RESEARCH

Understanding preservice special education teachers' culturally responsive self-efficacy: A mixed methods study

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Abstract

There have been increases in the culturally and linguistically diverse (CLD) student population over the last two decades; however, these changes have not been realized in the diversification of educators in the field. This sequential explanatory mixed methods study examined preservice special education teachers' (N = 54) culturally responsive self-efficacy beliefs and the factors and experiences that influenced their self-efficacy through semi-structured interviews (n = 8). This study sought to extend the work of Siwatu (2011a) by administering the culturally responsive teaching self-efficacy (CRTSE) scale and modifying it to include the language of disability (Chu & Garcia, 2014). Results indicate special education preservice teachers have moderately high CRTSE for teaching CLD learners with disabilities. Differences and commonalities between high and low self-efficacy groups are discussed.

Keywords: preservice teachers, special education, culturally responsive, culturally and linguistically diverse, self-efficacy, teacher education programs, mixed methods

Increasing cultural diversity in our nation's schools has highlighted the need to prepare teacher candidates to work with culturally and linguistically diverse (CLD) learners. Hussar and Bailey (2020) project that by 2028, the percentage of White students will decrease an additional 7% while populations will continue to increase for students who are Black (1%), Hispanic (8%), Asian/Pacific Islanders (20%), and those from two or more racial/ethnic groups (51%).

Although the racial and ethnic composition of our nation and our schools are changing, teacher demographics have not kept pace. In 1988, 87% of the teaching workforce was White; three decades later, 82% percent of teachers in our schools are White, with 18% being from CLD backgrounds (U.S. DOE, 2016). Preservice and inservice teachers continue to be predominantly White females from suburban or rural settings who may have

little knowledge of learners with CLD backgrounds (Imler, 2009; Kahn et al., 2014; Taylor, 2010; Trent et al., 2008).

DeCastro-Ambrosetti and Cho (2011) posit that educators bring their values and experiences into the classroom. If a preservice teacher lacks cultural awareness and if their values and experiences differ from their learners, there is a probability for cultural dissonance (e.g., Kahn et al., 2014;), which can lead to inconsistent experiences for CLD learners. For this reason, including culturally responsive pedagogy (CRP) as part of the core curriculum in teacher education programs (TEPs) is fundamental for all preservice teachers. CRP provides a framework for teachers to understand and acknowledge their cultural backgrounds and those of their students and families. Irvine (2012) asserts that CRP should be fundamental to the curriculum for all educators, and Gay (1995) posits that no teacher candidate should graduate from a TEP without understanding the impact that culture has on teaching and learning.

A growing body of research has found that when teachers employ culturally responsive pedagogies, students have higher levels of engagement, improved academic performance, and better relationships with teachers (i.e., Allen et al., 2017; Brown-Jeffy & Cooper, 2011; Cruz et al., 2020; Ladson-Billings, 2014). Conversely, when educators lack cultural competence and are unfamiliar with linguistic needs outside of the dominant language or culture this may unintentionally influence their educational decision-making and potentially lead to special education referrals of CLD learners. Learners from CLD backgrounds are disproportionality represented in special education and this referral may have been avoidable if educators understood the differences between disability and cultural and linguistic differences (Skiba et al., 2008; Taylor, 2010).

Some TEPs have transformed their courses and programs to prepare preservice teachers to use evidence-based practices with CLD learners (Scott et al., 2014). Others have enhanced dialogue around curriculum, field experiences, research methodology, pedagogy, and assessments (Irvine, 2012). Few have equipped teacher candidates with transformative pedagogies that move beyond surface-level celebrations and cultural symbols (Brown-Jeffy & Cooper, 2011). Additionally, recent literature reviews on special education TEPs and their inclusion of CRP (Author, 2021; Trent et al., 2008) indicate that programs that have redesigned their curriculums to include cultural competencies seldom include any outcome data to understand if their changes have resulted in better preparing preservice special educators for the CLD learners that they will instruct. Evaluation measures are needed to understand the factors influencing teachers' capacity to include CRP in their professional practice (Cruz et al., 2020). One possibility is for TEPs to explore using self-efficacy measures to determine how teacher candidates perceive their ability to teach learners with disabilities from CLD backgrounds.

Over the last forty years, educators have examined teachers' beliefs about their abilities to teach effectively. Bandura (1977) posits that teacher efficacy beliefs are causal and that specific behaviors will produce certain outcomes. Teacher self-efficacy is a teacher's belief in their ability to influence student learning and achievement. Teacher self-efficacy in culturally responsive practices focused on the role of culture and ethnicity in teaching and learning (Chu & Garcia, 2014). A student's cultural and linguistic identity is integral to learning, and it is crucial to determine whether teacher candidates are equipped for this responsibility. As TEPs continue to put effort into preparing culturally responsive teachers, it is necessary to understand if preservice teachers are efficacious in their ability to employ CRP (Siwatu, 2007).

Purpose of the Study

Siwatu (2007) developed an instrument called the culturally responsive teaching self-efficacy (CRTSE) scale to assess the culturally responsive self-efficacy of teachers. This scale has been used by various researchers (e.g., Chu & Garcia, 2014; Cruz et al., 2020; Malo-Juvera et al., 2018; Siwatu, 2007, 2011) either in its entirety or by modifying the scale or number of items included to study. Siwatu (2007) developed the CRTSE scale based on culturally responsive teaching competencies and utilized Bandura's (1977) self-efficacy construct. The purpose of the CRTSE scale was to glean information from preservice

teachers to understand their efficacy better as it relates to specific culturally responsive teaching practices. The scale consisted of 40 Likert-type questions where participants rated their perceived confidence level to be culturally responsive in their future classrooms. A higher total score equated to higher self-efficacy. Chu and Garcia (2014) adapted the original CRTSE scale by reducing the number of items on the survey and including language around disability for each question. Internal consistency reliability was measured using Cronbach's Alpha and met the minimum criteria of .70 (Chu & Garcia, 2014). Researchers administered the survey to inservice special education teachers teaching for less than a year and up to 15 years. As part of their work, Chu and Garcia (2014) also sought to understand collective self-efficacy versus individual self-efficacy scores.

