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**THE JOURNEY TO IMPROVING STUDENT CONNECTEDNESS:
EXPLORING TEACHER SELF-EFFICACY, USE, AND
PERCEPTIONS OF CULTURALLY SUSTAINING PEDAGOGY**

CHRISTOPHER F. CIPRIANO

A DISSERTATION

In the

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Degree of Doctor of Education

2022

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THE JOURNEY TO IMPROVING STUDENT CONNECTEDNESS:
EXPLORING TEACHER SELF-EFFICACY, USE, AND
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Christopher F. Cipriano

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ABSTRACT

THE JOURNEY TO IMPROVING STUDENT CONNECTEDNESS:
EXPLORING TEACHER SELF-EFFICACY, USE, AND
PERCEPTIONS OF CULTURALLY SUSTAINING PEDAGOGY

Christopher F. Cipriano

Dr. David Title, Ed.D., Dissertation Chair

This Dissertation in Practice investigated to what extent professional learning impacted teacher perceptions, instruction, and self-efficacy of Culturally Sustaining Pedagogy (CSP) at a Catholic high school. The dissertation followed an Improvement Science framework to address a specific problem of practice: a lack of universal student connectedness at the high school level. As students begin ninth grade, the connectedness to school many experienced on the elementary level often wanes, with academic, social, and emotional impacts. To build connectedness, the researcher selected a specific change idea focused upon CSP. The intervention consisted of two professional development (PD) sessions and several opportunities for meetings with and individual coaching by a consultant. This explanatory sequential mixed methods study gathered quantitative data assessing teacher self-efficacy pre- and post-intervention. It also tracked teacher use of CSP over a four-week period. The researcher gathered qualitative data from participants during semi-structured interviews following the completion of the intervention. Data showed statistically significant growth in teacher self-efficacy scores and teacher use of nearly 2,300 culturally sustaining practices. Results also indicated largely favorable teacher feedback to CSP and the study's intervention. Key findings of this study indicated a successful multi-faceted intervention model. The approach allowed teachers' confidence in the use of CSP to increase and

their self-efficacy to grow. Teachers also reported that culturally sustaining practices had a positive impact upon classroom culture and student learning. Teachers described improved classroom climate, growth in student engagement, and opportunities to learn more about students while strengthening student/teacher relationships. Teachers requested additional PD opportunities to implement specific CSP strategies and to ensure CSP use is authentic and addresses best practices. This study can serve as a model for other schools – both public and private – seeking to improve teacher use of culturally sustaining practices to build student connectedness.

Keywords: student connectedness, Culturally Sustaining Pedagogy, high school, Catholic school, student engagement, classroom climate

DEDICATION

This dissertation is the culmination of a three-year journey that would not have been possible without the love and support of my family. I am grateful for their encouragement from day one and complete understanding when we altered family life so that I could complete an assignment, read a journal article, go to the library, or write a paper – and eventually this dissertation. I would not be successfully completing this marathon without them – and couldn't be prouder to have my biggest champions – Joanna, Owen, and Dylan – cheering me on at the finish line. It is with unconditional love that I say thank you for all that you have done and continue to do for me – and dedicate this work to you.

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Since our orientation in August 2019, one amazing professor after another has provided support for Cohort 1 throughout our doctoral studies journey. They each modeled social and emotional learning and guided us with compassion and encouragement. I am especially grateful to Dr. Title, who worked tirelessly to not only bring this doctoral program to reality, but also guided me throughout this dissertation process. A big thank you as well to Dr. Marmo and Dr. Dowling for support, assistance, and encouragement throughout the journey. A special thanks for the faculty at Notre Dame High School – for without their commitment to participate in training, and ultimately bring culturally sustaining pedagogy to their students, this study would not have been possible.

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Chapter One: The Problem of Practice

A student is less likely to experience academic, behavioral, and attendance issues or engage in risky behaviors when he or she has established a strong connection to school (Aldridge & McChesney, 2018; Bradshaw et al., 2014; Centers for Disease Control and Prevention (CDC), 2009). Encouraging the growth of connectedness in all students is an important responsibility for educators with connected students experiencing greater success in and out of the classroom (Aldridge & McChesney, 2018; McGrath & Van Bergen, 2015; Pikulski et al., 2020). However, educators at the secondary level face an additional challenge, as research shows age negatively affects connectedness. Middle and high school students often report “significantly lower” levels of student connectedness than their elementary school counterparts (Pikulski et al., 2020).

This study sought to improve student connectedness at the secondary level by increasing teacher proficiency in the use of Culturally Sustaining Pedagogy (CSP). More specifically, the purpose of this Dissertation in Practice was to assess to what extent professional learning impacts teacher perceptions, instruction, and self-efficacy of CSP at a Catholic high school. Following the Improvement Science framework, the process included the identification of a significant problem found in the researcher’s organization and moved toward a solution with a goal of providing improved outcomes and efficiencies (Bryk et al., 2015). In its entirety, the Improvement Science approach includes the following steps: the identification of a problem of practice (PoP), end-user consultations, a review of data, the completion of a root cause analysis, a review of relevant literature, and the development of a working theory of improvement (Bryk et al., 2015). Following these steps and throughout the intervention phase, the researcher gathered data on a research-supported intervention before completing an analysis of the data, a reflection on the process, and considering implications for future research and implementation.

Background of the Problem

Defined as a measure of how strongly students feel they belong to a school community and coupled with a connection of value to the community, connectedness influences student experiences and outcomes (Datu & Yuen, 2020). This definition effectively and succinctly summarizes the concept and proves applicable to all school settings, including the location of this study. When they feel connected to school, students are more likely than their disconnected peers to experience a variety of benefits. Among these benefits, research has shown connectedness to school to be an important contributing factor to students' academic success (Bradshaw et al., 2014). Connected students are also more likely to graduate from school (Datu & Yuen, 2020). At the same time, they are also less likely to experience behavioral and attendance issues or to engage in risky behaviors including alcohol, tobacco, and drug use (Aldridge & McChesney, 2018; Bradshaw et al., 2014; CDC, 2009).

To promote the success of students and to prevent the negative outcomes most frequently experienced by disconnected students, developing student connectedness is an essential task for educators. Beyond the significant personal benefits and outcomes experienced by the student, the task of building connectedness has added urgency in a private school setting where student enrollment affects the financial status and operational viability of the institution. Promoting connectedness provides an opportunity to ensure students' academic, social, and emotional success, while also supporting enrollment and family satisfaction in their school of choice.

School connectedness develops a strong foundation for student academic success and social-emotional growth (Bradshaw et al., 2014; Pikulski et al., 2020). Research shows that connected adolescents report increased emotional contentment, with connectedness linked to stronger mental and emotional health (Aldridge & McChesney, 2018; Pikulski et al., 2020).

Likewise, high levels of connectedness predict lower levels of depression in students, decrease the rate of perceived social rejection, lead to reduced school-based problems, increase levels of optimism, and improve academic achievement into young adulthood (Monahan et al., 2010). When connected to both their school and the adults in that school community, students are more likely to make positive decisions, actively contribute to the greater community, have better attendance, and stay in school longer (Bradshaw et al., 2014; CDC, 2009; Jonson-Reid, 2010; McGrath & Van Bergen, 2015). Connected students are also more likely to graduate from high school (Datu & Yuan, 2020).

Recognizing the importance of adolescent connectedness to school, the United States CDC has issued several documents with recommendations for school administrators and teachers to promote connectedness. High-level strategies included: fostering decision-making opportunities that promote community empowerment, affording families an opportunity to be actively involved in school life, and providing students an opportunity to develop academic and social-emotional skills to be successful. Additional strategies included ensuring effective classroom management, providing staff with effective professional development (PD) to meet the needs of their students, and ensuring the development of strong relationships throughout the school community (CDC, 2009).

Educators can take specific steps to improve levels of student connectedness, especially at the secondary level. These steps include the development of strong student/teacher relationships, strengthening student social-emotional skill proficiency, and the use of CSP (Byrd, 2016; Darling-Hammond & DePaoli, 2020; Sulkowski et al., 2012). As teachers work to get to know and understand students and make efforts to relate to them, the strongest impact of student/teacher relationships occurs (Greene Nolan, 2020). When teachers implement multi-

dimensional approaches, show care and concern, and demonstrate respect, increased student motivation, improved attendance, and positive attitudes towards school result (Wilkins, 2014). Further, as schools implement programs to build social-emotional competencies, students are more likely to have deeper connectedness to school (Sulkowski et al., 2012). Finally, as described by Gay (2002), a pioneer in the field, CSP provides the opportunity for “the use of cultural characteristics, experiences, and perspectives of ethnically diverse students as conduits for teaching (students) more effectively” (p. 106). As educators implement each of these strategies, student connectedness builds (Byrd, 2016; Darling-Hammond & DePaoli, 2020; Sulkowski et al., 2012).

Background of Problem at Notre Dame High School

Using specific retention data and results from culture and climate surveys, the administration identified a lack of student connectedness at Notre Dame High School as an ongoing issue that has contributed to student withdrawals from the school. Notre Dame is a private, Catholic high school that is part of a larger, Diocesan school structure. With an enrollment of 460 students and a teaching staff of 33, the school serves a diverse student body from 30 area cities and towns.

While the school took initial steps prior to this research to specifically assess and strengthen connectedness, these efforts were in their infancy at the time of this study. The ongoing COVID pandemic also further affected these efforts. Despite Notre Dame’s ability to offer full-time in-person instruction for all students, dozens of students chose to learn from home during the 2020-2021 school year. Recognizing its importance and to counter the impact of the pandemic, the school identified increasing student connectedness as a priority in its newest

strategic plan (Notre Dame High School, 2021d). This study sought to build and assess teacher proficiency in the utilization of CSP to improve student connectedness over the long term.

Statement and Definition of the Problem

With the goal of addressing the problem centered upon a lack of universal student connectedness, this study targeted the growth of teacher competencies in the use of CSP to achieve the larger objective. Previous research has illustrated an alarmingly high rate of disconnected teenagers in American high schools at the start of ninth grade (Klem & Connell, 2004; Pikulski et al., 2020). Based upon this reality, coupled with a concerning 84% multi-year retention rate and a lack of universal connectedness as measured by student Culture and Climate Surveys (Notre Dame High School, 2020a; Notre Dame High School, 2021b), this study sought to assess the impact of a specific teacher-focused intervention with the goal of ultimately improving student connectedness.

Specifically, the student 2020 Culture and Climate Survey showed that 13% of the student body (53 of the 413 student respondents) disagreed or strongly disagreed in response to the question “I feel part of this school community” (Notre Dame High School, 2020a), and 16% of the student body (48 of the 300 student respondents) disagreed or strongly disagreed with the same question in 2021 (Notre Dame High School, 2021b). As a result, this study focused upon the efforts of the entire teaching staff with the intent to improve connectedness in all students. Through these efforts, both students and the school can realize benefits. To support the school’s financial obligations, its long-term viability, and strategic plan initiatives, building universal student connectedness is essential to promoting financial stability via on-going student enrollment along with consistent student success.

Disconnected students experience lower levels of academic success and are more likely to exhibit behavioral or attendance issues as well as engage in risky behaviors when compared to connected students (Vidourek et al., 2012). A review of grade point average (GPA) data showed that a group of 58 disconnected students who withdrew from Notre Dame over a five-year period had significantly lower GPAs than the rest of the school community. Using a weighted GPA (on a 5.0 scale), these 58 students averaged a 2.88 GPA versus a 3.66 for the entire school population (Notre Dame High School, 2016-2020). Administrators, teachers, and counselors validated this statistic with a variety of anecdotal experiences. Those students who demonstrated the highest levels of connectedness, “students who are super involved in all aspects of the community,” using the words of a staff member, often experience “the strongest academic outcomes.” Many students who “struggle academically” often appear “removed from the community and classroom,” reflecting a higher likelihood of disconnectedness (S. Bannon, personal communication, October 30, 2020).

For the success of all students, both in school and life, Notre Dame feels a particular urgency to strengthen student connectedness. The school also senses a real need to address and improve the Notre Dame attrition rate to ensure the on-going and long-term financial viability of the institution. Maintaining a strong enrollment is also a goal of the school’s strategic plan. The loss of students during the year or a failure to retain students from year-to-year has a significant impact upon the school’s budget and cash flow. With the present staffing levels and projected annual expenses, an enrollment of 480 students supports a balanced budget. Enrollment during the 2019-20 school year dropped to 446 students from nearly 490 students the previous year. Because of this enrollment reduction, Notre Dame experienced a revenue decrease of approximately \$250,000, which led to an operational loss for the school for the first time in five

years. Therefore, building widespread connectedness throughout the student body is critical to the effort to promote academic success and retain as many admitted students as possible from freshman through senior year.

Research has provided evidence that schools can take specific and actionable steps to address this problem in an effort to build student connectedness (Brackett et al., 2019; Darling-Hammond & DePaoli, 2020; Elias et al., 2014; Gay, 2013; Longobardi et al., 2016; McHugh et al., 2013; Wilkins, 2014; Woodward, 2018). This study sought to assess teacher use and perceptions of CSP with the intention to improve the students' classroom experience and build connectedness over time. Other actionable connectedness-building steps, while not part of this study but shown to be effective in schoolwide initiatives, include fostering strong student/teacher relationships, promoting student voice and choice, building classroom and school climate, and growing student social and emotional competencies (Brackett et al., 2019; Elias et al., 2014; Longobardi et al., 2016; McHugh et al., 2013; Wilkins, 2014; Woodward, 2018).

Notre Dame High School began to specifically address improving student connectedness via faculty professional development (PD) workshops during the 2020-2021 school year. As a result of the initial PD sessions, several teachers volunteered to implement basic connectedness-building activities in their classrooms in the Spring of 2021. These activities included promoting student voice and choice, social and emotional activities, such as mindfulness and gratitude journals, service-learning projects, and intentional efforts to solicit student feedback.

Observations indicated moderate fidelity by teachers to the implementation of targeted strategies and a small positive percentage change in measured student connectedness (Notre Dame High School, 2021c). Through an intentional and focused effort in all classrooms, the researcher hypothesized that student connectedness could be positively impacted over time. This study

therefore proposed a specific research-supported intervention designed to build upon the foundational steps taken by the school in recent years to improve student connectedness.

Research has shown that White students experience higher levels of school connectedness than Black, Hispanic, Asian, and multi-racial students (Anyon et al., 2016). With a diverse student body at Notre Dame, the researcher looked to determine if differences existed in measured student connectedness by race and ethnicity. Should differences exist, this could indicate a social justice concern that would influence the direction of the study. To determine if differences in reasons for withdrawal existed, the researcher coded reasons for withdrawal from student exit forms and reviewed results from the 2020 Culture and Climate Survey. Of 192 withdrawals over a five-year period, 58 appeared to result from a lack of connectedness. Common coded response themes included *Not Happy*, *Missed Friends*, *Better Fit Elsewhere*, and *Not Comfortable*. In addition, recognizing that prior research has shown the academic benefits of student connectedness, the researcher considered any students who failed three or more subjects in an academic year as disconnected. Data showed results that paralleled the racial make-up of the student body. Of the 58 disconnected students, 38 were White (66%) and 18 were Black, Hispanic, Asian, or multi-racial (31%). The racial identification of two students was unknown (3%) (Notre Dame High School, 2016-2020).

An analysis of the student 2020 Culture and Climate Survey showed similar results to the withdrawal data. Using student self-identified race and the survey response “I feel like I am part of this school,” of 251 responses from students of color, 37 disagreed and four strongly disagreed in their response. The data showed that 84% of students of color indicated a connectedness to school, which aligned closely with their White peers (Notre Dame High School, 2020a). Because of these data points, the researcher concluded that there did not appear to be differences in

connectedness amongst minoritized groups at Notre Dame High School. As a result, this Dissertation in Practice focused upon an intervention seeking to improve the connectedness levels of all students as opposed to an effort targeting connectedness levels in a specific cohort of students.

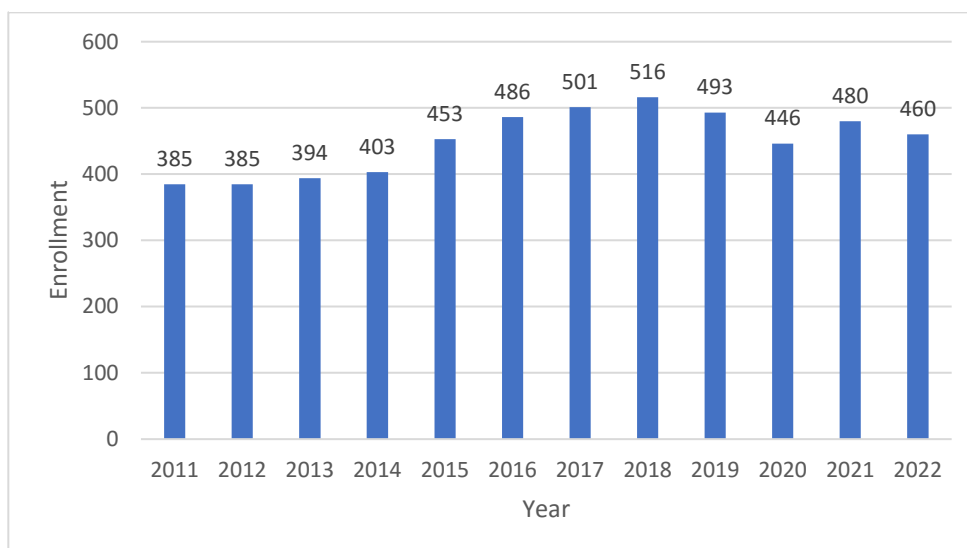
Setting and System

Notre Dame High School is a Catholic school in Fairfield, Connecticut. At its founding in 1956, the Diocese of Bridgeport established separate boys' and girls' schools with the intent of providing a college preparatory Catholic education to students in Fairfield County. With enrollment fluctuating through the decades, the single-sex schools merged into the current co-education institution in the 1970s. At present, the school is dependent upon tuition dollars to fund 90% of its operating budget.

While it consistently serves a diverse population, enrollment at Notre Dame has fluctuated between 350 and 800 students over the past three decades, with the most recent decade's enrollment reflected in Figure 1.

Figure 1

School Enrollment Data – 2011 to Present



After showing consistent gains in enrollment between 2013 and 2018, the school has experienced a decrease in enrollment in three of the past four school years. Enrollment for the 2021-2022 school year is 460 students, while enrollment stood at 480 students during the previous school year (Notre Dame High School, 2011-2022). Students from 30 cities and towns across Southwestern Connecticut and Westchester County, New York comprise the student body. Over 50% of the student population lives in the neighboring city of Bridgeport. The nearby city of Norwalk is the second largest city of residence for students. While two urban areas include the largest population centers, students also reside in affluent suburban locations including Fairfield, Trumbull, Westport, Wilton, and Darien (Notre Dame High School, 2021a).

The school employs thirty full-time and three part-time educators. While there is a mix between veteran teachers and recent college graduates, the average length of service for teachers at Notre Dame is 20.5 years, reflecting longevity and low annual turn-over. Fifteen staff members support the school community, including guidance counselors, a social worker, a school nurse, advancement and admission staff, custodians, and administrative assistants. An assistant principal and academic dean support the principal, who serves as the chief educational officer. The principal reports to the Superintendent of Schools for the Diocese of Bridgeport. An advisory board provides counsel and recommendations to the principal but serves solely as an advisory group.

A strategic plan, *Raising the Bar: Notre Dame 2020*, has guided the school's growth and its academic and extra-curricular programs in recent years. The school published a new strategic plan, *ND 2025: Tradition and Excellence*, in November 2021. This plan focuses upon efforts to ensure the long-term viability of the school with a priority of providing an excellent academic

program, improving student connectedness, and maintaining a stable enrollment. As part of the strategic plan, nine sub-committees authored recommendations, including in four areas relevant to this study: Academic Affairs, Student Life, Social and Emotional Learning, and Diversity, Equity, and Inclusiveness. Intentional teaching efforts to improve student connectedness feature the inclusion of student voice and choice in the classroom and in school planning, the integration of social and emotional activities into the curriculum, and efforts to build stronger student/teacher relationships. The focus areas support students and complement the efforts to promote long-term operational viability for the school.

System

Many factors within a school community influence a student's ability to develop connectedness. This Dissertation in Practice intended to focus upon improving teacher proficiency and use of CSP to influence the growth of student connectedness over time, as outlined in Figure 2.

Figure 2

Path to Student Connectedness



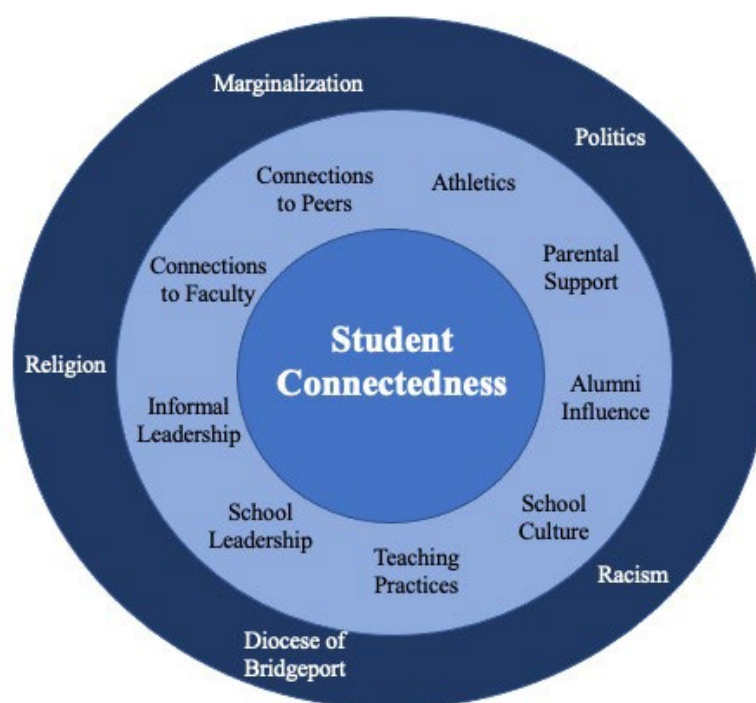
Connectedness is an important factor of student academic, social, and emotional success.

Identified as the problem of practice for this Dissertation in Practice, the researcher placed connectedness at the center of the systems map, a visual depiction of the numerous factors that influence a particular issue, as illustrated in Figure 3. Included in the inner, light blue ring of

Figure 3, a variety of conditions and factors within the school setting impact student connectedness, including involvement in the community, connections to faculty, experiences with peers, and influences from both parents and alumni. External experiences and influences, reflected in the outer dark-blue ring, and including religion, politics, marginalization, and racism, also influence the student experience. This study sought to target one of the areas of realistic influence – teaching practices – to ultimately improve connectedness.

Figure 3

Student Connectedness Systems Map



Understanding that disconnected students experience more academic and social-emotional challenges, several opportunities exist at Notre Dame to identify struggling students. While not necessarily an intentional effort to promote a student's transition from less connected to more connected, the school's current support system strives to provide resources and support for struggling students, who are also often disconnected from school. For example, the Student Assistance Team (SAT) meets regularly to discuss students experiencing academic and

emotional struggles. Comprised of administrators, counselors, the social worker, the Learning Specialist, Chaplain, and Academic Dean, SAT members discuss collective opportunities and possible solutions to support specific students. Administrative team meetings, observant teachers, guidance counselors, parents, and students also help identify students needing additional support. When identified, students meet with the guidance counselor, social worker, or chaplain. Depending upon the level of concern, the counselor might also notify the student's parents or make a referral for outside counseling.

However, guidance counselors' efforts often focus upon those students requiring particular attention due to large caseloads of over 150 students per counselor. As a result, academic, social, and connectedness check-ins with all students do not occur regularly. Counselors noted that, in some cases, they do not meet individually with some students until the college selection process begins in the junior year.

At present, no staff member at Notre Dame has the responsibility to monitor and encourage student involvement in the greater school community or to make a specific effort to effectively promote involvement and build student connectedness. The Director of Campus Ministry coordinates the school's service program and completes regular outreach on an on-going basis to nearly 200 Campus Ministry Club members. The Athletic Director oversees the 22-sport program. Beyond these roles, however, a specific position with a goal to target student involvement aside from sports and service is lacking.

Several additional factors influence a student's connectedness to school, including connections made with faculty and peers. With the school's bi-monthly Advisory program having been discontinued in 2018, students and faculty have a somewhat limited opportunity to connect outside of the classroom setting unless a teacher moderates a club or coaches a sport.

With only two teachers and one staff member coaching an athletic team and less than half of the staff serving as club advisors, limited extra-curricular opportunities to connect with teachers exist. A restricted school budget provides limited opportunities for the addition of new clubs and activities. Further, while the school's Link Crew orientation program provides regular opportunities for new students to connect with peers, the school lacks a wide-spread and ongoing effort to facilitate additional peer-to-peer connections beyond a student's first year at Notre Dame.

The school recently began to specifically identify the growth of student connectedness as a priority. Previously, indirect efforts to impact connectedness occurred, but neither the school nor its leadership provided any specific PD opportunities for teachers to promote its growth. Until 2020, the school did not regularly collect culture and climate data from students and faculty to assess connectedness levels, among other metrics. At present, the school still does not ask for the completion of an annual parent survey. The formation of a faculty-led data team only recently occurred in the fall of 2021 to begin analysis of testing data and results from school-wide surveys.

To understand the opportunity to successfully implement CSP at Notre Dame High School, it is important to discuss existing factors that influence teaching practices. While most staff recognize the importance of change to advance the school and promote its growth, for many years, the school's culture and leadership allowed teachers significant independence and freedom to implement the school's curriculum in their classrooms. For example, English teachers chose novels for use with their students. Social studies teachers determined projects and which time periods would receive the most focus, and science teachers designed labs for students. With this independence has come a level of comfort and, in some respects, complacency. While the culture

of the school is generally a positive one, as reflected by very low teacher turnover, this hands-off approach has contributed to some stagnancy in teacher approaches and a failure by some teachers to implement new strategies, projects, and approaches. With the understanding that implementing new teaching practices has a goal of positively impacting student connectedness, and in consideration of past practices in the school, any approaches should consider ways to effectively integrate into the culture and ideology of the school and the teaching staff.

Beyond the factors experienced in school or at home, numerous factors also influence the student experience and indirectly impact student connectedness. For example, as a Catholic high school, the teachings of the Church dictate aspects of Notre Dame's curriculum. Expectations and initiatives from the Diocese of Bridgeport and its Bishop also influence the student experience. On a larger scale, the marginalization of certain populations, ongoing racial tensions, the COVID-19 pandemic, and the divisive political atmosphere of the nation all influence the experience of a high school student in 2022.

