erasing non-Western cultures and experiences from the educational narrative.

Furthermore, the collaborative lesson planning approach used by Darcy's team posed challenges in accommodating the diverse learning needs of the students, particularly ELLs who faced difficulties in understanding what written on their textbook due to language barriers. CRT draws attention to how systemic factors can disproportionately affect marginalized groups. In this case, the collaborative approach, without adequate consideration of linguistic diversity, can be seen as perpetuating linguistic discrimination, which CRT seeks to address. Collaborative planning should not only focus on content but also incorporate strategies that acknowledge and support the diverse linguistic backgrounds of students, ensuring an equitable educational experience for all.

The learning environment in Darcy's classroom also failed to reflect the racial, ethnic, and cultural diversity of the students. Static seating arrangements resulted in some students being isolated at their desks during carpet time, leading to disengagement and missed opportunities for participation. Moreover, the case of Maya, a student who was socially and emotionally isolated due to her seating arrangement, underscored the

importance of a more comprehensive approach to address students' well-being and promote positive interactions. The classroom decorations and displays in Darcy's classroom also missed an opportunity to create an inclusive and engaging learning space by not representing the diverse backgrounds of the students. This omission could potentially impact students' self-efficacy, as evidenced by the wall displaying low academic performance. Darcy's teaching approach further highlighted the theme as it lacked cultural sensitivity, primarily using English as the language of instruction and materials and focused more on fact-based questions than encouraging higher-order thinking. Students' input that didn't align with her expectations was often dismissed, inhibiting a more inclusive and diverse learning experience.

Zara's teaching approach exhibited a lack of differentiation between diverse and non-diverse learners. Similar to Darcy, her relying heavily on the standard curriculum, which primarily emphasized Western cultures, posed a challenge in catering to the diverse backgrounds of her students. For example, when exploring topics like myths, the curriculum exclusively centered around Western gods and goddesses. Despite Zara's attempts to incorporate supplementary videos showcasing various cultures, including African American culture, these additions often fell short in encouraging meaningful engagement and failed to spark discussions among students.

Additionally, similar to Darcy, the learning environment in Zara's classroom also deprived some diverse learners' learning opportunities. It's worth noting that there was only one White student in Zara's classroom, highlighting the predominantly diverse composition of her student body. Despite her awareness that students seated farther from the front had difficulty seeing the slides displayed on a small screen clearly, Zara continued with this setup, limiting visual access to the learning materials for some students. Moreover, the static seating arrangements in her classroom meant that certain



students were confined to their desks, while others had the privilege of sitting on the carpet, potentially resulting in unequal participation and engagement. Despite being aware of the language barriers faced by 20 of her students, Zara did not adjust her instruction or provide support. Her use of English-only materials and fast-paced lectures hindered comprehension and hindered some students from fully participating in the learning process. Moreover, Zara's practice of frequently writing answers directly on the teacher board to address diverse learners' language barriers and aid their understanding, while well-intentioned, may have unintentionally hindered diverse learners' independent problem-solving and high order-thinking abilities. In essence, her one-size-fits-all approach and lack of cultural responsiveness in her teaching may have hindered the academic and personal development of her diverse learners.

In Irma's classroom, a significant disparity emerged between her perception of the student demographic and the actual composition of her class. She mistakenly believed that there were only 8 diverse learners when, in reality, there were 16. This unawareness of the majority of her students being diverse learners highlighted a critical gap in her understanding, and unfortunately, her teaching practices fell short in adequately meeting the needs of this diverse group. Irma's instructional approach predominantly followed the curriculum, lacking the necessary differentiation to accommodate the varying learning levels among her students, regardless of their diverse backgrounds.

The topics covered in Irma's class, spanning subjects like the solar system, Earth's history, and fairy tales in reading, along with math lessons on concepts such as equal shares and addition strategies, were primarily focused on the curriculum itself. Irma did not make specific adaptations for diverse learners and missed the opportunity to incorporate elements from their personal experiences, family backgrounds, or community contexts into her teaching. Furthermore, the classroom environment centered on curriculum-driven rules

and lacked decorations or elements that reflected the diverse racial, ethnic, and cultural backgrounds of her students. Irma's reliance on external rules to manage student behavior may have hindered meaningful connections with students from different cultural backgrounds and potentially excluded them from active learning participation.

Additionally, her instructional methods, characterized by lectures and explanations, particularly in addressing language barriers by reading math directions aloud, might have inadvertently hindered the development of diverse learners' independent reading and comprehension skills. Moreover, her exclusion of challenging problem-solving tasks in math for some students perpetuated differential expectations and could contribute to academic disparities among her diverse learners.

In Rosa's classroom, a significant gap also emerged between her understanding of her student demographic and the actual composition of her class. While Rosa believed that only 20-30% of her students were diverse learners, the reality was that approximately 62% of her students fell into this category. This stark misperception reflected a disconnect between her awareness and the classroom's actual diversity, highlighting a critical issue that her teaching practices failed to address. Similar to other cases, the curriculum-centric approach primarily concentrated on subject matter, overlooking the richness of her students' diverse identities and experiences. Although Rosa did dedicate racial topics like Black History Month within the social studies curriculum, it largely focused on the general spirit of the influential Black leaders rather than engaging in deeper discussions about race and racism.

Rosa's avoidance of addressing issues of race and racism due to her perceived sensitivity from the parents further hindered students from actively contributing to a more equitable learning environment, potentially perpetuating racial insensitivity and stereotypes. Additionally, Rosa's lack of effective classroom management skills, coupled

with her dependence on external incentives and especially heavy reliance on punitive measures, exemplify the perpetuation of oppressive educational systems rooted in white supremacy. These practices not only squander valuable class time but also contribute to the perpetuation of racial disparities and the alienation of students from marginalized backgrounds, further entrenching the existing power imbalances in education. Moreover, Rosa missed opportunities to challenge higher-ability diverse learners, potentially limiting their intellectual and academic growth. Her classroom environment and instructional approach did not leverage the diverse backgrounds of her students as valuable assets, resulting in an inadequate integration of their experiences into the learning environment.