We replicated and extended previous studies on the CRTSE scale (Siwatu, 2007; & Chu and Garcia, 2014) within the context of a large special education teacher preparation program in the Midwest. The university graduates approximately 150 undergraduate special educators each year and is considered one of the largest producers of special education teachers in the country. To expand the body of literature, we conducted a mixed methods study to explore the overall CRTSE of preservice special educators (quantitative) as well as the factors and experiences (mixed) that preservice special educators attribute to their CRTSE self-efficacy. To date, this is the first mixed methods CRTSE study that focuses solely on preservice special educators and understanding why they rank themselves the way they do regarding their culturally responsive teaching self-efficacy of learners with disabilities.

The objective of this mixed methods study was to understand the culturally responsive teaching self-efficacy beliefs of special education preservice teachers. To accomplish this, we administered an adapted CRTSE to preservice special educators, including language-encompassing disabilities. We also identified the types of experiences (coursework or personal) through semi-structured interviews that preservice teachers have encountered (or lack thereof) during their teacher preparation program and how those experiences have influenced their culturally responsive self-efficacy beliefs.

We addressed the following research questions:

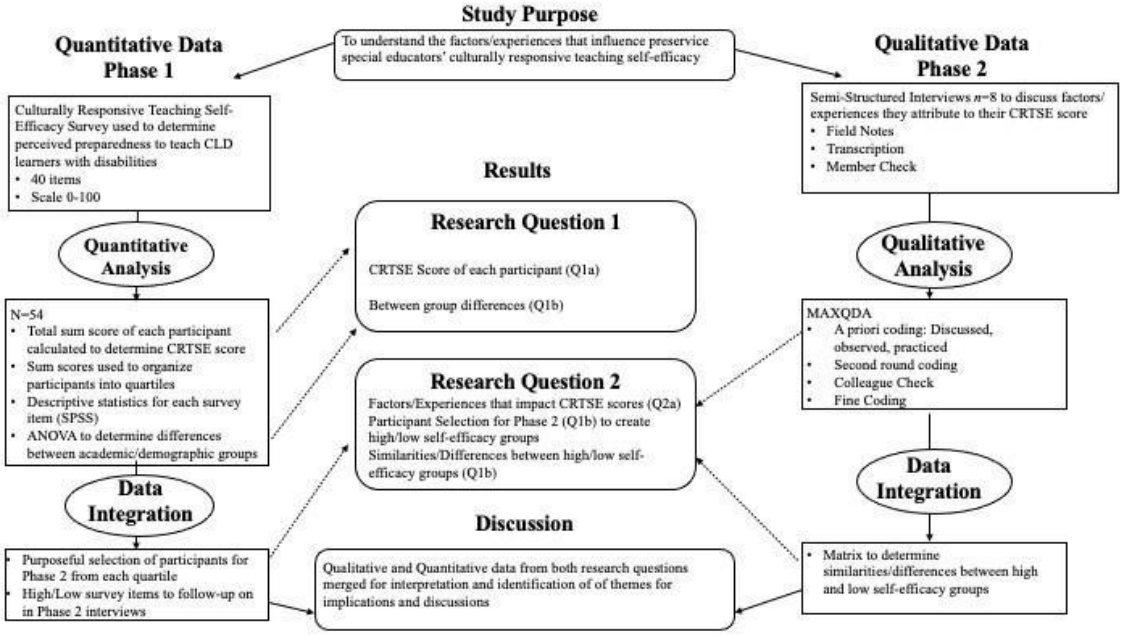
1. What are preservice special educators' culturally responsive self-efficacy beliefs? To what extent do these beliefs differ based on academic and/or demographic backgrounds?
2. What factors and/or experiences do preservice special educators describe as impacting their CRT self-efficacy? (b) How do these factors and/or experiences differ among those with high/low CRT self-efficacy scores?

Method

We utilized a mixed methods design (Tashakkori & Teddlie, 2003) which is a procedure for collecting, analyzing, and integrating or "mixing" the characteristics of qualitative and quantitative data analysis at specified points throughout the research process. Mixed methods typologies draw from the strengths of quantitative and qualitative paradigms, which are intended to reduce the weaknesses attributed to both (Johnson & Onwuegbuzie, 2004). The purpose of this two-phase, sequential mixed methods study was to obtain statistical, quantitative results from special education preservice teachers on their culturally responsive teaching self-efficacy beliefs and to determine if there was a relationship between academic and/or demographic factors that influenced the self-efficacy beliefs of preservice special educators enrolled in clinical experiences.

In the second phase, we used the qualitative interviews to explore the factors and/or experiences that preservice teachers attribute as impacting their CRT self-efficacy and then follow up with two participants from each quartile to gain perspective on the factors and experiences of those who scored at the low, low-middle, high-middle, and high ranges of the CRTSE survey. See Figure 1 for a visual of the implementation and integration process.

