Relationship between Teachers Attitudes and Beliefs and Adoption of Culturally Responsive Teaching Practices

by

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Abstract

Despite gains in student achievement in the South and nationwide, NCLB-defined achievement gaps for underrepresented populations persist. The need to address this gap is particularly important in Texas where 2015-2016 enrollment data indicated that racially, culturally, ethnically, and linguistically diverse (RCELD) students represent 52.2% of enrollment. Research indicates that culturally responsive teaching practices (CRTP) in schools and classrooms can be an effective means of narrowing the gap, though widespread CRTP adoption is disappointing. Existing research linking the implementation of culturally relevant pedagogy and teaching practices to student achievement in RCELD students has not sufficiently motivated school wide and classroom adoption of CRTP. Despite growing awareness by administrators and teachers that CRTP adoption is beneficial, CRTP school wide and classroom adoption is slow. Borrowing from the field of technology, this study utilizes the subdimensions of the Unified Theory of Acceptance and Use of Technology - performance expectancy, effort expectancy, social influence, and facilitating conditions to understand the relationship between Texas K-12 teacher's perceptions of CRTP and behavioral intent to adopt CRTP in classrooms and school wide. An online survey, the UTAUT-S, adapted from the UTAUT, was given to a sample of Texas K-12 teachers to measure teacher perceptions. Analysis of responses demonstrated that a strong correlation exists between the sub dimensions of facilitating conditions and social influence and teacher's behavioral intent to adopt CRTP in classrooms and school wide. On this basis, it is recommended that school leaders place strong focus on professional development and teacher influencers when classroom and school wide adoption of CRTP is the desired outcome. Further research is necessary to determine if the results of this

study would be consistent with teacher perceptions and behavioral intent to adopt CRTP in other regions of the United States.

Chapter 1: Introduction to the Study

Introduction

Despite gains in student achievement in the South and nationwide, gaps in academic achievement for underrepresented populations persist (Aud et al., 2016). The need to address the academic achievement gap is particularly important in Texas where 2015-2016 enrollment data indicated Hispanic students represent 52.2% of enrollment and the proportion of Hispanic students is increasing at six times the national rate (Texas Education Agency [TEA], 2016). Culturally responsive teaching practices (CRTP) in schools and classrooms can be an effective means of reducing the achievement gap between White students, and racially, culturally, ethnically, and linguistically diverse (RCELD) students, even though widespread CRTP adoption is disappointing (Aud et al., 2016; Griner & Stewart, 2013; Muijs et al., 2014).

While the demographic shift away from Northern European immigrants is most prominent in the Southern states, based on Southern Education Foundation analyses, America will soon be a country where Whites are in the minority (Southern Education Foundation [SEF], 2010). Because of political, historical, and demographic changes that began more than 140 years ago in the South, this diverse majority has emerged. On a more critical level, the southern portion of the U.S. is the only area of the country to have plurality of both students of color and low-income students in public schools (SEF, 2010), and these same groups were scoring the lowest on state-mandated tests and on the federal National Assessment of Education Progress (NAEP), the largest national representative exam for K-12 students (SEF, 2010). Further, southern states also have the nation's smallest percentages of students performing at average, or

above average, on the NAEP 4th through 8th grade tests, and the lowest on-time high school graduation rate. Because of the current value, educational policy places on standardized testing results to define the extent to which states' students are workforce ready, and because southern states are already scoring the lowest in the nation, this creates a daunting challenge for educators. Public schools continue attempts at curricular and structural changes to address the need and ensure that all students receive an equal opportunity for a quality education (SEF, 2010). Though the remainder of this study focuses on closing the achievement gap, it is a worthwhile pause to address research which takes exception to standardized testing as a predictor of future student success.

Standardized Test Achievement vs. Predictors of Future Workforce Success

Credible studies have previously suggested that test scores are an ineffective means of predicting future success among students (Camacho & Cook, 2007). These researchers suggest that teachers who adjust their lessons to an exam's test objectives, experience initial improvement in testing scores that then tend to plateau. However, the initial gains are sufficient to satisfy policy makers even if students aren't actually better prepared for success, so much as they are better prepared to perform well on a test (Camacho & Cook, 2007). For this reason, Camacho and Cook (2007) noted that it was wrong to rank a school's ability to prepare students for life after graduation based on standardized test scores alone. Some feel that standardized tests should not be gauges of student success at all, but rather means of ensuring teachers are held accountable for instructing in certain core areas.

In addition to their research results explicating the lack of connection between standardized test scores and prediction of future student success, the same study reported a further criticism of exalting student performance on standardized tests: standardized tests

measure procedural knowledge versus conceptual knowledge (Camacho & Cook, 2007). Conceptual knowledge refers to the ability to apply learning across a scope of standards, which indicates a greater ability to problem solve, a skill comprising learning and culture, rather than simply repeating content specific knowledge (Camacho & Cook, 2007). Researchers suggested that the emphasis on specific content knowledge taught to specifically pass a test may not be an accurate gauge of a student's capacity to deal with complex problems presented by the 21st century workplace. Further, the researchers suggested that creating truly accurate tests based on procedural knowledge would require coordination across multiple stakeholders throughout school districts to ensure that appropriate procedural knowledge instruction was conducted. This research, however, does not conclusively negate an argument for standardized testing scores to predict future success beyond high school.

Indeed, affirmative evidence exists at the high school level that students' ability to meet or exceed benchmark-testing scores on both state and national assessments was associated with both the chance for attending college and finding employment (Cumpton, Schexnayder, King, & Stolp, 2012). However, this finding was restricted to the state of Texas. These findings did provide some evidence that test scores could indicate the chance for a student to achieve employment after high school. Though the study's findings may not have specifically addressed "workforce readiness" they at least provided enough data from which to infer that testing scores could be associated with the minimal level of skills necessary to find employment.

Despite the work of Cumpton et al. (2012), the finding that standardized tests may be too narrow in what they gauge (Camacho & Cook, 2007) may have been more accurate given that success in the workplace was found to be linked with personality and not intelligence, reported as achievement, as gauged strictly by standardized tests (Borghans, Golsteyn, Heckman, &

Humphries, 2016). Their research suggested that student grades captured elements of a student's personality, such as grit, in a way that standardized tests did not. The data sets included came from four studies measuring IQ, personality, grades, and achievement. Three studies were longitudinal in nature and followed students over the period of at least a decade. The variables associated with workplace success were found to be a combination of personality and grades rather than standardized test scores and IQ measurements. One of the data sets came from the National Survey of Midlife Development and linked personality tests with workplace performance and increased wages more effectively than did IQ (Borghans et al., 2016). Standardized tests were found to have only partial explanatory power for workplace success and were not as effective in predicting that success as grades and personality. The study's results suggested that tests may not be an adequate means of gauging how a person will do in the workplace.

The work of Borghans et al. (2016) was consistent with the findings of Camacho and Cook (2007) who suggested that many forms of testing merely tested for content specific knowledge that was not adequate for predicting a person's overall problem-solving ability. The resulting picture indicates that the great weight placed on test scores to gauge a student's future performance, including in the workplace, may be inappropriate. As Camacho and Cook (2007) suggested, this indicates the need to improve the kinds of assessments that are conducted. However, the work of Borghans et al. (2016) suggests that there is already a means of successfully predicting future performance: personality and grades. Considering both findings, the importance of grades for anticipating future workplace success may need to be considered more highly than test performance. That may not be completely tenable however, given the longstanding tradition in the United States of using tests as a means of gauging student

performance. These tests are used to guide college entrance and assume performance in the workplace, but those assumptions may need to be reevaluated considering the work of Camacho and Cook (2007) and Borghans et al. (2016).

While the data provided by Cumpton et al. (2012) seemed to indicate that testing evaluations were linked to employment, the work by Borghans et al. (2016) drew upon four data sets that included longitudinal data. Consequently, gauging progress among schools using standardized testing scores may be an inappropriate means of determining the future success of students, and future evaluations of schools may need to consider a wider set of variables, including classroom student grades, when considering how schools are preparing students for future workforce success. Invariably, these discussions on the validity of standardized testing scores as the sole input for defining student achievement and workplace readiness versus a more balanced definition that included grades, would lead policy makers and experts to reconsider the notion of widely accepted, misguided beliefs regarding deficits and disparities that formulate achievement gaps between white and RCLD students.

Closing the Achievement Gap

Regardless of where these discussions lead policymakers in the future, one variable remains unchanged in the findings on the prediction of future student success: The solution to students receiving an adequate education lies with the classroom teacher. The implementation of quality teaching should be a priority. Research has shown that classroom adoption of Culturally Responsive Teaching Practices is an effective means of reducing the achievement gap between White students and racial, cultural, and linguistically diverse students, though CRTP adoption has been disappointing; only CRTP adoption factors were included in this study (Aud et al., 2016; Griner & Stewart, 2013).

Statement of the Problem

Although research exists linking the implementation of culturally relevant pedagogy and teaching practices to student achievement in RCELD students (Ladson-Billings, 1995, 2014; Paris & Alim, 2014), research explicating the reluctance in behavioral intent to adopt it does not. Interventions to improve CRTP adoption include: (a) Response to Intervention (RTI), a multi-tier early identification and support program for students with non-standard learning and behavior needs (Dougherty Stahl, 2016), and (b) changing school climate, interventions to restructuring teacher attitudes and beliefs regarding diversity (Gay, 2013). Despite these interventions and growing awareness by administrators and teachers, that CRTP adoption is beneficial, CRTP adoption is slow and academic achievement gaps have been stubbornly persistent (Aud et al., 2016). This is particularly true in the South, where over the last ten years demographics show the minority has become the majority in public schools. The southern United States has the lowest educational achievement and attainment levels and is home to 40% of the nations' low-income people. Often, race and class are indicators of the quality of public education afforded to students (SEF, 2010).

Background

CRTP grew out of research first published by Ladson-Billings in 1995 which conceptualized the term *culturally relevant pedagogy*, a theory characterized by empowerment of students' intellectual, social, emotional, and political selves by using cultural referents to impart knowledge, skills, and attitudes (Young, 2010). Ladson-Billings grounded the theory on three criteria: academic success, cultural competence, and critical or sociopolitical consciousness. Further, she expounded upon those criteria by saying that her theory not only focused on the above criteria, but she went on to conduct research that defined teaching behaviors that broadly

illustrate teaching behaviors that characterize culturally relevant pedagogy (Ladson-Billings, 1995, 2014). These articles benefitted practitioners with the inclusion of the headings: conceptions of self and others, social relations, and conceptions of knowledge as well as definite examples of what each would look like (Young, 2010). Even so, as Young discovered in her research, a void exists between knowledge of culturally relevant pedagogy and adoption to narrow achievement gaps in RCELD students.

Theoretical Framework

This study applied the constructs of the Unified Theory of Acceptance and Use of Technology (UTAUT) developed by Venkatesh, Morris, Davis, and Davis (2003) to the problem of CRTP adoption and use in schools and classrooms. The UTAUT was developed and validated to identify and quantify factors that influence adoption of emerging technologies, application, and processes and applied in classroom settings. The UTAUT is frequently used in the classroom setting to explain technology and application adoption. The constructs, factors, and dynamics that affect technology adoption in the classroom are remarkably similar to the adoption of new teaching practices, such as CRTP (Khechine, Lakhal, Pascot, & Bytha, 2014). The UTAUT consolidated constructs from earlier technology adoption models and social cognitive learning theory (Bandura, 1977; Davis, 1986). The UTAUT includes four sub dimensions that form behavioral intent to adopt a program: performance expectancy, effort expectancy, social influence, and facilitating conditions.

For the purposes of this study, performance expectancy refers to the degree to which adopting CRTP improved learning outcomes for RCELD students. Effort expectancy refers to the expected ease of use of CRTP and the amount of time and effort involved in learning the practice and implementing in the classroom. Social influence refers to what extent school

administrators, outside experts, peers, and educational professionals perceive that CRTP is an important teaching practice. Facilitating conditions refers to the availability of resources and support to adopt CRTP. The study survey (Appendix A) was developed based on the Unified Theory of Acceptance and Use of Technology Survey, which was validated and used in research on U.S. teachers (Khechine et al., 2014).

