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Arlene Wacha

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Walden University
2019

Abstract

Teachers' Perceptions of School District Professional Development Alignment with National Standards

by

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MsEd, Monmouth University, 2003

MBA, Monmouth University, 1986

BS, College of New Jersey, 1982

Project Study Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Education

Walden University

August 2019

Abstract

Despite ongoing delivery of teacher professional development (PD), educational leaders in the local district did not have an objective evaluation whether their implementation of the Marzano causal teacher evaluation model and the iObservation tool training were aligned with accepted national standards for PD effectiveness. Using Vygotsky's constructivist theory as the theoretical framework, the purpose of this quantitative descriptive, correlational study was to describe teachers' perceptions of the alignment of the district's PD with national standards and the relationship between teachers' reported self-efficacy and attitudes toward the PD program. A purposive sample of 80 middle school teachers completed the Learning Forward's Standard Assessment Inventory and Kao, Tsai, and Shih's Self-Efficacy and Attitude Survey. The response rate was 33%. Descriptive analysis indicated that teachers perceived and were satisfied with the alignment of the PD to national standards. Correlation analysis revealed strong positive correlations ($p < .01$) between teachers' self-efficacy ratings and their attitudes toward the PD's alignment with national standards. These findings informed development of a training promoting a shared vision among educational leaders and teachers about the necessity of following national standards when designing and implementing PD. Alignment of teacher PD with national standards might result in positive social change by creating effective trainings for teachers which could, in turn, have a positive influence on educational outcomes over time.

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Dedication

Thank you to my husband and my best friend of over 45 years. To my daughters, I achieved my goal of attaining a doctoral degree to continue as a lifelong learner and to lead by example. I dedicate this paper to my beloved parents, for whom I tried to balance my time and earning the degree during home hospice. Now that the study is complete, I can spend time with my sisters and family who patiently supported my busy schedule. Now, there is more time to live life to its fullest.

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I would like to thank my committee members. Dr. Andrea Wilson has been a God send and the most supportive, responsive, and longest committee member I have had since the start of my doctoral journey. My last committee:

- Dr. Andrea Wilson, committee chair,
- Dr. JoeAnn Hinrichs, methodologist second chair, and
- Dr. Dorin Stanciu, university reviewer -I would like to thank Dr. Stanciu for going above and beyond the call of duty to expedite my final paper.

Finally, there are my friends, who were of great support in deliberating over our problems and findings, as well as providing happy distraction to rest my mind outside of my research.

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Section 1: The Problem

The Local Problem

In 2002, the U.S. government established and enacted the No Child Left Behind Act (No Child Left Behind [NCLB], 2002) with a view to equalize educational opportunities for all students (NCLB, 2002). For the government to accomplish this goal, every state's educational department had to document the number of pupils scoring an annual increase in proficient scores in literacy and math (National Governors Association, 2010). Also, to help close a gap in the range in literacy and math scores, each state education department needed to implement a new teacher evaluation program through professional development (PD) training for teachers.

To calculate pupils' progress under the auspices of this act, the NCLB originally targeted 2014 as the year that all students' adequate yearly progress would be required to reach a proficient level (NCLB, 2002). In New Jersey, the Department of Education mandated that students in Grades 3-8 take the New Jersey Assessment of Skills and Knowledge (NJASK) exam (New Jersey Department of Education [NJDOE], 2008). The purpose of NJASK was to monitor adequate yearly progress (AYP), and NCLB dictates the national standards (NJDOE, 2012). Recently, the U.S. Congress replaced the standards of the AYP with The Every Student Succeeds Act of 2015 (Every Student Succeeds Act [ESSA], 2015). The original national and state educational goals were for all students to be 100% proficient by the year 2014 (NJDOE, 2011). As of 2012, however, not only were scores across the United States documenting a lack of AYP, but

also the local suburban school selected for this study was not increasing in AYP (NJDOE, 2012). Students in New Jersey are considered proficient with a score higher than 199 and lower than 250 on the NJASK (NJDOE, 2012). The purpose of monitoring AYP was to identify students who need extra help to reach a proficient level. There are many needy students requiring assistance to reach a proficient level. The students do not show enough performance increase in any category of standardized testing to meet the ESSA (2015) national standards, and, more than that, students are not meeting the New Jersey goals of 100% proficient (NJDOE, 2014).