Figure 1



Priority and Data Integration

We utilized a pragmatic framework (Johnson & Onwuegbuzie, 2004) which is often associated with mixed methods research because it allows researchers to engage in a plurality of methods best suited to answering their research questions (Creswell & Plano Clark, 2011; Johnson & Onwuegbuzie, 2004). To investigate the self-efficacy of CRTSE, the research team drew from a synthesis of conceptual and theoretical frameworks, including social learning theory (Bandura, 1977) and tenets of seminal CRP frameworks that influenced both the design and interpretation of both phases. These constructs integrated quantitative data collection to gain logical, reliable, objective, and replicable data, which informed the selection of participants for qualitative interviews. The qualitative interviews were framed in sociopolitical constructs, CRP frameworks, and constructivism to understand individual perspectives of special education preservice teachers and the experiences and factors that they attributed to their overall CRTSE. Figure 1 illustrates how research designs were integrated to answer the research questions.

The priority of paradigms in a sequential explanatory design is typically given to the quantitative strand since it is administered first (Creswell, 2003, p. 215). However, there is a variant of the sequential explanatory method known as the participant-selection variant (Creswell & Plano Clark, 2011, p. 86). This approach connected the two phases by using the quantitative results of the CRTSE survey to shape the qualitative sampling and data collection for follow-up interviews, where we examined the factors and experiences that participants described as having influenced their CRTSE scores. Greene (2007) stated that integrating paradigms is the most critical decision when designing a mixed methods study. The first opportunity for integration occurred during the analysis of the quantitative CRTSE survey data, which was divided into quartiles based on sum scores of each participant. The first author selected two participants from each quartile and conducted semi-structured interviews, which provided a deeper understanding of the phenomenon that would not be possible with either method in isolation (Creswell, 2008).

Another opportunity for integration occurred when calculating the mean score for each of the survey items during qualitative analysis. The first author coded and analyzed the responses to the five highest and lowest survey items to understand similarities and differences in their responses. Quantitative and qualitative results were integrated into a matrix to compare results within and across low and high self-efficacy groups.

Participants

A total of 54 preservice teachers participated in Phase 1 of the study. Recruitment efforts focused on teacher candidates from one of three special education programs: Deaf and Hard of Hearing (DHH), Learning and Behavior Specialist (LBS1), and Low Vision Blindness (LVB) who were also enrolled in a clinical experience. The first author explained the purpose of the study to students across all strands and invited them to participate. A link to an electronic survey was then shared with 130 students, which resulted in a 41% response rate. Participant demographic information can be found in Table 1.

Table 1

Summary of Academic and Demographic Background Data

Variable	Phase 1 Participants N=54	%
Race		
White	41	76
Black	2	4
Asian	1	2
Hispanic/Latino	10	18
I'd rather not disclose	0	
Gender		
Female	48	89
Male	4	7
I'd rather not disclose	2	4
Academic Level		
Practicum	7	13
Field-based	20	37
Student Teaching	26	48
Did not answer	1	2
Sequence		
Deaf and Hard of Hearing	5	9
Learning Behavior Specialist	48	89
Low Vision and Blindness	1	2
English Language Endorsement		
No	46	85
Yes	8	15
Urban Redesigned Courses Taken		
0	9	17
1-2	32	59
3 or more	13	24

Nineteen participants from Phase 1 agreed to be contacted for Phase 2. Researchers compiled survey scores into a total score and then ranked them into quartiles. To determine which of the eight participants were selected from the 19 who consented, researchers looked at individuals from different program sequences

and demographic characteristics. This purposeful selection of participants allowed for comparing high and low self-efficacy responses to determine any similarities or differences in their responses. Participants in Phase 2 were majority female (*n*=7) and White (*n*=5). The sample also included participants who identified as LatinX (*n*=2) and Asian (*n*=1). Most participants were enrolled in their student teaching semester (*n*=5). Seven participants were from the LBS1 program sequence, and one was in the DHH sequence. We contacted participants to confirm their willingness to participate and conducted interviews via teleconferencing software.

Survey Instrument

Section one of the survey consisted of demographic questions regarding the participants' background, academic level, credential program (LBS1, DHH, or LVB) within special education, and specialized coursework that would lead toward an English Language Endorsement or courses that focused on teaching in urban environments. Quantitative data was collected using a modified version of Siwatu's (2007) CRTSE survey. Previous studies utilizing the CRTSE survey instrument have reported reliability with ranges from 0.94 to 0.96 (Siwatu, 2007, 2011) and the Chu & Garcia (2014) adapted survey reported reliability of .95. The survey comprised 40 Likert-type items. Participants were asked to rate their confidence level for engaging in culturally responsive teaching behaviors by indicating their comfort level on a scale of 0-100. This scale is designed to develop a confidence rating from 0 (no confidence at all) to 100 (completely confident). Chu and Garcia (2014) included the language of disability within each survey item (e.g., the original item, "assess student learning using various types of assessments" was modified to "use various types of assessments that are matched to English language learners' language proficiency and special needs"). Participants' scores were summed and divided by 40 to generate a total score ranging from 0-100. Participants with higher scores on the survey are more confident in their ability to implement CRT than those with lower scores.

Procedure

Before participant recruitment in Phase 1, approval was sought and given by the university-based institutional review board. All participants were over the age of 18 and had informed consent. A Qualtrics survey link was shared with 130 students and remained open for one month. At the close of the survey, a random generator was used to select a participant for a gift card incentive. Fifty-four students completed the survey, and 29 participants consented to be included in the raffle and listed their email addresses.

At the start of Phase 2, an email with a link to join a teleconference was sent to each participant, along with their numerical responses to the survey, to use as a reference during the interview. Researchers read a script asking participants for their consent to record the interview and informed them they could turn off their cameras or end the interview at any point.

A script was used to ensure all participants were given the same information. Questions were semi-structured and open-ended, which allowed the participant to elaborate on their experiences. Each participant was asked to open the document sent to them with their survey responses. The interviewer also had a printed copy of their rankings to write down anecdotal information as participants responded to questions. The same a priori deductive codes of discussed, observed, and practiced that were used by Siwatu (2011) were also decided upon before we began interviewing participants. During the interview, responses were color-coded if the participant mentioned that they had discussed the item in coursework, observed in practice, or practiced in a class or during their clinical experiences.