Though the UTAUT is being used in this study, Hall and Hord's (1987) work on the Concerns Based Adoption Model was also examined. The three diagnostic measures and constructs explain the process of change implementation and address levels of concern along the way with the goal of greater implementation done with increasing fidelity (Hall, 2013). The CBAM intends to help practitioners and policy makers understand the complexities of change and assess change and implementation efforts in order to bring about full implementation of the change initiative. It looks at the *bridge* of those involved in the change initiative journey from beginning to ending of implementation, and it suggests that many who embark on the journey do not make it across the bridge. As the process of change is complex, and though their research expands 40 years, the CBAM model still reports findings that nearly 50% of teachers remain at lower implementation levels due to unaddressed stages of concern, varying levels of use, and innovation configurations that do not mirror the intended change initiative. Though "the three diagnostic dimensions of the Concerns Based Adoption Model have been applied with wide range of education innovations, different contexts, and across nations and cultures" motivation to adopt remains low (Hall, 2013, p.112).

For this reason, in this study, the UTAUT applies to the problem of CRTP adoption. This model addresses behavioral intent to adopt versus focusing on the process of change implementation. It suggests that motivation and intention to adopt are the engine that fuels the

vehicle of change to journey over the implementation bridge, and it explains 70% of behavioral intent to adopt an emerging initiative. Additionally, CRTP is a complex and dynamic issue that changes with changes in culture. This moving target cannot be easily measured and does not come in a tidy box with materials to explain adoption.

Purpose Statement

The purpose of this quantitative correlational study was to examine the relationship between teachers' perceptions, and CRTP adoption at the school and classroom level. Data were collected from 115 Texas-based public-school teachers using the Unified Theory of Acceptance and Use of Technology-Survey (UTAUT-S) to identify factors related to CRTP adoption. Pearson correlation statistics were conducted to measure the relationship between responses to the UTAUT-S and both school and classroom adoption of CRTP. Correlations between UTAUT-S sub dimensions of performance expectancy, effort expectancy, social influence, and facilitating conditions were conducted to isolate specific adoption concerns.

Research Questions and Hypotheses

RQ1. What is the relationship between teachers' overall perceptions, performance expectancy, effort expectancy, social influence, and facilitating conditions and culturally responsive teaching practices adoption school-wide?

H_o1. There is no relationship between classroom teachers' UTAUT-S total score and culturally responsive teaching practices adoption in entire schools.

H_o2. There is no relationship between classroom teachers' UTAUT-S subdimension scores for performance expectancy, effort expectancy, social influence, and facilitating conditions score and culturally responsive teaching practices adoption in entire schools.

RQ2: What is the relationship between teachers' overall perceptions, performance expectancy, effort expectancy, social influence, and facilitating conditions and culturally responsive teaching practices adoption in the classroom?

H_o3. There is no relationship between classroom teachers' UTAUT-S total score and culturally responsive teaching practice adoption in entire schools.

H_o4. There is no relationship between classroom teachers' UTAUT-S subdimension scores for performance expectancy, effort expectancy, social influence, and facilitating conditions score and culturally responsive teaching practice adoption in entire schools.

Nature of the Study

This study used a quantitative methodology to examine factors effecting CRTP adoption at both the classroom and schoolwide levels. Quantitative studies involve hypothesis testing based on empirical evidence. A quantitative approach is an appropriate choice when study variables are clearly defined and measurable empirically, the research problem includes measurable variables, and there is a desire to achieve high levels of reliability and generalize the findings (Leedy, Ormrod, & Johnson, 2019).

This study examined the relationship between teachers' perceptions and CRTP adoption in classrooms and schoolwide using the UTAUT-S to measure teachers' perceptions (Venkatesh et al., 2003). UTAUT-S sub dimensions of performance expectancy, effort expectancy, social influence, and facilitating conditions were separately examined for an association with CRTP adoption in classrooms and schoolwide. In this study, CRTP schoolwide and classroom adoption is the dependent variable and the independent variables are the total and sub-dimension scores for the Unified Theory of Acceptance and Use of Technology - Survey (UTAUT-S; Venkatesh et al., 2003). Pearson correlation statistics were used to test study hypotheses.

Summary

According to accountability measures prescribed by current legislation in education, the academic achievement gap between underrepresented populations and their White classmates persists nationwide despite legislative and school administration adoption efforts (Aud et al., 2016) toward reform models showing promise in meeting accountability measures in classrooms and schoolwide, such as CRTP. Despite research that CRTP in schools and classrooms can be an effective means of narrowing the achievement gap between White students and racially, culturally, ethnically, and linguistically diverse students, CRTP adoption is disappointing (Aud et al., 2016; Griner & Stewart, 2013; Muijs et al., 2014). The purpose of this quantitative correlational study was to examine the relationship between teachers' perceptions, and CRTP adoption at the classroom and schoolwide level. Pearson correlation statistics were employed to test hypotheses. Chapter 2 includes a literature review and synthesis of research regrading new teaching practices adoption, the achievement gap for underrepresented student populations, and culturally relevant teaching practices. Chapter 3 describes and defines the research design and methodology.

Chapter 2: Literature Review

Introduction

Although research exists linking the implementation of CRTP to student achievement in RCELD students, research explicating the reluctance in behavioral intent to adopt it does not. The purpose of this quantitative correlational study was to examine the relationship between teachers' perceptions, and CRTP adoption at the schoolwide and classroom level.

Literature Search Strategy

An initial review of the literature indicated empirical studies on CRTP involving the following terms: *culturally relevant pedagogy, culturally relevant education, culturally relevant teaching, and culturally sustainable pedagogy.* Google Scholar, JSTOR, and PubMed provided the preponderance of studies cited. These terms help to understand where cultural relevancy in education came from and where it needs to go in order to address the problem of adoption. From there, an exploratory review of the evolutions of the terminologies is researched. UTAUT addresses remarkably similar adoption issues in classroom technology adoption and applied it in this study to CRTP adoption in the classroom. The focus of research was on the four sub dimensions that form behavioral intent to adopt a program found within the construct of the UTAUT: practice expectancy, effort expectancy, social influence, and facilitating conditions, in order to learn how each sub dimension relates to similar conditions within the school and classroom setting.

For the purposes of this study, a model that incorporates the constructs of culturally relevant teaching, culturally relevant pedagogy, and the work on culturally sustaining pedagogy was used. Research supported by Ladson-Billings (2014) was used as a focus for the researcher's definition of what is termed Culturally Relevant Teaching Practices (CRTP), which synthesizes

the research of all three frameworks. In addition, literature regarding the Unified Theory of Acceptance and Use of Technology was reviewed.

Theoretical Framework

Evolution of Adoption Theory

The UTAUT was developed by Venkatesh et al. (2003) to consolidate constructs and improve the predictive power of six preceding models of adoption. These models were the theory of reasoned action; technology acceptance model; motivational model; theory of planned behavior; innovation diffusion theory; and social cognitive theory (Venkatesh et al., 2003). Table 1 summarizes the evolution of technology adoption theory in chronological order, names core constructs, and defines each construct. The table provides historical context and indicates the universal nature of the concept of adoption beyond just technology.

Table 1

Models and Theories of New Methods and Technology Acceptance

Model/Theory	Core Constructs	Definitions
Theory of Reasoned Action "Drawn from social psychology, TRA is one of the most fundamental and influential theories of human behavior…Davis, Bagozzi, and Warshaw, (1992) applied TRA to individual acceptance of technology and found that the variance explained was largely consistent with studies that had employed TRA in the context of other behaviors"(Venkatesh et al., 2003).	Attitude Toward Behavior Subjective Norm	"An individual's positive or negative feelings about performing the target behavior" (Fishbein & Ajzen, 1977, p. 216) "The person's perception that most people who are important to him think he should or should not perform the behavior in question" (Fishbein & Ajzen, 1977, p. 302)
Technology Acceptance Model (TAM) TAM is tailored to IS contexts, and was designed to predict information technology acceptance and usage on the job. Unlike TRA, the final conceptualization of TAM excludes the attitude construct in order to	Perceived Usefulness Perceived Ease of Use	"The degree to which a person believes that using a particular system would enhance his or her job performance" (Davis, 1989, p. 320). "The degree to which a person believes that using a particular system would be free of effort" (Davis, 1989, p. 320).

better explain intention"(Venkatesh et al., 2003).		
Motivational Model A significant body of research in psychology has supported general motivation theory as an explanation for behavior…and adapted it for specific contexts…Davis et al. (1992) applied motivational theory to understand new technology adoption and use (Venkatesh et al., 2003).	Extrinsic Motivation Intrinsic Motivation	The perception that users will want to perform an activity "because it is perceived to be instrumental in achieving valued outcomes that are distinct from the activity itself, such as improved job performance, pay, or promotions" (Davis et al., 1992, p. 112). The perception that users will want to perform an activity "for no apparent reinforcement other than the process of performing the activity per se" (Davis et al., 1992, p. 112)
Theory of Planned Behavior TPB extended TRA by adding the construct of perceived behavioral control. In TPB, perceived behavioral control is theorized to be an additional determinant of intention and behavior…TPB has been successfully applied to the understand o individual acceptance and usage of man different technologies (Harrison, Mykytyn, & Riemenschneider, 1997; Mathieson, 1991; Taylor & Todd, 1995b)" (Venkatesh et al.., 2003).	Attitude Toward Behavior Subjective Norm Perceived Behavioral Control	Adapted from TRA/TPB Adapted from TRA "The perceived ease or difficulty of performing the behavior" (Ajzen, 1991, p. 188).
Combined TAM and TPB This model combines the predictors of TPB with perceived usefulness from TAM to provide a hybrid model (Taylor & Todd, 1995a; Venkatesh et al., 2003).	Attitude Toward Behavior Subjective Norm Perceived Behavioral Control Perceived Usefulness	Adapted from TRA/TPB Adapted from TRA/TPB Adapted from TRA/TPB Adapted from TAM
Social Cognitive Theory "One of the most powerful theories of human behavior (Bandura, 1986), Compeau and Higgins (1995) applied this theory to technology utilization. The underlying theory allow it to be applied also to individual acceptance and intention of usage" (Venkatesh et al., 2003).	Outcome Expectations-Performance Outcome Expectations – Personal Self-efficacy	"The performance-related consequences of the behavior, specifically performance expectations deal with job-related outcomes" (Compeau & Higgins, 1995). "The personal consequences of the behavior. Specifically, personal expectations deal with the individual esteem and sense of accomplishment" (Compeau & Higgins, 1995). "Judgment of one's ability to use a technology to accomplish a

	Affect	particular task" (Venkatesh et al., 2003)
	Anxiety	"An individual's liking for a particular behavior (i.e. computer use)" (Venkatesh et al., 2003) "Evoking anxious or emotional reactions when it comes to performing a behavior (e.g., using a computer)" (Venkatesh et al., 2003).
Innovation Diffusion Theory (IDT) "Grounded in sociology, IDT (Rogers, 1995) has been used since the 1960's…within information systems, Moore and Benbasat (1991) adapted the characteristics and refined a set of constructs that could be used to study individual technology acceptance" (Venkatesh et al., 2003)	Relative Advantage	"The degree to which an innovation is perceived as being better that its precursor" (Moore & Benbasat, 1991, p. 195).
	Ease of Use	"The degree to which an innovation is perceived as being difficult to use" (Moore & Benbasat, 1991, p. 195).
	Image	"The degree to which use of an innovation is perceived to enhance one's social status or image within one's social system" (Moore & Benbasat, 1991).
	Visibility	"The degree to which one can see others in the organization using the systeme" (Moore & Benbasat, 1991).
	Compatibility	"the degree to which an innovation is perceived as being consistent with the existing needs, values, and past experiences of potential adopters" (Moore & Benbasat, 1991).
	Results Demonstrability	"The tangibility of the results of using the innovation including their observability and communicability" (Moore & Benbasat, 1991, p. 203).
	Voluntariness of Use	"The degree to which use of the innovation is perceived as being voluntary, or of free will" (Moore & Benbasat, 1991, p. 195).