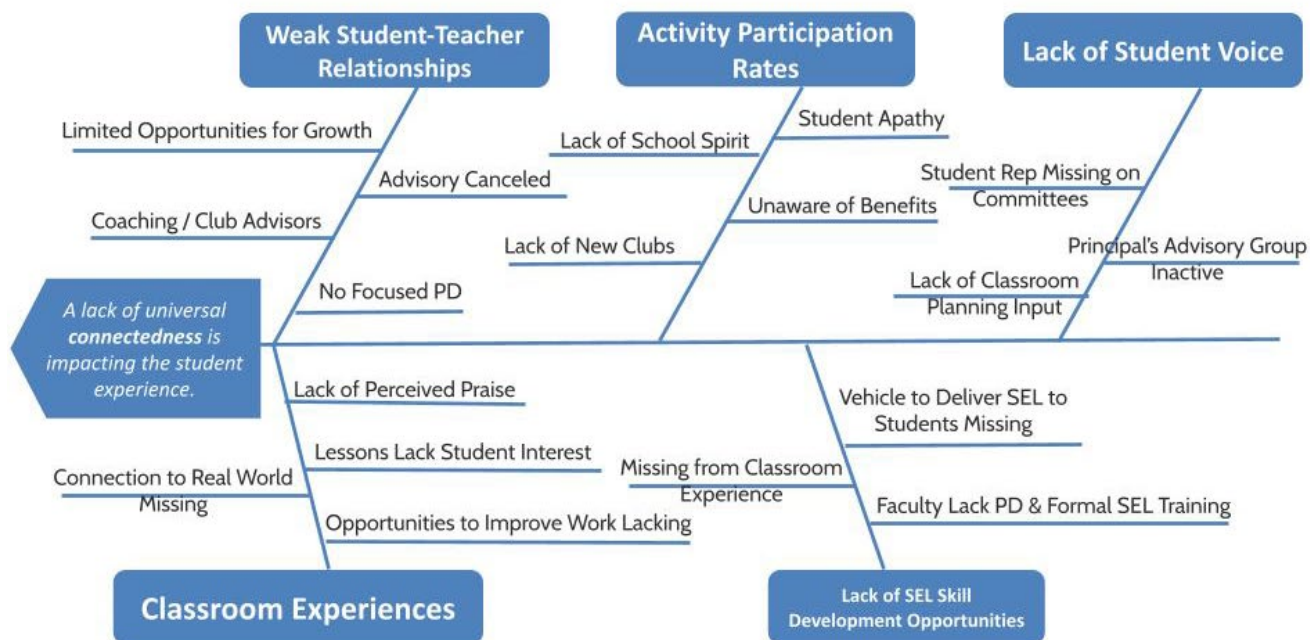
Root Cause Analysis

At Notre Dame High School, via an analysis of data and through end user consultations, the researcher identified several root causes that prevent students from indicating full connectedness to their school, both through their words and their actions. These root causes, as illustrated in Figure 4, a fishbone diagram, include weak student/teacher relationships, low student activity participation rates, a lack of student voice in both classroom and school planning, suboptimal classroom experiences, and a lack of opportunities to develop social and emotional skills. First-year activity participation rates, data from student and faculty school-wide culture and climate surveys, and interviews with several key faculty members supported the

identification of these root causes (Notre Dame High School, 2020a; Notre Dame High School 2020b; Notre Dame High School, 2020-2021).

Figure 4

Fishbone Diagram



2

Root Cause: Weak Student/Teacher Relationships

The lack of universally positive student/teacher relationships is a root cause of the identified problem of practice. Student/teacher relationships are an important component of student connectedness and academic success. “Students who perceive teachers as creating a caring, well-structured learning environment in which expectations are high, clear, and fair are more likely to report engagement in school” (Klem & Connell, 2004, p. 270). With relationships built in and out of the classroom, non-classroom-based opportunities at Notre Dame are somewhat limited. While many faculty members moderate a club or activity, opportunities for new student connections via clubs have not significantly expanded in recent years. Of the 25

active student clubs, four were new during the 2020-2021 school year, and three were new during the 2021-2022 school year. Three additional staff members chose to moderate an activity during the 2020-2021 school year, bringing the total to 46% of the teaching staff, with the percentage unchanged during the 2021-2022 school year. Furthermore, of the athletic coaching staff of 58, two coaches are faculty members (one teacher, one guidance counselor) and a third is a staff member. In 2018, the school discontinued the Advisory program, which had been intended to create additional student/teacher connections, due to a lack of overall faculty buy-in. These statistics indicate that opportunities for extra-curricular student-teacher connections are somewhat limited, putting additional focus and importance on authentic experiences and opportunities for student/teacher relationship building in the classroom.

The results of the 2020 and 2021 student Culture and Climate Surveys indicated that a cohort of students failed to identify as having an established connection with the faculty. Table 1 displays a comparison of results from Culture and Climate surveys taken in 2020 and 2021 with those who responded “Agree” or “Strongly Agree” reflected in percentages.

Table 1

Student Culture and Climate Surveys: Student/Teacher Relationships

Survey Question	2020 Student Responses	2021 Student Responses
Teachers understand student problems.	73%	68%
It is easy for students to talk to teachers.	83%	82%
Teachers make students feel good about themselves.	83%	78%
Teachers care about students.	89%	93%
Students are comfortable speaking with teachers about something that is bothering them.	79%	80%

Note. 2020 n = 413; 2021 n = 300.

The results showed a slight decrease in several measured areas year-over-year and highlighted the need for opportunities to build and strengthen student/teacher relationships.

Root Cause: Activity Participation Rates

A lack of a higher student-activity participation rate, especially among first- and second-year students, is a second root cause of the problem of connectedness. When students are active participants in their community, they are more likely to feel connected to their school (Martinez et al., 2016). Table 2 illustrates student activity participation data from the 2020 and 2021 school climate surveys with those who responded “Agree” or “Strongly Agree” reflected in percentages.

Table 2

Student Culture and Climate Survey: Student Activity Participation

Survey Question	2020 Student Responses	2021 Student Responses
I regularly attend school events.	74%	70%
I regularly participate in school events or activities.	80%	80%

Note. 2020 n = 413; 2021 n = 300.

The survey results indicated that, while most students at Notre Dame participated in activities or regularly attended school events, a cohort of students – between 20 and 30% – declined to do so.

When a three-year average of data is specifically examined, first-year students at Notre Dame demonstrated low activity participation rates, as illustrated in Table 3.

Table 3

Freshmen Activity Participation Rates (Three Year-Average: 2018–2020)

Involvement	Student Responses
Club/Activity Member	53%
Student-Athlete	69%
Completed Annual Service Requirement	83%

The analysis of freshman-specific data occurred because withdrawal data showed that the highest rates of attrition traditionally occurred between a student's freshman and sophomore year (Notre Dame High School, 2016-2020). Besides lower activity participation rates, freshmen were also less likely than upper-class students to complete the annual service requirement, with an average of 17% failing to do so. Data showed that first-year students had a 53% club and activity participation rate and a 69% athletics participation rate (not including 2019-2020 because of the cancelation of Spring sports). In end-user consultations, the Athletic Director, the Campus Minister, and several club advisors provided informal qualitative data that indicated some first-year students were unaware of all the extra-curricular opportunities available to them, despite the existence of school announcements and posters. Apathy or a lack of school spirit also impacted students, and, when looking specifically at service, the data showed that some students remained unaware of the benefits of service participation.

Root Cause: Lack of Student Voice

As identified in the culture and climate surveys, a majority of students did not feel that adults hear their voices, which highlights a third root cause of the problem. One third of all respondents felt that students at Notre Dame do not have a chance to help influence decisions at their school, including decisions involving activities and rules. From a more general perspective, a quarter of the students who responded said they believed students do not get to help decide what goes on at their school. At the time of the 2020 survey, there was no student representation on any school-wide committees, including on the Strategic Plan Steering Committee. The principal's Student Advisory Committee had not met for several years. Student data indicated that, while some teachers had solicited student input to develop classroom rules and assignments, most teachers had not included student voices when planning.

Root Cause: Classroom Experiences

The climate of the classroom is very important to the student experience and influences academic success and connectedness to school (Klem & Connell, 2004). Data from the 2020 school-wide Culture and Climate Survey indicated several areas of concern involving students' classroom experiences, including a disconnect from the faculty perspective. As shown in Table 4, responses indicated agreement or strong agreement with the question with those who responded "Agree" or "Strongly Agree" reflected in percentages.

Table 4

Student and Faculty Culture and Climate Surveys: Classroom Experiences (2020)

Survey Question	Student Responses	Faculty Responses
Teachers regularly praise students.	62%	97%
Lessons in the classroom connect to real life.	65%	93%
Lessons in the classroom are of interest to students.	66%	50%
Teachers provide support or opportunities to improve work.	85%	90%

Note: Student n = 413; Faculty n = 30.

Student responses indicated a lack of connection between subject matter and real-life, further contributing to this fourth root cause. In recent years, PD has not specifically focused upon classroom climate or the student experience. Faculty PD has instead involved topics such as project-based learning, writing school re-accreditation reports, and recently, a basic introduction to social and emotional learning.

Root Cause: Lack of SEL Skill Development Opportunities

The lack of wide-spread and intentional social-emotional skill development was an additional root cause for the lack of school connectedness found among some students. Research indicates that students with strong social-emotional skills perform better academically

(Sulkowski et al., 2012), thereby improving their experience and connectedness to school. While some teachers at Notre Dame have naturally embedded social-emotional skill development into the students' classroom experience, most faculty members have not received any formal training on social-emotional learning (SEL) and its benefits for students. Teachers participated in introductory presentations on both SEL and trauma in the fall of 2020, and some teachers participated in an online Yale University SEL course during the 2020-2021 year. However, most of the faculty have not received any formal SEL training or support. Furthermore, at present, the school lacks a means of delivering SEL opportunities to students. More than one-third of student respondents to the climate survey (n = 413) and 28% of faculty (n = 30) indicated that they felt adults in the school did not help students develop strategies to understand and control feelings and emotions. To address this root cause, a significant opportunity for growth exists to establish a connection for students and faculty among SEL, academic success, and, ultimately, connectedness to school.

Summary

Culture and Climate Survey data, along with end-user consultations, provided the researcher with several root causes directly related to a lack of universal student connectedness at Notre Dame High School. While many students indicated a strong personal connection to the school, data indicated opportunities for growth at Notre Dame to ensure that a higher percentage of students feel part of the school community. This connectedness benefits students with strong academic performance. It also benefits the school with an improved student retention rate and addresses the identified root causes of the problem.

Purpose and Significance of the Study

The purpose of this Improvement Science Dissertation in Practice is to assess to what extent professional learning focused upon CSP impacts teacher perceptions, instruction, and self-efficacy at Notre Dame High School. With a strong school culture and climate influenced by CSP in the classroom, coupled with additional efforts to improve the student experience, the goal of this work was to ultimately realize growth in the number of students who identify as connected to the school community. The intent was to positively change the retention rate of students over the short and long terms, while providing all students with the many benefits connectedness affords (Aldridge & McChesney, 2018; Bradshaw et al., 2014; CDC, 2009; McGrath & Van Bergen, 2015).

This study also sought to support key components of the school's newest strategic plan and to be impactful on the entire school community, including faculty, administrators, parents, board members, and, most especially, the student body. Notre Dame's mission statement begins: "We encourage our students to develop a thirst for knowledge and truth, and we instill in them the determination to strive for excellence in every endeavor they undertake" (Notre Dame High School, 2021a). To fully achieve this goal, and in support of the school's new strategic plan, the school and its faculty must recommit to supporting *all* students in new and different ways, including with CSP. With a retention rate of freshmen students under 85% (Notre Dame High School, 2016-2020) and climate survey data indicating a two-year average of 15% of students who did not feel connected to the community (Notre Dame High School, 2020a; Notre Dame High School, 2021b), new approaches may best support all students while building stronger connectedness to Notre Dame.

Especially at the secondary level, a lack of school connectedness can result in significant life-long impacts for students (Ladson-Billings, 2014). Should teachers find the intervention as described in this study useful and meaningful, as measured by both qualitative and quantitative data, not only does the opportunity to grow connectedness exist, there is also the potential for student benefits, including academic success, reduced disciplinary incidents, and improved emotional regulation skills. End-user consultations at Notre Dame uncovered a consistent pattern: not every disconnected student struggles academically, socially, and behaviorally, but when a student does struggle in these areas, a lack of connectedness is often a cause of the greater concern. As a staff member noted, based upon his years as both a student at the school and now as an assistant principal,

Connectedness is like a bicycle tire with many spokes. Each spoke represents a teacher, event, experience, team, classmate, game, project, conversation, etc. that helps a student ride through school. Each part works together so the wheel turns smoothly. When part of the connectedness wheel is missing, it is much more likely to become a bumpy ride (S. Bannon, personal communication, January 5, 2022).

This study sought to assess the implementation of a specific strategy targeted to expand student connectedness over the long term – with a desire to both support student success and strengthen private school enrollment.

Students and teachers stand to benefit from new and improved classroom-based strategies established using culturally sustaining practices. Throughout the implementation process, a committed approach provided the opportunity for educators to strengthen relationships with their students, who ultimately stand to benefit academically, socially, and emotionally. With a lack of other studies focused upon the use of CSP at Catholic high schools, this research can impact

Notre Dame, its students, and staff and serve as a model for implementation at similar private educational institutions. Data gathered in this study can provide valuable insights to help improve CSP practices at Notre Dame. Likewise, using the faculty's experience at Notre Dame, other schools may use this study's findings to model similar efforts to improve student connectedness, bolster student retention, and ultimately improve the student experience.

Research Design

Improvement Science provides the basis for this Dissertation in Practice. It allows the researcher to determine the causes of the problem of practice and subsequently implement strategies for improvement. By design, Improvement Science requires consistent assessment of implementation strategies and allows for needed adjustments throughout the implementation period. Educational research utilizes Improvement Science due to its problem-specific and user-centered approach (Bryk et al., 2015). It is a suitable strategy for this research because the Improvement Science process allows for the identification of reasons for a lack of student connectedness at Notre Dame High School followed by an intervention to improve this problem of practice.

Following the Improvement Science framework, the researcher sought to determine the impact of training and practice using CSP. The study's intervention consisted of two PD sessions and the opportunity for classroom visits and individual coaching with a consultant skilled in CSP. Surveys assessed teachers' culturally sustaining self-efficacy both pre- and post-intervention. This study also assessed the frequency of teacher use of specific classroom-based culturally sustaining practices. Finally, the researcher sought to identify themes expressed by teachers in semi-structured interviews related to their training, support, and implementation of culturally sustaining practices.

Methodology

While this Dissertation in Practice followed the Improvement Science framework, the researcher also selected an Action Research methodology. When utilizing Action Research, educators assume the role of researcher to study a problem of practice within their own school community (Efron & Ravid, 2019). Educators identify a problem that is of interest to them or one that requires attention in their community. Through Action Research, educators strive to improve their personal practice and professional growth while improving the experience of their students and school community. Action Research in education allows for a “bottom up” process led by those in the school community (Efron & Ravid, 2019). With a problem of practice identified at his school, the researcher selected Action Research as a methodology due to its common use in education. With its design, Action Research allowed for the researcher, also serving in his role as principal, to study opportunities to bring improvement to his school community.

Design

This dissertation utilized a mixed methods explanatory sequential design. Following a design that is appropriate for the intent of this study, as outlined by Creswell and Plano Clark (2018), research began with a quantitative phase that allowed the researcher to gather close-ended data that informed subsequent phases. Data analysis using inferential and descriptive statistics answered the first research question and assisted in the selection of participants for the qualitative phase of the study (Creswell & Plano Clark, 2018). The second phase of this mixed methods approach utilized phase one’s data to determine a possible explanation of results, refine qualitative research questions, and determine the structure of phase three’s semi-structured interviews (Creswell & Plano Clark, 2018). The third phase of the explanatory sequential design

provided for the collection of open-ended data. After coding and identifying themes gathered during semi-structured interviews, the fourth and final phase of the study provided the researcher with an opportunity to summarize and interpret both the quantitative and qualitative data and the extent to which the qualitative data helped explain the quantitative data (Creswell & Plano Clark, 2018).

Following the mixed methods design, this study first gathered quantitative data from teachers. Pre- and post-intervention surveys provided data as the researcher sought to assess teacher self-efficacy related to the use of CSP. Following the gathering and review of the quantitative data, the explanatory sequential design allowed for the researcher to refine research questions and consider the structure and participants for the next step in the study.

Feedback, experiences, and perspectives gathered from participating teachers during semi-structured interviews provided qualitative data for the third phase of the study. Using information gathered during these interviews, the researcher utilized thematic analysis to generate first and second level codes to further identify relevant and meaningful themes. Finally, the fourth phase of this mixed methods design allowed the researcher to review a summary of data gathered during the quantitative and qualitative phases of the study to interpret, understand, and explain relevance and connections, and, ultimately, to describe the impact of the intervention upon teacher use of CSP.

The researcher analyzed quantitative data using inferential and descriptive statistics and qualitative data using procedures of theme development (Creswell & Plano Clark, 2018). The merging of the two sets of results allowed for the drawing of comparisons and, ultimately, for the researcher to integrate the data. This approach provided an “in-depth and practical understanding” of the data that allowed for a better understanding of the use of CSP, student

connectedness, and related improvement efforts at Notre Dame High School (Creswell & Plano Clark, 2018, p. 118).

Research Questions and Hypotheses

- After participating in training and coaching sessions and with weeks of practice implementing strategies, to what extent is there a measured improvement in teachers' self-efficacy in the use of CSP?
 - H_1 – There is a statistically significant difference in the change in teachers' self-efficacy in the use of CSP as measured by the CRTSE.
 - H_0 – There is no statistically significant difference in teachers' self-efficacy in the use of CSP as measured by the CRTSE.

- Is there a statistically significant difference between Humanities teachers' self-efficacy in the use of CSP as measured by the CRTSE?
 - H_1 – There is a statistically significant difference in the change in self-efficacy scores of Humanities teachers as measured by the CRTSE.
 - H_0 – There is no statistically significant difference in the change in self-efficacy scores of Humanities teachers as measured by the CRTSE.

- Is there a statistically significant difference between STEM teachers' self-efficacy in the use of CSP as measured by the CRTSE?
 - H_1 – There is a statistically significant difference in the change in self-efficacy scores of STEM teachers as measured by the CRTSE.
 - H_0 – There is no statistically significant difference in the change in self-efficacy scores of STEM teachers as measured by the CRTSE.

- Is there a statistically significant mean score difference in the change in self-efficacy scores in the use of CSP as measured by the CRTSE between teachers with differing years of teaching experience?
 - H_1 – There is a statistically significant mean score difference in the change in self-efficacy scores in the use of CSP as measured by the CRTSE between teachers with differing years of teaching experience.
 - H_0 – There is no statistically significant mean score difference in the change in self-efficacy scores in the use of CSP as measured by the CRTSE between teachers with differing years of teaching experience.
- Is there a statistically significant mean score difference in the change in self-efficacy scores in the use of CSP as measured by the CRTSE between male and female teachers?
 - H_1 – There is a statistically significant mean score difference in the change in self-efficacy scores in the use of CSP as measured by the CRTSE between male and female teachers.
 - H_0 – There is no statistically significant mean score difference in the change in self-efficacy scores in the use of CSP as measured by the CRTSE between male and female teachers.
- Is there a statistically significant mean score difference in the change in CSP self-efficacy scores as measured by the CRTSE between teachers who met individually with the consultant and those who did not?

- H_1 – There is a statistically significant mean score difference in the change in CSP self-efficacy scores as measured by the CRTSE between the teachers who met individually with the consultant and those who did not.
 - H_0 – There is no statistically significant mean score difference in the change in CSP self-efficacy scores as measured by the CRTSE between the teachers who met individually with the consultant and those who did not.
- Which culturally sustaining practices, if any, did teachers self-report implementing during a four-week period?
 - How often were strategies used?
 - Did implementation differ by academic department and years of service?
 - How do teachers describe the impact of culturally sustaining strategies upon their classroom culture and student learning?
 - Was the overall approach of the intervention effective? Which strategies were most helpful and effective? Why?
 - What value and benefit did culturally responsive practices achieve in classroom culture? Why?
 - Why were certain strategies not used?
 - How was student learning impacted by teachers using CSP?
 - As indicated by teachers, how did students respond to the use of culturally sustaining practices?
 - Did teachers experience any unintended benefits from the use of CSP?

- Based upon their experience, what recommendations for future improvement would teachers make when using CSP?

Limitations of the Study

The researcher notes several possible limitations to this study, including a dependence upon self-reported data, a limited time during which participants had the opportunity to become proficient in the use of CSP, a short time-bound intervention period, and the ongoing COVID-19 pandemic.

Participants

This time-bound intervention period presented teachers with a period of time during which to become familiar and comfortable with CSP. To best support teachers during this time, a consultant provided two PD workshops, up to three in-class coaching sessions, and several one-on-one, in-person support opportunities. The researcher, serving in his role as principal, provided teachers with additional support between consultant visits, including email check-ins and an opportunity to meet one-on-one to discuss ideas or concerns. One might consider the relatively short window of time to conduct research a limitation of the study. A longer period may have allowed faculty to become more comfortable with the use of CSP and, potentially, more reflective upon their experience and personal ability levels. To mitigate this concern, the consultant provided classroom visits and offered individual meetings with faculty to directly support them through the process, as did the researcher between consultant visits.

COVID-19 Pandemic

The intervention implementation and study itself occurred as staff continued to teach during a global pandemic. Entering the second year of mask wearing, occasional remote teaching, and generally elevated levels of stress, some teachers expressed hesitancy to add

another task to their daily routines. The researcher and consultant acknowledged this reality during PD sessions and individual conversations with staff. The consultant reminded teachers that they likely already integrate some elements of CSP into their regular routines, and that this was an opportunity to expand what was already occurring in their classrooms.

The Researcher and the Problem

The researcher admits that his view of education is somewhat limited based upon his particular experience. He has driven to the same school each weekday (and on the occasional weekend) for the past 24 years. While serving in a variety of roles at the school, from classroom teacher to principal, he has had one employer for his entire professional career, and this has both influenced and limited his views. His firsthand experiences in high school and college, and those throughout his professional career, have helped to shape him as an educator. These experiences provided the lens through which he sees the role of education. He recognizes the importance of a well-rounded education, including involvement in school and community, the development of a strong level of connectedness, and the realization of life-long academic, social, and emotional benefits.

As a student, the researcher personally experienced the positive benefits associated with connectedness. Using these experiences and in his role as teacher and administrator, he has witnessed the academic, social, and emotional benefits experienced by connected students. Even more consequentially, he has seen the negative impacts of disconnectedness. Students have not only withdrawn from school when connectedness lacks, but the researcher has observed students struggling academically and emotionally. It is through the desire to see all students succeed that he identified connectedness as a problem of practice for his school and this Dissertation in Practice.

Building upon experiences in high school and college, the researcher recognizes and appreciates the excellent value in building connectedness for students. Whenever possible, he shares his own experience with students: a total lack of connectedness to school during his freshman year of high school during which connections to teachers and community were non-existent. Entering sophomore year, however, he took on a more active role in the community. By senior year, he served as class and student body president. His experiences allowed him to build relationships with peers, faculty, administration, and the local community. He reaped the rewards of connectedness and has fond memories of his high school career thanks in part to these experiences. This pattern continued into college. Fortunate to serve as president of the student body during his senior year, experiences once again provided him with extraordinary opportunities to build strong connectedness to the college community. It is his hope that all students with whom he works can realize the benefits of connectedness like those he was very fortunate to experience in high school and college.

The researcher has come to appreciate the importance of diversity throughout his professional career, although it was not always that way. Having grown up in a small suburban town with an almost exclusively White high school population, and with a similar undergraduate college experience, his limited and somewhat sheltered life experiences did not allow him an opportunity to recognize what he was missing. It was upon arriving at Notre Dame as a young teacher that he first experienced a truly diverse community. The experience of teaching students of all backgrounds, coupled with the mentoring of his predecessor, allowed him to appreciate and value the importance of diversity and better understand how it strengthens the community around us. While recognizing that White privilege has influenced his life experiences, an appreciation for diversity has helped guide his leadership as school principal. As he makes decisions, he

strives to ensure we continue to promote the beautiful diversity that surrounds us, while making a private, Catholic school education a reality for all who want it. It is through this lens that the researcher recognizes the importance and value of culturally sustaining teaching practices.

The researcher also acknowledges the influence his position as principal had upon the development of this Dissertation in Practice. His position allowed for the identification of student connectedness as a problem of practice, the participation of the entire faculty of the school in the study, and for the use of specific funding to provide the intervention's professional development sessions and classroom-based coaching. Having taught at the school for eight years and serving in an administrative role for the past 16 years, the researcher built relationships over time with all faculty members in the building. As a result, he was uniquely positioned to tap into a supportive community willing to participate in both the intervention and data gathering process.

In any position of leadership, including as a principal of a Catholic high school, relationships often contribute to one's success or failure. Having worked to build relationships during his 24 years at the school, the researcher recognized that long-standing relationships with teachers could influence this study. For some, these relationships could create bias during the intervention and data gathering process. As a result, the researcher sought to minimize any potential bias while simultaneously utilizing the trust and respect developed over several decades at the school to advance his research – with the goal to improve the student experience through stronger connectedness.

Definition of Key Terms

Connectedness – A measure of how strongly students feel they belong to a school community, combined with a connection of value to the community; connectedness influences student experiences and outcomes (Datu & Yuen, 2020).

Culturally Sustaining Pedagogy (CSP) – A teaching approach that allows educators to use “cultural characteristics, experiences, and perspectives of ethnically diverse students” to meet the learning needs of all students (Gay, 2002, p. 106). Originally and most frequently called “culturally responsive teaching,” a variety of names identify a practice with similar goals. Historically, these have included, among others, culturally responsive pedagogy, culturally responsive learning, cultural proficiency, culturally sensitive teaching, cultural competency, and culturally appropriate teaching (Hollie, 2019). The researcher refers to this approach as Culturally Sustaining Pedagogy (CSP) in this dissertation, based upon recent writings of Ladson-Billings (2014).

Improvement Science – Provides the model for this Dissertation in Practice. Using the Improvement Science model, the researcher identified a significant problem found in his organization and has worked towards a solution with the goal of providing improved outcomes and efficiencies (Bryk et al., 2015).

Chapter Summary

This Dissertation in Practice, following an Improvement Science framework, an Action Research methodology, and a mixed methods explanatory sequential design, sought to improve student connectedness by increasing teacher proficiency in the use of the CSP. When connected to school, students are more likely to experience social, emotional, and academic benefits (Bradshaw et al., 2014). Using data gathered from culture and climate surveys completed annually by students and student withdrawal records, the researcher, in his role as principal of Notre Dame High School, identified a lack of connectedness as a concern for the school and a focus for this dissertation. Recognizing that many experiences, groups, and individuals ultimately contribute to any problem, a system analysis provided context and identified several

influencing factors. A root cause analysis, which is a component of the Improvement Science process, identified several causes of a lack of student connectedness at Notre Dame that compelled the researcher to select the use of CSP as a potential change idea.

The purpose of this Improvement Science Dissertation in Practice was to assess to what extent professional learning focused upon CSP impacted teacher perceptions, instruction, and self-efficacy at Notre Dame High School. Data gathered in this study could provide valuable insights to help improve CSP practices at Notre Dame and guide future implementation at other schools. Using three research questions, the researcher intended to assess the level of improvement in teacher self-efficacy with CSP, along with determining which practices teachers regularly utilized. The study also sought teacher input describing the intervention process and perceived impacts upon classroom culture. Recognizing that this research approach had some limitations, the researcher identified potential areas of concern and noted strategies to mitigate any limitations.