Merriam and Tisdell (2016, p.196) speak to the importance of analyzing data at a rudimentary level during data collection; therefore, detailed notes were also collected as participants responded to questions. Bogdan and Biklen (2011) offered suggestions for analyzing data as they are being collected, including taking field notes and writing memos about what is being learned. Researchers reviewed field notes immediately after the interview and emailed transcriptions to the participant as a member check for accuracy.

Analysis and Results

Due to the sequential and integrative process of this

mixed methods study, analysis and results for each phase will be presented to illustrate how the analysis and results from Phase 1 of the study inform the purposeful selection of interview participants for Phase 2.

Analysis for Phase 1

Survey responses were exported from Qualtrics to the Statistical Package for Social Sciences (SPSS), a statistical software program for analyzing quantitative data. The sum scores of each participant were computed to generate a total score. Total scores could range from 0 to 4000. Participants with higher scores on the CRTSE scale were identified as having higher competence than those with lower scores. Sum scores were then converted into a strengths-index score, the total score divided by the number of survey items. For example, if a participant had an overall sum score of 3495 on the CRTSE scale, it was divided by 40, resulting in a strength index score of 87.38. Strength index scores are similar to standard scores and could range from 0-100. Having a score out of 100

Table 2

Descriptive Statistics for Each Survey Item

Measure	*M*	*MD*	*SD*	Range
CRTSE 1	74.29	74.00	13.77	40-100
CRTSE 2*	68.70	70.00	18.59	20-100
CRTSE 3	81.33	83.50	15.48	40-100
CRTSE 4	78.57	80.00	14.54	45-100
CRTSE 5	78.13	81.00	15.79	30-100
CRTSE 6*	72.09	72.00	19.42	22-100
CRTSE 7	76.44	79.50	17.61	40-100
CRTSE 8	81.59	85.50	17.94	21-100
CRTSE 9	84.00	85.50	14.98	38-100
CRTSE 10	76.44	80.00	19.75	10-100
CRTSE 11	79.79	80.50	15.69	10-100
CRTSE 12*	72.35	75.00	19.52	8-100
CRTSE 13	75.83	79.50	16.69	25-100
CRTSE 14**	93.12	97.50	8.68	68-100
CRTSE 15*	72.42	79.50	20.64	3-100
CRTSE 16	82.09	82.00	15.60	29-100
CRTSE 17	84.98	89.00	16.73	10-100
CRTSE 18	87.98	91.00	15.46	32-100
CRTSE 19**	90.98	97.00	12.50	53-100
CRTSE 20	87.29	91.50	15.78	34-100
CRTSE 21	86.51	91.00	15.41	44-100
CRTSE 22**	93.03	97.00	9.92	53-100
CRTSE 23	87.72	92.00	14.37	32-100
CRTSE 24	86.33	90.00	14.31	40-100
CRTSE 25	86.96	92.00	15.46	36-100
CRTSE 26	78.22	85.50	23.65	9-100
CRTSE 27	76.87	90.00	26.94	2-100
CRTSE 28	86.70	90.50	15.21	41-100
CRTSE 29	76.09	87.50	27.95	5-100
CRTSE 30	90.09	91.50	10.89	48-100
CRTSE 31	81.81	85.50	18.09	21-100
CRTSE 32	82.33	86.00	17.89	17-100
CRTSE 33*	73.03	77.00	24.24	17-100
CRTSE 34**	94.09	97.00	8.20	62.00
CRTSE 35	87.35	92.00	14.22	44-100
CRTSE 36	85.94	86.50	13.13	47-100
CRTSE 37**	92.62	93.50	8.22	62-100
CRTSE 38	84.53	90.00	17.02	30-100
CRTSE 39	86.40	89.00	13.68	46-100
CRTSE 40	86.20	90.00	16.13	13-100

Note. *five lowest mean scores; ** five highest mean scores

Results for Phase 1

was a quantitative indicator of the strength of each participant's overall CRTSE score and beliefs. The sum scores were used to order participants numerically from lowest to highest scores to find the median (Mdn = 3,387) and then were separated into quartiles based on their overall scores. Scores ranged from 1,997-4,000, and individual quartile (Q) scores were as follows: Q1 consisted of CRTSE scores from 1,997-3137, Q2 was 3,199-3.387, Q3 was 3,400-3,551, and Q4 was 3,569-4,000.

Data were analyzed in SPSS using non-parametric

tests to examine if there were any statistical differences between the independent variables of academic levels, race/ethnicity, course sequence, or the number of urban-focused courses that a participant took. Our first phase examined each participant's item-specific means and overall CRTSE score to determine the areas in which preservice special educators felt prepared and less prepared to deliver CRT to learners with disabilities. Item-specific-mean scores are displayed in Table 2. The overall CRTSE mean score for all participants was 82.53, with a *SD* of 11.08. Most participants (n=28) had an overall CRTSE range of 80-89.99.

Similarly, to other CRTSE studies (Chu & Garcia, 2014; Siwatu, 2007), participants ranked themselves highest on indicators related to building relationships and trust with their learners. The survey item that scored the highest included, "I can help students feel like important members of the classroom" (*M*=94.09, *SD*= 8.20), as well as helping learners build relationships. The competencies in which participants rated themselves lower were about incorporating native language into assessments, instruction, and intervention. The survey item with the lowest mean score, "I can design appropriate instruction matched to English language learners' language proficiency and special needs" (*M* = 68.70, *S D*= 18.59). See Table 3 for the indicators with the highest and lowest mean scores. Another focus of Phase 1 of the study was determining if demographic variables impacted overall participant CRTSE scores. The data did not meet the normality assumption therefore the Kruskal-Wallis test was used, as it does not assume normality. Results indicated that demographic variables did not significantly impact the independent variable of CRTSE scores.