Unified Theory of Acceptance and Use of Technology

In conducting initial research on the topic of adoption of CRE, CRT, and CRP, existing research addressing the causes of poor adoption are not evident. Adoption and usage of better

versions of research-based programs to affect student achievement can close gaps in academic achievement. Theoretical frameworks, such as makeup CRTP, show validity in moving marginalized students forward. Technological advancements only make an impact if adopted. For this reason, I chose to go outside the field to find tangential studies to provide a theoretical framework to apply to the problem of CRTP adoption. Upon review of the literature, The UTAUT developed by Venkatesh et al. (2003) was decided upon.

The UTAUT consolidated constructs from earlier technology adoption models and social cognitive learning theory and includes four sub dimensions that form behavioral intent to adopt a program: performance expectancy, effort expectancy, social influence, and facilitating conditions. This theory is being applied to the problem of lack of adoption of CRTP with populations (RCELD) where its adoption would positively impact student achievement and close achievement gaps persisting in current accountability systems. Subsequent sections of the literature review provide further background to the theory as a whole, preview the four sub dimensions of the UTAUT, as well as connect and apply them to the school context.

Though a plethora of programs are designed to close the accountability gaps for RCELD students, gaps persist. Venkatesh et al. (2003) observed that technologies must be accepted and used by employees in order to improve productivity, and the same holds true for CRTP use in the classroom. Because of this remarkable similarity, for this study, the UTAUT applies to the problem of CRTP adoption in schools where such adoption would positively affect achievement and close gaps for RCELD students. The UTAUT is consolidated through assessment, empirical comparison, synthesis, and empirical validation of the similarities and differences of eight prominent models rooted in information systems, psychology, and sociology (Venkatesh et al., 2003). For the purposes of understanding the history of the UTAUT and its innate connections

and application to the problem of CRTP classroom adoption, it is necessary to understand the underlying constructs that resulted in the formulation of the UTAUT by Venkatesh et al. (2003). Table 1 outlines the eight models, including their core constructs and definitions (Venkatesh et al., 2003).

Through empirical testing and comparison of the eight theories listed in Table 1 above, four constructs would play a significant role as direct determinants of user acceptance (adoption) and usage behavior: performance expectancy, effort expectancy, social influence, and facilitating conditions (Venkatesh et al., 2003). These labels represent the "essence" of the construct and not a particular theoretical perspective (Venkatesh et al., 2003). The four UTAUT constructs are defined and contextualized in the following sections. Five constructs makeup this UTAUT model determinant: perceived usefulness, extrinsic motivation, job-fit, relative advantage, and outcome expectations (Venkatesh et al., 2003) and are described more fully and individually in Table 1 above. The second of four determinants is effort expectancy.

Performance expectancy. Performance expectancy is defined as "the degree to which an individual believes that using the system will help him or her attain gains in job performance" (Venkatesh et al., 2003) and within each model listed in Table 1 above is the strongest predictor of intended use. People are more likely to adopt a technology that they feel will help them with their existing duties. As such, if a technology fails to perform up to expectations, it may lead to a decline in the adoption of that technology, given that people's perceptions of its performance are negatively impacted.

Effort expectancy. Effort expectancy is defined as "the degree of ease associated with the use of the system, and three constructs from the existing models capture the concept of effort expectancy: perceived ease of use, complexity, and ease of use" (Venkatesh et al., 2003, p. 203). People anticipate that a certain level of effort will be required in order for a certain technology to perform its function, and when the level of effort exceeds expectations, it may lead to a reduced adoption of that technology. The third of four determinants comprising the UTAUT is social influence.

Social influence. Social influence is defined as an individual deciding that other peoples' opinions are viable and should be followed as far as using a new system; this is represented by the constructs of image, social factors, and subjective norm. The notion contained in these constructs is that social and cultural norms influence individual's behavior (Venkatesh et al., 2003). Table 1 above outlines each of these constructs more fully and individually. Of note with the social influence determinant is its relationship to other's expectations especially when their expectations are tied to rewards for behavior to the affirmative or punishment for behavioral non-compliance.

It should be notedhat research outside of Venkatesh et al. (2003) indicated the importance of social influence on promoting behaviors. Research has previously been conducted indicating that social influence impacts a variety of different behaviors (Bozan, Davey, & Parker, 2015; Cruwys, Bevelander, & Hermans, 2014; Jamal, Ramlan, Karim, Mohidin, & Osman, 2015). Bozan et al. (205) stressedthat social influence impacted Health IT adoption among the elderly, again pointing the importance of social influence in encouraging technology adoption. Cruwys et al. (2014) found that social influence within certain contexts impacted what people ate and how much they ate, suggesting that social influence could impact eating behavior. Finally, Jamal et al.

(2015) indicated that social influence impacted savings behavior. As such, the research indicated that social influence was important for encouraging different kinds of behaviors including the technology adoption emphasized by Venkatesh et al. (2003). Different from but significant to the phenomena of intended use and adoption is the fourth determinant – facilitating conditions.

Facilitating conditions. Facilitating conditions are the degree to which organizational and technical infrastructure exists to support use of the system (Venkatesh et al., 2003) all of which are defined more fully and individually in Table 1. Facilitating conditions can be broadly defined and may change depending on the context in which specific behaviors are being promoted. Educational resources, mentors, and behavior modeling may all help promote the adoption of technology, as just a few examples.

Validation of UTAUT and application to CRTP in the Grades K-12 setting. Research indicates that the UTAUT explains as much as 70% of behavioral intention to adopt new technology (Venkatesh et al., 2003) and thus individual acceptance and usage decisions in an organization. This is significant for organizational managers seeking to intervene with members to ensure implementation of new technology. The four determinants of UTAUT - performance expectancy (perceived usefulness, extrinsic motivation, job-fit, relative advantage, and outcome expectations), effort expectancy (perceived ease of use, complexity, and ease of use), social influence (subjective norm, social factors, and image), and facilitating conditions (perceived behavioral control, facilitating conditions, and compatibility) resulted from the empirical testing and comparison of the eight models are outlined in Table 1. These four constructs are being applied to the problem of CRTP adoption in the K-12 organization and classrooms where CRTP has shown promise in closing the academic achievement gap for RCELD students. The conceptual framework that follows begins with the UTAUT theoretical framework and extends it

to the K-12 school setting, making specific connections with the adoption of CRTP in secondary 9-12 classroom settings where available in the literature.

The Achievement Gap: Historical Underpinnings

Public schools serve the public good by educating all citizens and training community leaders of the future (Neu & Stewart, 2009). Since its inception by Horace Mann in Massachusetts in 1837 the American public has been defining and re-defining the acceptable inputs and outputs of public education. Though varied qualitative and quantitative data measuring success with these inputs and outputs have been collected, it was not until NCLB legislation that data from NCLB-defined concepts for "achievement gap" and "standardized testing" were benchmarked, collected, and used to mandate schoolwide and classroom reforms. NCLB legislation required administrators to focus on reform and not the "correctness" of philosophical and cultural inputs of "achievement gap" and "standardized testing" inputs into the model. Promising schoolwide and classroom reform practices, such as CRTP, have been introduced by administrators and leaders to narrow NCLB-defined achievement gaps identified during standardized testing, but adoption efforts are disappointing. This study focused on understanding behavioral intent to adopt CRTP by measuring teacher perceptions about schoolwide and classroom adoption using the UTAUT-S. Though outside the scope of this study, it is a worthwhile pause for more discussion about "achievement gap" inputs reflected in NCLB legislation.

Though data was not formally disaggregated to define the Achievement Gap between white students and students of color until the NCLB mandate, since the era of Reconstruction when the Freedman's Bureau secured the funding of the first public African American schools,

an achievement gap between whites and students of color has existed relatively unchanged (Neu & Stewart, 2009).

Though historically an emphasis on equality of school funding has dominated discussion in school reform movements, findings in the Coleman Report, which for the first time caused legislators to rely more intentionally on educational research to inform educational policy (Carver, 1975) began slowly moving discussions away from funding as the sole savior for school success of students of color to answering the question of "What is it that we are seeing, and what else can be causing what we are seeing?" Studies to answer these questions have focused educational research in multiple directions including multicultural education (Jones, 2008), critical race theory, culturally relevant education (Ladson-Billings, 1995) , and culturally relevant pedagogy and teaching practices (Gay, 2010) with culturally relevant teaching practices holding the most promise in closing achievement gaps, though adoption of CRTP remains slow. Taking a look back to see where the achievement gap came from is important because it stems from many different attitudes, systems, and structures within society that have been slow to overcome. This is in concert with what we are seeing with the adoption of CRTP (Aronson & Laughter, 2015). Like segregation, though it would solve the problems that we see in education, many factors play into the reason that it has not been adopted, including inherent and historical bias whether or not realized. Though the UTAUT (Venkatesh et al., 2003) attempts to explain behavioral intent to adopt, this behavior is inherited through generations of thoughts, beliefs, and ideals, so examining the history of the achievement gap is important in understanding why it persists, and the complication of eradicating it (Aronson & Laughter, 2015).

The earliest schools in the North were funded by Protestant churches and wealthy families until Horace Mann founded the first public schools in Massachusetts (Kaestle, 1983).

The families funding the school also wanted to have input into teachers, teacher quality, and curriculum. The aim of the first schools was moral education and those things that would make the students into better citizens. As this was prior to abolition of slavery, laws forbid slaves to attend school, and poor white students also did not attend.

Teachers were predominantly single women from middle class families and were educated in normal schools after a stringent test to pass the 8th grade. Though most students only went to the 8th grade, the graduation test was said to be difficult (Kaestle, 1983). In the South, the picture looked very different. Children were mostly educated on the plantations by a tutor and blacks were not allowed to be educated though in some cases they obtained education from caring masters who would teach them, or they would pick up learning as they were around white children on the plantation (Kaestle, 1983).

After the Civil War, the Restoration era also saw the Freedman's Bureau starting the first public schools in the South for blacks and schools for whites also followed (Forman, 2004). Schools were segregated and funded unequally by local and state funds with additional funds for black schools coming from missionaries and agencies in the north. People on both sides desired segregated schools. Soon, African Americans began to see the differences in white schools and black schools and wanted equal schools and were tired of being treated like second rate citizens when they were given citizenship and guaranteed equality under the 13th and 14th Amendments (Forman, 2004).

In 1896 the landmark case of Plessy v. Ferguson required schools to be segregated under the ruling of *separate but equal* for the next 58 years until the landmark case of Brown v. Board in 1954, led by Thurgood Marshall and the NAACP (Patterson & Freehling, 2001). During the *separate but equal* years, the good faith efforts to create equal schools and provide equal funding

were often too little, too slow, and funding per student of white versus black lagged. African Americans frequently voiced the injustices taking place in their journey toward obtaining the full inheritance due them as citizens of the United States. This difference was well seen as the country moved toward the industrial age and needed skilled workers for factories and the wealthy business owners such as Andrew Carnegie, akin to the influence of today's Bill Gates, began investing in schools in order to ensure a skilled workforce. Indeed, the Taylor model was developed and many influences of this factory model of schooling remain in place today. Though it served the industrial age, it did not consider how students learned and certainly did not take into account cultural learning differences of students. Learning was not student centered. During this time, reformers such as John Dewey offered the most promising efforts toward CRTP practices in the classroom as he used a constructivist approach, but the new America dominated by factories and industry soon overtook these efforts.