All four cases demonstrated that their instructional practices excluded diverse learners. Their reliance on the standard curriculum and the failure to consider cultural, racial, and ethnic backgrounds are recurring issues. Furthermore, the theme of uniform instruction, where diverse learners are not adequately accommodated, exacerbates disparities in opportunities and engagement.

## **Conclusions**

Several key conclusions can be drawn from the findings. Firstly, from this multiple-case study we see that the four teachers' interpretations of SCT terminology, while employing technical terms, ultimately reflected a predominantly teacher-centered perspective. This orientation placed teachers at the center of the learning process, with students having limited autonomy and often serving as passive recipients of knowledge. The teachers anticipated that students would actively engage with the content presented by the teacher, but within the confines of teacher-designed activities.

Second, the frameworks of Critical Race Theory and critical reflection for transformative learning enabled the critical analysis of the perceptions and practices of the four participating teachers. The findings revealed a concerning pattern across the four

cases, where diverse learners were largely excluded from the teachers' perceived definitions and practices of SCT, further entrenching racist practices that deepen the opportunity gaps (Milner, 2016) and education debts (Ladson-Billings, 2006). Although they were aware that some of their English Learners encountered challenges due to the language barrier, they tended to reinforce the practice of treating English as the dominant and sole instructional language in the classroom, failing to critically reflect on how English as a dominant language led to the exclusion of the languages, literacies and identities of many of their students. Further, they failed to reflect on the racial identities of their students and how institutional racism and the White dominance permeate every aspect of schooling, including the curriculum, their instruction, the school climate etc., which reinforced the marginalization of their diverse students. When students did not perform or behave as they expected, they often blamed their students and implemented punitive approaches without critically reflecting on the impact of their teaching on the students. The blaming and punishing students could further enlarge the existing discipline gaps between diverse students and their White counterparts. Due to the lack of critical analysis of the social and political factors that impact teaching as well as the critical analysis of their own assumptions and practices, the participants' teaching practice demonstrated no transformation to better support their students. Several key factors contribute to this exclusion, rooted in the dominant White school culture, color-blindness, deficit mindset, and a curriculum-driven instructional approach.

Third, the common theme of teacher dominance across all four cases underscores the prevalence of traditional teacher-centered instruction. In these classrooms, teachers take center stage in delivering content, controlling the classroom environment, and directing learning activities. Students often find themselves in passive roles, with limited opportunities for active participation. Teacher-initiated interactions are a prominent

characteristic, reflecting a traditional pedagogical approach. A pervasive trend of limited student engagement and the use of external control methods in classroom management is evident in all cases.

Fourth, the implementation of small group teaching sessions for reading and literacy, mandated by the schools' programs, demonstrated a commitment to addressing the specific needs of struggling students. Diagnostic assessments played a crucial role in identifying these students and tailoring instruction accordingly. However, the small group teaching approach remained largely teacher-centered, with teachers providing direct instruction to the select group of students.

Last but not least, the analysis across all four cases underscores a troubling pattern of instructional practices that inadequately consider the racial, ethnic, and cultural backgrounds of diverse learners. This pervasive issue is characterized by a heavy reliance on standard curricula that often fail to represent or engage with the rich diversity of student experiences. Moreover, the learning environments in these classrooms are not conducive to meeting the needs of diverse learners, and instructional methods tend to be one-size-fits-all, lacking the necessary differentiation and cultural responsiveness.

### **Implications**

The findings of this research have the following implications for charter schools. Firstly, the research findings revealed that the school held a limited perspective regarding the curriculum, primarily valuing its ability to cover standards and contribute to students' strong performance in assessments. The school had clear expectations for all teachers to adhere to the prescribed curriculum, ensuring that all students within the same grade followed the same learning path. It's commendable that the school prioritized standards to narrow the achievement gaps among students, especially those from diverse backgrounds. However, there was a prevailing mindset that the students' efforts and mastery of the

standards were the sole keys to academic success. This perspective overlooked the systemic barriers created by race and racism that affected diverse learners and failed to acknowledge the significance of diverse learners' racial, ethnic, and cultural backgrounds as valuable assets and incorporate these assets into the curriculum.

Secondly, the research findings indicated that charter schools prioritized students' academic performance over student-centered teaching. The implicit school policy seemed to suggest that teachers could employ any teaching methods as long as they contributed to improving students' performance in assessments. As demonstrated in this study, both principals and teachers often held a superficial or technical understanding of SCT. They may not have fully recognized SCT as a powerful tool for enhancing students' performance in assessments. While teacher-centered teaching can effectively convey surface-level knowledge, it may not facilitate effective learning, as students benefit most when actively engaged in the learning process rather than being passive recipients of information. It is critical for charter schools to understand that SCT is not a waste of class time; in fact, it is a fundamental approach to help students achieve strong academic performance, particularly in diverse learner environments.

Thirdly, the charter school encountered systemic barriers that hindered the adoption of student-centered teaching. As previously discussed, these barriers included budget constraints, which limited the school's ability to acquire hands-on activity materials for teachers. Additionally, the school grappled with a high turnover of experienced teachers, leading to a majority of new educators who were still in the process of developing their teaching skills. Furthermore, the school faced significant pressure to maintain its ranking, which led to an overemphasis on student assessment data. These systemic challenges collectively created an environment where the implementation of SCT was challenging.

Fourthly, the teachers in the charter school had limited autonomy when it came to

both the content and methods of their teaching. The research findings highlighted that all teachers were required to strictly follow the curriculum, whether in regular teaching sessions or small group sessions. The pressure of student assessment performance evaluations further constrained their flexibility in deviating from the curriculum. Additionally, systemic barriers such as inadequate training in SCT, a lack of teaching materials for SCT and the teacher's insufficient experience also restricted their ability to effectively implement the curriculum.