Table 3

Survey Items with the Lowest and Highest Mean Scores

Item Number and Description	Rank	Overall *M* *N* = 54	*M* for Low CRTSE Group *n* = 4	*M* for High CRTSE Group *n* = 4
Low Self-Efficacy Survey Items				
2. **Design appropriate instruction** that is matched to English language learners' *language proficiency and special needs*.	40	68.70	56.75	78
6. **Use various types of assessments** that are matched to English language learners' *language proficiency of special needs.*	39	72.09	55.25	84.75
12**. Implement interventions** that *minimize the effects of cultural* mismatch between home and school.	38	72.35	65	83.25
15. Assist my students to be successful by *supporting the native language of my students with disabilities* who have limited English proficiency.	37	72.42	65	70.75
33. **Design a lesson** that shows how other cultural groups have made use of mathematics.	36	73.03	65.25	71.5
High Self-Efficacy Survey Items				
19. Help my students develop positive interactions	5	90.98	94	99.75

with each other.				
37. Use the *interests of my students* to make learning meaningful for them.	4	92.62	92	97.5
22. *Build a sense of trust* in my students.	3	93.03	93.5	100
14. Create a *caring, supportive, and warm learning environment* for my students from CLD backgrounds.	2	93.12	98.5	94.5
34. Help students *feel like important members* of the classroom.	1	94.09	85	96

Note.*Italicized phrases indicate language proficiency needs **Bolded phrases relate to pedagogical knowledge ** Italicized words in the high self-efficacy group relate to respect and rapport

Analysis for Phase 2

Data analysis for Phase 2, the qualitative phase, consisted of three distinct rounds of coding, a shorthand designation that captures the essence of data and allows for ease of retrieval (Merriam & Tisdell, 2016, p. 199). The first coding round took place during interviews and was both deductive and inductive. A priori codes of discussed, observed, or practiced were identified in Siwatu's (2011) study due to how these factors influence self-efficacy development (Bandura, 1977). Recorded interviews and transcripts were uploaded to MAXQDA, a qualitative data analysis software program. Researchers listened to transcripts multiple times, leading to a second coding round developed outside of the a priori codes. We evaluated the highest and lowest mean scores of survey items during this coding round to determine any differences between groups.

The research team met after each round of coding to confirm codes and began the third round of coding with a validity check, which resulted in developing additional codes, and a round of fine coding. After fine coding, a matrix was created to compile the responses for each section. The combined responses from participants across the first and second quartiles were synthesized, and the responses from participants in the third and fourth quartiles were also. This process generated a low (Q1/Q2) and high (Q3/Q4) self-efficacy group.

Results for Phase 2

In Phase 2, we sought to understand the differences between the responses of those with high/low CRTSE scores. The total number of items that were discussed, observed, or practiced are shown in Table 4. As indicated in the table, those in the high self-efficacy group offered more examples of survey items that were discussed and practiced in their special education program. Both high and lower self-efficacy groups reported similar opportunities to observe items in practice.

Table 4

Average Number of CRTSE Practices that were Discussed, Observed, Practiced

	Participants with low self-efficacy beliefs					Participants with high self-efficacy beliefs				
Variable	Piper	Travis	Ciana	Julie	Group Avg.	Callie	Kelly	Jillian	Amanda	Group Avg.
Number of CRTSE practices	17	2	22	23	16	22	15	38	35	27.5
Discussed										
Number of	11	1	13	7	8	4	1	6	20	7.75

CRTSE practices										
Observed										
Number of CRTSE practices	10	6	13	11	10	9	9	16	22	14
Practiced										

In addition to the a priori codes utilized during the interview process, additional codes were formed as a result of participant responses. Through analysis of interview transcription, four major themes emerged: (a) acquiring knowledge of CRT, (b) professor impact on CRT, (c) application and practice of CRT, and (d) experiences with CRT. Table 5 presents the themes and their subthemes and the differences among responses from the low and high self-efficacy groups.

Acquiring Knowledge of CRT

Participants from both high and low self-efficacy groups identified coursework as a primary source of their CRT knowledge. Within this theme, subthemes emerged as participants discussed the differences between courses taught in their special education programming at the foundations, methods level, and coursework taken in other departments. All eight participants mentioned how CRT was threaded throughout their coursework. One participant from the high self-efficacy group shared, “Honestly, every single class that I had that was a 300-level course very focused on culturally responsive teaching; it was at the center of everything we learned.” Table 5 identifies topics that participants attribute to their acquisition of CRT knowledge.

Professor Impact

Another theme identified throughout the interview analysis was professors' impact on their overall CRTSE. In coding the interview data, it was necessary to delineate the difference between a participant mentioning a professor’s name to identify the course they were discussing versus how a participant discussed how a professor delivered content that stood out to them and deemed as influential on their own CRT development. Within this theme, there were similarities across both high and low self-efficacy groups where they noted professors' passion for culturally responsive practices and personal connections with their students, see Table 5.

Application and Practice of CRT

A third theme established after analysis of interviews was related to the opportunity to apply CRT during clinical experiences. Participants in both high and low self-efficacy groups discussed their experiences of observing and learning from their cooperating teachers as they practiced CRT. Participants discussed the opportunities they engaged in where they felt they had opportunities to include CRT in their instruction. Both groups centered their examples on creating trusting relationships with their learners and creating warm, supportive learning environments. Those in the high self-efficacy group also discussed opportunities to communicate information related to Individualized Education Plans (IEP) with families as an opportunity that they were able to observe and participate in, which helped to increase their CRTSE. See Table 5 for differences amongst groups. Those in the low self-efficacy group spoke of having more opportunities to observe CRT practices at their clinical site (M = 8) than those in the high self-efficacy group (M= 7.75), however, those in the high self-efficacy group reported having more opportunities to practice CRT in their clinical sites (M = 14) versus those in the low self-efficacy group (M = 10).