Though still focused predominantly on equality of per pupil funding, school physical structures, and qualified teachers, the civil rights victory of Brown v. Board ended the decades-long fight and began to change the discussion and reform efforts (Patterson & Freehling, 2001). Coming on its heels was the Copeland Report which put the importance of school funding and family on trial and opened the door for scholars to begin asking what else could be causing the disparities that they were seeing in schools and students (Carver, 1975). Ruling out one race being more intelligent than the other as was proposed in the work of the phrenologists, as well as discounting the argument that students of color were still trying to adjust to life after slavery as was offered by the defendants in Brown v. Board, civil rights activists pointed to the studies showing that black students were being harmed by segregation. This proved to be an effective argument for the government to adopt a policy on busing that lasted into the 70's. The 80's

brought several important reforms. One key school of thought that began in the 80's was critical race theory which originated in law schools. It examined whiteness and power. Scholars soon applied this to education, and this prompted the study of critical race theory in education as well as the creation of theories to underpin multicultural education. Even so, educational disparities persisted prompting more radical policies for reform.

No Child Left Behind. Though criticized heavily as being too lofty and underfunded, the No Child Left Behind Act of 2001 was unprecedented legislation for the first time in history and addressed all of the issues that had plagued public education since Horace Mann founded the first public school (Department of Education, 2002). NCLB supported standards-based education reform based on the hypothesis that establishing a goal and setting high standards could improve individual outcomes in education (Department of Education, 2002). Long held attitudes regarding the educability of students as well as using disparities as an excuse for failure were no longer acceptable and revised teacher creeds and codes of ethics reflected the new philosophies that came as a result of the new legislation (Ford & Russo, 2013; Pitre, 2014).

NCLB ushered in reform for equality of funding, teacher quality, failing schools, curriculum that was not meeting student needs, teacher preparation quality, and student data to the forefront of discussions in education (Ford & Russo, 2013). It was the federal government's indictment on education and a mandate for change that had been allowed to proceed with all haste (Brown v Board) and in good faith (*Plessy v Ferguson*). The timeline was deliberate and set; one hundred percent of students would be successful by 2014. Heavy in standardized testing, this proved to be impractical, necessitating ESSA legislation and state waivers, but this legislation was unprecedented in its impact on moving public education forward to create 21st century learners.

CRTP, in its perfect storm, was brought to the forefront as the nation could no longer deny that an achievement gap exists, the minority is quickly becoming the majority, legislation requires that all students succeed, and educators and leaders are charged with producing the outcomes and results (Gay, 2013). Common Core showed promise in several states due to its inquiry, rigor, and constructivist roots and mirrored the literature of CRTP (Markow, Macia, & Lee, 2013). Common Core was also an answer to the *canned* learning that many felt the teaching to the test was creating. Although detrimental to CLD students, Common Core was also an additional reform in this era of multiple reforms, teacher burn out, evaluation, and new standards (Markow et al., 2013) requiring new tests and new ways of teaching. The flame of promise it may have created when implemented quickly burned out considering negative press. Still other tactics bringing about whole school cultural and curricular reforms which were showing promising results in closing the achievement gap were emerging successfully in states such as Texas where a large population of RCLD students were concentrated and where the population was already outnumbering white students.

Culture and Education

Culture refers to a set of knowledge, beliefs, art, morals, laws, customs, capabilities and habits shared by community members (Tylor, 1871). Historically, culture involved relatively consistent, visible, aspects of everyday life that served as indicia of community membership. Anthropologists observed that cultures evolved and improved through specific stages, and that culture defined, explained, and predicted member's behavior (Bonnell & Hunt, 2011). Two general approaches to scholarly research on culture developed: culture as symbols and culture as activity (Bonnell & Hunt, 2011). The first of these approaches viewed culture as collective knowledge organized into a coherent system for making meaning of the world. The second

approach extended the first to include culture as a set of options for taking action. Culture is not just a coherent system of symbols and meanings, but also a diverse collection of cultural 'tools' to enable action, and defines appropriate interaction (Young, 2010).

During the 1980s, educational practitioners and researchers shifted from a psychological or cognitive model of knowledge acquisition to Albert Bandura's Social Learning Theory (SLT; Bandura, 1989). SLT posited that students learn from one another, via observation, imitation, and modeling, thereby shifting the focus of learning to social interaction, and this social interaction serves as mediation for cognitive development from socially guided learning (Young, 2010). The *social turn* in teaching and learning moved culture to the forefront of pedagogy, despite the intractability of the definition of culture and the complexity of culturally responsive teaching methods. Culturally responsive pedagogy (CRP) involves differentiated curriculum and classroom interactions to reflect individual students' culture. The goal of CRP is to diminish the stubbornly persistent academic achievement gap between White and non-White students while promoting development of a collective rather than individualized identity (Ladson-Billings, 1995).

CRP promotes non-White students' academic success, develops cultural competence, and enables cross-cultural social consciousness that promotes acceptance (Aguirre & Zavala, 2013). While relatively little quantitative research exists on the efficacy of CRP to improve academic outcomes, the results in mathematics learning are encouraging (Aguirre & Zavala, 2013; Greer, Mukhopadhyay, Powell, & Nelson-Barber, 2009). While the theory of CRP is widely accepted, its complexity resulted in slower than expected classroom adoption and broadly divergent implementation (Aguirre & Zavala, 2013). A narrow approach to CRP, akin to Tylor's 1871 definition of culture, explains some of the disparity. A CRP adoption that merely acknowledges ethnic holidays, includes popular culture, or adopts colloquial speech misses the point (Irvine,

2010). This narrow approach to CRP adoption may have the unintended consequence of emphasizing, "the sense of otherness commonly felt by minority students" (Young, 2010, p. 252). In addition, culturally relevant teaching practices often reflect the norms of homogeneous classrooms. A superficial focus on cultural difference may reinforce a system of exclusion if the goal is to achieve a standard defined as the behaviors and achievement level of the dominant group (Schmeichel, 2012).

Critical consciousness is the component of Ladson-Billings' model with the lowest adoption rate (Young, 2010). Teachers may feel uncomfortable with the politics of structural inequality or racism (Sleeter, 2011). An important professional development moment may be necessary. Perhaps, coursework that promotes reflection on one's personal identity is necessary for teachers from dominant social classes before classroom activities in support of critical consciousness are implemented. Educational research into CRP adoption in the classroom suggests the need for a nuanced understanding of culture, teaching across cultural differences, and integrating culture into classwork; debates over the meaning of culture lie at the heart of these issues (Sleeter, 2011). The focus of this study is on culturally responsive teaching practices; that is, what it is that educators do and what do they say about what they do.

Culturally Responsive Teaching Practices

Research indicated that teachers are the single most important factor in student achievement (Sanders, Wright, & Horn, 1997) and that culturally responsive practices reduce the education gap for underrepresented students (Ladson-Billings, 1995). Even so, teachers do not readily possess the examples and tools for best practices to address these gaps that persist in their schools and classrooms (Fiedler & Danneker, 2007). Though many states across the country are in the process of reforming or have already reformed teacher evaluation models, CRTP is loosely

represented in these models. Without concrete examples, teachers cannot engage in professional discussions that improve practice and ultimately, student achievement. The same has been reported about teacher preparation programs. To comprehend more fully, we need to understand the body of research that culturally responsive teaching practices are rooted in – culturally relevant education (culturally responsive pedagogy, culturally relevant teaching) and culturally sustaining pedagogy. We begin first with culturally relevant education as it largely embodies the work of Ladson-Billings and Geneva Gay, the two most cited researchers in this arena (Aronson & Laughter, 2015).

Culturally Relevant Education: Culturally Responsive Pedagogy and Culturally Relevant Teaching

Ladson-Billings (1995) sought to make the practice of Culturally Responsive Pedagogy more accessible for pre-service and current classroom teachers (Ladson-Billings, 2014) by developing a theory of Culturally Responsive Pedagogy. Formulated on a teacher's affirmative belief about the educability of every classroom student (Ladson-Billings, 2014), regardless of culture or socioeconomic status, her research suggested that culturally responsive pedagogy must meet these three criteria: the ability to develop students academically, a willingness to support cultural competence, and the development of a sociopolitical or critical consciousness (Ladson-Billings, 2014); and was distinguishable by three propositions regarding self and others, social relations, and knowledge. Her theory was rooted deeply in social justice. While initially she asserted that these ideas were just good teaching (Ladson-Billings, 1995), she recognized that teachers come from varied perspectives and require concrete understandings to affect student achievement with culturally responsive pedagogy before these ideas would become the norm for all classrooms. As scholars began to take hold of her theory of Culturally Responsive Pedagogy, they began to include and in cases go away from, her focus in order to build upon and move

teachers toward classrooms that demonstrated daily a greater understanding of social justice and closing of achievement gaps as evidenced by teacher practices. Gay (2010) offered this type of perspective in her work on *Culturally Relevant Teaching.*

While Ladson-Billings' work focused on pedagogy and seeking to influence attitudes and dispositions that when fully adopted would determine instruction and assessment (Aronson & Laughter, 2015), Gay's (2010) work focused more on teaching describing what methods a teacher would employ and competencies possessed if that teacher were to be deemed as culturally relevant (Aronson & Laughter, 2015). For instance, programs such as SIOP (Sheltered Instruction Protocol) are rich in the influences of Culturally Relevant Teaching as classroom implementation of these strategies extend access to curriculum to students who would be marginalized if not for these practices. Ladson-Billings' work on Culturally Responsive Pedagogy, and Gay's work on Culturally Relevant Teaching exemplify the conceptual framework for Culturally Relevant Education; however, it is the later acceptance and pedagogical change of Ladson-Billings in her remix (Ladson-Billings, 2014), Culturally Sustaining Pedagogy, that completes the mix for the researcher's definition of Culturally Responsive Teaching Practices.

Culturally Sustaining Pedagogy

The term minority is used to describe ethnic populations and economically disadvantaged students, which was historically less than 50% of classroom enrollment in the South but is quickly becoming the majority in classrooms in the Southern United States (SEF, 2010). Consequently, classrooms solutions are needed in order to meet the needs of the changing demographic. Ladson-Billings also recognized the need for a pedagogical shift in culturally responsive pedagogy to culturally sustaining pedagogy. In the case of culturally responsive pedagogy, defining domains were academic success, cultural competence, and sociopolitical

consciousness (Ladson-Billings, 1995). However, absent concrete models and in the face of changing cultures, her work began to become stagnant instead of fluid as she observed classroom teachers attempting to implement culturally responsive pedagogy (Ladson-Billings, 2014) as a formula that did not change with changing cultures. Indeed, as teachers believed in the ideals and tried to implement them into their individual classrooms, and as scholars tried to explicate it in articles at the scholarly and practitioner levels, she noticed that her original theory was watered down and that the intent to be rooted in the deepest soil of social justice was not occurring (Ladson-Billings, 2014). Her answer to this was the pedagogical change to culturally sustaining pedagogy where authors began with CRP and then added ways to shift pedagogy in a manner that shifts, changes, adapts, recycles, and creates instructional spaces to ensure that consistently marginalized students are repositioned into a place of normativity (Ladson-Billings, 2014). This shift allowed for the fluidity that our rapidly changing culture and classroom demographic required; however, it still lacked the clear and practical aspects of what it looks like in the classroom as well as the specificity and focus needed to understand the complexities required to motivate the schoolwide adoption of a culturally responsive program. Clearly, from research, teachers were willing to adopt portions of the framework, but explanations as to why complete adoption did not accrue remained elusive.

Culturally Responsive Teaching Practices

Culturally Responsive Teaching Practices synthesize the works of Ladson-Billings (1995, 2014), Gay (2010), and Paris and Alim (2014) into a model that encompasses the tenets of all frameworks. The framework requires classroom teachers to reflect upon the needs of the changing cultures they serve when determining what the adoption of culturally relevant teaching practices looks like in their classroom. Such revisions do not imply that the original was deficient; rather, they speak to the changing and evolving needs of dynamic systems (Ladson-

Billings, 2014) such as what we see in the adoption of new technology. As a theory explaining further why adoption of CRTP and other classroom and schoolwide programs is lacking, the researcher has chosen to apply a theory grounded in the behavioral intent to adopt and attitudes toward adoption of new technology, the Unified Theory of Acceptance and Use of Technology Theory.