As part of the Improvement Science process, the researcher reviewed both scholarly literature and conducted interviews with several private school educators. The literature review and interview processes provided opportunities to gather relevant knowledge in support of current and best practices to address this dissertation's problem of practice. The next chapter of this dissertation focuses upon this review of both scholarly and professional knowledge.

Chapter Two: Review of Scholarly and Professional Knowledge

The prioritization of connectedness in schools allows students to experience academic, social, and emotional benefits. Research has validated these benefits, which include improved academic performance, participation in fewer risky behaviors, stronger mental health, including lower levels of anxiety and depression, and a higher likelihood of high school graduation (Aldridge & McChesney, 2018; Bradshaw et al., 2014; CDC, 2009; Datu & Yuen, 2020). As part of this Improvement Science Dissertation in Practice, educators shared experiences that confirmed this research, along with anecdotal evidence to support the importance of connectedness. Further, this research process identified several root causes of a lack of student connectedness along with a variety of drivers aimed at improving connectedness in students. Ultimately, this research focused upon an evidence-based practice, the use of CSP, to improve the overall student experience (Aronson & Laughter, 2016; Bonner et al., 2018; Rodriguez et al., 2004).

Connectedness through the Student Lens

Review of Scholarly Knowledge

As educators work to ensure students have a support system in place to promote academic and personal growth, assessing the level of connectedness students feel to their school community is an important consideration. Defined as a measure of how strongly students feel they belong to a school community, along with a community connection that students value, connectedness influences student experiences and outcomes (Datu & Yuen, 2020). At the secondary level, this assessment is especially critical because age impacts connectedness, with older students reporting significantly lower levels of connectedness than their elementary school counterparts (Pikulski et al., 2020). As explained by Aldridge and McChesney (2018), research

has indicated that school connectedness functions differently than aspects of social connectedness and a variety of other relationships. Because of its significant impacts upon students, connectedness requires isolation as an academic measure that further underscores the value and significance of school connectedness.

Numerous factors contribute to students' perception of connectedness to a school community, including the existence of meaningful student roles, regular recognition of student achievement, closeness between teachers and students, the level of student engagement, and the perceived value placed upon student input (Bradshaw et al., 2014). While recognizing that many factors contribute to its ultimate measure, connectedness is at its strongest when students believe adults in the school care about them both as learners and as individuals (CDC, 2009). As improvement efforts focus upon building connectedness in all students, research has shown differing experiences between students based upon racial backgrounds (Parris et al., 2018). For example, Black students regularly report lower levels of connectedness as compared to their White counterparts, highlighting the need to support and create culturally congruent connectedness-building efforts with students from traditionally marginalized groups.

Students with high levels of connectedness often experience mental health benefits as research has shown a relationship between school climate and adolescent mental health (Aldridge & McChesney, 2018). In particular, students with low levels of school connectedness are more likely to experience increased levels of anxiety (Pikulski et al., 2020). Parents whose students expressed low levels of connectedness reported observing high levels of anxiety, depression, and associated symptoms in their children (Pikulski et al., 2020). A CDC report (2009) highlighted that both suicidal ideation and eating disorders were more likely to occur in less connected students.

Less connected students are also more likely than their more connected peers to participate in a variety of risky behaviors, including substance abuse, smoking, self-harm, aggression (fighting), carrying of weapons, engaging in sexual activity, not wearing a seatbelt, and drinking and driving (Aldridge & McChesney, 2018; Bradshaw et al., 2014; CDC, 2009). In terms of academics, data have shown that students struggling with connectedness demonstrated higher levels of absenteeism and were more likely to drop out of school than their more connected peers (CDC, 2009; Pikulski et al., 2020). Beyond adolescence, some research has indicated that a lack of student connectedness results in life-long cyclical issues that impact adult employment status and contributes to future criminal justice issues (Ladson-Billings, 2014).

As a variety of experiences and factors contribute to students building connectedness, school-based relationships are critical. Positive relationships with peers and teachers impact school climate and fuel student connectedness (Bradshaw et al., 2014). Underscoring this importance, the National School Climate Center identified relationships as one of five domains that impact student perceptions of climate (Bradshaw et al., 2014). Positive relationships mitigated mental health issues in adolescents (Aldridge & McChesney, 2018) while building connectedness, increasing engagement, and improving student academic performance (McGrath & Van Bergen, 2015). Further, the inclusion of student voices in both classroom and school planning promotes stronger student/teacher relationships and stronger connectedness. Students have reported that strategies with this specific focus encourage higher levels of achievement and increased comfort in the classroom, which further illustrates the importance of positive relationships within school and the influence upon student connectedness (Bunner, 2017).

Research has also highlighted the influence that connectedness exerts upon positive student outcomes. Strong levels of student connectedness impact academic outcomes. Studies

have shown that high levels of connectedness correlate to improved academic performance (Bradshaw et al., 2014; CDC, 2009). Connected students are more likely to attend school regularly and ultimately graduate on time (CDC, 2009; Pikulski et al., 2020). Further, connectedness serves as a protective factor against mental health issues (Pikulski et al., 2020) while promoting conditions for academic success and serves as a “mediator” between other climate-related issues that may arise in a school setting (Aldridge & McChesney, 2018, p. 133).

Review of Professional Knowledge

Educators at private, Catholic high schools have noted initiatives to build stronger student connectedness within their communities even though efforts have occasionally appeared under different titles. To gather this information for this study, the researcher conducted empathy interviews with the principals at Immaculate High School in the Diocese of Bridgeport (Connecticut) and at St. Patrick Academy in the Diocese of Providence (Rhode Island), as well as colleagues in leadership roles at Notre Dame. Recognizing the need to support positive student outcomes, including academic achievement and mental health, while simultaneously promoting student retention at these schools of choice, administrators have noted the influence connectedness has upon their school communities. Efforts to build connectedness, both intentionally and unintentionally, have taken on a greater role in recent years and have largely proven beneficial to the student body. Annual culture and climate surveys demonstrate the need to continue out-reach to all students, with positive progress having been made in the recent past.

A theme identified in empathy interviews included school leaders not always recognizing the importance of connectedness. However, as they have become more comfortable in their roles and their experiences have broadened, they have become better attuned to the realities faced by disconnected students. One veteran educator noted he could recall several specific examples of

students who were experiencing significant issues in school, both from the academic and the behavioral perspective. Looking back, he reflected, this was a likely result of a school not meeting the needs of the students and a failure to offer them opportunities to grow as individuals while connecting with faculty members and the greater school community.

Similarly, a principal at a nearby Catholic school noted somewhat varied academic outcomes for both connected and disconnected students, but he also identified a consistent social and emotional connection. He highlighted the impact of the ongoing pandemic upon student mental health and the perceived toll it has taken on individual students and their connectedness to school. His observations underscored the impact on and relationship between student mental health struggles and a student's ability and willingness to connect with his or her school community. Another educator shared a story of a student who primarily participated in online learning during the height of the pandemic. Upon a return to in-person learning, the student sought out a teacher to thank her for "seeking to connect with him" on a regular basis, as many teachers appeared to not make the same effort. The student noted his overall feelings of disconnectedness and the negative impact it had had upon him personally and academically.

Educators recognized the realities faced by disconnected students: academic struggles, social and emotional difficulties, and behavioral issues. Some of their most difficult students have struggled to, or did not demonstrate a willingness to, establish a connection to the school community. Each educator anecdotally mentioned students, recognized as their "most successful," who have often been those involved in the school community having established strong relationships with faculty, staff, and peers. As noted by one educator, who teaches at both the high school and college level, "disconnectedness is clearly one of the biggest reasons students transfer." She shared a conversation she recently had with a student who transferred

from one private school to another – with the decision to transfer rooted in a feeling of “not belonging” at her previous school. Educators acknowledged that not only will all students benefit academically, socially, and behaviorally from connectedness efforts, but also that connected students are more likely to be happy and engaged, enjoy their high school experience, and, as a result, ultimately graduate from the school.

Summary and Conclusions

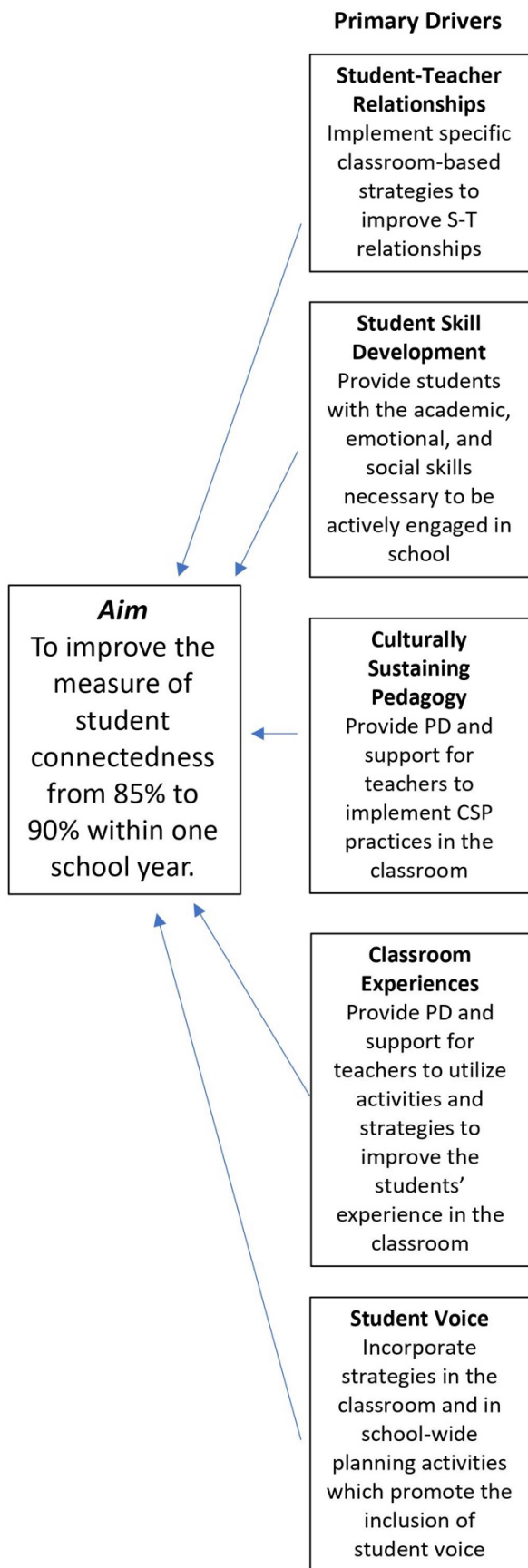
Connectedness impacts student outcomes and, therefore, must be a priority for all educators, especially those on the secondary level, where connectedness levels decrease as students get older (Pikulski et al., 2020). Validating the research, school leaders consistently recognized the benefits that connectedness affords students – especially academically. Using their decades of combined experience, educators shared stories of students who played active roles in the community and who had established strong relationships with teachers and peers. As supported by research, these connected students often had strong attendance and academic records.

Research has consistently highlighted the social and emotional benefits for connected students, including lower levels of anxiety and depression (Aldridge & McChesney, 2018; CDC, 2009; Pikulski et al., 2020). During interviews, however, administrators, expressed difficulty making the SEL connection to student connectedness. Lacking specific examples and data, it was difficult for them to directly associate risk-taking with connectedness. Overall, however, the researcher’s interviews with educators reinforced the frequently observed benefits for those students who establish strong connectedness to their school community.

Adult Actions and Student Connectedness

Review of Scholarly Knowledge

While connectedness is a student-specific measure, adult actions either support the growth of connectedness or contribute to the reality of disconnected students. Using a Driver Diagram, the researcher sought to “organize the various changes” considered to address the identified problem of practice (Bryk et al., 2015, p. 73). In a Driver Diagram, each change idea focuses upon improving the measurable area of improvement (an aim). A partial Driver Diagram (Figure 5) focuses upon a variety of adult actions (primary drivers) that the researcher hypothesized would influence student connectedness. This visual summary introduces specific areas of focus prior to an analysis of the root causes of the problem and ultimately, helps determine the best approach to address the problem of practice. Later in this chapter, the researcher also includes a full Driver Diagram that lists actions designed to influence the specific primary driver selected as the study’s intervention (Bryk et al., 2015).

Figure 5*Partial Driver Diagram*

Teacher Training

Research supports the potential of each action to positively improve the student experience and strengthen the connection a student feels to school (aim measure). Without proper training and a specific focus by educators, however, it is difficult to achieve improved outcome measures. Beginning with a lack of an intentional focus to build student connectedness in teacher preparation programs, educators are often ill-prepared to implement strategies to support all students and build optimal climate in schools and classrooms (Aldridge & McChesney, 2018; Bonner et al., 2018). Without intentional effort, climate remains stagnant, and educators fail to promote connectedness efforts. Further, the poor structural realities found in schools – especially urban schools – including limited resources, high staff turnover, and economic inequalities, contribute to poor achievement and performance of students (Ladson-Billings, 2017).

Educator Demographics

The demographics of the teaching population in the United States also influence connections made between students and teachers. With a primarily White and female teaching force and a more diverse national student population, teachers and students often have different cultural backgrounds (Gay, 2013). This difference provides an additional challenge for educators' efforts to build connectedness, as connections may not always occur naturally. Additionally, a lack of cultural knowledge and skills by teachers for the students in their classrooms who represent different backgrounds contributes to a disconnect (Bonner et al., 2018). These factors collectively result in increased difficulty in efforts to strengthen relationships that promote strong levels of student connectedness.

Classroom Approaches

In her research on culturally relevant pedagogy, Gay (2013) noted a missed opportunity for teachers to build connectedness. Too often, teachers focus instruction upon areas of weakness and identified problems instead of basing lessons upon the strengths and possibilities of the students in their classrooms (Aronson & Laughter, 2016; Byrd 2016; Gay, 2013). Further, when teachers do not implement collaborative approaches with and for their students, they miss academic growth opportunities. Moreover, a lack of collaboration, vision, and professional growth have a negative impact upon student outcomes. Collaboration is essential to efforts necessary to build culture and connectedness while also improving teaching practice and student learning (Ohlson et al., 2016).

Student/Teacher Relationships

Strong student/teacher relationships are critical to both school culture and student connectedness (Darling-Hammond & DePaoli, 2020). Despite the reality that adolescents are more likely to turn to teachers than parents for both academic and emotional support, the quality and strength of student/teacher relationships decreases as students move into high school (McGrath & Van Bergen, 2015). When strong relationships are not established, significant negative student outcomes can result, including an increase in occurrence of poor behaviors, relationship problems with peers, attendance issues, lower academic achievement, and, of importance to this study, negative attitudes toward school, all of which may directly impact student connectedness (McGrath & Van Bergen, 2015). When teachers make the commitment to ensure the existence of strong relationships with students in their classrooms, and ensure open communication, trust, and a caring environment, they help strengthen climate and student connectedness (CDC, 2009; McGrath & Van Bergen, 2015). In turn, as connectedness grows and

climate strengthens, students are more likely to experience an increased ability to regulate emotion and exhibit a willingness to face challenges both in and out of the classroom (Darling-Hammond & DePaoli, 2020).

Negative Teacher Actions

In contrast, certain adult actions in schools negatively influence school connectedness. These actions include a lack of effort to engage students and families in school planning (CDC, 2009) and a failure to promote student voices in the classroom, which leads to unempowered students (Tanase, 2021). The CDC report (2009) provided a lengthy summary of adult actions that contribute to negative connectedness outcomes for students: the omission of social and emotional learning skills to promote success and engagement, ineffective classroom management practices, teaching methods that result in a negative learning environment, and the lack of a team-focused approach to education. These examples further reinforce the significant impact adult actions, or a lack thereof, have upon student success in the classroom. Ultimately, positive actions provide educators with the ability to best support students as they attempt to forge strong connections to school.

Review of Professional Knowledge

While other educators who participated in empathy interviews as part of this Dissertation in Practice have not necessarily conducted specific research centered upon connectedness like that discussed in this study, they were aware of the impact faculty members have upon the student experience. These leaders noted actions from teachers which have either supported the growth or negatively impacted the development of student connectedness. To make this point, one educator shared a conversation she recently overheard between two students in which they discussed their desire to do well in class because of the strong relationship they had with their

teacher. In sharing this story, she noted, “the more positive your relationship is with a student, the more likely they are to feel comfortable coming for extra help, asking questions, emailing. I saw this all the time when I was teaching.”

Using other specific examples, principals discussed their observations involving teachers who struggled with both classroom management issues and forging strong student/teacher relationships. With specific anecdotal evidence, school leaders connected these struggles with a diminished student experience, which ultimately influenced opportunities to grow student connectedness. To support students and faculty, one educator discussed recent efforts specifically focused upon strengthening student/teacher relationships in his community. With PD opportunities providing the background and potential strategies, specific efforts provided the adults in the school with the resources needed to create stronger bonds with students, effectively improving student connectedness in the process.

Veteran educators recognized the importance of providing teachers with the skills and support needed to create a positive student experience and ultimately bolster student connectedness in their community, even though this does not always occur organically. Each principal was able to share at least one example of a student who struggled in their community and hypothesized, in alignment with the research, how a lack of connection and support from the school contributed to this specific student experience. Administrators recognized the academic and behavioral struggles of these individual students along with the risky behaviors in which some were likely engaged. As a result, educators acknowledged the importance of supporting teachers to ensure adult actions improve the student experience as opposed to negatively influencing it. Confirming the vital role adults play, one principal summarized it well: “showing

students teachers care and making sure to take advantage of every opportunity to connect is so very important.”

Summary and Conclusions

Connectedness provides students with a lengthy list of benefits while also protecting against many negative outcomes. As a result, connectedness is an important component of the student experience and requires the attention of and specific actions by educators. Noted by both researchers and educational leaders, when teachers do not forge strong relationships with their students, omit the inclusion of student voice, or utilize teaching methods that contribute to a negative climate in the classroom, they miss opportunities to build connectedness and best support students. Educators specifically noted observational and anecdotal evidence of examples when teachers’ efforts did not create a supportive classroom environment for students. As a result, principals felt that some students did not reach their full academic, behavioral, and social-emotional potential. With a desire to maximize student outcomes, including those from an academic and a social-emotional perspective, both the research and review of practice underscore the influence and importance of teacher efforts to build connectedness in students.

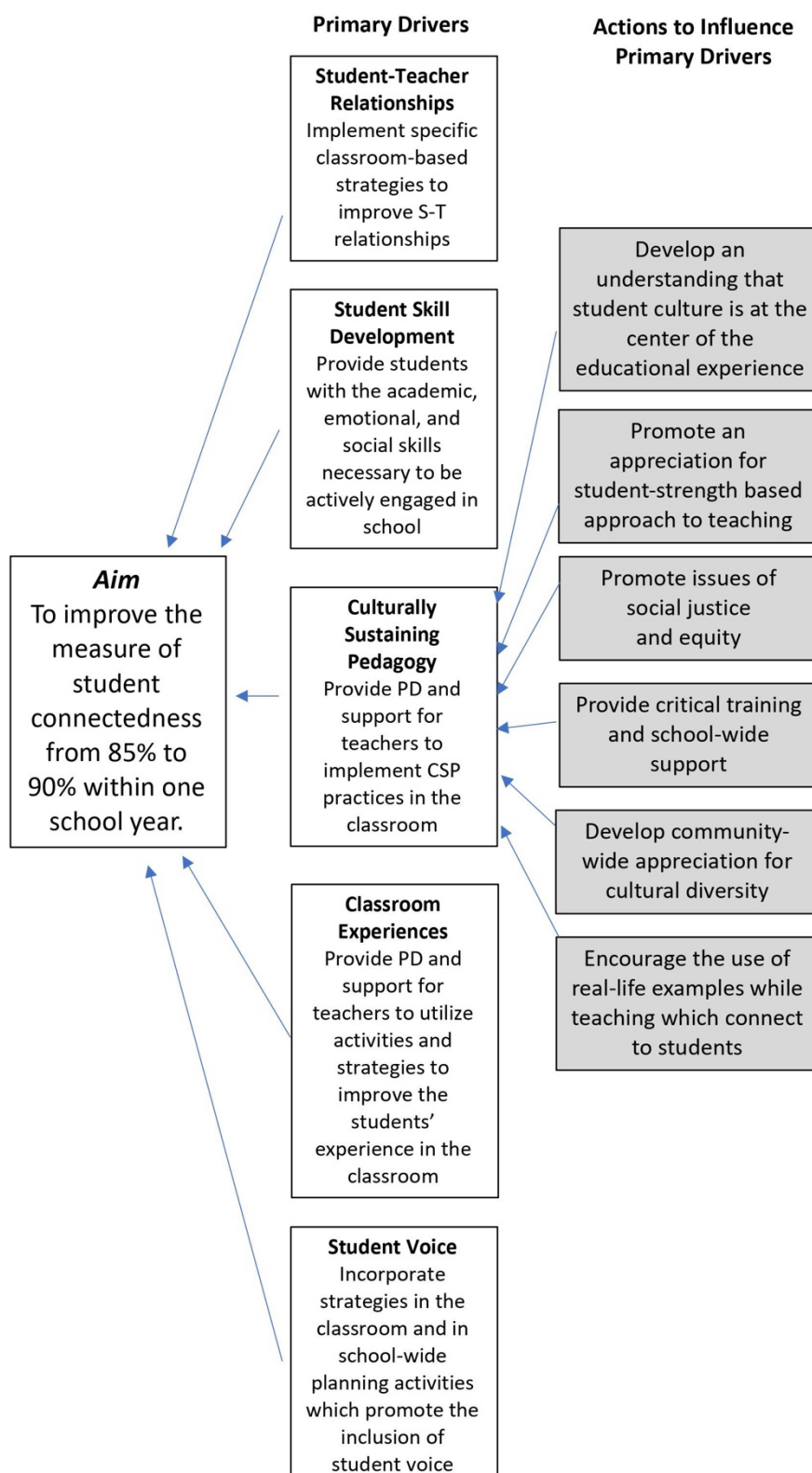
Working Theory of Improvement

Utilizing an Improvement Science model for this Dissertation in Practice, the researcher identified several root causes for the specific problem of practice investigated herein: a lack of universal student connectedness at Notre Dame High School. Each of these root causes, also identified in previous research, related to connectedness issues in adolescents. The root causes for this identified issue included weak student/teacher relationships, low student activity participation rates, a lack of student voice in both classroom and school planning, suboptimal classroom experiences, and a lack of opportunities to develop social and emotional skills, as

outlined in the Driver Diagram (Figure 6). This diagram also recommends specific actions to influence a specific primary driver for this Dissertation in Practice – culturally sustaining teaching practices.

Figure 6

Driver Diagram



Root Cause Analysis Summary

The lack of universally positive student/teacher relationships and low student activity participation rates were the first two root causes identified in this study tied to the issue of student connectedness. Research has shown that student/teacher relationships are a key component of both connectedness efforts and student academic success. As students and teachers build strong relationships, and as students perceive teachers as fostering a supportive and structured learning environment, students report higher levels of connection (Klem & Connell, 2004). Low activity participation rates also negatively impact student connectedness. Students' activity participation provides consistent opportunities for students to not only contribute to the community but also to forge relationships with peers and faculty members in a setting outside of the classroom. When students are active participants in their community, they are more likely to feel connected to their school (Libbey, 2004; Martinez et al., 2016).

The researcher identified a lack of student voice in both classroom and school planning and negative classroom experiences as additional root causes tied to lower connectedness measures. As students participate in the decision-making process within the community, both in the classroom and in larger school-specific discussions, connectedness measures increase (Libbey, 2004). Beyond student voice, affirming classroom-based experiences positively impact the student experience. The climate of the classroom is critical to the student experience and influences academic success and connectedness to school (Klem & Connell, 2004).

The final issue identified during the root cause analysis was a lack of opportunity for students to develop social and emotional skills in the classroom. Research indicates that students with strong social-emotional skills perform better academically (Sulkowski et al., 2012), thereby increasing their school-based experience and connectedness to school. As found in Chapter

One's fishbone diagram (Figure 3), each of these identified root causes contributed to a lack of measured student connectedness at Notre Dame. As educators addressed the issues outlined in the Driver Diagram (Figure 5), the potential existed to affect the targeted aim of this Improvement Science Dissertation in Practice. In this specific case, that would result in the growth of student connectedness at Notre Dame High School. To achieve this, and as part of the Improvement Science process, the researcher considered a series of strategies with a goal of positively impacting the student experience as well as overall student connectedness.

Review of Scholarly Knowledge: Mitigation Strategies

To improve student connectedness, a variety of research-based strategies exist, including promoting the use of student voice, facilitating positive classroom experiences, developing student social and emotional skill competencies, building strong student/teacher relationships, and utilizing CSP in the classroom. Following a summary of each strategy, this section focuses upon the strategy the researcher chose for the intervention: CSP.

Student Voice

When school administrators and teachers include students in the decision-making process, both for school-wide and classroom-based activities, the reliance upon student voice increases student connectedness (Woodward, 2018). As teachers solicit input to establish classroom-based rules, assignments, and decisions, allow for student choice in projects, and ask for and utilize student feedback, student voice expands. When students perceive their voice as heard in the classroom and in the school community, the student experience improves, and connectedness increases.

Positive Classroom Experiences

Teachers play a powerful role in controlling the climate of the classroom and influencing the experience of the student. As Klem and O'Connell (2004) highlighted, when students appreciate and enjoy their learning experience, academic benefits result, and connectedness builds. As educators implement innovative and engaging learning approaches and activities, students benefit. Lessons driven by conversation and interactions with peers, as opposed to traditional lectures directed solely by the teacher, along with those that effectively utilize technology resources, improve the student experience (Warfa et al., 2018). As these positive classroom-based experiences develop, students are more likely to demonstrate positive academic growth and improved levels of connectedness with the school community.

Social and Emotional Skill Competencies

The development of social and emotional skill competencies in students leads to numerous student benefits, including stronger connectedness to the school community. Researchers have identified a series of SEL benefits for students, including a measured decrease in behavioral and mental health issues, improved attitudes about self and school, and higher test scores (Bridgeland et al., 2013). Each of these benefits ultimately contributes to the student experience and improves student connectedness. When a school community makes a commitment to infuse SEL growth opportunities into the student experience, the potential impacts upon students are significant.

Student/Teacher Relationships

The promotion of strong student/teacher relationships is another strategy that not only positively benefits students but also contributes to the growth of student connectedness. Strong student/teacher relationships are a key component of the student experience and provide a series

of impactful benefits to students. Strong relationships counter a series of potential negative outcomes for students, including poor academic performance and the likelihood of dropping out of school (Darling-Hammond & DePaoli, 2020; McGrath & Van Bergen, 2015). As educators build strong student/teacher relationships, student attitudes towards school also improve (McGrath & Van Bergen, 2015). Further, while these relationships contribute to a positive student experience, research has shown that they also guard against negative impacts from stressful events for students (McGrath & Van Bergen, 2015).