Fifthly, a theoretical implication arising from this research suggests that charter schools should not restrict themselves to a strictly technical definition of student-centered teaching (SCT). Instead, they should construct their own definition of SCT tailored to their unique teaching contexts, especially in cases where the majority of students are diverse learners.

### **Recommendations to Administrations in Charter Schools**

#### ***Broader Conceptualization of Curriculum***

It is imperative to adopt a curriculum that places greater emphasis on learners and addresses the diverse needs of students. This transformation necessitates a fundamental shift in how curricula are conceptualized and executed. First and foremost, instead of exclusively striving to meet predefined standards, a learner-centered curriculum should take on the crucial task of customizing educational content and experiences to align with the distinctive needs, interests, and abilities of each student. However, it should not stop there. This curriculum should also provide opportunities where teachers and students have meaningful dialogues about the complex issues of race and racism. Such discussions can serve as a platform for students to not only better understand these important topics but also to shape and refine their own identities in a diverse and evolving world (Milner, 2016). Besides, the students' diverse backgrounds and experiences should be an integral

part of the curriculum Establishing connections with the students' communities and families and incorporating their knowledge into the curriculum is essential (Zeichner, 2017). This approach not only acknowledges the significance of diversity within the student population but also strives to create a more personalized and inclusive learning environment. It ensures that all students, regardless of their backgrounds or learning styles, have equal access to a meaningful and enriching education.

#### *Broader Definition of SCT in Teacher Evaluation*

The research findings revealed that SCT played a role in teacher evaluation within both charter schools. However, it was noted that their current definition of SCT was somewhat limited, primarily focusing on students' engagement and instructional method. To enhance the effectiveness of teacher evaluations and promote a more inclusive and holistic approach to education, it is recommended that school administrations begin by revising their definition of student-centered teaching. This revised definition should encompass a more comprehensive understanding of SCT. It should not only emphasize individualized learning and active student engagement but should also acknowledge and value the diverse backgrounds, experiences, and needs of students, as suggested by Gay (2018). This updated definition should then be integrated into the teacher evaluation descriptors, ensuring that teacher assessments align with the broader concept of student-centered teaching that encompasses diversity and inclusivity.

#### *Providing Professional Development for Teachers*

Teachers must undergo professional development that not only enhances their understanding of SCT but also equips them with strategies to navigate diversity, address systemic issues, and foster an inclusive learning environment. This professional development should be ongoing and adaptive, recognizing the evolving needs of educators and students alike. To achieve this, collaboration among educators, researchers, and



policymakers is essential. This collaborative effort can facilitate the continuous evolution of teaching practices, ensuring that they remain responsive to the diverse and dynamic educational landscape. Through such collaborations, educational stakeholders can enrich the professional development opportunities available to teachers, ultimately leading to more effective and inclusive teaching practices.

### *Addressing Systemic Barriers Faced by Charter Schools*

The research findings brought to light the systemic barriers that charter schools encountered, with a critical one being the lack of financial resources. This deficiency manifested in various ways, such as inadequate training opportunities for teachers, insufficient teaching supplies, and a loss of experienced educators. To address these systemic barriers effectively, it is imperative for school administrations to first recognize how these challenges create disparities in educational opportunities for students. Subsequently, proactive efforts should be made to tackle these barriers comprehensively, including securing necessary resources, enhancing training programs, and devising strategies to retain experienced teachers. By doing so, charter schools can work towards creating a more equitable and conducive learning environment for all students.

### **Recommendations to Teachers in Charter Schools**

#### *Incorporation of Diversity in their Perceptions and Teaching Practices*

Viewed through the lens of Critical Race Theory, the need for teachers to undergo a profound shift in their perceptions and practices regarding diversity and SCT takes on even greater significance. CRT underscores that race and racism are deeply embedded in societal structures, including education. Thus, the shift toward a more inclusive and equitable approach to teaching is not only important but also a matter of addressing systemic racial disparities. Teachers must go beyond superficial understandings of SCT and recognize how race and racism shape their pedagogy and their students' educational

experiences. CRT emphasizes that the mere acknowledgement of language barriers and academic gaps among diverse learners is insufficient; instead, educators should actively incorporate and contextualize the knowledge and experiences of their students from diverse backgrounds into their teaching practices. This approach aligns with CRT's call to recognize the strengths and contributions of marginalized groups, valuing diverse perspectives, and dismantling systemic inequities within education.

#### *Establishing More Meaningful Teacher Collaboration*

The research findings indicated that teachers in all cases engaged in close collaboration when creating lesson plans. Each teacher was tasked with planning lessons for a specific subject, and this collaborative approach was seen as a way to alleviate their individual workloads. However, upon closer examination, it became evident that this collaboration often resembled a mere division of labor rather than meaningful lesson planning. Teachers tended to select materials directly from the prescribed curricula, and each teacher was responsible for planning lessons for an entire grade level, which often did not adequately address the individual needs of students. In such a scenario, it is essential for teachers to make adjustments to their collaborative lesson plans based on the unique needs of their own students. True teacher collaboration should extend beyond a superficial division of labor focused on meeting curriculum standards; it should evolve into a community-oriented approach that seeks to address the diverse needs of learners.

#### *Building connections with the community and families.*

Across all the cases examined, it was evident that teachers often exercised authority over students and their parents. They saw themselves as the primary sources of knowledge, while parents, who may have faced language barriers or been occupied with work, were perceived as not fully comprehending the academic content taught in the classroom. This perspective, rooted in a deficit mindset, presented challenges in establishing effective

communication with parents. It is imperative for teachers to shift this mindset and recognize the immense value that students' families and communities bring to the educational equation. Teachers should actively engage with parents and communities, forging strong partnerships and integrating their knowledge and assets into their teaching practices. This collaborative approach can contribute to a richer and more inclusive educational experience for all stakeholders involved.