Culturally Responsive Teaching Practices Adoption

Culturally responsive teaching practices adoption assumes that when learning occurs within the lived experiences and frames of reference of the individual student, the experience is more personally meaningful, thereby increasing student engagement and improving learning (Gay, 2010; Ladson-Billings, 1995). CRTP adoption is necessary to meet the educational needs of a U.S. public school population that is more racially, ethnically, and linguistically diverse than ever (Ford, 2012). The student population stands in stark contrast to the teacher population that is 83.5% White monolingual females, 6.9% Hispanic, and 6.7% African American (Ortiz, 2012). Culturally and linguistically diverse (CLD) students from varying socioeconomic backgrounds consistently underperform their White peers on every measure of academic achievement and are twice as likely to leave school before completing high school (Artiles, Kozleski, Trent, Osher, & Ortiz, 2010). In addition, CLD students are overrepresented in programs for students with specific learning disabilities, speech and language disabilities, emotional and behavioral disorders, and intellectual or developmental disabilities (Aud et al., 2016).

Several researchers suggest that CRTP adoption is critical for reducing the student outcome gap for CLD students (Aguirre & Zavala, 2013; Gay, 2010). CRTP adoption is an educational reform movement founded on the idea that all students—regardless of their gender and social class and their ethnic, racial, or cultural characteristics—have the right to equal learning opportunities (Gay, 2010). CRTP incorporate students' home/community life and

interests into the curriculum, teaching approaches, and the classroom environment, which is consistent with widely accepted teaching practices more broadly described as differentiated instruction (DI; Tomlinson et al., 2003). DI and CRTP are strengths-based approaches where all students are included and expected to achieve from individualized learning plans based on individual student's needs.

While CRP theory is well-accepted (Gay, 2010; Irvine, 2010; Ladson-Billings, 1995, 2014), CRTP adoption is low and few scholarly research studies exist. A review of the literature included seven quantitative studies regarding CRTP adoption in the classroom and related coursework to prepare teachers to create CRTP-involved lesson plans. One study focused on preservice special education teachers; four focused on preservice general education teachers (Garii & Rule, 2009; Huang, 2002; Salsbury, 2008); two examined in-service teachers (Udokwu, 2009); and one focused on preservice special education teachers (Jones, 2008). Overall, researchers found that in-service and preservice teachers demonstrated minimal skills in preparing lesson plans incorporating CRTP. Several factors accounted for the limited numbers of scholarly research studies on CRTP and the lack adoption in the classroom. First, teacher preparation program (TPPF) faculty lacked the training and curriculum to prepare teachers to educate CLD learners (Sleeter, 2011). Second, programs and practices for CLD instruction are stand-alone topics rather than an integrated element across the curriculum (McCray, Alvarez-McHatton, & Beverly, 2011). Third, CRTP is not included, or evaluated, in student teaching or continuing education for in-service teachers (Trent, Kea, & Oh, 2008). Based on the absence of formal training as part of the teacher certification process, it is not surprising that teachers reported minimal level of CRTP adoption (Gay, 2010).

A recent CRTP study employed a mixed methods research design to address delivered several important findings (Kea & Trent, 2013). First, when preservice teacher candidates are exposed to culturally responsive curricula during coursework, do they infuse it in lesson plan development? Second, when preservice teacher candidates are exposed to culturally responsive curricula during coursework, do they infuse it in lesson delivery during field-based internship lesson observation? Third, when preservice teacher candidates are exposed to culturally responsive curricula during coursework, do they infuse it in lesson delivery during student teaching lesson observations?

The study covered a period of one school year involving a sample of 27 undergraduate preservice teacher candidates. The aim of the study was to measure participant's ability to design and deliver culturally responsive lesson plans using observations in student teaching settings. Kea and Trent (2013) indicated that while teachers embedded components of culturally responsive instruction in the lesson plans, few participants incorporated them during observations in their field-based placement and student teaching experiences. More specifically, a narrow approach to CRTP, akin to Tylor's (1871) definition of culture, was most frequently employed rather than the higher order levels of cultural integration involving transformation and social action. Half of the participants involved at least a token recognition of individual student's culture, and only six student teachers infused diversity within a teaching lesson. CRTP adoption and implementation remains a challenge even when specific programs are designed to address adoption.

Chapter 3: Methodology

Introduction

Chapter 3 details the study design, sample size and powering, variable operationalization, instrumentation, data collection plan, data analysis plan, and ethical considerations. The purpose of this quantitative correlational study was to examine the relationship between teachers' perceptions, and CRTP adoption at the school and classroom level. This study examined the relationship between UTAUT-S total score, and four sub dimensions: effort expectancy, facilitating conditions, performance expectancy, social influence, and the use of CRTP in schools and classrooms.

Research Design and Rationale

An adapted UTAUT-S was employed to examine the relationship between teachers' attitudes and beliefs and CRTP adoption (Venkatesh et al., 2003). A quantitative correlational design is an appropriate choice since the dependent, independent variables are interval, and the UTAUT-S instrument was validated on a sample of teachers (Leedy et al., 2019). Quantitative correlational studies involve hypotheses that are either accepted or rejected based upon empirical data (Leedy et al., 2019). Quantitative studies are appropriate when the independent and dependent variables are empirically measurable, hypotheses can be stated using study clearly defined study variables, and high levels of reliability are desired. This study is nonexperimental because no attempt was made to affect the participants' behavior through randomized trials.

Cross-sectional studies are used in multiple fields and observe data drawn from a population at a specific point in time (Levin, 2006). They are often used in the health field and used to better understand how often a specific outcome occurs in a certain population, although the cross-sectional approach does not need to be used only in a health context. Part of the cross-

sectional approach often includes collecting data on individual characteristics as well as information regarding the studied outcome. As Levin (2006) states, the cross-sectional study is designed to create a better understanding of the characteristics associated with a specific outcome. These studies are often descriptive but do not necessarily need to be, although by their nature they are neither longitudinal nor are they experimental. Typically, in a cross-sectional context, hypothesis is not formed, and the immediate goal is to describe characteristics of a population (Levin, 2006). The investigation that is conducted explores associations between a range of factors and a specific outcome. This description is consistent with that provided by Johnson (2001).

Levin (2006) noted that cross-sectional studies are specifically limited by the fact that they are only meant to investigate a phenomenon at one point in time and that they do not show causality. In many cases, they may not even show directionality of correlations or indicate whether an outcome occurred before or after a set of circumstances were in place. However, Levin (2006) was also speaking of the cross-sectional study from a specific medical perspective, whereas Johnson (2001) conceptualized it so that it could be applied across a range of fields. Levin (2006) did note that cross-sectional studies could be conducted in such a way that they yielded pseudo-longitudinal outcomes when the study was repeated regardless of whether the sample was the same or different from the original study.

Levin (2006) also emphasized the importance of response rates in the development of a proper study. Researchers should take care to not only create a study that included a highly representative initial sample that continued to be representative of the target population following responses from participants. Response rates could therefore impact the nature of a study (Levin, 2006). Nonresponse was a potential threat that could create an inadequately

representative sample, and so the use of techniques to minimize nonresponse could include prompting in a variety of fashions, from telephone calls to follow up requests for response. In any case of self-reporting, yet another threat that could emerge included the potential for responder bias. In cases where responders biased their answers in the direction that they anticipated researchers desired, the resulting study could be deeply flawed in the outcomes it produced (Levin, 2006).

The cross-sectional study was also ideal in certain cases given its advantages (Levin, 2006). This included the relatively inexpensive nature of these studies, the relatively short time required to conduct such a study, and the ability to assess many factors associated with an outcome. Such advantages had to be balanced out against the difficulty in inferring causation and the reality that such studies provided limited insight into a phenomenon without a larger understanding of how that phenomenon played out across a longer span of time (Levin, 2006). Consequently, researchers should choose the cross-sectional study approach with an understanding of the inherent advantages and disadvantages in order to determine whether the study was appropriate for their purposes.

For this study, the cross-sectional approach allowed for the study of a number of variables that included performance expectancy, effort expectancy, social influence, and facilitating conditions. How those are associated with the outcome of culturally responsive teaching practices was studied. This created a better understanding of how these variables influenced the adoption of culturally responsive teaching practices. The nature of this study captured a short instance in time regarding this phenomenon, but a follow up study could improve on data captured in this study. The variables explored in this study could be researched in future work to determine whether they are consistently associated with the adoption of

culturally responsive teaching practices. So, though this study is limited in the timeframe it is capturing, it could still be informative in the creation of follow up research.

Population

The study population was the 320,000 kindergarten through twelfth grade teachers employed by public schools in Texas (Bureau of Labor Statistics, 2017). Texas represents low cost and relatively easy availability of participants. Access to teachers can be achieved by contacting school administrators and making arrangements to reach out to teachers. By working in coordination with administrators, the recruitment process was facilitated.

Statistics drawn from the TEA (2016) indicated a total of 269,453 female teachers in the state and 83,719 male teachers, with female teachers constituting 76.41% of the population and male teachers constituting 23.59% of the population. This included 214,881 White teachers (60.94%), 91,422 Hispanic teachers (25.93%), 35,263 teachers of African descent (10.00%), 5,198 Asian teachers (1.47%), 1,263 Alaska Native teachers (0.36%), 829 Pacific Islander teachers (0.24%), and 3,776 teachers of two or more ethnicities (1.07%). Since 2012, the number of teachers across all demographic categories have increased, except those of Alaska Native descent and individuals of two or more ethnicities.

Sampling and Sampling Procedures

A minimum random sample of 115 individuals employed as public-school teachers in Texas were recruited for this study. Participants were recruited using the SurveyMonkey Audience panel, which includes the capability to select Texas-based public school teachers as an inclusion criteria. G*Power 3.1 software was used to calculate the minimum sample size required to power the study at 95% using the following assumptions: Pearson correlation statistic, medium effect size, $\alpha = .05$, $\beta = .95$, and one-tailed test. The choice of 95% powering

was based on earlier quantitative studies regarding CRTP (Debnam, Pas, Bottiani, Cash, & Bradshaw, 2015; Siwatu, 2011). Based on the assumption of 95% powering, the minimum sample size was 115 participants.

The study by Debnam et al. (2015) was designed as a means of better understanding how teaching practices could be adjusted to encourage higher degrees of engagement among students. The researchers also noted the importance of maintaining a high degree of learning in an increasingly diversified classroom environment, with respect to the increasing diversity of cultural backgrounds. Consequently, the researchers wanted to better understand how culturally responsive interventions impacted learning and whether they were effective. Debnam et al. (2015) noted that at the time of their research, there was little in the way of research regarding the effectiveness of culturally responsive interventions and their effect on the classroom environment. One particular weakness of the literature regarding culturally responsive interventions was that most of the study conducted into these approaches were reliant on self-reported measurements, which had limitations with regard to effectiveness and generalizability.

At the time of the research by Debnam et al. (2015), there was little in the way of previous research into culturally responsive interventions that also involved actual observation of teacher practices. There was also a lack of attention to issues of social desirability within the reports. Consequently, the researchers drew upon data derived from 142 Kindergarten through 8th grade teachers. Assessments were conducted using a number of tools, including the Assessing School Settings, Interaction of Students and Teachers (ASSIST), and the researchers' own external observations of conduct in the classroom. These means of assessment were combined with data drawn from self-reported data that teachers produced. What emerged from the study was that there was a discrepancy between the self-reported rates of culturally responsive teaching

strategies and that observed by the researchers (Debnam et al., 2015), though reports of self-efficacy were similar between teacher self-reporting and external observations. The findings regarding culturally responsive teaching strategies indicated that there was a need to develop new methods of assessing cultural responsiveness among teachers in a classroom to inform superior practices in the future.