Experiences with CRT

A recurring theme across participant interviews was personal experience attributed to their overall CRTSE. Across both self-efficacy groups, participants discussed personal growth throughout their teacher preparation program. Both groups spoke to their increased confidence in applying what they learned in coursework to their clinical settings. In addition to personal growth, participants were transparent about the areas where they felt they lacked experience. Those in the low self-efficacy group highlighted fewer examples of personal growth but identified more examples where they were not yet comfortable with their ability to implement CRT. Across both groups, participants indicated that they felt less efficacious in their ability to develop an IEP for learners from CLD backgrounds. They also shared that they felt unsure if it was appropriate to greet students in their native language as they have heard conflicting information on whether this is welcoming or presumptive. Communicating with students and families whose native language was not English was another area where participants from both groups felt they lacked exposure and experience. Table 5 highlights the personal growth and areas where they lacked experience for low and high self-efficacy groups.

Table 5

Low and High Self-Efficacy responses grouped by theme

Theme	Low Self-Efficacy Group	High Self-Efficacy Group
Acquiring Knowledge of CRT	Special Education courses at the foundational and methods level were threaded throughout the coursework. • Identity work/bias • Strengths-based language • Family Interviews • Trauma-informed instruction	All from Low self-efficacy group and: • How to critically examine curriculum for bias/single-story • Understanding various dialects and registers of language • Incorporate native language in literacy instruction
Professor Impact	• Shared Personal Experiences • Challenged Deeper Thinking/Connections • Professor's Passion on the Content Going out of their way to Share Resources	• Passionate about subject matter • Personal Connections • They were models of CRP • Available for Support & Clarification

Application & Practice with CRT	**Observing:**
	• Role of the cooperating teacher
	  • Families/Staff
	  • Modifying Materials
	Practicing:
	• Warm/inviting Learning Environments
		Observing:
		• Communication with families
		Practicing:
		• Relationship Building
		• Assessments to Inform Curricular Decisions
		• Differentiated Instruction/Assessment

Experiences with CRT	**Personal Growth:** • Strengths-based perspective **Lack of Experience:** • Have knowledge but have not had an opportunity to practice	**Personal Growth:** • Teacher Leader/Advocacy on CRT • Knows where to locate resources **Lack of Experience:**

- Native Language Use Assessments
- Developing IEPs for CLD learners

Native Language Use

Discussion

The current study represents the CRTSE beliefs of 54 special education preservice teachers from a TEP in the Midwest. This is the most extensive investigation of special education preservice teachers' culturally responsive teaching self-efficacy to date. One existing study (i.e., Cruz et al., 2020) included preservice special educators in their study; however, it is unknown how many participants were included. We examined special education preservice teachers' culturally responsive teaching self-efficacy and sought to understand the factors and experiences that impacted their ranking. Item-specific means were examined to determine targeted areas where preservice special educators felt most and least self-efficacious in their ability to implement culturally responsive teaching practices. Preservice teacher candidates had higher self-efficacy scores for indicators based on developing positive, supportive, and caring relationships with their CLD learners and making learning meaningful by incorporating learner interests. These results coincided with previous research that found that participants had higher self-efficacy on indicators that related to the classroom environment and showing student care (e.g., Chu & Garcia, 2014; Cruz et al., 2020; Siwatu, 2007, 2011).

Teacher care and establishing a supportive learning environment may be viewed as indicators requiring little skill (Siwatu, 2011); however, it is essential to note that teacher attitudes, beliefs, and perceptions play a significant role in becoming a culturally responsive educator. When teachers manifest affirming attitudes about their learners, the result is greater student achievement (Ladson-Billings, 1995). Villegas and Lucas (2002) also posit that teachers' attitudes regarding their learners significantly impact what students learn. While teacher care may be a less complex skill, it is encouraging that the data reflects that most participants surveyed have high self-efficacy regarding creating warm and welcoming learning environments for learners from CLD backgrounds. The highest survey indicators had a mean range of 90-94 out of a possible 100.

Preservice special educators felt less self-efficacious when designing and assessing instruction or implementing interventions aligned with the language proficiency needs of their CLD students with special education needs. Previous studies, one of which included special education preservice teachers, had similar findings (e.g., Chu & Garcia, 2014; Cruz et al., 2020; Siwatu, 2007, 2011). As teacher educators consider ways to target support for these complex skills, they may consider the curricular changes two programs made within their TEP to include more robust EL instruction. Pappamihiel et al. (2010) and Prater et al. (2008) combined their undergraduate and master's level special education programs to include additional EL coursework. This type of collaboration between disciplines can provide further understanding of the ways that disability and language proficiency needs may intersect versus viewing them as two separate entities with autonomous characteristics. Preservice teachers in one program (Prater et al., 2008) graduated with an EL minor. Neither of these programs used the CRTSE to evaluate self-efficacy, but they did use survey data that indicated positive outcomes. However, combining programs and earning a graduate degree may only be ideal for some TEPs and their students. Altering the current path to licensure by adding additional years of coursework may be a deterrent to some.

Acquisition of CRT

The acquisition of CRT knowledge through coursework was a significant theme identified during

participant interviews. Gay (1995) asserted that all graduates from TEPs should have a strong foundation in understanding culture's role in teaching and learning. Irvine (2012) and Moore et al. (2021) stated that culturally responsive pedagogy should be a foundational part of the curriculum for all educators. Many TEPs have included diversity courses; however, Hayes and Juarez (2012) advised TEPs to move beyond the one-stop diversity courses that covered CRT superficially and perpetuate implicit bias. Rueda and Stillman (2012) caution against teaching CRT in silos, where preservice teachers may think of culture as a fixed set of traits.