Culturally Sustaining Pedagogy (CSP)

An additional strategy identified to address the specific problem of practice of this Dissertation in Practice is the implementation of CSP in the classroom. Frequently referred to by its original name, culturally responsive teaching, a variety of terms identify a practice with similar goals. Historically, these have included, among others, culturally responsive pedagogy, culturally responsive learning, cultural proficiency, culturally sensitive teaching, cultural competency, and culturally appropriate teaching (Hollie, 2019). To avoid confusion with the politically sensitive acronym for Critical Race Theory (CRT) and with an understanding that pioneer Gloria Ladson-Billings (2014) called for both a “remix” of the original version of the culturally responsive approach and for an evolution to a “culturally sustaining” model, this dissertation utilizes the phrase “Culturally Sustaining Pedagogy” or CSP.

A noted pioneer in the field, Geneva Gay (2002), originally described culturally responsive teaching as “the use of cultural characteristics, experiences, and perspectives of ethnically diverse students as conduits for teaching them more effectively” (p. 106). Fellow pioneer Ladson-Billings (2014) noted more recently that two beliefs formed the foundation of cultural teaching practices: focusing teaching strategies upon student strengths and encouraging

educators to determine how to best celebrate student assets. Ladson-Billings, Gay, and other culturally responsive pioneers originally developed these strategies for teachers to successfully support and teach African American students (Ladson-Billings, 2014).

In their research, Aronson and Laughter (2016) summarized Gay's original culturally responsive dimensions to include the following concepts:

- Teachers socially and academically empower students which results in high expectations for all students in the classroom.
- The use of a multidimensional teaching perspective leads to engaged students through cultural knowledge, experience, and perspectives.
- Teachers validate student culture.
- Teachers seek to educate the whole child.
- Teachers utilize an approach based upon student strengths.

Culturally sustaining practices, which originated in scholarly legal writing, became established in educational research and practices over the past several decades and provide significant opportunity to benefit all students in the classroom, while promoting stronger student connectedness (Darling-Hammond & DePaoli, 2020; Gay, 2013). Developed by legal scholars Richard Delgado and Jean Stefancic as Critical Race Theory, culturally responsive teaching practices first appeared in education beginning in the 1990s (Delgado & Stefancic, 2010). The ideas gained popularity with educators following the publication of Ladson-Billings's (1994) *The Dreamkeepers: Successful Teaching of African American Students*, although some trace its roots in education back to a Ramirez and Castaneda (1974) publication called *Cultural Democracy, Bi-cognitive Development, and Education* (Hollie, 2019).

CSP, with a specific foundation in education, strives to achieve a series of goals including ensuring high expectations for all students, improved learning and student outcomes, the growth of student connectedness, and the utilization of experiences and perspectives as resources for learning (Gay, 2013). A “key mandate” of CSP is that approaches must teach to student strengths as opposed to identifying and focusing upon areas of weakness (Byrd, 2016; Gay, 2013, p. 68). When teachers successfully implement CSP, all students benefit, and an important goal exists to link principles of learning with a deep appreciation and understanding of culture (Ladson-Billings, 2014; Tanese, 2020).

The climate of the classroom has also been an influential component of CSP even as approaches have evolved (Gay, 2002). Collaborative work and student choice remain essential (Tanese, 2020), as is a school-wide effort to successfully implement CSP (Barnes & McCallops, 2019). In short, educators must consider three key approaches as they use CSP in the classroom: setting high expectations, creating an atmosphere of cultural competence, and promoting critical consciousness (Byrd, 2016).

Research shows that CSP promotes student success (Darling-Hammond & DePaoli, 2020). With an original focus to improve the performance of marginalized students (Gay, 2013), CSP provides all students with the opportunity to develop knowledge along with an appreciation for cultural diversity (Bonner et al., 2018; Gay, 2013; Rodriguez et al., 2004). Cultural influences then become an integral part of the student learning process (Tanese, 2021). While a willingness to implement the strategies is key among educators, research indicates that practices become stronger and more effective over time as teachers utilize CSP in their classrooms (Tanese, 2021). As this occurs, the student experience becomes stronger and the benefits more frequent.

Studies have shown that the successful implementation of CSP engages students in the learning process (Aronson & Laughter, 2016; Bonner et al., 2018). Qualitative research has shown that teachers observed increased student self-esteem, self-worth, and self-respect, along with higher levels of student confidence, motivation, and engagement (Bonner et al., 2018; Rodriguez et al., 2004). When teachers successfully implement CSP in the classroom, they recognize and describe perceived life-long benefits to both students and society (Bonner et al., 2018). Beyond social and emotional growth opportunities for students, improved academic outcomes also result (Gay, 2002; Byrd, 2016). In addition to daily classroom-based academic achievement, research has also validated improved test scores (Aronson & Laughter, 2016).

Among its many benefits, CSP supports the implementation of social and emotional learning strategies. As noted by Barnes and McCallops (2019), CSP strategies align with SEL approaches as the use of student interests reinforce concepts, increase student buy-in, and promotes student engagement. Further, these practices create a “partnership” with students “anchored in” respect and integrity (Gay, 2002, p. 109). CSP also benefits students by promoting issues of social justice and racial inequality, while encouraging and challenging students to identify strategies to address these societal problems (Byrd, 2016).

Likewise, research has shown that the successful implementation of CSP provides an opportunity for students to build a stronger connection to the curriculum, improve writing skills, and decrease behavioral problems in the classroom (Aronson & Laughter, 2016). Students themselves have recognized the opportunity CSP provides to them for academic and personal growth (Rodriguez et al., 2004), and, when looking specifically at a diverse population, CSP supports improved student attendance and higher student GPA and credits earned (Dee & Penner, 2017).

As educators seek to implement CSP practices in their school communities, researchers recommend that teachers acknowledge, plan for, and address certain challenges that can develop. Of most importance, teachers must be aware of their own biases and influences from prior experiences that can impact CSP implementation (Barnes & McCallops, 2019; Bonner et al., 2018). Further, educators should develop strategies to successfully and directly deal with any controversy that may develop from implementation (Gay, 2002). As Barnes and McCallops (2019) explained in their research findings, for CSP to be successful, school communities must commit to supporting all students and teachers throughout the process and provide the necessary training. In doing so, both teachers and students will grow more comfortable with the framework, themes, and essential concepts, while both groups will experience the benefits of the approach.

CSP provides a unique opportunity for the classroom to become a site for social change (Aronson & Laughter, 2016). The approach allows teachers to base activities and lessons upon student interests, ensures that learning connects to real life, and promotes the utilization of student voice in the classroom (Tanase, 2020, 2021). As learning experiences build upon students' backgrounds, teachers facilitate connections to students' lives. These connections then powerfully become part of the "official curriculum" of a school, further enriching the student learning experience (Tanase, 2021, p. 4). As these foundations build, they enrich student outcomes and consistently place culture at the core of the student experience. This provides for a meaningful and authentic student experience that better connects students to the school community (Bonner et al., 2018).

Beyond the benefits previously highlighted, culturally sustaining practices also impact the culture and climate of a school community (Byrd, 2016). CSP and specific implementation

strategies provide opportunities for students to become more connected to their community. Using the Psychological Sense of School Membership scale as a measure, Dickson et al. (2016) found that, when students rated teacher use of CSP at a high level, students' sense of school belonging (connectedness) was also higher. Further, CSP creates climates that are safe, respectful, and ensure appreciation for others (Byrd, 2016). As culture builds and students respectfully recognize the value of this environment, opportunities for increased connectedness exist. CSP utilizes real-life examples and connects these themes and issues to student interests. As this occurs, students become more engaged and identify as more connected to school (Byrd, 2016; Rodriguez et al., 2004). In particular, Rodriguez et al. (2004) specifically noted that as these teaching practices create connections to student learning and experiences, "feelings of belongingness and comfort" develop for students, further highlighting the impact that CSP practices have upon student connectedness (p. 50). As described by Aronson and Laughter (2016), Rodriguez (2004), and Byrd (2016), each of the unique benefits of CSP contributes to an improved student experience, which leads to a variety of opportunities to measure growth, including the strengthening of student connectedness.

Review of Professional Knowledge

Empathy interviews with school leaders at Diocesan Catholic high schools revealed several themes relevant to this Dissertation in Practice. The first theme to emerge from the interview process showed that schools have made modest efforts to assess and indirectly support student connectedness. Each school has asked students to complete an annual culture and climate survey that administrators reviewed internally. The administrators then used the results to inform the decision-making process. One school offered PD sessions focused on improving student/teacher relationships in recent years, and another has worked to advance student voice in

their school community. Despite the understanding of its importance, none of the schools specifically targeted student connectedness with ongoing initiatives or focused faculty PD.

A second theme to emerge was a mixed understanding of culturally sustaining teaching practices, the proposed intervention for this Dissertation in Practice. While each school has done some work to increase academic expectations and promote acceptance of all students, only one has specifically implemented CSP. One school administrator highly endorsed culturally sustaining teaching practices and spoke to the influence it has made upon the school community. Recognizing that, “I can only see life through my lens,” this principal highlighted the ability of CSP to allow faculty to see beyond their own experiences and perspectives. With a committee formed to support faculty and help advance the conversation, CSP permitted teachers to abandon a deficit mindset and instead teach students from positions of strength. CSP and the subsequent opportunities for reflection allowed everyone, according to the principal, to broaden their perspectives in and out of the classroom.

In this particular school, CSP allowed students to see themselves as part of a larger community, which impacted the climate of the entire school and strengthened connectedness. Instead of congregating according to specific racial groups, which was common prior to the implementation of this approach, students’ views evolved, and the community noticed the impact throughout the school. From the principal’s perspective, teachers largely embraced this opportunity, which helped to raise expectations and rigor for all students. Both student and faculty experiences helped to improve the school community while giving “teachers more courage to try new things.” While reiterating the importance of on-going assessment of the practice, this school leader concluded by highlighting a foundational principle of CSP: “When

you teach to all students, your practice becomes stronger.” As one’s practice becomes stronger, so, too, does the connectedness of students to the school community.

Summary and Conclusions

Research has uncovered an impactful list of student benefits that result from the successful implementation of culturally sustaining teaching practices. CSP provides educators with a powerful approach to improve academic and behavioral issues, while also providing an opportunity to address cultural issues and strengthen the bond between student and school. As this bond develops, students benefit academically and socially, and student connectedness grows. With consistent benefits rooted in the promotion of student personal and academic success, an approach focused upon using student strengths, an opportunity to build cultural awareness and appreciation, and consistent student engagement, CSP provides a high leverage strategy for student growth and development. As confirmed by a principal whose school has implemented and embraced CSP, this approach provides a strong opportunity for both faculty and student growth and development.

Chapter Summary

Decades of research have established the importance of connectedness for students. Recent studies and anecdotal evidence have confirmed that the academic, social, and emotional impacts remain significant. At the secondary level, data show a decline in connectedness among students, while CDC (2009) data highlight the increased likelihood of risky behavior participation by disconnected adolescents, which further highlights the importance of this topic. Meanwhile, adult actions play a significant role in the students’ opportunity to build connectedness. Schools promote a positive climate when strong student/teacher relationships exist, teachers value student voice, and educators solicit student feedback. Further, when

communities encourage student involvement, develop SEL skills, and positive classroom-based experiences are common, opportunities to increase connectedness exist. Of most importance for this research, evidence also points to the positive influence of CSP and the impact it has upon student connectedness – ultimately, a critical factor for student success.

With the problem of practice, root cause analysis, and a working theory of improvement having been discussed, the researcher identified a methodological approach to address a specific problem of practice. The next chapter of this Dissertation in Practice describes the approach used to determine if the chosen high-leverage strategy made a statistically significant impact upon teacher self-efficacy. With the intervention focused upon CSP, Chapter 3 of this Dissertation in Practice outlines the methodological approach used for this study.

Chapter Three: Methodology

With a goal of building student connectedness, this study targeted the growth of teacher competencies in the use of CSP to achieve the larger objective. Based upon an intervention driven by PD sessions and classroom-based coaching opportunities, this Action Research-based study utilized the Improvement Science framework, Action Research methodology, and a mixed methods explanatory sequential design. As part of the Improvement Science process, the researcher identified a problem of practice, conducted end-user consultations, reviewed data, completed a root cause analysis and a review of relevant literature, and developed a working theory of improvement. As this Improvement Science Dissertation in Practice evolved to its next phase, the researcher gathered data on a research-supported intervention at his educational institution. An analysis of the data gathered through web-based surveys and semi-structured interviews helped answer research questions that sought an understanding of teacher self-efficacy along with the use and impact of CSP in the classroom.

Improvement Science Framework

Improvement Science served as the basis for this Dissertation in Practice. Following the Improvement Science model, the researcher identified a significant problem found in his organization and worked toward a solution with a goal of providing better outcomes and efficiencies (Bryk et al., 2015). Using retention and culture and climate survey data, the researcher, also serving as principal of the school, identified student connectedness as a problem of practice. Following a process based upon the Carnegie Foundation's Six Core Principles of Improvement, the researcher, through a collaborative approach with colleagues, identified root causes of the problem and analyzed the system that impacts the problem (Bryk, 2015). This process uncovered several contributing factors to the problem, including weak student/teacher

relationships, a perception that student voice is not incorporated into classroom and school planning, and missed opportunities to integrate social and emotional learning into the student experience. Through a collaborative effort with input solicited from stakeholders, the development of a working theory for improvement, and with the collection of relevant data, the researcher identified a specific change idea to attempt to improve student connectedness and the overall student experience (Bryk et al., 2015; Perry et al., 2020).

With an opportunity to address an everyday problem, Improvement Science intentionally follows a “systematic, systems-changing discipline inquiry process” while encouraging researchers to become scholarly practitioners (Perry et al., 2020, p. 28). Improvement Science Dissertations in Practice provide researchers with the opportunity to identify a specific and actionable problem in their own organization and understand its causes by completing empathy interviews with those in the community along with a review of existing data. Through these interviews with various staff members at Notre Dame High School, the researcher built a better understanding of issues surrounding student connectedness using a variety of adult perspectives. A review of literature justified the PoP and explained its connection to prior research. The Improvement Science process allowed the researcher to also gather professional knowledge from colleagues in similar settings to further understand the identified problem (Bryk et al., 2015).

To determine the most impactful and meaningful opportunity to address the problem, the researcher developed a Theory of Improvement along with a realistic and measurable time-bound goal to improve student connectedness. Through the development of a Driver Diagram (Figure 6), which is a visual representation of the Theory of Improvement, the researcher identified several change ideas prior to selecting a specific driver upon which to base the intervention to mitigate the PoP (Perry et al., 2020). Prior to the implementation of this intervention focused

upon building teacher proficiency in the use of CSP, the achievement of the initial steps occurred over a multi-month period. Defined measures, including future student culture and climate surveys, ultimately will determine if the selected change idea had resulted in an improvement to the PoP. Additional steps for this Improvement Science-based Dissertation in Practice included the implementation of the intervention, the gathering and analysis of data, and a reflection upon the process (Perry et al., 2020).

Theory of Improvement

Influenced by both teacher actions and the culture and climate created in classrooms and throughout the greater school community, connectedness is a critical component of the student experience. Because they play such an influential role, educators' actions and pedagogical approaches can significantly influence the day-to-day student experience. When students feel an increased connection to their school community, significant academic, behavioral, and social-emotional benefits result (Aldridge & McChesney, 2018; Bradshaw et al., 2014; Darling-Hammond & DePaoli, 2020).

As teachers work to implement innovative and engaging strategies, their actions are more likely to positively affect students. With a variety of approaches available and with the support of other research, the development of strong student/teacher relationships benefits the classroom environment and positively influences student outcomes (CDC, 2009; Darling-Hammond & DePaoli, 2020; McGrath & Van Bergen, 2015). Beyond the strength of student/teacher relationships, as teachers implement activities and strategies to improve the classroom experience, academic performance and student connectedness improve (Klem & Connell, 2004). Further, when a school community commits to providing opportunities for student academic, social, and emotional skill development, students better engage in the learning process and

experience numerous benefits (Collaborative for Academic Social and Emotional Learning, 2008). As educators work to promote the use of student voice in both the classroom and school planning activities, and when students recognize the value and importance placed upon their input and opinions, connectedness strengthens, and the student experience improves (CDC, 2009; Tanase, 2021).

At Notre Dame High School, recent PD focused upon opportunities for teachers to strengthen connectedness with students. Advancing the student experience is a constant focus area for teachers. In recent years, the administration encouraged teachers to integrate activities that foster positive student-teacher relationships into their lessons, along with increased opportunities to utilize student voice in classroom planning and the decision-making process.

In this vein, the Improvement Science process identified several drivers that can impact student connectedness at Notre Dame High School to complement these ongoing efforts. These drivers included stronger student/teacher relationships, the integration of social-emotional learning, promoting the use of student voice, and improving the overall student experience.

However, recent culture and climate surveys, largely reflected stagnant growth in student connectedness (Notre Dame High School, 2020a; Notre Dame High School, 2021b). While experiencing some success in individual focus areas, the overall mixed results were largely reflective of teacher resistance to fully embracing and integrating the ideas. To meet the learning needs of the school's diverse student body and to address the ongoing desire to improve the student experience and connectedness, the researcher identified an intentional area of school-wide focus: classroom integration of CSP.

This Dissertation in Practice focused upon a specific intervention that provides teachers with PD and classroom-based support to implement CSP. Research has established a connection

between positive student outcomes, strengthened student/teacher relationships, and increased school connectedness through the implementation of school-wide CSP (Aronson & Laughter, 2016; Bonner et al., 2018; Byrd, 2016; Darling-Hammond & DePaoli, 2020; Gay, 2013). This research, therefore, intended to investigate whether PD and the implementation of CSP positively impacted teacher self-efficacy and teachers' perceptions of the classroom environment and student learning.

Methodology

While this Dissertation in Practice followed the Improvement Science framework, it also utilized an Action Research methodology. When utilizing Action Research, educators assume the role of researcher to study a PoP within their own school community (Efron & Ravid, 2019). Educators identify a problem that is of interest to them or one that requires attention in their community. Using an intervention, one pursues answers to established research questions, and teachers reflect and critique the process while becoming familiar with the problem and intimately engaged in determining a solution. Through Action Research, educators strive to improve their personal practice and professional growth while improving the experience of their students and school community. Action Research in education allows for a “bottom up” process that is led by those in the school community (Efron & Ravid, 2019).

This Dissertation in Practice followed the model of Action Research, with the researcher serving as the principal at the research site. The researcher is a 24-year veteran of the high school (having served in a leadership role for the past 16 years) and is keenly aware of the challenges at the school. The aim of this Improvement Science project was to improve the connectedness of all students at Notre Dame High School to maximize the academic, behavioral, social, and emotional benefits experienced by connected students. To accomplish this task, the researcher

identified the use of CSP as a change idea to ultimately improve school connectedness and the student experience – primary goals in line with the intent of Action Research.

Design

This dissertation utilized a mixed methods explanatory sequential design, as outlined by Creswell and Plano Clark (2018) and summarized in Table 5.

Table 5

Mixed Methods Explanatory Sequential Design

Study Phase	Phase Activity	Intent of Phase
Phase 1	Gather close-ended quantitative data	Answer first research question
Phase 2	Use strategies to connect with Phase 1 data	Determine any explanations, refine research questions, determine structure of Phase 3 interviews
Phase 3	Collect open-ended qualitative data	Analyze data; code and identify themes to answer research questions
Phase 4	Interpret the Connected Results	Summarize and interpret data; determine how QUAL explains QUAN

This design was appropriate for the intent of this study because research began with a quantitative phase that allowed the researcher to gather close-ended data that informed subsequent phases. Data analysis using descriptive and inferential statistics answered the first research question and assisted in the selection of participants for the qualitative phase of the study (Creswell & Plano Clark, 2018). The second phase of this mixed methods approach utilized qualitative data to determine possible explanations of the results, to refine qualitative research questions, and to determine the structure of phase three's semi-structured interviews (Creswell & Plano Clark, 2018). The third phase of this explanatory sequential design provided for the collection of open-ended data. After coding and identifying themes gathered during semi-structured interviews, the fourth and final phase of this study design provided the researcher with

an opportunity to summarize and interpret both the quantitative and qualitative data and the extent to which the qualitative data helped explain the quantitative data (Creswell & Plano Clark, 2018).

Following the mixed methods design, this study first gathered quantitative data from teachers. Pre- and post-intervention surveys provided data as the researcher sought to assess teacher self-efficacy related to the use of CSP. After using descriptive and inferential statistics to analyze this data, the researcher determined if any patterns existed in the data. Further, using the CRTSE scale that accompanied the survey (Siwatu et al., 2016), the researcher determined whether teacher self-efficacy had improved after the intervention period. Following the gathering and review of the quantitative data, the explanatory sequential design allowed for the researcher to refine the research questions and consider the structure and participants for the next step in the study.

Semi-structured interviews provided qualitative data for the third phase of the study. Participating teachers shared their feedback, experiences, and perspectives by answering questions focused upon the intervention, PD, and any observed student experiences related to the use of CSP. Using information gathered during these interviews, the researcher reviewed and coded data multiple times to identify relevant and meaningful themes. Finally, the fourth phase of this mixed methods design allowed the researcher to review a summary of data gathered during the quantitative and qualitative phases of the study to interpret, understand, and explain relevance and connections, and, ultimately, to determine the impact of the intervention upon teacher use of CSP.

Purpose of the Study

The purpose of this Improvement Science Dissertation in Practice was to assess to what extent professional learning focused upon CSP impacted teacher perceptions, instruction, and self-efficacy at a Catholic high school. The researcher intended to determine teacher self-efficacy in the use of culturally sustaining practices both pre- and post-intervention. This study also assessed the frequency of teacher use of specific classroom-based culturally sustaining practices. Finally, the researcher sought to uncover themes expressed by teachers in semi-structured interviews related to their training, support, and implementation of culturally sustaining practices. Specific areas of focus included perceived impacts and benefits upon student learning and the classroom environment, the overall experience with the intervention process, unintended results of the practices, and recommendations for future improvements when using CSP.

Target Population

The school administration determined that the improvement of student connectedness, as measured by annual student Culture and Climate Surveys, was a school-wide goal. Further, based upon a review of the relevant literature, the researcher selected the use of CSP as a driver to help achieve the larger goal. To work towards this initiative, participants in this study included the entire teaching staff, as described in Table 6, of a private, Catholic, Diocesan high school located in a suburban Connecticut town.

Table 6

Study Participant Demographics

Demographic	n	%
Gender		
Men	17	51.5
Women	16	48.5

Demographic	n	%
Age		
21-29	4	12.1
30-39	5	15.2
40-49	13	39.4
50-59	2	6.1
60+	9	27.2
Ethnicity		
White	33	100
Total Years of Teaching Experience		
0-5 Years	5	15.2
6-10 Years	5	15.2
11-19 Years	7	21.2
20-29 Years	9	27.2
30+ Years	7	21.2
Total Years of Teaching at Notre Dame		
0-5 Years	9	27.2
6-10 Years	7	21.2
11-19 Years	6	18.2
20-29 Years	7	21.2
30+ Years	4	12.2
Highest Degree Earned		
Bachelor's	6	18.2
Master's	23	69.7
Sixth Year	3	9.1
Doctorate	1	3
Employment Status		
Full-time	30	90.9
Part-time	3	9.1

With a mix of veteran and young teachers, the 33 educators at this school – 16 females and 17 males – have completed an average of 20.5 years of service in education and 14.8 years at their present school. The majority of the faculty serve in a full-time capacity, and 82% have attained an advanced degree. The faculty do not represent a diverse group, however, they are exclusively White, while educating a diverse student body.

Procedures

With a goal of ultimately improving student connectedness to school, the researcher selected an intervention designed to accomplish that goal over time through the introduction and use of CSP in the classroom. All teachers took part in two PD sessions led by Sandi Drummey, EdD, a partner in ADAC (an acronym for Accountability, Delivery, Advocacy, and Community). This firm is a consultant group that provides support, teacher training, and guidance specifically for non-public schools across the country. Dr. Drummey, a former Catholic school teacher, principal, and Diocesan Assistant Superintendent (see her biography included in Appendix A), focused her doctoral dissertation work on culturally responsive practices in leadership, which allowed her to bring her scholarly knowledge and experiences to the Notre Dame faculty. In preparation for this Dissertation in Practice, the researcher spoke with a colleague at a similar Diocesan high school in Rhode Island with whom Dr. Drummey had worked previously. The principal spoke very highly about not only her work at his school but also the positive impact the intentional focus upon CSP had had upon his school community. In his words, “Sandi’s work helped to raise the bar for all students and teachers. When you teach to all students [using CSP], your practice becomes that much stronger.”

Serving in his role as principal of Notre Dame High School, at a meeting prior to the first PD workshop, the researcher provided the faculty a high-level overview of CSP and the benefits

to students as uncovered through his research for this dissertation. Faculty participated in two workshops, each lasting two hours, in December 2021 and January 2022, focused on CSP. Dr. Drummey visited the school to conduct classroom visits and provide individualized support and feedback for staff three times between December 2021 and March 2022. Any teachers who missed a PD session met individually with Dr. Drummey to ensure that all teachers received similar training and support for this school-wide initiative. Using her vast experience in Catholic education and her culturally responsive knowledge, Dr. Drummey provided teachers with background knowledge justifying the approach and specific strategies to implement CSP in the classroom. Teachers also developed a personal action plan including specific, measurable, achievable, relevant and time-based (SMART) goals to outline an implementation approach for CSP in their classroom.

The researcher, in his role as principal, collected action plans and provided support to teachers between Dr. Drummey's visits to the school. Teachers received an invitation to conference with the researcher to discuss specific strategies and individual implementation plans. The researcher also conducted classroom visits, if requested by teachers, to provide feedback and additional implementation suggestions. As principal, the researcher also connected with Dr. Drummey via email or phone to request additional support or input as needed. In addition, teachers had access to Dr. Drummey via email between her visits to the school.

Prior to participation in the first PD session, the researcher sent all faculty members an invitation to complete the CRTSE survey as designed by a professor at Texas Tech University (Siwatu et al., 2016). Teachers assessed their use of and comfort with a variety of culturally sustaining practices. Faculty volunteers completed the same survey at the end of the intervention. To ensure participant confidentiality, the survey requested an anonymous identifying factor

during the completion of the web-based surveys, which allowed the researcher to accurately compare pre- and post-intervention data. A comparison of data from the first and second surveys assessed changes in teacher practices and self-efficacy perceptions over time. During the intervention period, faculty members also received a weekly invitation to voluntarily complete a Google Forms-based survey to collect quantitative data assessing the frequency of use of CSP practices.

As the study entered the qualitative phase, the researcher utilized convenience sampling to structure several small-group semi-structured interviews with approximately 12-15 teachers. Following the recommendation of Creswell and Plano Clark (2018), the selection of individuals invited to participate in the qualitative phase was a smaller group than the one that participated in the quantitative phase, but it represented those who were “best suited” to provide more detail on the quantitative data (p. 190). To ensure a representation of each academic discipline and a variety of perspectives, teachers from each of the six academic departments were invited to participate in the semi-structured interviews. While the unequal size of participant groups from both phases was not a concern, a priority was to ensure that the researcher uncovered meaningful themes to help explain the selected data (Creswell & Plano Clark, 2018).