The study by Siwatu (2011) was also an exploration of culturally responsive teaching. This was a mixed methods approach that included the collection of quantifiable data in combination with a second phase that included interviews between researchers and teachers. The study included a sample of 19 teachers. The quantitative aspect of the research included data collection that was used to inform what teachers believed constituted culturally responsive practices (Siwatu, 2011). The qualitative element of the research was designed to identify the experiences teachers had during their education program that helped to form their own self-efficacy beliefs regarding culturally responsive teaching. The qualitative interviews revealed that there were disparities in regard to what teachers were shown to be culturally responsive teaching methods (Siwatu, 2011). The qualitative aspect of the study therefore helped to better inform the data drawn from the quantitative portion of the study. Discrepancies in what teachers were taught constituted culturally responsive practices may inform why there are discrepancies in what teachers practice in the classroom. As concluded by Debnam et al. (2015), better methods of observation and informing teacher practices could help to refine and improve upon culturally responsive teaching practices in the classroom.

Instrumentation

The UTAUT-S (Appendix A) measures the extent to which individuals are inclined to adopt a particular innovation. The UTAUT-S developed by Venkatesh et al. (2003) unified eight

earlier technology adoption theories. The UTAUT-S includes 16-items using a 5-point Likert-type scale. The Likert-type scale extends from *strongly disagree* (a score of five), to *strongly agree* (a score of one) (Venkatesh et al., 2003). Each individual's total score ranges from 16 to 80. Each of the four subcategories of the UTAUT-S score ranges from 4 to 20. The UTAUT-S examines the following four dimensions of behavioral intent to adopt CRTP: performance expectancy, effort expectancy, social influence, and facilitation conditions. Each sub dimension includes four statements evaluated by participants using the Likert scale and is described as follows:

a) Performance expectancy refers to the degree to which an individual believes that using the system improves job performance. Related constructs include perceived usefulness, extrinsic motivation, relative advantage, and outcome expectations. An example of a performance expectancy survey item is "CRTP is effective for teaching RCELD students".
b) Effort expectancy refer to amount of effort required to use CRTP. Related constructs from the prior adoption models include perceived ease of use, and ease of use. An example of an effort expectancy survey item is: "Little incremental classroom time is needed to use CRTP".
c) Social influence refers to the degree to one perceives that important other individuals believe CRTP should be used. Related constructs from the prior adoption models include subjective norms, and image. An example of a social influence survey item is: "People who influence my behavior think that we should use CRTP".
d) Facilitation conditions refers to beliefs regarding the existence of organizational and technical infrastructure support CRTP use. Related constructs from the prior adoption models include support resources, perceived behavioral control, and

compatibility. An example of a facilitation conditions survey item is: “School administrators are knowledgeable about CRTP and support adoption”.

The UTAUT-S explained between 47% and 53% of the variance in adoption in two separate validation studies aggregating more than 1,000 participants (Venkatesh et al., 2003). The UTAUT-S outperformed eight other adoption instruments and reported Cronbach’s alpha of .69.

Operationalization of Variables

The purpose of this quantitative correlational study was to examine the relationship between teachers’ perceptions, and CRTP adoption at the school and classroom level. Table 2 describes how study variables were operationalized. CRTP school-wide and classroom level adoption is the dependent variable and was collected from demographic surveys. School-wide CRTP adoption equaled the approximate number of teachers adopting CRTP divided by the number of teachers. Classroom CRTP adoption equaled the proportion of time teachers employ CRTP during a typical school day. Independent variables of EE, FC, PE, and SI represent participant’s sub-scores on the UTAUT-S.

Pilot Test. A pilot test of the UTAUT-S, modified to reflect the current study, was conducted using five pedagogy experts to review and comment upon survey instructions and item wording. Three pedagogy professors and two K-12 classroom teachers participated in the Pilot Test and their suggestions are reflected in the survey in Appendix A.

Table 2

Variables, Scales of Measurement, Variable Type, and Operationalization

Variable	Scales of Measurement	Variable Type	Operationalization
CRTP school adoption	Interval	Dependent	Survey (Appendix B)
CRTP classroom adoption	Interval	Dependent	Survey
Total UTAUT-S score	Interval	Independent	UTAUT-S score
Effort expectancy	Interval	Independent	UTAUT-S EE score
Facilitating conditions	Interval	Independent	UTAUT-S FC score
Performance expectancy	Interval	Independent	UTAUT-S PE score
Social influence	Interval	Independent	UTAUT-S SI score

Procedure

No participant was recruited, nor any data collection initiated without prior approval from the Auburn University Internal Review Board (IRB). IRB policies and procedures maintain the integrity of the university and protect human subjects and students from harm. Participants were recruited using the SurveyMonkey Audience panel application, which randomly selected one thousand Texas public school teachers who received a recruitment email, with an expected response rate of 10%. Participants were required to acknowledge agreement with an Informed Consent Form, which states, (a) participation is voluntary, (b) participants may terminate at any time without consequences, (c) no remuneration will be paid for participating, and (d) all information will be held strictly confidential. A SurveyMonkey portal was employed to host data collection.

Data Collection and Analysis

Data collection occurred anonymously using a SurveyMonkey portal page that includes an Informed Consent Form, UTAUT-S (Appendix A), and an adoption survey (Appendix B). Data collection began with participants selecting *I agree* after reading the Informed Consent Form. If a respondent selected, *I do not agree*, they were thanked for their time exited the survey. Data collected by the Survey Monkey application was transferred to an Excel spreadsheet and examined for outliers and missing data (Rousseeuw & Leroy, 2005). Data were transferred from the spreadsheet to the Statistical Package for the Social Sciences 23 (SPSS) for data analysis. The study sample was characterized using descriptive statistics (means, standard deviations, frequencies, and percentages), and hypotheses were tested using Pearson correlation statistics.

Research Questions and Hypotheses

RQ1. What is the relationship between teachers' overall perceptions, performance expectancy, effort expectancy, social influence, and facilitating conditions and culturally responsive teaching practices adoption school-wide?

H_o1. There is no relationship between classroom teachers' UTAUT-S toal score and culturally responsive teaching practices adoption in entire schools.

H_o2. There is no relationship between classroom teachers' UTAUT-S subdimension scores for performance expectancy, effort expectancy, social influence, and facilitating conditions score and culturally responsive teaching practices adoption in entire schools.

RQ2: What is the relationship between teachers' overall perceptions, performance expectancy, effort expectancy, social influence, and facilitating conditions and culturally responsive teaching practices adoption in the classroom?

H_o3. There is no relationship between classroom teachers' UTAUT-S toal score and culturally responsive teaching practice adoption in entire schools.

H_o4. There is no relationship between classroom teachers' UTAUT-S subdimension scores for performance expectancy, effort expectancy, social influence, and facilitating conditions score and culturally responsive teaching practice adoption in entire schools.

Table 3

Statistical Tests for Null Hypotheses

Hypothesis	Variable	Statistics
Hypothesis 1_o. There is no relationship between teachers' total UTAUT-S score**,** performance expectancy, effort expectancy, social influence, and facilitating and culturally responsive teaching practices adoption in entire schools.	UTAUT total score, EE, FC, PE, and SI sub-scores, school adoption ratio	Multiple Linear regression
Hypothesis 2_o. There is no relationship between total UTAUT-S score**,** performance expectancy, effort expectancy, social influence, and facilitating and culturally responsive teaching practices adoption in the classroom.	UTAUT total score, EE, FC, PE, and SI sub-scores, school adoption ratio	Multiple linear regression

Chapter 4: Results

Introduction

The purpose of this quantitative correlational study was to examine the relationship between teachers' perceptions, and CRTP adoption at the school and classroom level. The aim of this study was to advance knowledge on factors that influence classroom teacher's adoption of CRTP. This study is responsive to a future research suggestion by Debnam et al. (2015) who noted that little research existed regarding CRTP adoption. The aim of CRTP adoption is to bridge the academic achievement gap for diverse students at a time when diversity is rapidly increasing. In Texas, which was the setting for the study, Hispanics comprised 52.2% of the public-school population and increased at six times the national growth rate (TEA, 2016).

Respondents provided demographic data for age, gender, teaching experience, CRTP experience, and school type. Data for factors affecting CRTP adoption were collected from respondents using the UTAUT Survey and subscales for performance expectancy, effort expectancy, social influence, and facilitation conditions (Venkatesh et al., 2003). Classroom and school-wide adoption were measured with a Likert-type scale from *strongly disagree* (a score of five), to *strongly agree* (a score of one). Findings reflected Texas public school teachers' attitudes and beliefs regarding CRTP and CRTP adoption (Venkatesh et al., 2003).

Sample Demographics

SurveyMonkey Audience® panel recruited a purposive sample of 115 classroom teachers in Texas public schools. As shown in Table 4, twenty-four (21%) participants were male and 92 (79%) were female. Respondent gender composition was similar to Texas-wide statistics, which were 76% female and 24% male (TEA, 2016). The mean age for participants at the time of the survey was 35.1 years; mean teaching experience was 10.0 years, and mean CRTP experience

was 3.31 years. School type for respondents were approximately equally divided, 41 (35%) taught primary school students, 42 (36%) taught middle school students, and 33 (28%) taught high school students. SurveyMonkey Audience® provides only fully completed responses, as such, no data is available on the number of individuals recruited needed to produce a response rate.

Table 4

Study Sample Demographics

Demographic variable	*N/%*	Mean	*SD*
Age	116	35.10	7.91
CRTP Experience	116	3.31	2.02
Gender			
Man	24(21%)	-	-
Woman	92(79%)	-	-
School type			
Primary	41(35%)	-	-
Middle	42(36%)	-	-
High School	33(28%)	-	-
Teaching Experience	116	10.02	6.54

Table 5 summarizes descriptive statistics for UTAUT total score, performance expectancy, social influence, effort expectancy, facilitating conditions, classroom adoption, and school adoption. The Statistical Package for the Social Sciences® 26 (SPSS) was used to conduct descriptive and inferential statistical procedures. The individual classroom teacher was both the unit of observation and the unit of analysis. The unit of analysis is a bound representing study focus, in this case perceptions of individual classroom teachers (Leedy et al., 2019). UTAUT total mean score for all participants was 2.68 (*SD*=0.85). Performance expectancy mean score was 2.76 (*SD*=1.06). Effort expectancy mean score was 3.00 (*SD*=1.10). Social influence

mean score was 2.38 (*SD*=0.83). Facilitating conditions mean score was 2.58 (*SD*=0.93). Classroom adoption mean score was 2.56 (*SD*=1.60). Schoolwide adoption mean score was 2.70 (*SD*=1.55).

Table 5

Descriptive Statistics by Study Variable

Variable	Mean	*SD*
UTAUT total score	2.68	0.85
Performance expectancy	2.76	1.06
Effort expectancy	3.00	1.10
Social influence	2.38	0.83
Facilitating conditions	2.58	0.93
Classroom adoption	2.56	1.60
School-wide adoption	2.70	1.55

N=116.

Statistical Assumptions

Statistical assumption for the use of linear regression analysis are: 1) linear relationship between dependent and independent variables; 2) homoscedasticity, or equality of residuals, 3) and no autocorrelation (Durbin Watson), and normally distributed dependent variable (Shapiro-Wilk). Linear regression is a statistical method for obtaining a formula to predict values of the dependent variable based on one of more independent variables using a *best fit* straight-line formula. Linear regression was employed to describe the relationships between the dependent variables of classroom adoption, and school adoption, and independent variables of performance expectancy, effort expectancy, social influence, and facilitating conditions. Assumptions for use of regression were met. Shapiro-Wilk was not significant for dependent variables of classroom adoption, and school-wide adoption, at *p*=.651 and *p*=.443, respectively. Durbin Watson

statistics of the four regression procedures ranged between 1.5 and 2.5, indicating no autocorrelation, and met the homoscedastic requirement.

Two hypotheses were required to address each research question because participant's survey response data would be double counted if UTAUT-S total score (which was the average response for all subdimensions), and subdimension responses were included in a single regression procedure (Leedy et al., 2019). For each research questions, regression procedures were conducted with UTAUT-S total score as the independent variable, and a second regression procedure conducted with performance expectancy, effort expectancy, social influence, and facilitating conditions as independent variables. Regression procedures were conducted with SPSS 26 and the results reported by hypothesis.