In response to the need of national standards, the Race to the Top Act of 2011 under the American Recovery and Reinvestment Act of 2009 (Pub. L.-1115) authorized states to implement reform in teacher evaluation plans by providing funds for teacher professional development (U.S. Department of Education, 2009). Finding an evaluation plan with effective professional development continues to challenge the school districts. Despite the many years of teacher professional development, student achievement scores have decreased. McGuinn (2012) stated that there would be many problems if, in an attempt to reform teacher evaluation, one professional training framework was implemented. Ballou and Springer (2015) noted that educators evaluate the new frameworks carefully, especially when the evaluators directly relate students' assessment scores with teachers' evaluation. Also, the states had a deadline to implement the new training models by the year 2012. School districts began the challenge to find the best evaluation plan with professional development.

Problem Statement

Educational policymakers in District B (pseudonym used throughout this paper to refer to the district in which this research took place) did not have an objective evaluation regarding the alignment between the known and accepted national standards and the effectiveness of the actual measures put in place. Against the aforementioned background, the problem statement was that District B did not know whether (a) the Marzano causal teacher evaluation model and the iObservation tool training model program PD program put in place was described and aligned with the known national standards for PD effectiveness and whether (b) there was a relationship between the teachers' levels of self-efficacy and attitudes toward the PD program with respect to the PD alignment to national standards. When compared to state ranking, Middle School 2 (pseudonym used throughout this manuscript to indicate the research site) met only 21% of the academic requirements. The need for reform in teachers' professional development to increase student achievement became evident. Middle School 2 college and student readiness met 0% when compared to state ranking (see Table 1).

Table 1

Performance Areas in School District B Middle School 2

	Peer rank	Statewide rank	Percent of targets met
Academic achievement	8	45	21%
College and career Readiness	11	23	0%
Student growth	8	14	100%

Note. Very high performance: equal to or above the 80.0th percentile. High performance: between the 60.0th and 79.9th percentiles. Average performance: between the 40.0th and 59.9th percentiles. Lagging performance: between the 20.0th and 39.9th percentiles. Significantly lagging performance: equal to or below the 19.9th percentile. Statistics obtained from *Grades 5-8 New Jersey Assessment of Knowledge and Skills spring 2012: Test results* (New Jersey Department of Education, 2012).

District B had two middle schools. The existing problem was reflected in Middle School 2 declining AYP scores which have continued to decline since 2012 (NJDOE, 2012). Harris and Sass (2011) studied the problem of increasing lagging performance and identified that the number of students categorized as high achievers was decreasing and the number of students categorized as low achievers was increasing. Harris and Sass addressed the various types of difficulties in professional development that their middle school participants experienced when trying to have all students reach adequate annual progress. Harris and Sass found that middle school teachers' productivity increased with experience and that professional development had a stronger relationship with content subject teachers such as math rather than general teaching performance. Each year since 2009, District B has seen results similar to those of Harris and Sass, with more students' scores decreasing and fewer high achievers.

Middle school students' scores provide insight into the school's progress in tracking the basic skills accomplished. By the end of Grade 8, school districts expect that educated students are familiar with all of the foundations of basic learning skills (Akers, 2016). Holbein and Ladd (2015), Darling-Hammond (2012), and Guskey (2014) noted that improving teacher effectiveness through training significantly influences student achievement. The Learning Forward's national standards have provided guidelines for quality professional development programs (Grissom & Youngs, 2016). Çakır and Bichelmeyer (2016) indicated that professional development has more of an effect on student achievement than teacher experience or level of degree.

Another factor that affected the evaluation of the professional development was the teachers' comfort level with the web-based training. In a longitudinal study, Noble and McGrath (2016) found that the well-being of a student had a strong correlation to achievement. The problem was a lack of positive education, and the purpose of the longitudinal study was to have the teacher participants create a flourishing educational environment by acknowledging the needs of teachers and students (Noble & McGrath, 2016). Noble and McGrath implemented computerized surveys and workshops to train teachers. Many of the participants (96%) concluded that the professional development framework would be effective in successful practices of student well-being (Noble & McGrath, 2016). Therefore, using an effective professional development model to train teachers to increase student achievement had a strong relationship for the well-being of the student (Noble & McGrath, 2016).