An independent third party, with more than 30 years of experience conducting research focus groups, led the semi-structured interviews. Stephen Keating, president of Keating Associates (see a biography included in Appendix B), conducted interviews to protect the confidentiality of participants. He was familiar with the Notre Dame community and its faculty as he had worked as a marketing consultant with the school for the preceding 12 years. Keating deleted all identifying data from interview transcripts and his notes prior to the researcher’s analysis. Following the procedures of the explanatory sequential design, the researcher

summarized and interpreted the quantitative data and, separately, the qualitative data, prior to discussing the extent and ways the qualitative data helped to explain the quantitative data gathered at the beginning of the study (Creswell & Plano Clark, 2018).

Data Collection Instruments/Measures

This Dissertation in Practice, following a mixed methods explanatory sequential design, collected both quantitative and qualitative data. Quantitative data obtained from teacher participants assessed their CSP self-efficacy both pre- and post-intervention. Additional data gathered on a weekly basis during the intervention indicated which specific culturally sustaining strategies teachers chose to implement in their classrooms. Qualitative data, gathered during a series of post-intervention, semi-structured, small-group interviews focused upon the intervention and specific teacher experiences and perceptions using CSP. A summary of research questions, measures, and analysis methods follows in Table 7. Each is explained throughout the remainder of this chapter.

Table 7

Summary of Research Questions, Measures, and Analysis

Research Question	Measurement Instrument	Method of Analysis
To what extent is there a measured improvement in teachers' self-efficacy in the use of Culturally Sustaining Pedagogy (CSP)?	CRTSE Survey	Mean, Standard Deviation, Paired <i>t</i> -test, Independent Samples <i>t</i> -test
Which culturally sustaining practices did teachers implement during a four-week period?	Web-based Google Form	Measures of frequency

Research Question	Measurement Instrument	Method of Analysis
How do teachers describe the impact of culturally sustaining strategies upon their classroom culture and student learning?	Semi-structured interviews	First- and second-level coding for thematic identification

Quantitative Instruments/Measures

All 33 teachers at Notre Dame received an email invitation to complete a 41-item self-inventory survey, the CRTSE. Found in Appendix C, this survey utilized a Likert-type scale for responses on a web-based platform (Siwatu et al., 2016). This survey aligned with the intent of this study, provided a “quantitative indicator of the strength” of teachers’ CRTSE beliefs, and research has determined the internal reliability of these CRTSE scores to be .96 as measured by Cronbach’s Alpha – making it highly reliable and appropriate for use (Siwatu et al., 2017, p. 871). Many researchers have utilized this survey to effectively collect data and have referenced Siwatu’s work in other research studies (Cruz et al., 2020; Fitchett et al., 2012; Frye et al., 2010).

The web-based Google Forms survey asked participants to rank themselves based upon confidence to complete a classroom-based task (e.g., “I am able to adapt instruction to meet the needs of my students”) using a 0 (no confidence at all) to 100 scale (complete confidence). Teachers included an anonymous identifier which allowed the researcher to link pre- and post-data. They also provided their gender and years of teaching experience when completing the survey. By totaling the numeric responses to each question, and with a possible total score range of 0 to 4,100, CRTSE scores determined the level of teacher confidence when using CSP. This survey also provided an opportunity to determine a CRTSE strength index by adding the score from each response and dividing by the number of responses, with a range from 0 (low self-efficacy belief) to 100 (high self-efficacy belief) (Siwatu et al., 2016).

In addition to the CRTSE survey, the researcher requested that teachers complete a Google Forms survey each week to monitor CSP implementation. After clicking a link agreeing to participate in the data-gathering process, teachers accessed the Google Form, which did not collect email addresses or any specific user identification. The survey (Appendix D) included a list of 54 culturally sustaining practices from the Culturally Responsive Practices Crosswalk with Danielson's Framework for Teachers (Syracuse City School District, 2019), which Dr. Drummey provided to teachers during a PD session. Each Friday during the intervention period, participating teachers voluntarily self-identified the specific practices they had implemented during that week.

Qualitative Instruments/Measures

With an intent to gather data directly from those who participated in the intervention at Notre Dame High School, the researcher utilized a convenience sampling method. This approach allowed the researcher to gather data from those individuals available to him (Martella et al., 2013). With this approach, the researcher initiated several face-to-face, small-group, semi-structured interviews with faculty members. Three randomly selected members from each of the six academic departments (Math, Science, Modern Language, Theology, English, Social Studies) received an invitation to participate. Faculty members could decline participation at any time. With each semi-structured interview session lasting between 45 and 60 minutes, an independent third party asked questions to protect participant confidentiality. The researcher provided the interviewer with a list of nine questions (see Appendix E). The interviewer recorded notes and observations, de-identified any names, and provided this information to the researcher. The researcher also received transcripts of the interviews with all names and identifying markers first removed by the interviewer.

Research Questions and Hypotheses

- After participating in training and coaching sessions and with weeks of practice implementing strategies, to what extent is there a measured improvement in teachers' self-efficacy in the use of CSP?
 - H_1 – There is a statistically significant difference in the change in teachers' self-efficacy in the use of CSP as measured by the CRTSE.
 - H_0 – There is no statistically significant difference in teachers' self-efficacy in the use of CSP as measured by the CRTSE.
- Is there a statistically significant difference between Humanities teachers' self-efficacy in the use of CSP as measured by the CRTSE?
 - H_1 – There is a statistically significant difference in the change in self-efficacy scores of Humanities teachers as measured by the CRTSE.
 - H_0 – There is no statistically significant difference in the change in self-efficacy scores of Humanities teachers as measured by the CRTSE.
- Is there a statistically significant difference between STEM teachers' self-efficacy in the use of CSP as measured by the CRTSE?
 - H_1 – There is a statistically significant difference in the change in self-efficacy scores of STEM teachers as measured by the CRTSE.
 - H_0 – There is no statistically significant difference in the change in self-efficacy scores of STEM teachers as measured by the CRTSE.
- Is there a statistically significant mean score difference in the change in self-efficacy scores in the use of CSP as measured by the CRTSE between teachers with differing years of teaching experience?

- H_1 – There is a statistically significant mean score difference in the change in self-efficacy scores in the use of CSP as measured by the CRTSE between teachers with differing years of teaching experience.
- H_0 – There is no statistically significant mean score difference in the change in self-efficacy scores in the use of CSP as measured by the CRTSE between teachers with differing years of teaching experience.
- Is there a statistically significant mean score difference in the change in self-efficacy scores in the use of CSP as measured by the CRTSE between male and female teachers?
 - H_1 – There is a statistically significant mean score difference in the change in self-efficacy scores in the use of CSP as measured by the CRTSE between male and female teachers.
 - H_0 – There is no statistically significant mean score difference in the change in self-efficacy scores in the use of CSP as measured by the CRTSE between male and female teachers.
- Is there a statistically significant mean score difference in the change in CSP self-efficacy scores as measured by the CRTSE between teachers who met individually with the consultant and those who did not?
 - H_1 – There is a statistically significant mean score difference in the change in CSP self-efficacy scores as measured by the CRTSE between the teachers who met individually with the consultant and those who did not.
 - H_0 – There is no statistically significant mean score difference in the change in CSP self-efficacy scores as measured by the CRTSE between

the teachers who met individually with the consultant and those who did not.

- Which culturally sustaining practices, if any, did teachers self-report implementing during a four-week period?
 - How often were strategies used?
 - Did implementation differ by academic department and years of service?
- How do teachers describe the impact of culturally sustaining strategies upon their classroom culture and student learning?
 - Was the overall approach of the intervention effective? Which strategies were most helpful and effective? Why?
 - What value and benefit did culturally responsive practices achieve in classroom culture? Why?
 - Why were certain strategies not used?
 - How was student learning impacted by teachers using CSP?
 - As indicated by teachers, how did students respond to the use of culturally sustaining practices?
 - Did teachers experience any unintended benefits from the use of CSP?
 - Based upon their experience, what recommendations for future improvement would teachers make when using CSP?

Data Analysis Methods

An analysis of quantitative data was conducted using descriptive and inferential statistics. Using the CRTSE survey, the researcher calculated measures of frequency and central tendency with a mean score for each item on the survey. This mean score provided a solid estimate of “the

population parameter” as compared to other measures because it “takes into account all scores in the data set” (Martella et al., 2013, p. 102). A standard deviation calculation for the response from each question highlighted the distance of scores from the mean, which provided additional context for the data. By summing the results of all survey questions, with a possible score range of 0 to 4,100, the researcher calculated teacher self-efficacy scores. Using these results, and dividing by the number of responses, the calculation of a CRTSE strength index was accomplished with a range from 0 (low self-efficacy belief) to 100 (high self-efficacy belief) (Siwatu et al., 2016). An average score determined a high, average, and low range among the school’s faculty.

The researcher disaggregated results using a variety of variables including academic department, years of teaching experience, and gender. Descriptive analysis helped determine overall teacher confidence in the use of CSP both pre- and post-intervention. The researcher utilized a paired *t*-test to determine if a statistically significant difference existed with teachers’ self-efficacy in the use of CSP as measured by the CRTSE pre- and post-intervention survey. Even with a relatively small sample size, a *t*-test still provides a powerful assessment of statistical significance (Martella et al., 2013). The researcher also used independent samples *t*-tests to determine if a statistically significant difference existed between various groups.

Additional quantitative analysis was conducted with the data gathered from the weekly self-reported teacher surveys that indicated the culturally sustaining practices used the previous week. Using descriptive statistics, the researcher determined the frequency of implementation of each practice. The study reported data by aggregated frequency count and disaggregated by department, gender, and years of service.

During the qualitative phase of the study, notes and transcripts from semi-structured interviews provided data for analysis. With participant permission, the interviewer recorded each interview session. Using notes and transcripts, data obtained from these deidentified conversations and interview observations underwent content analysis. First- and second-level coding identified emergent themes during each read-through. The researcher conducted coding to develop across-case (school-wide) themes in the data. After the researcher had coded the data multiple times, he grouped codes into categories with multiple themes highlighted before explaining the data in narrative form (Glesne, 2014). To ensure the efficacy of the coding process, an independent third party skilled in qualitative data analysis coded a portion of the data to conduct an intercoder reliability check.

Threats to Validity

Using an Improvement Science design and Action Research methodology, and with data gathering occurring at the researcher's school, several potential threats to the study's validity existed. Attempting to ensure that data were reliable and that readers view this research as trustworthy and dependable, the researcher identified the threats most likely to impact this study and attempted to mitigate their impact. The researcher worked to ensure the study and its data fulfilled the original intent, answered the appropriate research questions, and remained true to the study's selected design, while striving to ensure that the study reflected an accurate measure of data from the school.

Participant Concerns

The gathering of data for this study depended upon the willingness of faculty members to participate. Survey completion was optional, and data were self-reported. In alignment with Action Research, the researcher conducted research at his institution. As a result, he had a

working relationship with each of the study participants, and this relationship may have unintentionally influenced participant responses (Glesne, 2014). Even though survey data did not gather individual identifiers and an outside third party led semi-structured small-group interviews, the possibility of an unintended influence of the researcher upon teacher participants existed. The researcher and interviewer reminded teachers that their responses should accurately reflect what occurred as opposed to what they thought the researcher needed, and that participation was voluntary, anonymity promised, and honest feedback was important to the validity of the study's results. Finally, some teachers may have chosen to not complete surveys, which threatened the validity of the data.

Other threats to validity existed during the qualitative research phase. With a small population size, semi-structured interviews were dependent upon willing volunteers. Potentially, teachers randomly selected might have been unwilling to participate in this phase, which would have impacted the depth of qualitative data. The random selection of three teachers from each academic department, however, provided a greater opportunity to reach the goal of 12-15 interview participants. To protect teacher confidentiality during the qualitative phase and to encourage the sharing of honest and open perspectives, an independent third party conducted each semi-structured interview. The interviewer reminded teachers that prior to submitting transcripts to the researcher, he would de-identify data and remove any names.

Researcher Bias

Researcher subjectivity and/or bias presented another threat to the validity of the study (Zohrabi, 2013). To mitigate any biases, the researcher participated in an "interview the investigator" process (Chenail, 2011, p. 258). Following the process as a participant by beginning with the completion of a consent form through a mock focus group interview session,

the researcher took notes on the process and highlighted any surprises or frustrations. This process provided the opportunity to edit the original interview questions. Further, the researcher journaled before and after the “interview the investigator” process to document any thoughts and reflections that might bias the collection of data. This process helped to uncover any biases, allowed the researcher to develop empathy for participants, and identified vulnerabilities or concerns (Chenail, 2011).

To further address potential research bias, the study utilized intercoder reliability. A skilled second coder coded a portion of the qualitative data gathered during focus group interviews (Lombard et al., 2006). This process sought to ensure that the codes identified by the researcher were truly evident in the data as opposed to ideas the researcher hoped would become evident through the research process.

Hawthorne Effect

The Hawthorne Effect, which occurs when participants alter their behavior because of on-going observation, was a potential threat to validity. The researcher sought to maximize the trust he had built with the staff during his lengthy tenure at the school and provided opportunities for Dr. Drummey to build rapport and relationships with the faculty during PD sessions and classroom visits. It was through trust and a relaxed atmosphere that participants could feel comfortable and unthreatened, thereby mitigating the Hawthorne Effect (Oswald et al., 2014).

Chapter Summary

To build student connectedness at Notre Dame High School, a variety of interventions was considered. Ultimately, with a goal of improving connectedness over the long term, the purpose of this Improvement Science Dissertation in Practice was to assess to what extent professional learning focused upon CSP impacted teacher perceptions, instruction, and self-

efficacy. Rooted in Action Research and following a mixed methods explanatory sequential design, the study's target population included the entire faculty of 33 teachers at Notre Dame.

Utilizing both qualitative and quantitative measures, the study gathered data in multiple phases to answer the three research questions and associated sub-questions. Beginning and ending the quantitative phase with a web-based, culturally sustaining practices self-efficacy survey, teachers also self-reported pedagogical approaches used on a weekly basis throughout the intervention period. The researcher analyzed quantitative data using descriptive and inferential statistics, which included paired and independent sample *t*-tests comparing pre- and post-intervention data. Several small-group, semi-structured interviews provided qualitative data and insights into teacher perspectives and observations surrounding the intervention, support, and use of CSP. The researcher coded qualitative data multiple times to identify relevant and meaningful themes. With several potential threats to the validity of the study, including the dependency upon self-reported data and a willingness to participate, unintended bias from both participants and researcher, and the Hawthorne Effect, the researcher worked to mitigate any threats during each phase of the research process.

The study gathered data to answer the three identified research questions. In the next chapter, the researcher will present the qualitative and quantitative data gathered during and after the intervention process. This data helped answer the three research questions identified by the researcher as part of this Improvement Science Dissertation in Practice.

Chapter Four: Presentation of the Findings

With a goal to build stronger levels of student connectedness, this Improvement Science Dissertation in Practice sought to improve teacher use of and self-efficacy with Culturally Sustaining Pedagogy. To answer each of the study's research questions and related sub-questions, the researcher gathered quantitative and qualitative data by following a mixed methods explanatory sequential design. Teacher self-efficacy surveys, given both pre- and post-intervention, along with weekly CSP surveys identifying practices utilized in the classroom over the previous week, provided quantitative data. Transcripts from semi-structured focus group interviews provided qualitative data. This chapter presents the results and analysis of these data.

Description of the Sample

Participants in this study included the entire teaching staff, as described in Table 6, of a private, Catholic, Diocesan high school located in a suburban Connecticut town. With a mix of veteran and younger teachers, the 33 educators at this school, 16 females and 17 males, have completed an average of 20.5 years of service in education and 14.8 years at their present school. Most of the faculty serve in a full-time capacity, and 82% have earned an advanced degree.

Statement of Results

Research Question 1

The researcher gathered quantitative data to answer the first research question and associated sub-questions:

- After participating in training and coaching sessions and with weeks of practice implementing strategies, to what extent is there a measured improvement in teachers' self-efficacy in the use of CSP?

- Is there a statistically significant difference between Humanities teachers' self-efficacy in the use of CSP as measured by the CRTSE?
- Is there a statistically significant difference between STEM teachers' self-efficacy in the use of CSP as measured by the CRTSE?
- Is there a statistically significant mean score difference in the change in self-efficacy scores in the use of CSP as measured by the CRTSE between teachers with differing years of teaching experience?
- Is there a statistically significant mean score difference in the change in self-efficacy scores in the use of CSP as measured by the the CRTSE between male and female teachers?
- Is there a statistically significant mean score difference in the change in CSP self-efficacy scores as measured by the CRTSE between teachers who met individually with the consultant and those who did not?

Using the CRTSE survey (Appendix C), the researcher gathered quantitative data to answer the first research question. When completing this survey, both pre- and post-intervention, teachers rated their level of ability to implement a variety of culturally sustaining practices in their classrooms. After receiving an email invitation, 31 teachers completed the pre-intervention survey, and 29 submitted the post-intervention survey. Teachers completed post-intervention surveys after participation in two, two-hour PD sessions. Teachers were also able to request individual coaching sessions and a classroom observation during several day-long visits to the school from the consultant.

Using a 0 (no confidence) to 100 (full confidence) scale for each question, the researcher tallied individual responses to the 41 questions for each teacher to determine a culturally

responsive self-efficacy score. A mean score was then calculated for each teacher – both pre- and post-intervention – which allowed the researcher to perform a paired-samples *t*-test to determine if there was a statistically significant change between pre- and post- data. Table 8 includes data from the 29 teachers who completed both the pre- and post-intervention self-efficacy surveys, including pre- and post- mean scores (M) and standard deviation (SD), along with the results of the *t* test.

Table 8

Paired t-test of Teacher Self-efficacy Pre- and Post-Intervention

		N	M	SD	<i>t</i> (28)
Teacher Self-Efficacy	Pre- Intervention	29	70.44	13.73	-4.06*
	Post- Intervention	29	78.59	10.65	

* $p < .001$

As shown in Table 8, there was a statistically significant increase in teacher self-efficacy scores, $t(28) = -4.06, p < .001$, from pre- to post-intervention. As a result, the researcher rejected the null hypothesis.

Self-Efficacy Growth Based upon Subject Specialty

Because of the small number of participants in each academic department, the researcher grouped academic departments into Humanities: Art, English, Learning Specialist, Modern Language, Social Studies, and Theology ($n = 19$) and STEM: Science, Technology, Math ($n = 10$) and conducted a paired samples *t*-test to assess if statistically significant growth occurred within the two groups. Table 9 includes data grouped into two categories according to teacher subject specialty along with pre- and post-intervention mean self-efficacy scores and mean self-efficacy change as measured by the CRTSE.

Table 9*CRTSE Change Measured by Academic Discipline*

Subject Specialty	n	Pre-	Post-	Mean	<i>SD</i>
		Intervention	Intervention	CRTSE Change	
Humanities	19	71.58	77.29	5.71	7.93
STEM	10	68.28	81.05	12.78	14.18

Data showed that both Humanities and STEM teachers increased their CRTSE scores. However, STEM teachers, who had lower pre-intervention scores, ended with higher post-intervention scores than Humanities teachers, and more than doubled the Humanities teachers' self-efficacy growth.

Table 10 includes data from the 19 Humanities teachers, including pre- and post-intervention self-efficacy mean scores and standard deviation, along with the results of the paired samples *t*-test.

Table 10*Paired t-test of Teacher Self-Efficacy Pre- and Post-Intervention: by Subject Specialty*

Subject Specialty	n	<i>M</i>	<i>SD</i>	<i>t</i> (df)	<i>p</i>	
Humanities	Pre- Intervention	19	71.58	11.78	-3.14 (18)	.01
	Post- Intervention	19	77.29	10.64		
STEM	Pre- Intervention	10	68.28	17.34	-2.85 (9)	.02
	Post- Intervention	10	81.06	10.75		

As shown in Table 10, there was a statistically significant increase in teacher self-efficacy scores, $t(18) = -3.14, p = .01$, from pre- to post-intervention for Humanities teachers and a statistically significant increase in teacher self-efficacy scores, $t(9) = -2.85, p = .02$, from pre- to post-

intervention for STEM teachers, which allowed the researcher to reject the null hypotheses. Both sub-groups of teachers showed statistically significant growth in their self-efficacy scores, with STEM teachers achieving a nearly doubled mean score growth (12.78) versus Humanities teachers (5.71). Both groups demonstrated similar consistency in post-intervention scores as measured by the standard deviation.

Self-Efficacy Changes Based upon Years of Teaching Experience

The researcher sought to determine self-efficacy growth, as measured by the CRTSE, based upon years of teaching experience. Table 11 includes data based upon teachers' years of experience and shows the mean CRTSE self-efficacy change by group.

Table 11

CRTSE Change Measured by Years of Teaching Experience

Years of Teaching Experience		CRTSE Mean Change	
Experience	n	Pre- to Post-Intervention	<i>SD</i>
0 – 5	5	8.99	9.51
6 – 10	4	9.53	12.39
11 – 19	6	5.48	3.00
20+	14	8.60	13.43

Teacher self-efficacy scores increased by a mean of 8.15 ($SD = 10.81$) when the researcher compared pre- to post-intervention survey results. Specifically looking at growth in self-efficacy scores, as shown in Table 11, teachers with ten years or fewer of teaching experience (in two categories of 0 – 5 and 6 – 9 years) showed the largest increase in self-efficacy scores when comparing pre- and post-intervention results. Teachers with between 11 and 19 years of teaching experience showed the smallest growth in self-efficacy scores.

To determine if a statistically significant change occurred in pre- and post-intervention self-efficacy data, the researcher conducted paired samples *t*-tests for each of the four years-of-experience categories of teachers. Table 12 contains data for teachers segregated by years of teaching experience and includes mean self-efficacy scores pre- and post-intervention, standard deviation, *t*-test results, and *p* value.

Table 12

Paired t-test of Teacher Self-Efficacy Pre- and Post-Intervention: Years of Teaching Experience

Years of Teaching Experience		n	M	SD	t(df)	p
0 – 5 Years	Pre-Intervention	5	77.66	15.09	-2.12 (4)	.10
	Post-Intervention	5	86.66	7.39		
6 – 10 Years	Pre-Intervention	4	61.70	16.68	-1.54 (3)	.22
	Post-Intervention	4	71.23	9.47		
11 – 19 Years	Pre-Intervention	6	68.26	11.16	-4.47 (5)	.01
	Post-Intervention	6	73.74	11.50		
20+ Years	Pre-Intervention	13	71.30	13.31	-3.13 (12)	.03
	Post-Intervention	13	79.90	10.06		

There was a statistically significant change in self-efficacy scores, $t(6) = -4.47, p = .01$, from pre- to post-intervention for teachers with 11 – 19 years of teaching experience, and, $t(12) = -3.13, p = .03$, from pre- to post-intervention for teachers with 20+ years of teaching, which allowed the researcher to reject the null hypotheses for both of these groups. When comparing the four categories of teaching experience, all groups showed growth pre- to post-intervention ($M = 8.15$,

$SD = 1.82$), yet only the two larger sample size groups of more veteran teachers (11 – 19 years and 20+ years) showed statistically significant growth.

Self-Efficacy Changes Based Upon Gender

The researcher sought to determine self-efficacy change, as measured by the CRTSE, based upon teacher gender. Table 13 reflects the mean CRTSE score change from pre- to post-intervention for male and female teachers.

Table 13

CRTSE Change Measured by Gender

Gender	n	CRTSE Mean Change	
		Pre- to Post-Intervention	<i>SD</i>
Male	15	9.07	11.45
Female	14	7.17	10.40

As shown in Table 13, male teachers ($n = 15$) showed slightly greater growth ($M = 7.17$, $SD = 12.60$), as measured by the CRTSE survey than female teachers ($n = 14$) ($M = 9.07$, $SD = 7.98$).

To determine if a statistically significant difference existed in the post-intervention CRTSE results between male and female teachers, the researcher conducted an independent samples t -test, as reflected in Table 14.

Table 14

Independent Samples t -test of Teacher Post-Intervention Self-Efficacy Based upon Gender

Gender	n	<i>M</i>	<i>SD</i>	$t(24)$
Male	15	76.60	12.60	1.06*
Female	14	80.72	7.98	

* $p = .30$

Results indicated that while males experienced greater mean score change pre- to post-intervention, females ($M = 80.72$, $SD = 7.98$) had higher self-efficacy scores than male teachers

($M = 76.60$, $SD = 12.60$) according to the CRTSE, $t(24) = 1.06$, $p = .30$, Cohen's $D = .39$. The t -test showed that the change in post-intervention scores was not statistically significant based upon gender, and, therefore, the researcher accepted the null hypothesis.

Self-Efficacy Changes Based upon Consultant Support

The researcher sought to determine the impact of self-efficacy change, as measured by the CRTSE, based upon consultant support with individual teachers. In total, 59% ($n = 17$) of the teachers (8 females and 9 males) met with the consultant. An analysis of those teachers by subject specialty showed that 80% ($n = 8$) of STEM teachers and 47% ($n = 9$) of Humanities teachers met with the consultant. Average years of teaching experience for those who met with the consultant was 22.4 years versus 19.6 years for those who did not meet with the consultant. Table 15 includes data grouped into two categories: teachers who met with the consultant during a visit to the school and those who did not, along with pre- and post-intervention mean self-efficacy scores and mean self-efficacy change as measured by the CRTSE.

Table 15

CRTSE Change Measured by Consultant Support Meetings

Consultant Support Level	n	Pre- Intervention Mean	Post- Intervention Mean	Mean CRTSE Change	SD
Met with consultant	17	75.47	82.50	7.03	10.21
Did not meet with consultant	12	64.14	73.05	8.91	12.03

Teachers who chose to meet individually with the consultant ($n = 17$) showed slightly smaller growth ($M = 7.03$, $SD = 10.21$) than those ($n = 12$) who chose not to meet with her ($M = 8.91$, $SD = 11.51$). At the same time, those teachers who did not meet individually with the consultant had pre-intervention scores that averaged 9.58 points lower than the teachers who met with the consultant, reflecting a greater opportunity for growth. To determine if a statistically

significant difference existed in the post-intervention CRTSE results between teachers who met individually with the consultant versus those who did not, the researcher conducted an independent samples *t*-test. Table 16 contains mean post-intervention self-efficacy scores based upon the level of consultant support, standard deviation, and *t*-test result.

Table 16

Independent Samples t-test of Teacher Post-Intervention Self-Efficacy Based upon Consultant Support Level

	n	<i>M</i>	<i>SD</i>	<i>t</i> (26)
Met with Consultant	17	82.50	10.34	-2.66*
Did Not Meet with Consultant	12	73.05	8.71	

* $p = .01$

As shown in Table 16, the results indicated that the teachers who met with the consultant ($M = 82.50$, $SD = 10.34$) had higher post-intervention self-efficacy scores than the teachers who did not meet with the consultant ($M = 73.05$, $SD = 8.71$) according to the CRTSE, $t(26) = -2.66$, $p = .01$, Cohen's $D = .99$, indicating a statistically significant difference between these two groups. This allowed the researcher to reject the null hypothesis.