Results

Research Questions and Hypotheses

RQ1. What is the relationship between teachers' overall perceptions, performance expectancy, effort expectancy, social influence, and facilitating conditions and culturally responsive teaching practices school-wide adoption?

H_o1. There is no relationship between classroom teachers' UTAUT-S total score, and culturally responsive teaching practices school-wide adoption.

Linear regression analysis was used to test if, and to what extent, UTAUT-S total scores were associated with school-wide adoption of culturally responsive teaching practices. The regression model indicated a significant positive relationship between UTAUT-S total score and school-wide adoption ($F(1,115)=17.054$, $p<.01$). As shown in Table 6, UTAUT-S total score explained 13.0% of the variance ($R^2=.130$) in school-wide CRTP adoption. Therefore, Null Hypothesis 1 was rejected; there was a statistically significant relationship between UTAUT-S total scores, and school-wide adoption of culturally responsive teaching practices.

Table 6

Regression Model Summary for UTAUT-S and School-wide CRTP Adoption

Model	*R*	R^2	Adjusted R^2	Std. Error of the Estimate
1	.361[a]	.130	.122	1.468

a. Predictors: (Constant), UTAUT-S Total.

H_o2. There is no association between classroom teachers' UTAUT-S sub-dimension scores for performance expectancy, effort expectancy, social influence, and facilitating conditions, and culturally responsive teaching practices school-wide adoption.

Multiple regression analysis was used to test if, and to what extent, UTAUT-S sub-dimension scores for performance expectancy, effort expectancy, social influence, and facilitating conditions were associated with school-wide CRTP adoption. As shown in Table 7, UTAUT-S sub-dimensions explained 25.8% of the variance (R^2=.258) in school-wide CRTP adoption. As shown in Table 8, social influence (β = .625, p<.01), and facilitating conditions β = .691, p<.01) significantly predicted school-wide CRTP adoption. Therefore, Null Hypothesis 2 was rejected for social influence, and facilitating conditions, and accepted for performance expectancy, and effort expectancy.

Table 7

Model Summary for UTAUT-S Sub-dimensions and School-wide CRTP Adoption

Model	*R*	R^2	Adjusted R^2	Std. Error of the Estimate
1	.508[a]	.258	.231	1.374

a. Predictors: (Constant), Facilitating Conditions, Social Influence, Performance Expectancy, Effort Expectancy

Table 8

Regression Coefficients for UTAUT-S Subdimensions Scores and School-wide CRTP Adoption

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	*Beta*	*t*	*Sig.*
1	(Constant)	.517	.443	--	1.168	.246
	Performance expectancy	-.394	.235	-.267	-1.672	.097
	Effort expectancy	-.003	.258	-.002	-.012	.990
	Social influence	.625	.198	.332	3.158	.002**
	Facilitating conditions	.691	.256	.411	2.700	.008**

a. Dependent Variable: School adoption. **Significant at $p<.01$.

RQ2: What is the relationship between teachers' overall perceptions, performance expectancy, effort expectancy, social influence, and facilitating conditions and culturally responsive teaching practices classroom adoption?

H_o3. There is no association between classroom teachers' UTAUT-S total score and culturally responsive teaching practice classroom adoption.

Linear regression analysis was used to test if, and to what extent, UTAUT-S total scores were associated with classroom adoption of culturally responsive teaching practices. As shown in Table 9, linear regression indicated that UTAUT-S total scores explained 18.2% of the variance in classroom CRTP adoption (R^2=.182, $F(1,115)$=25.437, $p<.01$). Therefore, Null Hypothesis 3 was rejected, there was a statistically significant positive association between UTAUT-S total scores, and classroom CRTP adoption.

Table 9

Regression of UTAUT-S Total Score and Classroom CRTP Adoption

Model	*R*	R^2	Adjusted R^2	Std. Error of the Estimate
1	.427[a]	.182	.175	1.449

a. Predictors: (Constant), UTAUT-S Total.

H_o4. There is no association between classroom teachers' UTAUT-S sub-dimension scores for performance expectancy, effort expectancy, social influence, and facilitating conditions, and culturally responsive teaching practices classroom adoption.

Multiple regression analysis was employed to test if, and to what extent, UTAUT sub-dimension scores for performance expectancy, effort expectancy, social influence, and facilitating conditions were associated with classroom adoption culturally responsive teaching practices. As shown in Table 10, UTAUT-S subdimensions explained 28.6% of the variance (R^2=.286) in classroom CRTP adoption. As shown in Table 11, social influence (β = .613, p<.01), and facilitating conditions (β = .699, p<.01) exhibited modest positive associations with classroom adoption. Performance expectancy (β = -.285, p=.227), and effort expectancy (β = .008, p=.974) exhibited no significant association with classroom adoption. Therefore, null hypothesis 4 was rejected for social influence, and facilitating conditions, and accepted for performance expectancy, and effort expectancy.

Table 10

Regression Model Summary for UTAUT-S and Classroom CRTP Adoption

Model	R	R^2	Adjusted R^2	Std. Error of the Estimate
1	.535[a]	.286	.261	1.372

a. Predictors: (Constant), Facilitating Conditions, Social Influence, Performance Expectancy, Effort Expectancy

Table 11

Regression Coefficients for UTAUT-S Subdimensions Scores and Classroom CRTP Adoption

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	*t*	Sig.
1	(Constant)	.055	.442	--	.123	.902
	Performance expectancy	-.285	.235	-.190	-1.214	.227
	Effort expectancy	.008	.257	.006	.033	.974
	Social influence	.613	.198	.320	3.100	.002**
	Facilitating conditions	.699	.256	.409	2.736	.007**

a. Dependent Variable: Classroom adoption. **Significant at $p<.01$.

Summary

The purpose of this quantitative correlational study was to examine the relationship between teachers' perceptions, and CRTP adoption at the school and classroom level. A purposive sample of 115 classroom teachers in Texas public schools completed an adapted version of the UTAUT-S to examine the association between teachers' attitudes and beliefs regarding CRTP adoption, and CRTP school and classroom adoption (Venkatesh et al., 2003). The sample comprised 92% female, with an average of 10.0 years of teaching experience, and 3.3 years of CRTP experience. Linear regression analysis was used to test if, and to what extent, UTAUT-S total scores were associated with school-wide, and classroom adoption of CRTP. Findings indicated teachers' overall perception and belief regarding CRTP adoption, as measured by UTAUT-S total scores explained 13.0% of the variance in school-wide adoption, and 18.2% of the variance in classroom adoption. UTAUT-S sub-dimensions of social influence, and facilitating conditions were significantly associated with CRTP adoption at both the school-wide and classroom levels. UTAUT-S sub-dimensions of performance expectancy, and effort expectancy were not significantly associated with CRTP adoption at both the school-wide and

classroom levels. Chapter 5 includes a discussion of study findings, conclusions, and recommendations.

Chapter 5: Discussion, Conclusion, and Recommendations

Introduction

Despite some gains in overall U.S. student achievement, the gap in academic achievement persistsfor racially, culturally, ethnically, and linguistically diverse (RCELD) students (Aud et al., 2016). The academic achievement gap is particularly important in Texas where Hispanic students represented 52.2% of enrollment in 2016, and the proportion of Hispanic students was increasing at six times the national average (TEA, 2016). While culturally responsive teaching practices (CRTP) in classrooms was contributed to reducing the academic achievement gap between White students and RCELD students, CRTP adoption was slow and uneven (Aud et al., 2016; Muijs et al., 2014). The purpose of this quantitative correlational study was to examine the relationship between teachers' perceptions, and CRTP adoption at the school and classroom level.

Study data was collected for this study from a purposive sample of 115 Texas public-school teachers completing a demographic survey, and the Unified Theory of Acceptance and Use of Technology-Survey (UTAUT-S). The UTAUT-S was previously used in classroom-based research, primarily for adoption of new learning technologies, such as internet-based applications (Sawang, O'Connor, & Ali, 2017). There were two key findings from this study. First, the application of UTAUT constructs of performance expectancy, effort expectancy, social influence, and facilitating conditions to adoption of teaching practices yielded significant results. Specifically, UTAUT construct explained 28.6% of the variance in classroom CRTP adoption (p>.01), which is similar to 41% of variance in adoption explained by validation studies of UTAUT-S (Venkatesh et al., 2003). Therefore, techniques employed to accelerate technology

adoption may be suitable for use in CRTP adoption. Second, social influence, and facilitating conditions significantly affected classroom and school-wide CRTP adoption.

Interpretation of Findings

CRTP Adoption in Schools

There were several sub findings in exploring research question one, which asks, what is the relationship between performance expectancy, effort expectancy, social influence, and facilitating conditions that determine culturally responsive teaching practices adoption in entire schools and individual classrooms? Prior researcher validated the use of the UTAUT as a means of predicting adoption of technologies within the organizational context (Venkatesh et al., 2003). Generally, the UTAUT indicated that individuals had both performance and effort expectations that liked to whether they were willing to adopt a technology. In addition, both social influences could drive adoption of a technology, as could various facilitating conditions within an organization. Venkatesh et al. (2003) indicated that the UTAUT score accounted for 40% to 50% of the variance in adoption of a behavior, and this finding was confirmed by this study

The four constructs of the UTAUT were predictive of CRTP adoption in schools for both UTAUT-S total scores (R^2=.130), and the four subdimensions together (R^2=.258). The difference in the predictive power between total scores and subdimension scores is explained by the negative β's for performance expectancy, and effort expectancy. While not statistically significant, negative β's tended to "wash-out" the predictive power of social influence, and facilitating conditions in the total score.

The findings that four constructs of the UTAUT were associated with increased CRTP adoption in schools was consistent with the existing literature. Previous research revealed that 70% of behavioral intention to adopt a newly presented technology was explained by the construction of the UTAUT (Venkatesh et al., 2003). Performance expectancy, effort expectancy, social influence, and facilitating conditions all helped to explain whether people were willing to adopt a new technology.

Venkatesh et al. (2003) indicated that individuals expect a new technology to perform to a certain level of expectancy. When technology failed to perform up to expectations, it resulted in a lower likeliness of a person adopting a technology. Individuals presented with a technology anticipate that it will perform to a specific degree and look forward to seeing whether the desired results actually occur. Individuals also expect that a certain degree of effort will be required to use the technology, which Venkatesh et al. (2003) characterized as effort expectancy. Introducing a new technology needed to occur within a context that eased the effort required to use the technology such that the effort required did not exceed expectations and reduce the likeliness that a person adopts it.

Facilitating conditions (β=.411, p<.01)), and social influence (β=.332, p>.01). were significant predictors of school-wide CRTP adoption. Social influence referred to the degree to which individuals felt others expected them to use the new technology, and when this feeling was intense, the individual was more likely to adopt the technology (Venkatesh et al., 2003). The current study was consistent with this, though the current study linked social influence on a willingness to adopt CRTP. Facilitating conditions, on the other hand, referred to the degree to which individuals believed there was support for the use of a new technology (Venkatesh et al., 2003). Within the current study, the findings were generally consistent with literature, though the

current study indicated that performance expectancy, and effort expectancy were not significant predictors of adoption.

The findings regarding facilitating conditions and social influence were anticipated given the existing literature. Facilitating conditions were indicted by Venkatesh et al. (2003) as important because they provided support for an individual to adopt a new behavior. Individuals needed the support of the larger organization to help them adopt a new technology, because without the necessary support there may be confusion regarding how to adopt the technology and implement it. Organizations that provided material resources that helped individuals learn more about a technology or provided instructors who guided learners in how to use a technology were more likely to promote technology adoption. Consequently, it was important for organizations to set a foundation for promoting technology adoption by making the appropriate resources available to learners. The UTAUT was successfully adapted to predict CRTP, suggesting its value when applied outside the technology context while also suggesting important factors promoting the adoption of CRTP.