The participants, from both high and low self-efficacy groups, expressed how cultural competencies were thread throughout their coursework. Coursework experiences were broken into sub-themes, including foundational, methods, and clinical coursework. Results from the current study indicate that participants in Phase 2 identified their foundational level courses as having a significant impact on their overall CRP acquisition. To ensure that CRP is being integrated into foundations-level courses, teacher educators may consider conducting a syllabus review (Dykes et al., 2012) to ensure that CRP is introduced in early coursework experiences.

These results of CRT discussion across coursework differ from Siwatu (2011) as he noted a need for CRT instruction within methods courses according to the participants he interviewed. Siwatu (2011) asserted that by including CRT in methods courses, preservice teachers would have furthered their knowledge and development of their CRTSE. Results from the current study indicate that TEPs are moving beyond a one-stop-shop approach to diversity training (Hayes & Juarez, 2012), including discussion in foundations, methods, and clinical courses.

Professor Impact

A factor that candidates in both high and low self-efficacy groups discussed was their professors' overall impact on their CRT knowledge. They further discussed that it was not only the content that they taught but how their professors made them feel. Participants referenced many of the salient features of CRP frameworks that their professors embodied, such as viewing students from an asset-based perspective and examining their attitudes, beliefs, and perceptions. Participants shared how each of these factors impacted their understanding of CRT. Conversely, this contrasts findings from Siwatu (2011), where he examined participants' perceptions of their professor's qualifications and mentioned that participants noted missed opportunities for professors to expand their knowledge on CRT.

A participant from the lower self-efficacy group discussed how he had a professor who noticed he was complacent and, rather than allowing him to remain there, encouraged him to have a depth of thinking as it related to families and cultural competence. Having high expectations of students is one of the core tenets of CRP (Ladson-Billings, 1995).

A difference that emerged from the high self-efficacy group was how participants viewed their professors as co-contributors of knowledge construction. They did not feel like there were power constructs between the professor and students but instead viewed them as collaborators in learning. This aligns with the work of Villegas and Lucas (2002), where educators and students construct new knowledge together versus previous notions that students are empty vessels that educators pour knowledge. Participants identified several qualities as significant attributes of their professors, including how they shared personal experiences and provided additional resources that aligned with their interests. Additionally, they explained that professors with high impact were approachable and that they learned from observing them. Observing professors and seeing successful models of CRT in action reinforces Bandura's (1977) assertion that vicarious experiences are a source of information that develops self-efficacy. Participants in the high self-efficacy group indicate that the passion and knowledge of their professors have encouraged them to be that kind of teacher for their future students. These examples further evidence that when teachers manifest a positive and affirming attitude, it has shown an increase in student achievement (Ladson-Billings, 1995). Teacher educators may want to examine that they are not only including CRP in their

curriculum but also reflect on the seminal CRP frameworks (e.g., Ladson-Billings, 1995, 2014; Villegas & Lucas, 2002) to consider how they are exhibiting these qualities or if self-reflection illuminates gaps, consider ways to grow knowledge by reaching out to colleagues who hold expertise in that area (Pappamihiel et al., 2010; Prater et al., 2008).

CRT in Action

Moore and colleagues (2021) posit that novice educators lack opportunities to discern and celebrate cultural differences that are present in their classrooms. Nor do they understand how to affirm these differences through pedagogical decision-making. Participants in the low self-efficacy group spoke more about the influence of their cooperating teachers on their understanding of CRT than those in the high self-efficacy group. This is in contrast to Siwatu (2011), where participants in the high self-efficacy group had, on average, seven more mentions of the impact that observations during clinical experiences had on their overall CRTSE. In this study, participants observed that their cooperating teachers interacted positively with families and their educational team. Participants also indicated that they had the opportunity to observe how they navigated challenging topics and conversations. Learning to modify instruction was another critical factor influencing the CRTSE of those in the low self-efficacy group.

Participants from the high self-efficacy group discussed how their cooperating teachers communicated with families regarding upcoming IEP meetings. Perhaps those in the low self-efficacy group were influenced more by their cooperating teachers because these vicarious experiences allowed those with low self-efficacy to see a task successfully performed and then believe they could do it themselves (Bandura, 1977). Seeking out high-quality mentors for special education teacher candidates is an integral part of the process of including CRP in field experiences (Ellerbrock et al., 2016; Sleeter, 2008). Teacher educators may want to explore the process of selecting cooperating teachers who have had positive experiences teaching learners from CLD backgrounds to ensure they have strong models for their clinical students.

Regarding opportunities to practice CRT, participants shared their experiences of being in the classroom. Those in the high self-efficacy group discussed having more opportunities to practice CRT in their clinical settings than those in the low self-efficacy group. This aligns with Siwatu (2011), who also found that those with high self-efficacy identified more than three times the number of opportunities to practice CRT in their clinical settings than those in the low self-efficacy group. The responses from participants in the low self-efficacy group mentioned how they were able to practice building relationships with their learners and create a warm and supportive learning environment. This qualitative data aligns with the survey data as the indicators with the highest scores related to teacher care and supportive learning environments.

Participants from the high self-efficacy group discussed ways in which they were able to incorporate learner interest into the lessons they were teaching. All of the participants in the high self-efficacy group discussed sending home interest inventories or surveys that served as a source to understand the interests and backgrounds of their learners and use this for instructional purposes. Specifically, participants mentioned making curricular adaptations to include items familiar to the learners they work with and ways to differentiate assessments to meet learner needs. Having high self-efficacy in including learner interests into instruction aligns with the quantitative data, where indicators related to student interest were high (M = 92.62).