Intersection of Variables

This study sought to assess the impact of several variables upon teacher self-efficacy in their use of culturally sustaining practices. Having considered several variables – subject specialty, gender, years of teaching experience, and level of consultant support – the researcher acknowledges the potential overlap of variables in the study's data. For example, while gender did not produce statistically significant results, the following variables did: subject specialty (both for Humanities and STEM), years of teaching experience (in two of the four categories), and level of consultant support. In the following chapter, the researcher addresses these

relationships and attempts to isolate these variations to determine the most impactful variables while noting future areas of study.

CRTSE Question Analysis

Summary totals indicated teacher self-efficacy growth in 38 of the 41 CRTSE survey questions. Appendix F includes growth data by individual question. To determine the statistical significance of each question's measured change, the researcher conducted a paired *t*-test on the pre- and post-intervention scores for each survey question. Twenty-four questions showed statistically significant growth ($p < .05$). Table 17 includes the ten survey questions that showed the largest measured growth pre- to post-intervention and showed a statistically significant change as measured by a paired-samples *t*-test. The table includes pre- and post-intervention mean scores for each question, the difference between the two scores, and each question's *p* value.

Table 17*CRTSE Questions with Largest Pre- to Post-Intervention Positive Change*

	Pre-	SD	Post-	SD	Diff.	SD	<i>p</i>
Teach students about their cultures' contributions to science.	33.17	33.77	51.90	30.46	18.72	35.59	0.01
Identify ways that the school culture (e.g., values, norms and practices) is different from my students' home cultures.	58.90	29.32	77.31	18.79	18.41	21.94	< .001
Obtain information about my students' cultural backgrounds.	65.90	25.74	82.86	15.53	16.97	19.33	< .001
Implement strategies to minimize the effects of the mismatch between my students' home cultures and the school culture.	56.52	25.12	73.03	20.23	16.52	20.89	< .001
Use my students' cultural backgrounds to help make learning meaningful.	69.66	25.77	84.59	13.34	14.93	24.94	0.04
Use a learning preference inventory to gather data about how my students like to learn.	58.10	30.96	71.59	29.84	13.48	32.81	0.04
Design a lesson that shows how other cultural groups have made use of mathematics.	23.83	35.75	37.24	36.83	13.41	34.14	0.04
Use examples that are familiar to students from diverse cultural backgrounds.	67.10	27.32	80.28	20.29	13.17	26.52	0.02
Identify ways how students communicate at home may differ from the school norms.	65.86	27.22	79.00	15.81	13.14	24.56	0.01
Teach students about their cultures' contributions to society	58.45	27.75	71.38	27.65	12.93	21.76	0.01

The survey questions that showed the largest growth in teacher self-efficacy scores related to specific teaching strategies and activities that created an opportunity for teachers to implement a culturally sustaining strategy and better connect with their students. Some of the largest gains reflected strategies shared by the consultant during PD sessions – including obtaining information about students’ cultural backgrounds, using students’ cultural backgrounds for meaningful learning, and attempting to minimize the mismatch between school and home cultures. Further, math and science-specific questions reflected two of the largest self-efficacy changes, in line with CRTSE growth amongst members of those departments.

Research Question 1 Summary

Using the CRTSE survey data, the researcher conducted a paired samples *t*-test using pre- and post-intervention self-efficacy scores. The results showed a statistically significant change in self-efficacy scores and allowed him to reject the null hypothesis. Further analysis of the results confirmed a statistically significant increase in self-efficacy scores when the researcher categorized the faculty into two academic groups: Humanities and STEM teachers. In total, teachers experienced a mean growth of 8.15 points in their self-efficacy scores following the intervention. Based upon years of teaching experience, teachers with the fewest years of experience (1 – 10 years) saw the largest gains (9.26), and teachers with 11 – 19 years of classroom teaching experience saw the smallest gains (5.48). Using a paired samples *t*-test, the researcher noted a statistically significant change in self-efficacy scores for teachers with 11 – 19 and 20+ years of classroom experience.

Teachers in all but one academic department showed self-efficacy gains. Science teachers showed the largest gains pre- to post-intervention. When comparing post-intervention self-efficacy scores of teachers who individually met with the consultant versus those who did not,

the researcher noted two key findings. First, those teachers who did not meet with the consultant had a larger mean increase in self-efficacy scores as compared to their colleagues who met with Dr. Drummey. However, the mean *post*-intervention score for those who did not meet with the consultant was nearly nine points lower than those teachers who did meet with Dr. Drummey. (The *post*-intervention score of the “did not meet” group failed to exceed the *pre*-intervention score of those who met with the consultant.) Even though the “did not meet” group experienced a larger mean CRTSE score growth, the data show that the teachers with higher levels of CSP confidence – as reflected in their *pre*-intervention scores – were more likely to request a meeting with the consultant to further advance or refine their classroom practices. The second key finding presented itself when the researcher conducted an independent samples *t*-test comparing the *post*-intervention scores of the teachers in both groups. The *t*-test showed a statistically significant difference in the results between those teachers who met with the consultant and those who did not.

Of the 41 areas of focus on the survey, teachers indicated self-efficacy growth in 38 areas. Of the 38 items with growth, a paired samples *t*-test indicated 24 areas experienced statistically significant growth.

Research Question 2

- Which culturally sustaining practices, if any, did teachers self-report implementing during a four-week period?
 - How often were strategies used?
 - Did implementation differ by academic department and years of service?

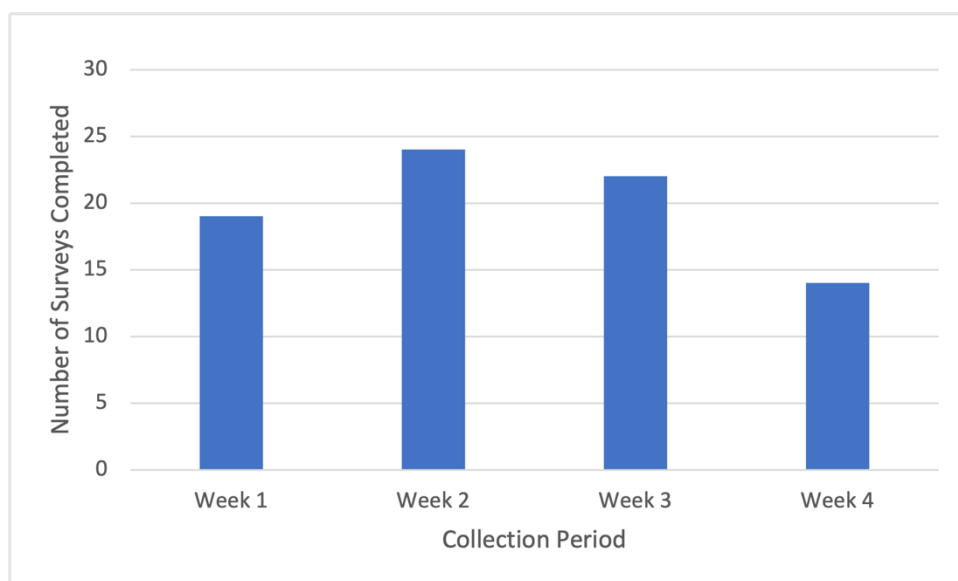
At the beginning of the intervention period and after the first PD session, teachers selected three to six items from the Culturally Responsive Practices Crosswalk with Danielson’s

Framework for Teachers (Syracuse City School District, 2019) as areas of focus in their classrooms. Teachers submitted these focus areas to the researcher. To gather quantitative data to address the study's second research question, the researcher created an online survey that he emailed each Friday to teachers over a four-week period. The survey included focus areas that two or more teachers selected from the Crosswalk document. In total, the survey (see Appendix D) listed 55 practices, which the researcher categorized as Student-Focused Activities, Teacher Directed Actions, or On-Going Activities. The survey instructions asked teachers to select each culturally sustaining practice utilized in any of their classes during that week. Teachers had the opportunity to add any options not included on the survey at the end of the form.

Over the four-week period, teachers submitted a total of 80 survey responses. Figure 7 indicates the number of self-reported surveys received during the four-week collection period.

Figure 7

Weekly CSP Survey Submissions



Responses peaked in the second week of data collection, when 24 teachers submitted a survey.

Fourteen teachers submitted a survey in week four, which was the lowest participation rate.

While the total number of faculty participants is unknown based upon the anonymity of the survey, submitted surveys indicate participation from members of each academic department, representing a variety of years of teaching experience. In total, teachers self-reported the implementation of all 55 practices included on a weekly CSP survey form. With an average of 20 surveys completed weekly, teachers identified using between six and 50 practices in their classroom each week, with a mean of 27.9 practices ($SD = 11.2$) selected per survey.

CSP Survey Results by Academic Department and Years of Teaching Experience

Based upon the survey responses, the researcher calculated the mean number of culturally sustaining practices utilized by academic department and by years of teaching experience. Anonymity of survey responses prevented the researcher from determining the exact number of individual participants by department. Table 18 lists the total number of survey responses for each academic department and the mean number of culturally sustaining practices self-reported by members of each department.

Table 18

Survey Responses and Mean Number of CSP Strategies by Academic Department

Academic Department	Total Number of Survey Responses	Mean Number of CSP Identified	<i>SD</i>
Art	6	20.0	4.94
English	17	30.9	11.26
Math/Computers	18	27.1	11.97
Modern Language	7	34.3	12.76
Science	13	32.5	12.20
Social Studies	7	23.6	6.24
Theology	12	22.8	8.40

Teachers self-reported a mean strategy implementation of 27.9 ($SD = 11.2$). Implementation varied by department, from a low of 20 strategies implemented by the Art Department to a high of 34.3 strategies used by the Modern Language Department.

The researcher analyzed CSP use based upon years of teaching experience. Table 19 highlights the mean number of CSP strategies self-reported weekly as categorized by years of teaching experience.

Table 19

Survey Responses and Mean Number of CSP Strategies by Years of Teaching Experience

Years of Teaching Experience	Total Number of Survey Responses	Mean Number of CSP Identified	<i>SD</i>
1 – 9	23	28.4	9.73
10 – 19	17	28.5	8.39
20 – 29	17	25.1	12.50
30+	23	29.0	13.53

Implementation of strategies based upon years of teaching experience was largely consistent, ranging from a mean of 25.1 to 29.0 ($SD = 1.78$) strategies implemented. Veteran teachers with 30 or more years of experience reported the most frequent use of CSP strategies each week. Even though these data indicated that teachers with between 20 – 29 years in the classroom reported using the smallest number of CSP strategies, CSP use was largely consistent in the classrooms of survey participants.

Most and Least Frequently Used CSP Practices

In total, teachers self-reported the individual use of 2,288 culturally sustaining practices in classrooms during a four-week period. “Use of technology to enrich instruction” was the most referenced activity, included 69 times and equivalent to 86% of survey responses. The “use of

hexagonal thinking activities” was the least referenced activity and was included three times (equivalent to 4% of survey responses). Table 20 lists the most frequently used culturally sustaining activities (in the top 20% of responses) and includes the number of times teachers indicated using the activity and the percentage of inclusion on survey responses.

Table 20

Most Frequently Used Culturally Sustaining Practices

Activity Category	Activity	n	%
Teacher-Directed Actions	Use of technology to enrich instruction	69	86
Teacher-Directed Actions	Create atmosphere of respect and rapport	66	83
On-Going	Holds students accountable	66	83
Teacher-Directed Actions	Interact individually with students	65	81
Teacher-Directed Actions	Create sense of community where students belong and contribute	62	78
Teacher-Directed Actions	Connect learning to students’ lives	61	76
Teacher-Directed Actions	Welcomes students by name	61	76
On-Going	Visual aids used to support student learning	60	75
Student-Focused	Students use critical thinking skills	55	69
Teacher-Directed Actions	Demonstrates flexibility and responsiveness	55	59

Of the ten most often used practices, seven were from the Teacher-Directed Actions category, two were from the On-Going Activities category, and one was a Student-Focused Activity.

Table 21 lists the least referenced activities (in the bottom 20% of responses) according to teacher CSP surveys. The table also includes the number of times teachers indicated using the activity and the percentage of inclusion on survey responses.

Table 21*Least Frequently Used Culturally Sustaining Practices*

Activity Category	Activity	n	%
Student-Focused	Use of hexagonal thinking activities	3	4
On-Going	Learn, use, and display words in students' native language	13	16
Teacher-Directed Actions	Identify bias in curriculum and work to address it	17	21
Teacher-Directed Actions	Addresses sexism in lesson, materials, etc.	17	21
Student-Focused	Socratic/open-ended student-led discussions	17	21
Student-Focused	Peer editing/Peer Teaching	18	23
Student-Focused	Opportunities for students to examine bias	19	24
Teacher-Directed Actions	Teacher acknowledges own biases and inequitable actions	20	25
Student-Focused	Use of student-directed lessons	20	25
Teacher-Directed Actions	Use of exit tickets	21	26

Of the ten least-used practices, five were Student-Focused, four were Teacher-Directed, and one was an On-Going Activity. Appendix G includes complete survey responses by individual focus area.

Use of CSP by Years of Teaching Experience

A review of CSP data based upon years of teaching experience showed that newer teachers (1 – 9 years of experience) favored different practices than their colleagues who had additional years of classroom experience. Tables 22, 23, 24, and 25 include the most and least frequently used CSP practices as indicated by teacher survey responses according to years of teaching experience. Each table includes the number of times teachers indicated using a specific strategy and its percentage of inclusion on surveys in that category.

Table 22*Most- and Least-Used CSP Strategies by Teachers with 1 – 9 Years of Experience*

Category	Activity	n	%
Student Focused	Students use critical thinking skills	20	87
Teacher-Directed	Connect learning to real-world experiences	20	87
Student-Focused	Students engage in the learning process	19	83
On-Going	Learn, use, and display words in students' native languages	3	13
Student-Focused	Use of student-directed lessons	3	13
On-Going	Curriculum re-shaped to include diversity and contemporary voices/artists	3	13
Student-Focused	Use of hexagonal thinking activities	0	0

Table 23*Most- and Least-Used CSP Strategies by Teachers with 10 – 19 Years of Experience*

Category	Activity	n	%
Teacher-Directed	Connect learning to students' lives	17	100
Teacher-Directed	Effort made to learn about student interests	16	94
On-Going	Hold students accountable	16	94
Teacher-Directed	Use of multiple perspectives with validation during instruction	2	12
Teacher-Directed	Teacher acknowledges own biases and inequitable actions	2	12
Teacher-Directed	Identify bias in curriculum and work to address it	2	12
On-Going	Learn, use, and display words in students' native languages	0	0
Student-Focused	Use of hexagonal thinking activities	0	0

Table 24*Most- and Least-Used CSP Strategies by Teachers with 20 – 29 Years of Experience*

Category	Activity	n	%
Teacher-Directed	Use technology to enrich instruction	16	94
On-Going	Hold students accountable	14	82
On-Going	Visual aids used to support student learning	14	82
Student-Focused	Socratic / open-ended student-led discussions	2	12
Student-Focused	Use of hexagonal thinking activities	2	12
On-Going	Learn, use, and display works in students' native languages	2	12

Table 25*Most- and Least-Used CSP Strategies by Teachers with 30+ Years of Experience*

Category	Activity	n	%
Teacher-Directed	Use of technology to enrich instruction	21	91
On-Going	Holds students accountable	20	87
Teacher-Directed	Create atmosphere of respect and rapport	19	83
Teacher-Directed	Create sense of community where students belong and contribute	19	83
Teacher-Directed	Interact individually with students	19	83
Teacher-Directed	Identify bias in curriculum and work to address it	5	22
Teacher-Directed	Addresses sexism in lesson, materials, etc.	5	22
Student-Focused	Peer editing/Peer tutoring	3	13
Student-Focused	Use of hexagonal thinking activities	1	4

Teachers in the 1 – 9 years of experience category, as shown in Table 22, were the only group to indicate Student-Focused activities among the top three used during the intervention period. Teachers with 10 years of experience or more, as shown in Tables 23, 24, and 25,

exclusively preferred the use of Teacher-Directed and/or On-Going Activities. In total, teachers identified a variety of different strategies (ten total) as most used among the four years-of-experience categories. Only two of the 55 total items on the survey repeated on multiple lists: “hold students accountable” (10 – 19 years, 20 – 29 years, and 30+ years) and “use of technology to enrich instruction” (20 – 29 years and 30+ years).

Teachers, regardless of years of experience, indicated using several Student-Focused activities least often during the intervention period. In total, teachers included 22% (12 of 55) of the culturally sustaining practices on four least-likely-to-be-used lists based upon years of teaching experience. Survey results analysis showed that three specific activities were least employed in the classroom: “use of hexagonal thinking activities,” “learn, use, and display words in students’ native languages,” and “identify bias in curriculum and work.”

Use of CSP by Academic Discipline

Some academic departments submitted a relatively small number of responses to the CSP survey, with as few as three department members responding. As such, the researcher combined the Art, English, Modern Language, Social Studies, and Theology Department responses (n=49) and Science, Technology, and Math Department responses (n=31) to identify broader themes in CSP use. Humanities teachers indicated the use of 1,324 CSP strategies during the intervention period for a mean of 27.0 practices per teacher, per week ($SD = 10.57$). STEM teachers indicated using 909 CSP strategies during the intervention period for a mean of 29.3 practices per teacher, per week ($SD = 12.17$). Table 26 includes the five most used culturally sustaining practices as reflected by inclusion on at least 75% of survey responses from Humanities teachers. The table specifically lists the number of times teachers included a practice on a survey response and the

overall percentage of inclusion on responses. The table also lists practices least used by Humanities teachers – with practices used by less than 20% of survey respondents.

Table 26

Most and Least Frequently Used CSP Strategies – Humanities Teachers

Category	Activity	n	%
Teacher-Directed	Create atmosphere of respect and rapport	39	80
Teacher-Directed	Interact individually with students	39	80
Teacher-Directed	Use of technology to enrich instruction	39	80
Teacher-Directed	Connect learning to students' lives	37	76
On-Going	Hold students accountable	37	76
Student-Focused	Peer editing/ Peer teaching	10	20
Student-Focused	Students set goals to improve their experience	10	20
Student-Focused	Use of student-directed lessons	7	14
On-Going	Learn, use, and display words in students' native language	7	14
Student-Focused	Use of hexagonal thinking activities	1	2

Table 27 reflects the CSP strategies most and least frequently used by STEM teachers. Teachers indicated their most frequently used practices by including them on at least 80% of survey responses. The table lists the specific number of times teachers included a practice on a survey response and the overall percentage of inclusion on responses. The table also lists practices least used by STEM teachers (practices used by less than 20% of survey respondents).

Table 27*Most and Least Frequently Used CSP Strategies – STEM Teachers*

Category	Activity	n	%
Teacher-Directed	Use of technology to enrich instruction	30	97
Teacher-Directed	Welcomes students by name	29	94
On-Going	Hold students accountable	29	94
Teacher-Directed	Create atmosphere of respect and rapport	27	87
Teacher-Directed	Create sense of community where students belong and contribute	26	84
On-Going	Curriculum reshaped to include diversity and contemporary voices/artists	5	16
Teacher-Directed	Identify bias in curriculum and work to address it	4	13
Student-Focused	Opportunities for students to examine bias	3	10
Student-Focused	Socratic/open-ended student-led discussions	3	10
Student-Focused	Use of hexagonal thinking activities	2	6

As indicated by 80% of survey respondents, STEM teachers most often used 11 of the 55 culturally sustaining practices weekly (compared to five in this category by Humanities teachers). As indicated by a total of 20% or fewer of survey respondents, STEM teachers least often used seven of the 55 practices weekly (compared to five in the least-used category by Humanities teachers). Four of the five most-used practices for Humanities and STEM teachers were from the Teacher-Directed category, whereas Student-Focused activities were least likely to be used by both cohorts of teachers, according to weekly survey data.

CSP Practice Similarities: Humanities and Math/Science/Technology

Humanities and STEM teachers indicated five similar frequently used culturally sustaining practices – used by 80% or more of teachers in both groups. These practices were as follows.

- Create atmosphere of respect and rapport
- Interact individually with students
- Use of technology to enrich instruction
- Connect learning to students' lives
- Hold students accountable.

The survey results indicated that two practices were used by 20% or less teachers in both disciplines.

- Learn, use, and display words in students' native language
- Use of hexagonal thinking activities.

Research Question 2 Summary

Data gathered to address the second research question showed that classroom teachers used all 55 culturally sustaining practices during a four-week survey period, although their selections indicated preference for certain practices over others. In total, 80 survey responses indicated use of 2,288 individual culturally sustaining practices, with a mean of 27.9 practices ($SD = 11.2$) per respondent, per week. Members of the Art Department reported using the fewest CSP strategies weekly (20), and the Modern Language Department reported the most frequent use of CSP strategies (34.3).

CSP use based upon years of teaching experience was largely consistent ($SD = 1.78$). Teachers with more than 30 years of teaching experience indicated the most frequent weekly use of CSP strategies (29.0), and teachers with between 20 and 29 years of teaching experience indicated the fewest CSP strategies used on average (25.1) per week. Newer teachers (with between 1 and 9 years of teaching experience) indicated a preference for more student-focused practices, while veteran teachers relied more heavily upon teacher-directed CSP.

Humanities teachers indicated a total use of 1,324 CSP strategies during the intervention period – a mean of 27.0 practices ($SD = 10.57$) per teacher, per week. STEM teachers indicated using 909 CSP practices during the intervention period for a mean of 29.3 practices ($SD = 12.17$) per teacher, per week. Humanities teachers showed a preference for five culturally sustaining practices in particular, as reflected by their inclusion on at least 80% of survey responses. The survey results also revealed the five practices teachers used least frequently, as indicated by their being recorded by less than 20% of respondents. For their part, STEM teachers showed frequent use of 11 of the 55 culturally sustaining practices, as reflected by their inclusion on the surveys of 80% or more of respondents. STEM teachers indicated infrequent use of seven of the 55 practices as noted by their inclusion on 20% or less of survey responses.

Research Question 3

To gather qualitative data focused upon teacher perspectives of the study's intervention and its impact, the researcher organized two small group semi-structured interview sessions with study participants to answer the following research question and related sub-questions:

- How do teachers describe the impact of culturally sustaining strategies upon their classroom culture and student learning?
 - Was the overall approach of the intervention effective? Which strategies were most helpful and effective? Why?
 - What value and benefit did culturally responsive practices make to classroom culture? Why?
 - Why were certain strategies not used?
 - How was student learning impacted by teachers using CSP?

- As indicated by teachers, how did students respond to the use of culturally sustaining practices?
- Did teachers experience any unintended benefits from the use of CSP?
- Based upon their experience, what recommendations for future improvement would teachers make when using CSP?

The researcher emailed an interview invitation to gather teachers in a forum to solicit their feedback regarding the intervention, to inquire about the impact of CSP upon classroom practices and student learning, and to request recommendations for future improvements involving CSP use. In total, 20 teachers accepted the researcher's invitation. A third-party interviewer conducted the sessions to ensure participant anonymity. Participants represented each of the school's six academic departments. Prior to submitting transcripts to the researcher, the interviewer removed all names and other identifying features. As a result, the researcher is unable to attribute credit for individual quotations in this chapter's qualitative data. Upon receipt of the transcripts, the researcher conducted first- and second-level coding and identified two categories of themes from the data: Positive Impacts and Future Efforts. Themes identified in the category of Positive Impacts included: culture and climate, better knowledge of students, strengthened student/teacher relationships, student engagement and participation, building upon existing teaching practices, and intervention/consultant. Themes identified in the category of Future Efforts included continued effort and focus, on-going teacher support, and time needed.

To assess the reliability of the coding process, an independent researcher reviewed a transcript of one focus group session. During this inter-coder reliability process, the second researcher identified six themes, five of which the researcher identified during his first level of coding. The second researcher further identified 30 sub-themes through coding. Of these sub-

themes, the researcher also noted 24 identical or very similar themes, which he combined during second-level coding and the data reduction process. A comparison of both themes and subthemes resulted in an intercoder reliability score of 81%.

Positive Impacts

Teachers frequently shared positive feedback about the impacts CSP had upon their students' experience, their teaching perspective, and the strengthening of relationships between students and teacher. Focus group participants also shared positive reviews about the intervention process, and more specifically, the consultant who delivered PD and provided ongoing and regular support for teachers.

Positive Impacts Upon Classroom Culture and Climate. Teachers repeatedly shared comments reflecting the positive impact that culturally sustaining practices had upon their classroom's culture and climate. As teachers practiced CSP, became more comfortable with its concepts and approaches, and built upon the practices they had used prior to the intervention, they acknowledged the value of CSP and its ability to benefit their classrooms. As growth occurred, the use of CSP allowed for bonds to strengthen between students and teacher as well as the development of a community-like atmosphere for learning. As one teacher noted, CSP use is "about creating a sense of community."

Teachers consistently noted the influence of classroom climate to foster an atmosphere conducive to learning. As one teacher summarized:

Classroom climate is the most important thing. If I have students that don't want to be in my classroom, I'm already fighting a losing battle. Right? If they don't feel like they're involved and invested in, what's their motivation to do any of the work?

Interview participants then connected improved classroom climate to the implementation of CSP. PD sessions, consultant support, and regular use of practices allowed teachers to recognize the

impact these strategies had upon classroom climate. Teachers noted the connection between climate and CSP initiatives and its ability to support the development of stronger classroom climate:

I definitely feel there's a more positive atmosphere this year.

When [students are] at ease, that makes the teaching and learning a little more effective. CSP helps get us there.

Better Knowledge of Students. Participants noted that CSP allowed them to get to know their students on a more personal level, which further enhanced classroom culture. Strategies afforded teachers an opportunity to learn about students and their cultures while simultaneously building and strengthening the culture within the classroom. Teachers specifically identified practices that contributed to the growth of culture as well as lessons that intentionally linked learning to students' lives and experiences. One teacher commented:

I start each of my classes with a prayer and special intentions. I have had several students share personal bits of information, whether it was someone at home was struggling with illness or they were just stressed about school, pandemic, life ... they've opened up more about that, and we've been able to facilitate conversations about those things in class or even after in one-on-one settings that I otherwise wouldn't have known.

A colleague supported the power of CSP and its ability to provide teachers opportunities to better know their students:

They [students] gave me a lot of information about themselves, which was really interesting. And I wish I did it at the beginning of the year instead of the middle because I feel like I learned a lot about them.

According to another staff member, the intentional integration of CSP “shows you care” and demonstrates a desire to know each student better, further strengthening the culture of the classroom.

Strengthened Student/Teacher Relationships. As teachers implemented CSP, many recognized opportunities to strengthen the student/teacher relationship. CSP afforded teachers an opportunity to make direct connections with students and build a positive atmosphere for learning and student growth. As one teacher noted:

Once a bond is created, students have more of a desire to fulfill the requirements and your commitment to each other.

Teachers noted how specific CSP strategies strengthen relationships:

I think once you open the door in your classroom to the ideas of talking about students and their cultures or home lives or their individual stories, then I think that leads to more of these things and deepening of relationships with your students in appropriate ways.

I meet the students in my class every day when they come in. It makes a difference. You're personally addressing each person.