## **Limitations**

### *Limitations of Case Study Methodology*

This study employed a case study approach to conduct a thorough investigation of teachers' perceptions and practices of student-centered teaching within the specific context of charter schools. However, the conclusions drawn from this study may not be universally applicable to all charter schools. The two charter schools examined in this research were primarily funded by public sources and had a majority diverse student and teacher population. They prioritized policies related to student academic performance and encountered systemic barriers due to financial constraints. Furthermore, charter schools often have varying degrees of autonomy when it comes to their educational policies. The operational procedures and educational priorities of charter schools can differ significantly. As a result, it is essential to exercise caution when attempting to extrapolate the findings and recommendations of this study to encompass all charter schools. The specific circumstances, policies, and challenges faced by individual charter schools may not align with those observed in the schools investigated in this study.

### *Limited Time and Data Sources*

The data collection for this study spanned two semesters, encompassing interviews and observations. Initially, observations commenced during the first semester; however, as an international student, I was navigating the American school system for the first time, which

required some adjustment. Consequently, the bulk of data collection occurred during the second semester. While this study benefited from the data collected during this timeframe, there are opportunities for further enhancement. Collecting data over a more extended period, potentially spanning multiple semesters, could offer valuable insights into the evolving teaching patterns of educators and the impact of changing curricula on their instructional practices. It would also allow for a deeper exploration of any longitudinal changes in teacher perceptions and practices related to student-centered teaching. Additionally, incorporating data collection from students and parents would provide a more comprehensive perspective. Insights from students and parents could shed light on their experiences, perceptions, and expectations related to student-centered teaching, contributing to a richer understanding of the dynamics within the educational context. In summary, while the current study's data collection process was informative, future research could benefit from an extended timeframe and the inclusion of data from students and parents to further enrich the findings and insights.

#### *Limitations of my Perspectives*

As the primary instrument for data collection and analysis (Yin, 2003), my perspective on student-centered teaching inevitably carried certain biases and limitations. These biases stemmed from my own preconceptions about student-centered teaching, influenced by the literature I had engaged with and my previous experiences as an elementary teacher in China. Despite my efforts to minimize bias, I acknowledge that my experiences and beliefs may have influenced both the data collection process and the subsequent analysis. To mitigate subjectivity, I sought assistance from one additional rater to provide additional perspectives and reduce potential bias. However, it is possible that there were aspects of the data I may have overlooked, or important themes that were not emphasized as much as they could have been. Within the scope of my research questions and objectives, I have confidence in the results and implications derived from the study.

The data analysis process adhered to established research methods, and the findings are presented within the context of the study's specific focus and research questions.

Nonetheless, it is essential to acknowledge the inherent subjectivity and potential limitations associated with any research endeavor and remain open to further exploration and interpretation of the topic in future studies.

### **Future Work**

*How the diverse learners and parents perceived the teachers' teaching? Whether they're included or excluded from teacher's teaching in their perceptions.*

In future research endeavors, there are several valuable avenues to explore. One significant area of investigation involves gathering perceptions not only from teachers but also from students and their parents. This multi-stakeholder approach can provide a comprehensive view of teaching practices and their impact. Future studies can delve into students' views on teaching methodologies, particularly whether they prefer student-centered or teacher-centered approaches. This exploration can illuminate students' experiences, their levels of engagement, motivation, and how well they believe their educational needs are met. Incorporating parents' perspectives is vital, as they play an integral role in their children's education. Research can aim to uncover parents' concerns, needs, and expectations regarding their child's learning. Understanding parental perspectives can inform strategies for building stronger school-family partnerships. Future research can also continue to assess students' academic progress and identify the factors contributing to their successes or challenges. This can involve analyzing academic outcomes and examining how different teaching approaches correlate with student performance. Therefore, I hope to follow up with my participants to research these questions.

## **Appendix A: Interview Questions for Participating Teachers**

### **#General Question**

1. Would you please introduce yourself a little bit? (for example, your prior education, your family background; How many years of your teaching experience; What's your highest level of education)?
2. How did you decide to become a teacher?
3. Tell me something you are excited about being a teacher? Tell me something you are proud of yourself as a teacher.
4. What school are you teaching in now? (public, Title 1 or not, student demographics; name of the school)
5. What are the percentages of students with diverse backgrounds (racial/linguistic) in your class?
6. What are some challenges have you encountered in teaching in diverse schools? How do you overcome those challenges?

### **#Beliefs in SCT**

1. How would you define the relationship between you and your students in teaching?
2. What are your roles in your students' study? Can you give some examples?
3. What're your students' roles? Can you give some examples?
4. Do you let your students make decisions in their learning activities? What type of decisions?
5. Do you think what you described above is student-centered teaching?
6. What do you think student-centeredness means?
7. What kind of educational philosophies or theories do you use to guide your teaching?
8. How did you learn about student-centered teaching?

### **#Perceived practice of SCT**

1. What do you think of student-centered teaching? Does your school support/require teachers to teach with student-centered teaching?
2. How do you conduct student-centered teaching? (What methods/approaches do you use?)
3. When do you usually implement student-centered teaching during the day?
4. What do you think are the benefits of SCT for students?
5. What are the major barriers?
6. What do you think of your students' readiness in student-centered teaching?
7. Do you feel some students are not ready for it? Usually who are those students?
8. Does your school provide some support or training for teachers about student-centeredness? What kind of school culture do you think are suitable for student-centered teaching?
9. What are the student characteristics that are suitable for student-centered teaching?
10. Do you think your teaching is student-centered? Why or why not?
11. Overall, what is the ideal situation for you to implement student-centered teaching (school, student, and teacher)?