Of course, the current findings were contextualized within the importance of social influence with regard to whether someone would adopt the technology. Social influence was also noted by Venkatesh et al. (2003) as an important predictor of whether someone would be more likely to adopt a technology. The importance of social influence on people's behaviors is well researched. Adjacent research has previously indicated that social influence impacts food intake and choice (Cruys, Bevelander, & Hermans, 2014), savings behavior (Jamal, Ramlan, Karim, Mohidin, & Osman, 2015), and health IT adoption patterns (Bozan, Davey, & Parker, 2015). Venkatesh et al. (2015) indicated that social influence was characterized by an individual's valuing of other peoples' opinions. Image, social factors, and subjective norms all impacted

behavior. Consequently, Venkatesh et al. noted that social influence functions in several different ways but essentially was related to social and cultural norms. The findings that social influence impacted CRTP adoption was therefore consistent not only within the context of the UTAUT but also with separate research investigating how social influences impacted behavior. Given the fact that schoolwide adoption of a technology was strongly associated with these two factors, schools may reap the strongest benefits by addressing these two issues first.

Findings indicated that school-wide CRTP adoption was more likely when teachers felt necessary and sufficient resources would be available for implementation and their colleagues agreed to adopt as well. Schools were also more likely to adopt CRTP if they believed that the intervention would be relatively easy to implement and that there would be a corresponding positive outcome for the effort invested into implementing CRTP. Since social influence was also more likely to lead to a school adopting CRTP, the findings indicated that when teacher believed others expected them to use CRTP, they were more likely to implement it. Finally, school-wide adoption of CRTP was more likely when there was a perceived support for its use.

CRTP Adoption in Classrooms

The four constructs of the UTAUT were predictive of CRTP adoption in classrooms both UTAUT-S total scores (R^2=.182), and the four subdimensions together (R^2=.286), which was similar to the predicative power for school-wide CRTP adoption. The difference in the predictive power between UTAUT total scores and subdimension scores is explained by the negative β's for performance expectancy, and effort expectancy. While not statistically significant, negative β's tended to "wash-out" the predictive power of social influence, and facilitating conditions in the total score.

Facilitating conditions (β=.409, $p<.01$), and social influence (β=.320, $p>.01$). were significant predictors of school-wide CRTP adoption. As discussed in the prior section, social influence referred to the degree to which individuals felt others expected them to use the new technology, and when this feeling was intense, the individual was more likely to adopt the technology (Venkatesh et al., 2003). Facilitating conditions referred to the degree to which individuals believed necessary and sufficient resources were available to implement the new technology (Venkatesh et al., 2003). Within the current study, the findings were generally consistent with literature, except for the findings that performance expectancy, and effort expectancy were not significant predictors of CRTP adoption in the classroom.

Findings indicated that classroom CRTP adoption was more likely when teachers felt resources would be available for implementation, that and their colleagues agreed to adopt as well. Since social influence was also more likely to lead to a classroom CRTP adoption, findings suggest garnering the support of key influencers may be important to promote adoption.

Once again, the findings of the current study were consistent with the existing literature and the UTAUT as presented by Venkatesh et al. (2003). The finding that facilitating conditions and social influence were particularly strong predictors of CRTP adoption in the classroom was also internally consistent with the first finding that schoolwide adoption of CRTP was particularly influenced by these two variables. Encouraging the implementation of CRTP in the classroom may therefore be specifically enhancedby providing strong organizational support for CRTP adoption and creating an environment in which peers encouraged use of CRTP. Although the UTAUT was developed as a means of predicting adoption of technology, it again demonstrated its value when applied to other contexts.

Limitations

One limitation to the generalizability of the study findings was on the reliance of teachers from only the geographic region of Texas. Study findings are limited in their generalizability when only specific regions are included because specific regions of a world, or even within one country, may have regional specific factors at play that influence the outcomes of the study. A region's culture, mores, and trends may all have some sort of impact on how people respond to a particular phenomenon, in this study, the measurement of teacher's perceptions about CRTP schoolwide and classroom adoption. However, it is outside the scope of the study to determine all the potential regional variables that might influence the study's findings. Additionally, teachers were not specifically asked to identify their race/ethnicity,so conclusions based upon similarities between student and teacher cultures was not explored. Nationally drawn samples generate results that minimize the impact of regional influences, but the researcher was also restricted in resources and was forced to limit the sample to the geographic state of Texas. Despite the geographic limitations of the study, an adequately sized sample of 115 individuals was studied to generalize findings to other schools in Texas with similar ethnic compositions.

With regard to adequate representation of the larger population, the research was also not suited to typify the national population of teachers because it was not appropriately representative of the country's national teacher demographics. A sample that does not adequately capture the demographic factors of the larger population cannot adequately represent that sample, and so researchers attempt to create a sample that appropriately captures that larger population. Failure to do so can lead to disproportionate representation of specific demographic groups. Given that varying groups have different experiences that contextualize how they

interpret events or respond to stimuli, a non-representative sample can lead to findings that would not typify the responses of the larger population.

Because the survey was conducted online, the researcher also did not have the ability to control the environment in which the responses were made. The lack of consistency in environment presented another variable outside the control of the researcher, in this case the chance for an environment to range in its characterization. As such, the participants may have taken the survey in a wide number of conditions, potentially leading to distraction or participation fatigue depending on the environmental conditions.

Recommendations

Future research is needed to validate study findings, which is necessary when pedagogical changes are recommended at the classroom level. Findings from a stratified nation-wide sample could be used to develop programs and practices to increase the velocity of CRTP adoption in schools. Taking this approach would help to determine whether the findings of this study, most applicable to Texas, could also be extended to the national population of teachers.

There are practical recommendations regarding the UTAUT and CRTP that can be implemented into schools that may help to increase the usage of CRTP. The findings indicated the value of all four constructs of the UTAUT in explaining CRTP adoption. However, the research particularly pointed to facilitating conditions and social influence as strong predictors of whether schoolwide adoption of CRTP would occur and whether CRTP would be implemented in the classroom. Consequently, if schools want to more quickly promote CRTP adoption, then it is important to encourage both of these factors. Schools can choose to create an environment in which teachers are supported in the adoption of CRTP. They can provide resources, mentors, and have teachers sit in on classes where CRTP is being used.

This can help to clarify for teachers how CRTP can be used, and diverse approaches to helping teachers implement CRTP could create an environment in which facilitating conditions were strongly in favor of CRTP adoption. Additionally, given the impact of social influence on CRTP adoption, using approaches such as mentorship and class sit-ins may both be used to demonstrate a positive social influence encouraging CRTP use, given the social nature of these approaches to encouraging CRTP.

The successful adaptation of the UTAUT to CRTP also leads to recommendations for the theory itself. As demonstrated, the UTAUT can be adopted to help explain adoption of teaching practices and not just technology. As such, future research should attempt to implement the UTAUT and use it to help explain adoption of things other than technology. In the current study, that meant helping explain adoption of teaching practices. However, future research may use the UTAUT to help explain not only different types of teaching practices but the likeliness of adopting certain materials or behaviors among administration, as just two examples. Future research should attempt to adapt the UTAUT in increasingly diverse situations to help identify just how flexibly the theory is and how adaptable it is to diverse contexts. The most immediate way the UTAUT could be adopted, from the findings of this study, may be to explain different types of teaching practices. However, future research should attempt to apply the UTAUT in even more diverse circumstances.

Implications

In practice, the current findings suggest that the likelihood of schools adopting CRTP, and teachers using CRTP within their classrooms, was improved when facilitating conditions exist, and changes are consistent with the principles of social influence. For schools, this means it is important to provide the appropriate support, or facilitating conditions, that help teachers

implement CRTP. Schools should identify influencers among teachers and incorporate their feedback into the change process. In addition, administrators can provide CRTP-based instruction guides and professional development opportunities. Finally, schools should review with teachers the outcomes of introducing CRTP, presenting schoolwide improvements resulting from the use of CRTP and demonstrating to teachers that their use of such interventions has resulted in corresponding, improved schoolwide performance.

The theoretical implications for this study are that the UTAUT itself can be extended to understanding both organization wide, and individual adoption, of a behavior that is not technological in nature. The current study suggests that the use of teaching practices could be predicted using the UTAUT total score and its four constructions of performance expectations, effort expectations, social influence, and facilitating conditions. As such, the theory may be extendable to research whether a teaching intervention is likely to be adopted by using the UTAUT as the research instrument. The degree to which the UTAUT can be extended remains unknown, though the findings of the current study imply that the theory can be applied to contexts that are not restricted to technology adaption alone.

Conclusion

The purpose of this quantitative correlational study was to examine the relationship between teachers' perceptions, and CRTP adoption at the school and classroom level. This study adapted the UTAUT and its four constructs of performance expectations, effort expectations, social influence, and facilitating condition to predicting not an increased willingness to adopt a new technology, but to adopt a new teaching practice. The current study therefore not only helped better understand willingness to adopt teaching practices but to apply the UTAUT outside of a technological context.

The study findings indicated that increased scores on the UTAUT and its four constructs were associated with an increased willingness to adopt CRTP. Consequently, schools hoping to encourage adoption of the CRTP should attempt to increase supports within a school meant to help teachers adopt such practices. These supports would not only act as the facilitating conditions necessary to encourage use but improve the effort expectations of teachers, who may be more easily able to introduce CRTP and achieve expected outcomes. As a CRTP-centered culture is put into place and adoption increases, it may lead to greater social influence causing teachers to feel greater expectations that they should use CRTP as well. However, administrators may also be able to meet performance expectations by demonstrating how the use of CRTP has led to increased school performance. Future studies should attempt to replicate the approach used within the current study except expanded to a nationally representative sample to better understand if teachers across the nation are more willing to adopt CRPT as the constructs of the UTAUT are met.

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Appendix A: Culturally Responsive Teaching Practices Adoption Survey

Purpose: The purpose of this quantitative correlational study is to examine the relationship between teachers' perceptions, and CRTP adoption at the school and classroom level.

Definition. Culturally Responsive Teaching Practice refers to pedagogy that respects and uses the reality, history, and perspectives of each individual student as an integral part of educational practice. CRTP adoption means the teacher 1) develops and nurtures cultural competence, 2) develops a critical consciousness of cultural diversity, and 3) implements programs and practices that include ethnic and culture specific content and learning strategies (Gay, 2013; Ladson-Billings, 1995).

Instructions. Read each statement below and select the response that most closely reflects your experience in the classroom.

Performance Expectancy	**Strongly Disagree**	**Somewhat Disagree**	**Neutral**	**Somewhat Agree**	**Strongly Agree**
CRTP is effective for teaching RCELD students.	1	2	3	4	5
CRTP accelerates learning RCELD students.	1	2	3	4	5
CRTP increases full classroom learning pace.	1	2	3	4	5
CRTP are an important factor in school administrator's evaluation of my teaching performance.	1	2	3	4	5
Effort Expectancy					
CRTP are clear and understandable.	1	2	3	4	5
Learning CRTP is easy for teachers.	1	2	3	4	5
Implementing CRTP is easy for teachers.	1	2	3	4	5
Little incremental classroom time is needed to use CRTP.	1	2	3	4	5
Social Influence					
People who influence my behavior think that we should use CRTP.	1	2	3	4	5
People who are important to me think that we should use CRTP.	1	2	3	4	5
School administration is supportive of CRTP adoption.	1	2	3	4	5
In general, teachers, students, and administrators support CRTP adoption.	1	2	3	4	5

Facilitating Conditions					
The resources necessary to use CRTP are available.	1	2	3	4	5
School administrators are knowledgeable about CRTP and support adoption.	1	2	3	4	5
CRTP is consistent with existing programs and practices.	1	2	3	4	5
Continuing education and training is available for teachers to learn CRTP.	1	2	3	4	5

Appendix B: Culturally Responsive Teaching Practices Adoption Scale

	Strongly Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Strongly Agree
CRTP is fully adopted in my classroom.	1	2	3	4	5
CRTP is fully adopted in my school.	1	2	3	4	5