So much of it is using their names when they enter, making sure that if you see a student who looks upset or angry, you're approaching them with compassion and patience and awareness because I probably don't know what is really happening. That's such a big piece of it that is seamless to integrate.

It feels like we have less strangers.

Stronger Student Engagement and Participation. Throughout the process, teachers largely acknowledged that students received CSP positively. Teachers found culturally sustaining activities beneficial to student learning while noting that the activities helped prepare students to learn about themselves and others and built a foundation for success in the future. Teachers noted that engagement levels of their students increased during activities infused with culturally sustaining practices and resulted in better student work. One teacher commented:

For me, it [CSP] results in better work. The kids are more engaged if they've bought into what's going to happen in the classroom, and they're going to produce better work. For me, their writing is going to be better because they care more about what they're writing about. They are more invested.

According to interview participants, through the intentional focus placed upon culturally sustaining practices, students demonstrated more awareness about themselves and classmates and appeared to be more comfortable and engaged during discussions and activities.

It seems like student engagement has gone up as culturally sustaining practices have been implemented in the classrooms more. I've found that many students who have been more or less hiding in the classroom over the past couple of years felt more welcome coming out to myself or to their classmates. They got more engaged with the class material or just feel more comfortable engaging with me.

I checked to make sure everyone was on task for a culturally responsive assignment. I walked around the room, and everyone was on task with it. That's all I can say about it. It shows that they're really engaged with it.

While not universally mentioned, several teachers noted increased levels of participation and student interaction. Students more readily shared information with teachers during discussions, and activities helped to establish a level of mutual respect. While discussing the recently added use of exit tickets, one teacher commented as follows.

I learned that through the exit tickets I can learn more and more about my students, and it actually changed my class. Students are suddenly more willing to participate.

Another teacher summarized CSP's impact very simply: *It gets them [students] to participate more.*

Building Upon and Expansion of Existing Teaching Practices. To impact student learning opportunities, teachers expressed an understanding that CSP provided an opportunity to build upon established curriculum and practices that many already used in the classroom. For some teachers, CSP allowed for the integration of innovative approaches or a more intentional approach to a concept or theme. This relieved the stress that CSP was a new initiative that would require significant amounts of additional work and responsibility. Teachers noted as follows:

We're just learning to think about it [CSP] a lot deeper.

I felt good that I kind of already was doing this without even realizing it.

[CSP] has been happening in English for the last five-ten years. It's been a big, big push. I really tried to create spaces in my curriculum for students to have this, you know, to really think about that and to write about it and to talk about it with the classmates. It's now become a core part of our class.

Teachers also acknowledged that CSP provided an opportunity to expand established teaching approaches and, consequently, impact student learning. CSP-focused cooperative learning strategies, for example, allowed teachers to deliver course content while integrating varied activities and strategies. Moreover, CSP allowed some teachers to reimagine lessons, concepts, and student learning. For example, a science teacher discussed creating a lesson plan specifically designed with a culturally sustaining focus. In it, he connected *Romeo and Juliet* and *West Side Story* to forensics concepts and asked students to work in groups to create similar scenarios with elements reflective of their own cultural backgrounds. In describing the lesson and response, he mentioned the following details.

This was an assignment where they were the writers placing their cultural experiences and identities into a fictional story. I found the students all on task and found them to be very creative in what they were embellishing their stories with.

Intervention and Consultant. Teachers consistently noted their appreciation for the consultant's work and her approach to the PD sessions, individual staff meetings, and observations of teachers. While some teachers acknowledged some skepticism at the start of the intervention, based upon previous PD and other areas of school-wide focus, they appreciated the different layers of this overall process.

I've been teaching for over 40 years, and we've normally had workshops where it is taught to you. This is something where the workshop has been really working with us. It wasn't a forced thing. She [Sandi] gave a lot of ideas. This is how all workshops should be done to try to help nurture so we could get better at this. I really feel that I have the professional support in this area. We haven't had a workshop like this in years that's helped us to this level.

One of the [PD] sessions ... we actually had time to just plan out a lesson. It was lovely. I finished that and I felt really good because so often my planning feels hurried. If you have multiple classes to prepare for, it's a lot to then all of a sudden be like, oh, I need to be culturally responsive to Shakespeare and be really creative, too. The PD approach worked.

It was nice that people had different forums to explore options with her.

Teachers were especially appreciative of the versatility of the intervention process which allowed for choice. They did not have to attend individual meetings with the consultant or schedule an observation with her. Instead, teachers could request appointments based upon individual comfort level and specific CSP needs.

Future Efforts

Continued Effort and Focus Required to Maximize Student Benefits. While highlighting the positive benefits CSP brings to classrooms and their students, teachers validated the importance of ensuring CSP's success and the long-term efforts needed to achieve a variety of goals. Recognizing that CSP requires continuous effort, teachers noted intentional areas of ongoing focus following the PD sessions and consultant visits.

I consciously think about it [CSP], even if it's something that I already do all the time. I say, okay, I have to make sure I try to do that today.

You just have to make more of a conscious effort to really include thinking about diversity and trying to create projects that will allow [students] to be as diverse and true to themselves as they can.

Another teacher, recognizing the ability of CSP to become integrated into all classroom practices with ongoing effort said the following:

Once you establish it, it starts to grow. And it becomes very easily integrated into your work over time.

Ongoing Teacher Support. CSP provided teachers with a unique opportunity to adapt and adjust teaching strategies. Throughout the multi-month process, however, some acknowledged an emotionally exhausting experience, which highlighted the need for on-going teacher support.

I am getting so much information about these kids especially when I'm doing writing assignments and reading their journals. I am absorbing a lot of information about them. So it has added this extra kind of emotional burden that has affected kind of who I am.

Teachers requested on-going PD to ensure CSP use is consistently authentic and intentional. Teachers also requested support to make CSP unique in their classrooms while simultaneously contributing to the greater goals of the approach. They also asked for training on specific CSP strategies to maximize student learning.

Authenticity is huge and it's hard. You want it to seem genuine.

I mean, they're good ideas, but it is important to make sure that everybody is doing their own unique thing to their own class, but that we're all contributing towards the bigger picture as well.

This is just another simple thing that was on the list that I wish we had the opportunity to have training for, but we just didn't have that opportunity.

How do we ensure we're hitting this from all different angles and that we're not repeating things that people are doing in other classes and other places? How do we make sure that the student is getting all their needs met and how are we working together for that?

It is important to make sure that everyone is doing their own unique thing to their own class, but that we're all contributing towards the bigger picture as well. Additional PD could help.

Time Needed. During focus group discussions, teachers consistently requested additional time during the school day to properly plan for CSP integration along with an opportunity to dialogue and collaborate with colleagues. Using the interview sessions as examples, participants

in both focus groups noted that they overwhelmingly enjoyed hearing what other teachers (especially in other disciplines) had done to bring CSP to their classrooms.

I think when we exchange our ideas with each other, it's our strongest suit – not just within your own department but just going outside because it helps you to see other people's ideas. Sometimes it can be very repetitive when you're talking to the same group of people over and over. When you see people in different environments, it gives you more of a recharge.

Something we can all probably mutually agree upon is time – having time to meet with each other to talk about some of the best practices we have. I think that would be a great opportunity to share what's been working and just continue to improve on practices as a whole.

Just by sitting here, people have brought up a couple of things and I just find myself nodding my head. This is something that I didn't think of. It would be nice to be able to have some time to actually work with my colleagues.

Research Question 3 Summary

Two consistent themes emerged during focus-group interviews: “positive impacts” and “future efforts.” Teachers consistently noted the positive impacts culturally sustaining practices had upon their classroom culture and student learning. Participants’ feedback indicated that they viewed the intervention’s approach as effective with teachers appreciating its versatility and flexibility. Teachers expressed their appreciation for the consultant and the variety of strategies used throughout the intervention process – from the PD sessions to classroom coaching and one-on-one consultations. While noting that strategies provided teachers with opportunities to learn more about their students, teachers observed more engaged students who produced better quality work. However, because of the direction of the conversation in both focus groups and with specific follow-up questions not asked by the interviewer, the sessions failed to determine why teachers did not use certain strategies.

Teachers indicated that student engagement and participation increased when using CSP-focused activities. However, teachers did not specifically address student responses to CSP beyond these observations during the interviews. Teachers noted the importance of continued effort and focus to maximize student CSP benefits. Finally, teachers made several recommendations for future efforts at Notre Dame, including a request for on-going support and PD along with time to plan and collaborate with colleagues.

Summary of Results

This Dissertation in Practice sought to answer three research questions. Using both quantitative and qualitative data, the researcher gathered survey and focus group data for analysis. Using data from a pre- and post-intervention CRTSE survey, the researcher conducted a paired samples *t*-test and determined that a statistically significant difference occurred that reflected growth in teacher CSP self-efficacy. The researcher also analyzed self-efficacy growth by academic department and years of teaching experience. *T*-tests showed statistically significant growth in academic departments, and descriptive statistics provided evidence of growth based upon years of teaching experience. An independent samples *t*-test showed a statistically significant difference between post-intervention self-efficacy scores based upon the level of consultant support. Finally, the researcher conducted a *t*-test on responses to each of the survey's questions and found statistically significant teacher self-efficacy growth in 24 of the 41 questions.

To determine the frequency of teacher CSP use during the intervention period, the researcher asked teachers to complete a weekly survey noting practices utilized in classes. Over a four-week period, teachers indicated the use of nearly 2,300 individual practices, with a mean of 27.9 practices ($SD = 11.2$) used by teachers each week. Teachers referenced using all 55

practices on the survey at least once, with several regularly used by over 80% of survey respondents. The researcher used descriptive statistics to determine the most and least frequently utilized practices by academic department and based upon years of teaching experience.

Finally, the researcher organized two semi-structured focus group interviews to gather qualitative data from teacher participants. In each session, teachers shared their input about the impact CSP had upon their classroom culture, student learning, and the intervention process, along with recommendations for future improvements. Using transcripts from the interviews, the researcher coded teacher responses and identified two primary themes: “positive impacts” and “future efforts.” Sub-themes included culture and climate, better knowledge of students, strengthened student/teacher relationships, student engagement and participation, building upon existing teaching practices, intervention/consultant, continued effort and focus, on-going teacher support, and time needed. In summary, the intervention successfully improved teacher use of CSP strategies, strengthened self-efficacy, and, from the teacher perspective, made a meaningful contribution to practice and the student experience. The concluding chapter of this Dissertation in Practice will discuss these results in detail, note limitations of the study, and conclude with recommendations for practice and further study.

Chapter Five: Discussion

Improvement Science provides the researcher with an opportunity to identify and address a specific problem of practice. Beginning with the identification of an issue, the practitioner follows a structured process with the goal to work toward a solution. For this Dissertation in Practice, the researcher identified connectedness as a problem of practice at his school before initiating a collaborative process with colleagues to identify root causes of the problem. Following a review of relevant literature, the researcher developed a Theory of Improvement, which included several potential change ideas. With one change idea selected as an intervention that focused upon teacher use of culturally sustaining pedagogy, the researcher gathered relevant quantitative and qualitative data. In this chapter, as the process focuses upon the “Act” portion of the Plan – Do – Study – Act Improvement Science model, the researcher discusses results and presents a series of recommendations for practice along with suggestions for future study (Bryk et al., 2015).

Summary of the Results

Following a mixed methods explanatory sequential design, the researcher gathered both quantitative and qualitative data. Pre- and post-intervention culturally sustaining self-efficacy surveys and weekly surveys in which teachers self-reported culturally sustaining practices implemented in their classroom during that week provided the researcher with quantitative data. These data helped inform the collection of qualitative data – gathered during two semi-structured interviews with participants. Data showed a statistically significant improvement in teacher self-efficacy scores, the use of nearly 2,300 culturally sustaining practices in classrooms over a four-week period, and a largely favorable response by teachers to the intervention and CSP experience.

Discussion of the Results

Improvement Science supports and requires an on-going opportunity for improvement of an identified problem of practice. This Dissertation in Practice sought to study the effects of an intervention selected to support teachers in the use of culturally sustaining practices. Based upon a review of literature, the researcher selected this intervention with the desire to ultimately improve student connectedness. An analysis of the study's results showed the intervention's areas of focus were largely successful: teachers showed statistically significant self-efficacy growth, self-reported the use of nearly 2,300 culturally sustaining practices in classrooms over a four-week period, and shared largely favorable feedback during focus group interviews.

Positive Teacher CSP Growth

A comparison of the pre- and post-intervention self-efficacy data, as gathered using the CRTSE survey, showed statistically significant growth by the 29 teachers who completed both surveys. These results suggest that the two PD sessions, along with the opportunities to meet one-on-one with the consultant or schedule a lesson observation with feedback, improved teacher self-efficacy in the use of CSP. Further, the intentional focus upon these practices, opportunities to plan lessons with a CSP focus, and several months to practice strategy implementation appear to have been impactful to help teachers become more comfortable with CSP.

Attesting to the impact of the intervention, nearly all teachers indicated self-efficacy growth post-intervention. It is possible that the few teachers ($n = 4$) who indicated a drop in self-efficacy scores (of greater than one point) better understood specific strategies targeted by the questions and more honestly assessed their skills, although further study is required to better understand any decreases in scores. Self-efficacy growth was the greatest among teachers with the least teaching experience of ten years or fewer. These results indicate a strong willingness to

embrace the ideas and concepts by this demographic, although future study might investigate more specific reasons for this growth. More veteran teachers, those with between 11 and 19 years of classroom experience, demonstrated the smallest self-efficacy growth. This may indicate that these teachers are more confident with other pedagogical approaches and committed to using existing strategies.

With one exception, every academic department saw an increase in mean self-efficacy scores, with STEM teachers showing a larger gain than Humanities teachers. As reflected in CRTSE scores, STEM teachers had lower self-efficacy scores pre-intervention, but they doubled the mean score growth of Humanities teachers and ended with a higher post-intervention mean score than their Humanities counterparts. STEM teachers also indicated slightly higher classroom use of CSP in weekly survey data. This is particularly exciting as math and science teachers often express difficulty when implementing new classroom-based strategies and argue that strategies are easier to implement in humanities-based courses. It appears the consultant's efforts to provide additional examples and support for math and science teachers were beneficial. Further, it appears that math and science teachers embraced and identified creative ways to ensure that CSP reaches all students, no matter what the academic discipline. Qualitative data specifically highlighted this fact when a science teacher discussed a newly designed lesson plan incorporating *Romeo and Juliet*, students' cultural identities, and forensics concepts.

Unexpected data resulted when the researcher compared those teachers who met individually with the consultant to those who did not. An independent samples *t*-test showed a statistically significant mean score difference in the change in self-efficacy scores between these two groups of teachers, but teachers ($n = 17$) who requested an opportunity to meet one-one-one with the consultant experienced smaller self-efficacy growth than teachers ($n = 12$) who did not

meet with her. This difference (less than two points) was likely a result of the fact that teachers who did not meet with Dr. Drummey indicated lower self-efficacy scores pre-intervention – which highlighted a greater opportunity for growth.

Further analyzing the variable of consultant support, years of teaching experience did not provide a distinguishing difference between the two groups: data showed a relatively small three-year difference. Of the teachers who met with the consultant, data showed STEM ($n = 8$) and Humanities ($n = 9$) teachers nearly equally represented. However, reflective of their self-efficacy score growth and higher use of culturally sustaining practices, 80% of STEM teachers met individually with the consultant, versus 47% of Humanities teachers. This additional layer of support from Dr. Drummey to individual teachers appears to have been an influential factor in the self-efficacy growth demonstrated by STEM teachers, which highlights the impact and importance of classroom-based coaching.

Male and female teachers indicated growth in mean self-efficacy scores, but results showed a small difference (1.9 points) in mean score differences between genders. An independent samples t -test did not indicate that gender resulted in a statistically significant change in self-efficacy scores. The researcher concluded that the difference in mean scores was too small to be meaningful. It is possible that the small population size of this study impacted these data, and future study focused upon gender with a larger population size may be necessary.

CRTSE Survey Analysis

Looking specifically at the individual items on the CRTSE survey, teacher responses to 38 of the 41 items indicated self-efficacy growth. Of the 38 items with growth, a paired samples t -test indicated statistically significant growth in 24 of the measured items, once again reinforcing the self-efficacy growth of the faculty throughout the intervention process. These

statistically significant changes indicated that teachers understood and grew more confident in the use of practical classroom-based strategies, especially those that allowed for the development of a better understanding of student cultural backgrounds, as highlighted during the two PD sessions. An analysis of the survey items that had the largest gains and statistically significant growth reflected strengthened teacher knowledge and a deeper understanding of student cultural differences. These growth areas also showed increased confidence to implement specific pedagogical strategies to support all students from a culturally sustaining perspective – the goals of the consultant, the researcher, and the intervention process.

Three survey items showed a decline in self-efficacy scores, which likely reflected a stronger understanding by faculty members of specific culturally sustaining practices pre- to post-intervention:

- *I am able to determine whether my students like to work alone or in a group. (-7.31)*
- *I am able to praise English Language Learners for their accomplishments using a phrase in their native language. (-15.52)*
- *I am able to structure parent-teacher conferences so that the meeting is not intimidating for parents. (-0.93)*

Recognizing that one of these three areas showed less than a one-point drop from pre-intervention levels and over 90% teacher confidence for implementation, potential exists for future PD activities to specifically address these two other opportunities for growth.

Semi-Structured Focus Groups

Semi-structured interviews supplied rich qualitative data for analysis. Teachers appeared open and candid with the independent third-party interviewer while sharing their thoughts, observations, and recommendations focused upon the intervention process, the impact upon

student learning, and recommendations for future use. With a goal of between 12 and 15 teacher participants, the response exceeded expectations, with 20 teachers accepting the invitation to participate, which likely reflected an eagerness to share opinions and help guide future CSP efforts.

After reviewing the transcripts of each 45-minute session, the researcher determined that teacher willingness to participate likely resulted from a positive overall experience and the desire for teacher voice to help guide the process going forward. During focus group sessions, teachers expressed increased comfort in CSP use and described the positive impacts they observed throughout the implementation process which qualitatively supported the self-efficacy score growth reflected in the quantitative data.

Implementation

Culturally sustaining pedagogy implementation surveys submitted weekly by teachers over a four-week measurement period indicated frequent use of CSP in the classroom. With surveys showing a mean of 27.9 culturally sustaining practices used weekly, the results illustrated the efforts teachers made to embrace the overall concept and implement a focused effort to bring specific strategies to their students. An analysis of results by academic department again reinforced the concept that teachers, regardless of discipline, attempted to bring CSP to their students. For example, the Art Department utilized 20 culturally sustaining practices per teacher each week, albeit this was the smallest mean number reported by an academic department. The Modern Language Department utilized the most culturally sustaining strategies (34.3 per teacher, per week) according to the weekly survey results. While art teachers noted their efforts to bring a more diverse array of artists and composers to their lessons, language

teachers, by nature of their subject matter, expressed an easier path to implementing CSP in their classrooms, which was most likely a reason for their higher frequency use of CSP.

CSP implementation was largely consistent based upon years of teaching experience. Interestingly, the most veteran teachers, those with 30 years or more of experience, and sometimes known to be the least likely to adjust well-established teaching practices, indicated the highest frequency of CSP use. Teachers in the 20 – 29 years of experience category indicated the smallest frequency of CSP use, although the difference was only 3.9 items versus their more experienced colleagues. These results somewhat conflicted with the CRTSE survey data, which showed teachers in the 20–29-year category with statistically significant self-efficacy growth pre- to post-intervention. Self-reported implementation data indicated that there was not necessarily a direct correlation between confidence and CSP implementation. These teachers may prefer a slower integration of CSP into their more established practices and lesson plans. Further study is needed to determine why certain groups were more likely than others to implement CSP strategies, including those groups that showed statistically significant self-efficacy growth.

Of the most-often used CSP strategies as indicated on the weekly survey, the majority were “teacher-directed” or an “on-going strategy,” with only one categorized as “student-focused.” While the use of any CSP strategy is beneficial, it is interesting to note that the most frequently used strategies were those focused upon teacher actions. More specifically, when the researcher analyzed preferred CSP strategies based upon years of experience, only teachers in the 1 – 10 years of experience category included a student-focused strategy in the top three. As the school looks to ultimately build student connectedness and transition to a more student-centered approach to learning, it will be interesting to see if teachers implement a more student-focused

CSP approach. Additional study may help to determine the cause of CSP preferences for teachers, and future PD might provide skills and specific examples to teachers focused upon student-centered learning strategies, especially those with a CSP focus.

Thanks to the leadership of Dr. Drummey, teachers found the intervention and implementation process effective and productive. From the opening moments of the first PD session, Dr. Drummey's warmth and collegial personality helped to put staff members at ease while allowing them to recognize the importance of these efforts. Teachers repeatedly described their endorsement of the multi-faceted approach taken during the intervention – from two PD sessions to Dr. Drummey's individual availability during multiple follow-up visits to the school. Teachers provided positive feedback about the process and the consultant throughout focus group sessions – in addition to making comments directly to the researcher.

Consequences for Learning

Teachers expressed support for the concepts of CSP and indicated largely favorable experiences in their classrooms, which was in alignment with the researcher's goal, selection of this change effort, and previous research (Aronson & Laughter, 2016; Bonner et al., 2018; Byrd, 2016). Teachers described the positive impact CSP made upon the culture and climate of the classrooms, with some teachers indicating a specific and noticeable change once CSP became an area of focus. Participants also readily described how they had opportunities to learn more about their students, their backgrounds, and cultures, all of which ultimately strengthened bonds and student/teacher relationships.

Teachers acknowledged certain culturally sustaining practices were already part of their students' classroom experience prior to the first PD session, even if the teachers and students had not previously recognized it. This foundation allowed teachers to build upon strategies and look

to enrich the student experience more intentionally. Moreover, CSP provided further opportunity to utilize new teaching strategies and approaches. The student experience was stronger through this use of additional strategies. Even with the largely positive experiences shared from the teacher perspective, teachers acknowledged that CSP requires on-going effort. Commitments from teachers to continue implementing strategies and from the administration to continue to support these approaches are necessary.

In addition, teachers recognized that the intervention process and their efforts to bring CSP to their classrooms provided *them* with opportunities to learn. Along with enriching their professional knowledge base, CSP afforded teachers the opportunity to learn more about the students in their classrooms while strengthening bonds and creating opportunities for students to assume the role of teacher. Participants expressed a desire to continue to expand professional learning opportunities – from both colleagues and the consultant. Nearly unanimously, teachers asked for time during the school day to both speak to colleagues in CSP-focused conversations and to plan lessons with a goal of stronger CSP implementation. Teachers also requested additional PD sessions to ensure CSP use is authentic, addresses best practices, and provides support to implement specific CSP strategies. The desires for both an on-going focus on CSP, as well as continued learning, reflect teacher support for this approach and an opportunity for continued growth which will benefit both students and staff.

Students

While this Dissertation in Practice did not specifically gather data from students, teachers indicated positive student responses to CSP and specific classroom activities. Teachers described improved student engagement during lessons and higher levels of participation in activities and discussions. Teachers noted that CSP provided new opportunities to better know the students in

their classrooms while strengthening student/teacher relationships. Data gathered from the teacher perspective in this study indicated that CSP enriched the student experience and helped to create a classroom environment more conducive to student learning and growth. Significant opportunity exists for future CSP study to gather data specifically from the student perspective.

Limitations of the Study

The weekly CSP survey results provided a somewhat limited view into culturally sustaining practices at Notre Dame. With results submitted over a limited period – four weeks – the researcher was dependent upon self-reported data to draw conclusions. Further, based upon an average of 20 submitted surveys each week, 13 teachers out of 33 did not complete the survey. If some teachers did not use any CSP each week and failed to submit a survey indicating as such, the results in this study are inflated. Due to the anonymity of the survey, it is impossible to determine if the 20 weekly respondents are representative of the entire faculty.

Another limitation of the study occurred because of the timing and frequent interruptions to the intervention's implementation. With the first PD session held in November, the researcher asked teachers to implement CSP strategies leading up to the Christmas break. Upon return from a two-week vacation, teachers and students faced increased stress and anxiety from the on-going pandemic and the newly-arrived Omicron variant. Shortly thereafter, a mid-term exam schedule paused classes for a week before students and staff returned to a somewhat normal schedule, which was interrupted by an occasional snow day and a long weekend for the February break. A lack of continuity was a constant throughout the intervention period.

Finally, with the researcher serving as the principal of the school, a courtesy bias – the desire for staff to help their supervisor – may have limited the study. For example, more teachers than expected participated in focus group sessions and provided largely positive reviews of the

process. The researcher is hopeful that this interest and feedback reflected faculty desire to share honest impressions of the process and the intervention versus helping their principal complete his research study.

Recommendations for Practice and Further Study

Much opportunity exists for both similar and expanded use of this intervention model. Educators may want to consider a similar implementation of this intervention, as statistically significant growth in teacher CSP self-efficacy along with largely favorable qualitative data shared during focus group interviews indicated strong opportunity for success. For future implementation and additional research opportunities, the researcher noted several areas for consideration and further study.

Recommendations for Practice

Future implementation should consider ensuring that faculty members have a voice in the implementation process. As evidenced during the semi-structured interviews, faculty generally warmly received the process and provided solid recommendations for future CSP growth. Ensuring faculty voice throughout the process will only strengthen their experience. Administrators should consider forming a committee of leaders among the faculty, representative of the various academic departments, to ensure consistent faculty support and buy-in.

As staff indicated during interview sessions, it is essential for administrators to create opportunities for staff to collaborate and share best practices. Whether in professional learning communities (PLCs), department meetings, structured inter-departmental groups, or during a faculty meeting, providing faculty members with an opportunity to hear from colleagues, collaborate, and share ideas will likely promote faculty buy-in, ensure faculty voice is heard, and

build support for a successful approach to CSP implementation. Creating this opportunity should be a priority.

Faculty members indicated a desire for on-going CSP support and additional PD opportunities. Teachers expressed a willingness to continue to grow, learn, and refine their practice. Too often initiatives receive a short-term focus before leaders introduce the next solution to a problem. In this case, avoiding “solution-itis” is essential (Bryk et al., 2015). Faculty support for this initiative is high, as expressed during focus group interviews, and provides a solid foundation for future CSP initiatives.

When considering a similar intervention, administrators should design both a short-term and long-term implementation strategy. These plans can build upon faculty support and work over the long-term with a consultant to address areas of focus beyond a short-term period such as this study’s implementation period. Ongoing collaboration with the consultant, regular check-ins with staff, ensuring individual teacher CSP accountability, creating one-on-one support opportunities, and allowing teacher voice to inform the process are all recommended to support future planning and implementation efforts.

Recommendations for Practice at Notre Dame High School

Teachers acknowledged that CSP requires on-going and focused effort. The administration at Notre Dame High School would be wise to seize upon their support and work with the consultant to address areas of focus, including those specifically requested by the teachers. These areas include providing CSP strategy support, ensuring the use of authentic approaches to best connect with students, promoting student-centered CSP activities, and developing support for those CSP activities least implemented by teachers. Continuing to build upon the established momentum is essential.