## **Appendix B: Interview Questions for Principals**

### **#General Question about the charter school**

1. Would you please introduce yourself a little bit? (For example, your prior education, your family background; How many years of your working experience in charter school; What's your highest level of education)?
2. Why do you decide to work in a charter school? What do you want to achieve as being a principal in a charter school?
3. How does the charge school system enable you to do things that public schools might not be able to do?
4. As a charter school, what challenges do you face that regular public schools might not?
5. How does your school support students from different backgrounds?
6. How is charter school different from public schools?
7. What are the sources of schools funding? Government, benefactors, student fees or parent fundraising?
8. What is the number of staff currently working in this school? Please estimate the percentages of teachers of color in your school.
9. What is the current school enrollment, i.e. the number of students of all grades/ages in this school? Please estimate the percentages of diverse learners in your school.

### **#Policy for SCT**

1. What kind of educational philosophies or theories do you use to guide your school leadership?
2. How do you define student-centered teaching? What do you think of student-centered teaching?
3. What are the policy requirements from your school district for student-centered teaching?
4. How does your school implement student-centered teaching? And specific policies? What actions you take as a principal to implement student-centered teaching?
5. Does student-centered teaching is an indicator to evaluate teachers' performance in your school?
6. How does your school support teachers' innovative teaching practices?
7. What are the resources and support your school provides for teachers for student-centered teaching? Such as professional development opportunities for student-centered teaching.
8. What are the challenges that your school encounter to implement student-centered teaching?

### **#School Climate for SCT**

1. What are the physical environment (classrooms, playgrounds...) in your school do you think support SCT in your school?
2. How do teachers in your school collaborate with each other for student-centered teaching?
3. How does your school provide teachers with opportunities to actively participate in school decisions?

4. How does your school provide students with opportunities to actively participate in school how often teachers implement SCT?
5. What is the relationship between teachers and students in your school?



### Appendix C: Observation Times and Dates

Participants	Dates	Time	Subjects
Darcy	March 09 <sup>th</sup> , 2023	8:05am to 9:00am	Reading
Darcy	March 09 <sup>th</sup> , 2023	9:00am to 9:55am	Power Hour for Reading
Darcy	March 09 <sup>th</sup> , 2023	11:45am to 11:55am	Grammar
Darcy	March 09 <sup>th</sup> , 2023	11:55am-12:25pm	Writing
Darcy	March 09 <sup>th</sup> , 2023	12:47pm to 1:30pm	Math
Darcy	March 21 <sup>st</sup> , 2023	11:50am to 12:05pm	Grammar
Darcy	March 21 <sup>st</sup> , 2023	12:05pm-12:35pm	Writing
Darcy	March 21 <sup>st</sup> , 2023	12:35pm to 1:30pm	Math
Darcy	March 27 <sup>th</sup> , 2023	11:44am to 12:05pm	Grammar
Darcy	March 27 <sup>th</sup> , 2023	12:05pm-12:40pm	Writing
Darcy	March 27 <sup>th</sup> , 2023	12:40pm-1:30pm	Math
Darcy	March 27 <sup>th</sup> , 2023	1:30pm-2:15pm	Small group for math
Darcy	March 27 <sup>th</sup> , 2023	2:15pm-2:40pm	Social studies
Darcy	April 21 <sup>st</sup> , 2023	11:43am to 11:50am	Grammar
Darcy	April 21 <sup>st</sup> , 2023	11:50pm-12:30pm	Writing
Darcy	April 21 <sup>st</sup> , 2023	12:30pm-2:07pm	Math
Darcy	April 24 <sup>th</sup> , 2023	9:09am to 9:55am	Power Hour for Reading
Darcy	April 24 <sup>th</sup> , 2023	11:45am to 11:57am	Grammar
Darcy	April 24 <sup>th</sup> , 2023	12:02pm-12:43pm	Writing

Darcy	April 24 <sup>th</sup> , 2023	12:43pm-2:05pm	Small group for math
Darcy	April 24 <sup>th</sup> , 2023	2:05pm-2:30pm	Social Science
Zara	March 14 <sup>th</sup> , 2023	8:20am-8:55am	Reading
Zara	March 14 <sup>th</sup> , 2023	9:00am-9:45am	Power Hour for Reading
Zara	March 30 <sup>th</sup> , 2023	8:20am-8:53am	Reading
Zara	March 30 <sup>th</sup> , 2023	9:00am to 9:55am	Power Hour for Reading
Zara	March 30 <sup>th</sup> , 2023	12:00pm to 12:05pm	Grammar
Zara	March 30 <sup>th</sup> , 2023	12:05pm-12:55pm	Writing
Zara	March 30 <sup>th</sup> , 2023	13:00pm-13:40pm	Math
Zara	April 18 <sup>th</sup> , 2023	11:58pm-12:59pm	Writing
Zara	April 18 <sup>th</sup> , 2023	13:00pm-13:41pm	Math
Zara	April 18 <sup>th</sup> , 2023	13:41pm-14:10pm	IReady Time
Zara	April 20 <sup>th</sup> , 2023	11:55am-12:15pm	Grammar
Zara	April 20 <sup>th</sup> , 2023	12:15pm-13:05pm	Writing
Zara	April 20 <sup>th</sup> , 2023	13:05pm-14:10pm	Math
Zara	April 20 <sup>th</sup> , 2023	14:10pm-14:25pm	IReady Time
Zara	April 20 <sup>th</sup> , 2023	14:26pm-14:45pm	Social Science
Zara	April 27 <sup>th</sup> , 2023	8:20am-9:29am	Reading
Zara	April 27 <sup>th</sup> , 2023	9:29am-10:00am	IReady Time
Zara	April 27 <sup>th</sup> , 2023	12:04pm-13:08pm	Writing
Zara	April 27 <sup>th</sup> , 2023	13:08pm-13:50pm	Math