A more complex skill discussed was how participants differentiated assessments based on learner strengths and needs. In Phase 1 of the study, this was an indicator with the second-lowest mean score (M = 72.09), however those in the higher self-efficacy group had a higher mean score (M = 84.75) which indicated they were progressing towards some of the more challenging skills identified on the CRTSE survey. It could be that those with higher self-efficacy have had more opportunities to practice teaching CRT, as Bandura (1977) indicates that mastery experiences are the most influential factor in increased self-efficacy. These experiences also help preservice teachers evaluate their

effectiveness. One consideration that TEPs could make regarding field experiences is to create structured experiences at the beginning, middle, and end of their program (Ellerbrock et al., 2016; McCadden & Rose, 2008; Sleeter, 2008). Ellerbrock et al. (2016) assert that having structured clinical experiences with guided inquiry provides an opportunity for preservice teachers to build their cultural knowledge while being guided to engage in critical self-reflection that focuses on biases and assumptions.

Limitations

There are limitations within both phases of the study that should be considered before making generalizations regarding the outcomes of this study. The first limitation is the small number of CRTSE studies that include special education preservice teachers. Therefore, much of the comparative data comes from in-service or general education teachers. Another limitation of the study is the small sample of preservice teachers from the same special education teacher education program. Within Phase 1, the mean scores distributed within quartiles are close in range, which could be considered a limitation, as three-fourths of the participants had a mean score of 80 or above. This could indicate that preservice teachers may have an inflated sense of efficacy due to the level of support they receive from their cooperating teacher and entering into a learning environment that has already been established (Knobloch, 2006). Within Phase 2, It is also essential to consider that although participants were chosen for Phase 2 based on quartile rankings, the factors and experience shared by these participants may not represent those not interviewed. Additionally, the quantitative and qualitative results are based on participant perceptions which may be limiting as it does not consider other sources to corroborate.

Future Directions

There are several recommendations for practice and future research. Including the current study, three CRTSE studies to date include special education participants as part of the population; it would benefit the field to continue this investigation to determine if preservice special educators are more self-efficacious in teaching CLD learners. Future researchers may want to consider expanding this study beyond one special education program and include participants from several universities to see if the results are similar. Additionally, some demographic groups were too small to be compared. It will be meaningful to determine if demographic and academic factors correlate to higher CRTSE when there is a larger participant pool. There are a limited number of studies with empirical data to determine the cultural responsiveness of future teachers; therefore, researchers may want to administer the CRTSE as a pre-and post-test measure at the beginning and end of their clinical experiences (e.g., Fitchett et al., 2012; Whitaker & Valtierra, 2018) to determine individual growth throughout a program. One limitation of the current study was that self-efficacy scores could be skewed due to overconfidence. To solve for this, future research could include observations and artifacts in addition to survey data. Including observations conducted by either university staff or cooperating teachers could provide additional qualitative data to either support CRTSE scores or offer examples that conflict with self-reported scores. Including artifacts that evidence culturally responsive practices would allow participants to share what they have done versus considering what they would do in culturally diverse classrooms. Selecting artifacts may encourage participants to reflect more on their self-evaluation as they complete the CRTSE survey.

Implications for teacher educators signal the need for their programs to systematically infuse CRP across their coursework and ensure they are starting this work early in their foundational level courses. Reviewing syllabi and ensuring that CRP standards are being included across the program, beginning at the foundational level or identifying potential gaps where standards are not being included (Dykes et al., 2012). When embarking on this inquiry process, teacher educators may also begin to explore the survey items that have consistently earned low self-efficacy ratings across several research studies (e.g., Chu & Garcia, 2014; Cruz et al., 2020; Siwatu, 2007, 2011). While most of those studies have been with general education populations, it would be prudent for special education TEPs to consider how they plan to

solve this. One recommendation would be for teacher educators in special education departments to collaborate with colleagues in bilingual or English Language programs to understand the types of assessments or interventions appropriate for learners from CLD backgrounds.

Additionally, the commonality amongst several indicators with the lowest overall mean score related to instructional design or implementation for learners from CLD backgrounds. When teacher educators model ways to differentiate instruction for learners with disabilities, they may include learners from diverse cultural backgrounds and explain how they considered culture in their design and delivery. We know that vicarious experiences (Bandura, 1977) are a meaningful way to increase self-efficacy, and results from this study indicate the powerful impact that professors have on the CRTSE of the preservice teachers they instruct.

The impact of the professor and their influence on a preservice teacher's culturally responsive self-efficacy was an unexpected result of this study. Teacher educators should continue to strengthen their understanding of CRP and examine their biases by participating in professional development or beginning their own investigation into identity and cultural awareness. When embarking on a redesign, researchers who engaged in this process outlined the extensive professional development they undertook (Pappamihiel et al., 2010; Prater et al., 2008) to grow their knowledge. They also noted the collaboration with professionals from other departments that benefited their process.

Professors may want to investigate the seminal frameworks, including the work of Ladson-Billings (1995, 2014) or Villegas and Lucas (2002). Faculty are also encouraged to seek readings related to combatting color-blindness, moving beyond race neutrality, and challenging the normative standards in education that have created systems of oppression and inequity (Allen et al., 2017; Brown-Jeffy & Cooper, 2011). Another source of professional development that faculty may want to access is through CREDE; they have a set of five standards that represent the commonalities found in the literature and offer recommendations across cultural, racial, and linguistic groups (Prater et al., 2008). Finally, it would be valuable to investigate partnerships with school districts that have established meaningful field experiences to understand the qualities and characteristics that result in sustained employment in CLD settings (Moore et al., 2021).

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