Recognizing that teachers did not equally implement CSP in their classrooms, opportunities should be developed to provide support to those teachers who need to continue building their CSP self-efficacy. The school should work to ensure that CSP becomes part of the culture in each classroom, which may require additional one-on-one work with the principal or consultant. The administration should focus intentional support upon the Theology Department, the one department that experienced a decline in self-efficacy pre- to post-intervention. The school may also want to designate additional PD funding to ensure the long-term success of this initiative.

At Notre Dame, the researcher intends to build upon the success of this intervention and the on-going faculty support with additional PD opportunities that address areas of faculty concern. As principal, the researcher plans to identify time in schedules to provide teachers with an opportunity to collaborate and share best practices rooted in CSP. He also plans, with the assistance of Dr. Drummey and with input gathered from students and faculty, to hold a school-wide cultural celebration in the coming months. This celebration intends to spotlight the cultural diversity of the school and focus upon traditions, food, and cultural dress.

To continue school-wide efforts to build student connectedness, beyond this CSP initiative, the Notre Dame leadership team should consider additional strategies and programs aimed at enriching the student experience, such as those included in the Driver Diagram designed as part of the Improvement Science process. For example, while faculty acknowledged that CSP supported the development of stronger student/teacher relationships, Notre Dame should consider specific PD opportunities to strengthen these relationships. With several teachers in the focus group sessions acknowledging the importance of these relationships, it is evident

that support to expand foundational efforts exists. In time, and as the relationships grow, so too will student connectedness, further supporting the aim of this Dissertation in Practice.

School leaders and teachers should consider opportunities to ensure student voice becomes an essential element of both school-wide and classroom planning. While the school has taken initial steps to welcome students to standing committees, the administration should complete a thorough review of all opportunities to promote and gather student insight and perspective. From the annual review of the student handbook to on-going membership on the Strategic Plan Steering Committee to determining creative ways to ensure student voice consistently becomes part of the CSP implementation process, strong opportunity exists, with some relatively easy opportunities at the forefront, to promote student voice. Further, both PD sessions and PLC discussions with colleagues can support classroom teachers to develop creative and innovative opportunities to bring student voice to classroom planning and lesson design activities.

While already begun, Notre Dame should continue with social emotional skill integration and development. Building upon the SEL Team's recent planning efforts, providing students with effective SEL skill development will promote the growth of student connectedness. The school should consider a formal vehicle to deliver SEL instruction to students on a consistent basis while also providing teachers with opportunities to develop their own SEL knowledge and skills. Teachers can then integrate these skills into classroom instruction to further enrich the student experience.

With the implementation of multiple strategies aimed at promoting student connectedness, including faculty use of CSP, the school must develop opportunities to measure the impact of these efforts. Student retention data can provide a high-level overview of the

success of connectedness-driven effort with an improved retention rate indicative of impactful efforts. The annual student Culture and Climate survey provides data and a year-over-year measure of connectedness. It is also possible to use this data to track cohorts of students as measured by their connectedness levels. Beyond this, the researcher, in his role as principal, must identify on-going opportunities to gather both qualitative and quantitative data for the school focused upon connectedness. The school's leadership team should identify additional measurement tools, including surveys and the creation of student focus groups, to ensure that all efforts benefit the community and students and ultimately work to promote and measure connectedness. It is through the successful combination of these efforts – and effective measurement tools – that students will realize the academic, social, and emotional benefits of connectedness.

Recommendations for Practice at Other Schools

Feedback from teachers centered upon this dissertation's intervention was consistently positive. Educators pursuing the use of CSP at other institutions – both public and private – should consider a model similar to the one used in this intervention. Two PD sessions, both manageable in time and scope, along with ongoing opportunities for teachers to meet individually or request an observation with the consultant, helped to effectively develop teacher self-efficacy in the use of CSP. Most specifically, coaching from the consultant was impactful on the success of the intervention. Providing teachers with continuous support, as shared during the focus group interviews, was important, as was the versatile nature of the overall approach.

While the design of the intervention provided teachers with some freedom and independence, administrators should develop strategies to ensure teacher accountability. For this study, and in his role as principal, the researcher requested that teachers submit to him three to

five strategies from an extensive list of CSP practices. He then followed up after a lengthy school break with an email reminder to each teacher of their self-selected strategies. An offer to assist or connect with the consultant accompanied the email. If implementing a similar model, not every teacher is likely to request a one-on-one meeting with the consultant. By requesting the selection of specific areas of focus following the first or second PD session, an attempt to ensure CSP implementation in every classroom can occur. Further, educators would be wise to consider ensuring that PD sessions contain discipline-specific strategies to allow teachers to gain practical ideas for classroom-based CSP.

The researcher encourages administrators to remind teachers at the beginning of the process that they are likely already implementing some CSP in their classrooms without realizing it. Teachers often view PD as another initiative in the ever-changing world of education. With the tremendous benefits CSP provides, providing reassurance to staff and encouragement at the onset of the process might help to overcome any faculty resistance. Using this experience, the researcher also recommends administrators meet with a key group of faculty leaders (department chairpersons, for example) prior to the first PD session to promote buy-in. Building this foundational support early should help to ensure success throughout the process for both faculty and students. Throughout the implementation period, administrators may want to consider the formation of a committee to gather regular faculty feedback. The regular use of faculty voice will further promote buy-in and support.

Following the model of Improvement Science, administrators should consider ways to regularly assess the intervention's model and efficacy. While a consultant may provide support in this area, regularly soliciting specific feedback from faculty will help to guide the process. A willingness to adjust is essential while continuously striving to achieve the goals of the project.

This intervention occurred over a 15-week period from early November through mid February. Administrators would be wise to consider a lengthier implementation period with PD sessions appropriately spaced between consultant visits. This should allow ample time for teachers to practice strategies and become more comfortable with CSP. Further, the researcher recommends ensuring consistency in scheduling by avoiding prolonged breaks in the class schedule (e.g., winter break, mid-term exams) to promote successful implementation.

With an initiative of this size and scope, it is important to learn from missteps and celebrate the achievements. Leaders should consider opportunities for teachers to regularly share their CSP success stories with the community with an intentional focus placed upon celebrating success. Further, a school should consider a school-wide celebration with planning and input gathered from faculty and students to publicly reaffirm a school's commitment to culturally sustaining practices.

Strengths of This Study

The researcher noted several strengths of this study. Researchers seeking to replicate this approach in the future may wish to consider use of the following strategies:

- CRTSE Survey – this valid and reliable measure provided an established measurement tool to assess pre- and post-intervention teacher CSP self-efficacy.
- Intervention Model – the varied intervention model based upon two PD sessions and individual classroom visits by the consultant proved effective and well-received by teachers.
- Semi-Structured Focus Groups – these sessions, guided by a third-party interviewer, provided teachers with an opportunity to candidly share perspectives, opinions, and recommendations regarding the intervention and future efforts.

- Engagement of Entire Faculty – the design of this intervention provided an opportunity for the entire faculty of the school to engage in training and implementation of culturally sustaining pedagogy. This approach allowed for impacts to be realized by all students in all grades.

Further Study

Additional study should consider student perspectives focused upon CSP implementation. While a goal of this study was to positively impact the student-experience, the researcher only gathered teacher input and perspective. Additional data gathered from the student perspective, including feedback on specific implementation strategies, along with opinions on impacts to classroom culture and climate, could help better assess the effectiveness and determine future steps of the intervention.

With a goal to impact student connectedness, additional study is necessary to determine if the efforts of this intervention actually impacted connectedness. The Improvement Science model requires the selection of a specific change idea – in this case, classroom-based use of culturally sustaining pedagogy – to impact the problem of practice. Prior to adjusting a CSP focus or initiating the launch of another change idea, it is important to gather data assessing any impact upon student connectedness. This should be a priority and a consideration of future research efforts.

Future research may also consider a closer investigation of specific demographics of study participants. For example, this study showed STEM teachers with more than double the self-efficacy growth of Humanities teachers. Academic department-specific focus groups could provide more targeted content-specific feedback. Data also showed teachers with 11 – 19 years of teaching experience reported the smallest CSP self-efficacy growth while teachers with 6 – 10

years of experience showed the largest growth. Were there specific reasons and underlying causes for these results? Future research at Notre Dame may also investigate why teachers who met with the consultant experienced smaller levels of self-efficacy growth versus those who did not, considering the positive feedback shared by participants and the statistically significant difference in self-efficacy changes between these two groups. Finally, with no statistically significant difference noted in post-intervention self-efficacy scores between male and female teachers, future researchers may consider using a larger sample size to determine if results are similar.

Researchers may wish to also consider a deeper investigation into CRTSE question responses. Why did some questions show a statistically significant change versus others? Did certain areas show meaningful growth as compared to others? Are there opportunities for future PD sessions to address areas of concern and weakness? Would similar results occur in a non-pandemic environment?

In this study, teachers self-reported weekly CSP data. As noted in the limitations discussion, these data are potentially inflated given the number of non-participatory teachers. Therefore, future research may wish to determine ways to promote additional participation to ensure a more complete picture of teacher participation levels and teacher CSP preferences. At Notre Dame, future research should consider ways to determine why CSP implementation differed based upon years of teaching experience and why certain groups preferred some strategies over others. Qualitative data might help to explain why individual teachers and academic departments less frequently used certain strategies. Future PD sessions could help to address these differences.

In addition, future research may gather data from teachers who did not initially participate in focus group sessions. What additional supports might be necessary to promote more consistent CSP use in classrooms among the teachers? How can the positive feedback shared by participatory teachers become the experience of all teachers? As CSP efforts continue, the researcher should continue to monitor for unintended consequences – both positive and negative – and gather data to determine why teachers did not implement some CSP strategies. Further, additional research efforts should assess the student response to CSP – both from the teacher and the student perspective.

Conclusion

As part of the Improvement Science process, the researcher identified a PoP at his school: a lack of universally high student connectedness as measured by annual student Culture and Climate Surveys. With a goal of ultimately improving student connectedness, the researcher conducted a root cause analysis and end-user consultations to uncover potential causes of this issue. He then determined a goal for improvement (an aim measure) and drivers to impact this aim. The researcher selected a single strategy upon which to focus efforts to build student connectedness: teacher use of culturally sustaining pedagogy.

With a focus upon the use of CSP, the researcher and a consulting firm designed an intervention to provide teachers with two PD sessions and the opportunity for one-on-one support during the consultant's multiple follow-up visits to the school. Following a mixed methods design, the researcher gathered quantitative and qualitative data to assess the impact of the intervention. Data showed a statistically significant improvement in teacher self-efficacy scores, along with frequent self-reported use of culturally sustaining practices. Qualitative data, gathered during semi-structured interviews, showed faculty members supportive of the

intervention with a positive impact made to classroom culture, stronger student/teacher relationships, and more engaged and participatory students. Teachers also acknowledged the need for on-going efforts to promote CSP, with a request for time to lesson plan, meet with colleagues, and participate in additional CSP-focused PD. Data provided answers to the researcher's three research questions and allowed him to accept the primary hypothesis, to determine which strategies teachers most (and least) frequently implemented, and to gather largely favorable teacher perspectives of CSP and the implementation process.

With research conducted at a small, Catholic high school, the researcher acknowledged several limitations to the study, including dependency upon self-reported data, an oft-interrupted school schedule, and the possibility that faculty shared certain responses and data simply to support the researcher (who is also the principal). Based upon the results of this study and feedback gathered, opportunity exists for a similar study to be impactful at other institutions. The researcher noted recommendations for future work both at his school and elsewhere, including gathering student perspectives, ensuring faculty voice throughout the process, creating time for faculty collaboration, assessing the impact of student connectedness, and providing on-going PD and additional connectedness-focused activities.

The Improvement Science model offers educators an opportunity to address a specific problem in a school. With its systematic approach, from the identification of the problem through an analysis of the data and recommendations for future research, the process allows for an assessment of the selected primary driver while recognizing it as an on-going and long-term effort. In this case, as teachers integrate CSP effectively into their classrooms, educators strengthen their practice and students benefit. While this occurs, students grow as individuals,

experience academic, social, and emotional benefits, and can become more strongly connected to school – the goal of this Dissertation in Practice.

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Appendix A

Sandra Drummey, Ed.D

Senior Vice President for Leader & Teacher Development – ADAC

A lifelong special education practitioner, Sandi has served as a teacher, vice-principal, and principal. As an administrator, she established special education centers, and as the Assistant Superintendent of Catholic Schools in the Diocese of Fall River, she oversaw the creation and implementation of a first-of-its-kind diocesan-wide special education program. Sandi holds a bachelor's degree from Suffolk University, a master's degree from Boston College, and a doctoral degree from Boston College.

Appendix B

Stephen Keating
President, Keating Associates

For over three decades, Stephen Keating has helped schools, colleges, and universities leverage the power of their brands to drive institutional performance and reputation. As a catalyst for strategic change and growth, Stephen leads schools in shaping and communicating brands that galvanize institutional culture, engage support and loyalty, and energize action.

With a passion and expertise in Catholic and Christian education, Stephen has guided institutions in revitalizing their brand and vision, leading strategic planning programs, developing powerful enrollment and advancement communications, building support and participation with stakeholders, and serving as a valued strategic brand partner.

Stephen has served as President of Keating Associates in Worcester, MA since January 1991.

Appendix C

Culturally Responsive Teaching Self-Efficacy Scale

Rate how confident you are in your ability to successfully accomplish each of the tasks listed below.

Each task is related to teaching.

Please rate your degree of confidence by recording a number from 0 (no confidence at all) to 100 (completely confident).

Remember that you may use ANY NUMBER between 0 and 100.

0 = No Confidence at All
Confident

50 = Moderately Confidence

100 = Completely

* Required

1. I am able to adapt instruction to meet the needs of my students. *

2. I am able to obtain information about my students' academic strengths. *

3. I am able to determine whether my students like to work alone or in a group. *

4. I am able to determine whether my students feel comfortable competing with other students

5. I am able to identify ways that the school culture (e.g., values, norms and practices) is different from my students' home culture. *

6. I am able to implement strategies to minimize the effects of the mismatch between my students' home culture and the school culture. *

7. I am able to assess student learning using various types of assessments. *

8. I am able to obtain information about my students' home life. *

9. I am able to build a sense of trust in my students. *

10. I am able to establish positive home-school relations. *

11. I am able to use a variety of teaching methods. *

12. I am able to develop a community of learners when my class consists of students from diverse backgrounds. *

13. I am able to use my students' cultural background to help make learning meaningful. *

14. I am able to use my students' prior knowledge to help them make sense of new information.

15. I am able to identify ways how students communicate at home may differ from the school norms. *

16. I am able to obtain information about my students' cultural background. *

17. I am able to teach students about their cultures' contributions to science. *

18. I am able to greet English Language Learners with a phrase in their native language. *

19. I am able to design a classroom environment using displays that reflects a variety of cultures

20. I am able to develop a personal relationship with my students. *

21. I am able to obtain information about my students' academic weaknesses. *

22. I am able to praise English Language Learners for their accomplishments using a phrase in their native language. *

23. I am able to identify ways that standardized tests may be biased towards linguistically diverse students. *

24. I am able to communicate with parents regarding their child's educational progress. *

25. I am able to structure parent-teacher conferences so that the meeting is not intimidating for parents. *

26. I am able to help students to develop positive relationships with their classmates. *

27. I am able to revise instructional material to include a better representation of cultural groups

28. I am able to critically examine the curriculum to determine whether it reinforces negative cultural stereotypes. *

29. I am able to design a lesson that shows how other cultural groups have made use of mathematics. *

30. I am able to model classroom tasks to enhance English Language Learner's understanding. *

31. I am able to communicate with the parents of English Language Learners regarding their child achievement. *

32. I am able to help students feel like important members of the classroom. *

33. I am able to identify ways that standardized tests may be biased towards culturally diverse students. *

34. I am able to use a learning preference inventory to gather data about how my students like to learn. *

35. I am able to use examples that are familiar to students from diverse cultural backgrounds. *

36. I am able to explain new concepts using examples that are taken from my students' everyday lives. *

37. I am able to obtain information regarding my students' academic interests. *

38. I am able to use the interests of my students to make learning meaningful for them. *

39. I am able to implement cooperative learning activities for those students who like to work in groups. *

40. I am able to design instruction that matches my students' developmental needs. *

41. I am able to teach students about their cultures' contributions to society. *

42. Your Name *

43. Your Gender *

Mark only one oval.

- Male
 Female

44. Your total years of teaching experience *

Mark only one oval.

- 0-2
 3-5
 6-10
 11-19
 20 or more

45. Did you meet individually with Sandi or did she observe one of your classes during either of her visits? *

Mark only one oval.

- Yes
 No
-

Appendix D

Culturally Responsive Practices

Part of my doctoral study includes an analysis of the culturally responsive practices used in ND classroom: following our PD sessions.

Completion of this weekly survey is completely voluntary. Each survey is anonymous and data will be reported in the aggregate (summed together - not reported individually).

This survey contains checkboxes to indicate which strategies you utilized in any of your classes this week. Simply select all that apply and hit submit.

1. Week Ending

Mark only one oval.

- January 28
- February 4
- February 11
- February 16

2. Academic Department

Mark only one oval.

- Arts
- English
- Math/Computers
- Modern Language
- Science
- Social Studies
- Theology

3. Gender

Mark only one oval.

- Male
 Female

4. Number of Years Teaching (total teaching experience)

Mark only one oval.

- 1-4
 5-9
 10-19
 20-29
 30 plus

5. Student-Focused Activities (check all used this week)

Check all that apply.

- COOPERATIVE LEARNING opportunities
 CRITICAL LITERACY SKILLS used
 Opportunities for students to examine BIAS
 Opportunity for students to SELF REFLECT, evaluate, examine learning
 Peer editing / Peer Teaching
 SOCRATIC/open-ended student-led discussions
 Students ENGAGE in the learning process
 Students SUPPORT other students
 Student VOICE included in classroom planning
 Students SET GOALS to improve their experience
 Students use CRITICAL THINKING SKILLS
 Student interpret HISTORICAL REALITIES through a modern-day lens
 Use of HEXAGONAL thinking activities
 Use of STUDENT DIRECTED lessons

6. Teacher Directed Actions (check all used this week)

Check all that apply.

- Address SEXISM in lesson, materials, etc.
- Celebrate CULTURAL IDENTITIES
- Connect learning to REAL WORLD EXPERIENCES
- Connect learning to SOCIAL CONCERNS and encourage students to act
- Connect learning to STUDENTS' LIVES
- Convey to students that each is CAPABLE OF LEARNING
- Create ATMOSPHERE of respect and rapport
- Create ENVIRONMENT that encourages positive student behavior (students behave out of a sense of personal responsibility)
- Create SENSE OF COMMUNITY where students belong and contribute
- Demonstrates active interest in STUDENTS' COMMUNITIES / CULTURE
- Demonstrate FLEXIBILITY and RESPONSIVENESS
- DIFFERENTIATION of lessons
- Effort made to learn about STUDENT BACKGROUND & CULTURE
- Efforts made to learn about STUDENTS' INTERESTS
- Help students to recognize ability to OVERCOME CHALLENGES
- Identify BIAS in curriculum and work to address it
- Identify possible MISUNDERSTANDINGS in advance and a plan to address them
- INTERACT individually with students
- Lessons identify & build upon STUDENT KNOWLEDGE
- Objectives used which promote HIGHER LEVEL THINKING and student engagement
- Teacher provides specific FEEDBACK to students that prompts improved performance
- Teacher acknowledges own BIASES and INEQUITABLE ACTIONS
- Uses OPTIMISM in lesson
- Uses BODY LANGUAGE to convey message that all students are important
- Use of TECHNOLOGY to enrich instruction
- Uses EXIT TICKETS
- Uses MULTIPLE PERSPECTIVES and validates them during instruction
- Values CONTRIBUTIONS from students of all background and abilities
- WELCOMES students by name

7. On-Going Activities (check all used this week)

Check all that apply.

- Activities included to strengthen STUDENT-TEACHER RELATIONSHIPS
- COLLABORATE with colleagues to ensure student success
- Cultural DISPLAYS in classroom
- Curriculum reshaped to include DIVERSE & CONTEMPORARY voices, artists
- Holds students ACCOUNTABLE
- Learn, use, and display words in students' NATIVE LANGUAGE
- Outreach made to FAMILIES so they can assist in student's education
- PRAYER daily
- Promotes EQUITY (not equality)
- Promotes respect for STUDENT DIFFERENCES
- Teacher uses PROXIMITY equitably with all students
- VISUAL AIDS used to support student learning

8. Include any other culturally responsive practices not listed above that were used this week he

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Google Forms

Appendix E

Semi-structured Interview Questions

1. Describe your overall experience using culturally sustaining pedagogy in the classroom.
2. How did your students respond to the use of culturally sustaining pedagogy?
3. From your perspective, which culturally sustaining pedagogy most enriched your students' classroom experience? Why?
4. Which culturally sustaining pedagogy did you most enjoy teaching? Why?
5. Describe any challenges you faced while implementing culturally sustaining pedagogy.
6. How could the administration best support you as you continue to implement culturally sustaining pedagogy in your classroom?
7. How has your comfort in the use of culturally sustaining pedagogy evolved? If your comfort has improved, why do you think this occurred?
8. Describe any unintended outcomes related to the implementation of culturally sustaining pedagogy in your classroom.
9. Moving forward, describe the role you think culturally sustaining pedagogy will play in your classroom.

Appendix F

	Pre- Interv.	Std. Dev.	Post- Interv.	Std. Dev	Pre / Post Change
CRTSE Item 1	83.93	13.97	83.97	20.68	0.03
CRTSE Item 2	76.03	19.57	84.28	13.37	8.24
CRTSE Item 3	90.00	17.13	82.69	22.01	-7.31
CRTSE Item 4	64.34	32.93	78.07	21.86	13.73
CRTSE Item 5	58.90	29.32	77.31	18.79	18.41
CRTSE Item 6	56.52	25.12	73.03	20.23	16.52
CRTSE Item 7	84.48	14.60	90.97	12.50	6.48
CRTSE Item 8	59.45	26.80	74.34	21.92	14.90
CRTSE Item 9	86.00	12.67	89.93	13.04	3.93
CRTSE Item 10	79.24	19.05	88.14	12.69	8.90
CRTSE Item 11	86.31	13.61	93.21	8.09	6.90
CRTSE Item 12	83.38	19.49	91.03	8.31	7.66
CRTSE Item 13	69.66	25.77	84.59	13.34	14.93
CRTSE Item 14	83.93	16.91	90.86	10.83	6.93
CRTSE Item 15	65.86	27.22	79.00	15.81	13.14
CRTSE Item 16	65.90	25.74	82.86	15.53	16.97
CRTSE Item 17	33.17	33.77	51.90	30.46	18.72
CRTSE Item 18	41.59	39.61	46.72	37.64	5.14
CRTSE Item 19	68.34	33.59	73.79	28.34	5.45
CRTSE Item 20	82.72	19.59	91.55	13.29	8.83
CRTSE Item 21	79.48	25.99	84.55	15.00	5.07
CRTSE Item 22	37.45	39.37	42.93	36.61	5.48
CRTSE Item 23	55.24	33.33	68.24	33.67	13.00
CRTSE Item 24	91.72	11.12	91.90	10.13	0.17
CRTSE Item 25	91.55	10.45	90.62	13.43	-0.93
CRTSE Item 26	83.59	13.78	86.52	12.97	2.93
CRTSE Item 27	66.69	27.04	78.62	23.03	11.93
CRTSE Item 28	74.69	27.29	80.10	21.71	5.41
CRTSE Item 29	23.83	35.75	37.24	36.83	13.41
CRTSE Item 30	63.24	29.15	68.79	25.24	5.55
CRTSE Item 31	65.00	30.62	66.55	29.16	1.55
CRTSE Item 32	84.76	14.41	90.10	10.70	5.34
CRTSE Item 33	59.34	36.69	70.00	33.43	10.66
CRTSE Item 34	58.10	30.96	71.59	29.84	13.48
CRTSE Item 35	67.10	27.32	80.28	20.29	13.17
CRTSE Item 36	76.55	21.96	87.24	13.60	10.69
CRTSE Item 37	76.83	23.67	86.79	13.82	9.97

CRTSE Item 38	79.14	16.85	86.90	12.78	7.76
CRTSE Item 39	82.59	18.59	86.76	21.69	4.17
CRTSE Item 40	82.93	18.59	86.90	15.72	3.97
CRTSE Item 41	58.45	27.75	71.38	27.65	12.93
Average					8.40

Appendix G

	Activity	Total	%
Student Focused Activities	Students use critical thinking skills	55	69
	Students engage in the learning process	53	66
	Students support other students	50	63
	Cooperative Learning Opportunities	48	60
	Opportunities for students to self-reflect, evaluate, examine learning	47	59
	Critical Literacy Skills used	43	54
	Student voice included in classroom planning	42	53
	Students interpret historical realities through a modern-day lens	31	39
	Students set goals to improve their experience	22	28
	Use of student-directed lessons	20	25
	Opportunities for students to examine bias	19	24
	Peer editing / Peer Teaching	18	23
	Socratic/open-ended student-led discussions	17	21
	Use of hexagonal thinking activities	3	4
Teacher Directed Actions	Use of technology to enrich instruction	69	86
	Create atmosphere of respect and rapport	66	83
	Interact individually with students	65	81
	Create sense of community where students belong and contribute	62	78
	Connect learning to students' lives	61	76
	Welcomes students by name	61	76
	Connect learning to real world experiences	57	71
	Create environment that encourages positive student behavior	57	71
	Demonstrates flexibility and responsiveness	55	69
	Effort made to learn about students' interests	51	64
	Lessons identify & build upon student knowledge	48	60
	Teacher provides specific feedback to students that prompt improved performance	48	60
	Values contributions from students of all backgrounds and abilities	48	60
	Teacher uses body language to convey message that all students are important	47	59
	Convey to students that each is capable of learning	46	58
	Differentiation of lessons	46	58
	Optimism used in lesson	45	56
	Help students to recognize ability to overcome challenges	43	54
	Effort make to learn about student background and culture	42	53
	Objectives used which promote higher level thinking and student engagement	42	53
Connect learning to social concerns and encourage students to act	38	48	
Demonstrates active interest in students' communities & cultures	36	45	

Teacher Directed Actions	Identify possible misunderstanding in advance and a plan to address them	32	40
	Use of multiple perspectives with validation during instruction	27	34
	Celebrate cultural identities	23	29
	Use of exit tickets	21	26
	Teacher acknowledges own biases and inequitable actions	20	25
	Addresses Sexism in lesson, materials, etc.	17	21
	Identify bias in curriculum and work to address it	17	21
On-Going Activities	Hold students accountable	66	83
	Visual aids used to support student learning	60	75
	Promotes respect for student differences	54	68
	Activities included to strengthen student-teacher relationships	47	59
	Collaborate with colleagues to ensure student success	45	56
	Outreach made to families so they can assist in student's education	38	48
	Teacher uses proximity equitably with all students	37	46
	Promote equity (not equality)	33	41
	Prayer used daily	32	40
	Curriculum reshaped to include diversity and contemporary voices / artists	26	33
	Cultural displays in classroom	24	30
	Learn, use, and display words in students' native language	13	16