Zara	April 27 <sup>th</sup> , 2023	13:50pm-14:08pm	IReady Time
Irma	Oct.27 <sup>th</sup> , 2022	9:50am-10:25am	Reading
Irma	Oct.27 <sup>th</sup> , 2022	10:50am-11:50am	Math
Irma	Nov. 17 <sup>th</sup> , 2022	9:50am-10:25am	Reading
Irma	Nov. 17 <sup>th</sup> , 2022	10:50am-11:50am	Math
Irma	Feb 10 <sup>th</sup> , 2023	8:30am-9:00am	RTI
Irma	Feb 10 <sup>th</sup> , 2023	9:10am-9:50am	Word Work
Irma	Feb 10 <sup>th</sup> , 2023	9:50m-10:25am	Reading
Irma	Feb 10 <sup>th</sup> , 2023	10:50am-11:50am	Math
Irma	Feb 15 <sup>th</sup> , 2023	9:52m-10:25am	Reading
Irma	Feb 15 <sup>th</sup> , 2023	10:50am-11:50am	Math
Irma	Feb 22 <sup>nd</sup> , 2023	13:55pm-14:10pm	Writing
Irma	April 03rd, 2023	9:15am-10:05am	Word Work
Irma	April 03rd, 2023	10:05m-10:25am	Reading
Irma	April 03rd, 2023	10:45am-11:40am	Math
Rosa	Oct.22 <sup>nd</sup> , 2022	9:50am-10:25am	Reading
Rosa	Oct.22 <sup>nd</sup> , 2022	10:50am-11:50am	Math
Rosa	Nov. 3 <sup>rd</sup> , 2022	10:50am-11:50am	Math
Rosa	Nov. 7 <sup>th</sup> , 2022	9:50am-10:25am	Reading
Rosa	Nov. 7 <sup>th</sup> , 2022	10:50am-11:50am	Math
Rosa	Feb. 9 <sup>th</sup> , 2023	8:30am-8:50am	RTI
Rosa	Feb. 9 <sup>th</sup> , 2023	9:15am-10:13am	Word Work
Rosa	Feb. 9 <sup>th</sup> , 2023	10:13am-10:20am	Reading
Rosa	Feb. 9 <sup>th</sup> , 2023	10:20-10:50am	Recess

Rosa	Feb. 9 <sup>th</sup> , 2023	10:50am-11:08am	Continue Reading
Rosa	Feb. 9 <sup>th</sup> , 2023	11:08am -11:50am	Math
Rosa	Feb. 16 <sup>th</sup> , 2023	9:10am-10:00am	Word Work
	Feb. 16 <sup>th</sup> , 2023	10:00am-10:30am 10:45am-11:05am	Reading
Rosa	Feb. 16 <sup>th</sup> , 2023	13:48pm-14:10pm	Writing
Rosa	Feb. 23 <sup>rd</sup> , 2023	11:05am-11:50am	Math
Rosa	April 4 <sup>th</sup> , 2023	11:10am-11:50am	Math
Rosa	April 4 <sup>th</sup> , 2023	13:50pm-14:20pm	Writing
Rosa	April 4 <sup>th</sup> , 2023	14:25pm-14:45pm	Social Studies
Rosa	April 5 <sup>th</sup> , 2023	8:10am-8:50am	RTI
Rosa	April 5 <sup>th</sup> , 2023	9:10am-10:13am	Word Work
Rosa	April 5 <sup>th</sup> , 2023	10:13am-10:27am 10:45am-10:55am	Reading
Rosa	April 5 <sup>th</sup> , 2023	11:00am-11:57am	Math

## Appendix D: Initial Coding Schema

Research Question	Stage 1 coding based on Constructivism & Social constructivism & Culturally Responsive Teaching.
<p>1(1) What are elementary teachers' beliefs and perceived practice in student-centered teaching?</p> <p>2 (1) How do elementary teachers actually implement student-centered teaching in their classrooms?</p>	<ul style="list-style-type: none"> <li>● <b>Knowledge</b> 1.Related to real-life; 2. Reflects students' interests and needs; 3. Reflects individual differences and interests; 4. Develops from lower level to higher-level thinking; 5. Diversity and Equity (diverse learners' prior knowledge as important assets for teaching)</li> <li>● <b>Teachers' Role</b> <b>1.Lesson plan: Flexibility</b> (Creates flexible lesson plan); <b>Teaching materials</b> (Teaching materials are based on students' prior knowledge and real-life relatedness); <b>Current learning level</b> (Identifies students' current knowledge before instruction); <b>Thinking Level</b> (Reflects higher-level thinking: analysis questions; synthesis questions; evaluation questions); <b>Individual differences</b> (interests, needs, backgrounds); <b>Diversity and Equity</b> (High expectations for all learners; the curriculum reflects all learners' racial, socioeconomic and linguistic backgrounds); <b>2.Learning Environment: Classroom Organization</b>(Arranges the classroom to accommodate discussion and interactions among teacher and students, students and students); <b>Diversity and Equity</b> (Ensures bulletin boards, displays, instructional materials, and other visuals in the classroom reflect the racial, ethnic, and cultural backgrounds represented by students; Displays and uses materials (supplemental books) that reflect all students' racial, ethnic, and cultural backgrounds year round; Displays products and props from students' home and community background); <b>3.Instruction: Meaning Discovery</b> (Provide opportunities for students to pose questions; Provide opportunities for students to determine what to learn; Provide opportunities for students to construct their own meaning and knowledge;); <b>Activities</b> (Provide opportunities for students to do hands on activities; Give students time and space when they're doing activities); <b>Interaction</b>(Provide opportunities for students to interact with teachers; Provide opportunities for students to do group work and cooperate with each other); <b>Development</b> (Provide scaffolding at the right time and right level for all learners); <b>Feedbacks for students</b>(Confer with students to provide feedback to improve performance; Provide opportunities for students to use peer reviews; Provide written feedback that allows students to revise and improve their work ); <b>Feedbacks from students</b> (Asks students for feedback on the effectiveness of instruction); <b>Diversity and Equity</b> (Asks higher-order questions equitably of all students; Acknowledge all students' comments, responses, questions, and contributions; Uses multiple approaches to consistently monitor students' understanding of instruction, directions, procedures, processes, questions, and content; Learns, uses, and displays some words in students' heritage</li> </ul>

	<p>language; Uses probing and clarifying techniques to assist students to answer); <b>4.Assessment: Rubric</b> (Create the rubrics with students); <b>Self-assessment</b> (Provide opportunities for students to assess themselves); <b>Multiple assessments</b> (Use both formative and summative assessment methods); <b>Assessment and Teaching</b> (Assessment as important source for teaching); <b>Diversity and Equity</b> (the assessment reflects all learners’ racial, socioeconomic and linguistic backgrounds);</p> <ul style="list-style-type: none"> <li>● <b>Learners’ Role</b></li> </ul> <p><b>What</b> (make decision in what to learn); <b>How</b> (make decision in how to learn); <b>When</b> (make decision in when to learn); <b>Where</b> (make decision in where to learn);</p> <ul style="list-style-type: none"> <li>● <b>Learning Relationship Between Teachers and Students</b></li> </ul> <p>Teachers and students share the front; Teachers are at the front; Students are at the front; <b>Diversity and Equity</b> (the influence of teacher and student racial gaps on teachers’ teaching );</p>
<b>Research Question</b>	<b>Stage 2 coding based on Critical Race Theory &amp; Theory of Critical Reflections for Transformative Teaching</b>
<p>1(2) What are the differences, if any, between their perceived SCT for diverse learners and non-diverse learners?</p> <p>2(2) What are the differences, if any, between their SCT practice for diverse learners and non-diverse learners?</p>	<p style="text-align: center;"><b>Critical Race Theory</b></p> <p><b>Color blindness:</b> avoid and reject their own and their students’ racialized experience in decision making; race is irrelevant to success of students. (Milner, 2016)</p> <p><b>Context-neutral mind-sets:</b> without a keen sense of how contextual, ecological, and environmental realities shape opportunities to learn; concentrating on learning subject matter and consider it unimportant to understand the complexities inherent in teaching that subject matter in different contexts, such as urban spaces. (Milner, 2016)</p> <p><b>Contextual teaching practice:</b> contextualized knowledge of culture, community, and identity of children and their families as the core of their student-centered teaching practice. (Milner, 2016)</p> <p><b>Denial of competence</b> are denied inter- and intrapersonal competence, segregated from the larger society, and labeled as socially or emotionally disturbed. (Milner, 2016)</p> <p><b>Deficit minded sets and low expectations:</b> focusing on what students do not have rather than on the assets students bring into the learning environment; having a narrow view of what it means to be normal or successful; providing unchallenging learning opportunities for diverse learners. (Milner, 2016)</p> <p><b>Conceptions of socioeconomic status matter:</b> students are rewarded by their ability, performance, effort; systematic and institutional structures are not considered; individual achievement is seen as an independent variable. (Milner, 2016)</p>

**Interest Convergence:** According to Bell (2004), the principle of interest convergence has two parts. First, “the interest of Blacks in achieving racial equality will be accommodated only when that interest converges with the interests of Whites in policy-making positions” (p. 69). Second, a racial remedy will be “abrogated at the point that policymakers fear the remedial policy is threatening the superior societal status of Whites” (p. 69).

**Macroaggressions:** highlight how systemic racism impacts educational outcomes. Examples include unequal school funding, tracking and ability grouping, discipline disparities, curriculum bias, standardized testing bias, and underrepresentation of teachers of color.

**Microaggressions:** as viewed through the lens of Critical Race Theory (CRT), are subtle and often unintentional acts, comments, or behaviors that convey negative or derogatory messages about an individual based on their race or ethnicity. For example, making assumptions about someone’s cultural background or intelligence due to their appearance or accent can be a form of microaggression.

**Whiteness as property:** included school’s policies and practices served to regulate the cultural expressions of black students, thereby reifying the value of whiteness; the conflict over curriculum changes as a battle about values or ideology. (Dixsan & Anderson, 2018)

**Work with the community:** shared knowledge and shared commitment to social and educational equity

### **Theory of Critical Reflections for Transformative Teaching**

**Assumption analysis:** Teachers endeavor to recognize the underlying assumptions about education and society that form the basis of their and others’ ideas, beliefs, values, and actions—assumptions often taken for granted. They then evaluate the accuracy and validity of these assumptions in light of real-life experiences.

**Contextual Awareness:** Teachers acknowledge that their assumptions are shaped by both social and personal factors within a particular historical and cultural context. They recognize that their perceptions of suitable workplace organization, interactions with close associates, and political engagement are influenced by the culture and era in which they exist.

**Imaginative speculation:** Teachers engage in an exploration of alternative approaches to existing modes of thought and lifestyles, offering opportunities to question prevailing knowledge paradigms. This realization empowers them to replace outdated, illogical, or oppressive societal structures with more contemporary, logical, or

equitable alternatives. Such a process can be simultaneously liberating and challenging, as it challenges the status quo while opening doors to new possibilities.

**Reflective Skepticism:** teachers doubt the claims made for the universal truth of SCT; question the notion that an idea of stoical structure's longevity implies its correctness. Teachers realize the deficiencies of their current SCT practice and explore better solutions.

**Reflection-based actions:** based on previous steps of reflection on their SCT beliefs and practices, they take actions to change or improve their SCT practice.

**Reflection on Reflection-based Action:** The analysis the effect of their reflection-based actions on their SCT. They make further decision on how they can change or improve their SCT.



### Appendix E: Observation Protocol

Length of Activity:90minutes					
		Time	Diverse Learners	Non-Diverse Learners	Reflective notes
<b>Learning environment</b>	The decoration of the classroom The organization of the classroom				
<b>Teaching Goal</b>	Content				
<b>Teacher</b>	Welcome every student				
	Eye contact				
	Body language, gestures, and expressions				
	Materials to support teaching (graphics, videos...)				
	Connection to prior knowledge				
	Connection to real-life experience				
	Instruction Language				
	Lecture Presentation				
	Question Strategies				
	Teaching Activities				
	Grouping Strategies				
	Scaffolding Strategies				
	Clarifying Strategies				
	Interaction with students				
	Feedback for students				
Assessment for students					
<b>Learners</b>	Response to teacher				
	Eye contact				
	Body language, gestures, and expressions				
	Reaction to prior knowledge				
	Reaction to teacher's lecture				
	Reaction to teachers' questions				
	Performance in learning activities				
	Performance in assessment				

	Interaction with peers				
	Feedback for teachers				
	Feedback for peers				
	Evaluating themselves				

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## Curriculum Vitae

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### EDUCATION BACKGROUND

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### PEER-REVIEWED PRESENTATIONS

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Ping, L., Vongkulluksn, V., Liu, K (2024) Student-Centered Teaching Across OECD Countries: An Ecological Perspective Investigation of Country-, School-, Classroom-, and Teacher-Level Factors. Accepted to present at the 2024 American Educational Research Association (AERA) Annual Meeting, Philadelphia, Pennsylvania, PA, 2024.

Vongkulluksn, V., Ping, L., Hilpert, J., Lu, L (2024) Examining Situational- and Person-Specific Nature of Undergraduate Students' Self-Efficacy and Academic Burden. Accepted to present at the 2024 American Educational Research Association (AERA) Annual Meeting, Philadelphia, Pennsylvania, PA, 2024.

Ping, L., Vongkulluksn, V., Liu, K (2022) Student-centered Teaching across countries: an ecological perspective of teacher efficacy, classroom characteristics, and teaching practice. Presented at the 2022 American Psychological Association (APA) Annual Meeting, Minneapolis, MN, 2022

Ping, L., Liu, K (2022) Chinese teachers' perspectives and practices of student-centered teaching: a Case Study in Enshi, Hubei Province. Accepted to present at the 2022 American Educational Research Association (AERA) Annual Meeting, San Diego, CA, 2022.

Liu, K., Miller, R., Pollard-Durodola, S., & Ping, L. (2022) Racism and critical resilience: counternarrative of Asian international college students in the age of Covid19. Accepted to present at the 2022 American Educational Research Association (AERA) Annual Meeting, San Diego, CA, 2022.

Ping, L., Liu, K., Zhong, Z. (2021) Chinese teachers' implementation of learner

centered teaching: a Case Study in Enshi, Hubei Province. Presented at the Global Conference on Education and Research, Online, 2021.

Ping, L. (2021) Chinese teachers' perspectives of learner-centered teaching: A Case Study in Enshi, Hubei Province. Presented at Association for Teacher Education (ATE) International Conferences, Online, 2021.

Ping, L. (2020) A meta-analysis of media literacy interventions on young adults. Presented at the 23rd American Association of Behavioral and Social Sciences, Las Vegas, NV, 2020.

Zhong, Z., Liu, K., Miller, R., Ping., L., (2019) Rethinking the Learner: Learner-centered pedagogy from a Chinese perspective. Presented at Association for Teacher Education (ATE) International Conferences, Atlanta, GA, 2019.

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### **PEER-REVIEWED PUBLICATIONS**

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Ping, L., & Liu, K. (2020). Using the technology acceptance model to analyze K-12 students' behavioral intention to use augmented reality in learning. *Texas Education Review*, 8(2), 37-51.

Liu, K., Miller, R., Pollard-Durodola, S. D., & Ping, L. (2022). Racism and Resilience: Counter-Narratives of Asian International College Students in the Age of COVID-19. *The Qualitative Report*, 27(2), 2077-3009.

Ping, L., Vongkulluksn, V., & Liu, K. (Under Review). An international perspective on student-centered teaching: teacher efficacy, classroom characteristics, and teaching practice. *Learning and Instruction Differences*.

Ping, L., Liu, K., Liu, C. (Under Review). Chinese teachers' perceptions and practice of student-centered teaching: A Multiple-Case Study in R Prefecture in China. *Asia Pacific Education Review*.

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### **FELLOWSHIPS, HONORS & AWARDS**

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- Summer Doctoral Fellowship Program (2023): \$7500
- Summer Doctoral Fellowship Program (2022): \$7000
- Teaching and Learning Graduate Assistantship (2022-2023): Graduate Assistantship
- Summer Doctoral Fellowship Program (2021): \$7000
- COE Research Development Grant (2021-2022): Graduate Assistantship
- CRRSAA Research Funds (2021): Summer Graduate Assistantship
- Patricia Sastaunik Scholarship (2022): \$2500
- Patricia Sastaunik Scholarship (2021): \$2500
- UNLV Access Grant (2021): \$2000
- Department of Teaching and Learning Department Travel Grant (2021): \$350
- College of Education Summer Research Fellowship (2020): \$6100
- Graduate Assistant Training Grant at UNLV (2020): \$500
- Teaching and Learning Graduate Assistantship (2020-2021): Graduate Assistantship

- UNLV Access Grant (2020): \$2000
- UNLV Access Grant (2019): \$2000
- Department of Teaching and Learning Department Travel Grant (2019): \$350
- Teaching and Learning Graduate Assistantship (2019-2020): Graduate Assistantship
- Department of Teaching and Learning Recruitment Funds (2018): \$3000
- Teaching and Learning Graduate Assistantship (2018-2-19): Graduate Assistantship
- Top Three Scholarship in Hubei University of Chinese Medicine (2012, Spring): RMB300
- Top Three Scholarship in Hubei University of Chinese Medicine (2011, Spring): RMB300
- Top Three Scholarship in Hubei University of Chinese Medicine (2011, Fall): RMB300
- Excellent Merit Student in Hubei University of Chinese Medicine (2010)
- First-Tier Scholarship in Hubei University of Chinese Medicine (2010 Fall): RMB600
- Second-Tier Scholarship in Hubei University of Chinese Medicine (2010, Spring): RMB500
- Second-Tier Scholarship in Hubei University of Chinese Medicine (2009, Fall): RMB500