Before 2012, New Jersey middle school students' academic skills were not reaching the required proficient range. The goal was that all students' scores fall into a proficient range, as measured by state assessments. Over the last assessed years of New Jersey Assessment of Skills and Knowledge (NJDOE, 2012), the students' mean NJASK scores have declined. Students' scored in the partially proficient or failing category. The NJDOE agreed that all students must be at least proficient in language arts, literacy, and mathematics by 2014. The reform model should address the problems found on the NCLB state report (NJDOE, 2012.) concerning 28.2% of New Jersey middle school students achieved 200 points or fewer out of 300 points on the NJASK.

The few acceptable professional development training plans available for teacher evaluation reform have no evaluations directly correlated to increase student achievement (Marzano Center, 2012). Onosko (2011) stated that the districts implementing Race to the Top Act frameworks in schools have created high stakes accountability (Onosko, 2011). Onosko summarized eight different interest group proposals that outlined the problems of implementing Race to the Top frameworks. Onosko concluded that the focus of the teacher training could not be concentrated on student math and verbal outcomes. Because of documenting for the high-stakes accountability, teachers' professional development focuses on raising the low student's score to be proficient. Chalmers and Gardiner (2015) evaluated the effectiveness of teacher professional development plans. The purpose of their evaluation framework was to identify the participating teachers' impact on the professional development programs (Chalmers & Gardiner, 2015). Chalmers and

Gardiner reviewed many professional development training studies and concluded that there was a need for professional development to train the teacher to provide accountability for student progress.

To meet the requirements of the new reform, teachers focus on teaching students to pass the assessment instead of helping improve the skills of low-achieving students to become proficient. Because the focus was on the low-achieving student, teachers have not challenged the high-achieving student to increase on assessments. Lipman (2015) reported that there was a lack of urban resources to help the underprivileged children. Because teachers' evaluations depend on the success of their students, there has been more focus on the low-achieving students and less focus on the high-achieving students. Evaluations of the new reform of teachers' professional development need to measure the effectiveness on all levels of student academic achievement.

Rationale

The rationale for the study originated with the problem that District B did not know whether the Marzano causal teacher evaluation model and the iObservation tool training model program was described and aligned with the national standards for effectiveness and whether there was a relationship between teachers' levels of self-efficacy and attitudes toward the PD program with respect to the PD alignment to national standards. The purpose of the study was to determine whether the Middle School 2 teachers perceived the professional development of the Marzano causal teacher

evaluation model and the iObservation tool to be meeting national standards as an effective web-based professional development for District B.

The Administrators in District B, the setting of this study, invited 400 school superintendents to attend a statewide convocation. At the New Jersey convocation, the education commissioner stated that the NJASK middle school scores did not show improvement. The most recent proficient 2017 scores for Middle School 2 lagged behind the New Jersey state average in middle school English and Math (NJDOE, 2017). Allen et al. (2018) agreed that the achievement gap between the wealthy higher achieving students and poor lower achieving students remained wide.

The Kao, Tsai, and Shih (2014) Survey to Measure Self-efficacy and Attitude toward Web-based Professional Development (SAI2) was used to identify potential associations of teachers' self-efficacy and attitudes toward the professional development (PD) program with respect to the PD alignment to national standards, association which, in turn, could be identified objectively as correlations. The PD implementation was to focus on improving student achievement. The Marzano causal teacher evaluation model and the iObservation tool training model PD program put in place was (a) to describe and align with the known national standards for PD effectiveness and if (b) there was a relationship of the teachers' levels of self-efficacy and attitudes toward the PD program with respect to the PD alignment to national standards.

The ongoing problem was to train teachers to accept and implement nationally based standard professional development that was effective in promoting teacher self-

efficacy with a focus on student achievement. Overall, as previous research has indicated, effective professional development including self-efficacy and attitude will train teachers according to national standards as well appropriate implementation of a web-based model (Desimone & Garet, 2015, Dartnow & Hubbard , 2015, and Filipe, Ferreira, & Santos, 2015). These studies have indicated that teachers properly trained with effective professional development were able to help students increase in student achievement. In 2012 and 2018, the NJDOE addressed the problem of effective professional development and student assessment. In review of the broader problem, Congress updated the No Child Left Behind Act and reauthorized the Elementary and Secondary Education Act as the Senate Bill 1177 - 114th The Every Student Achieves Act of 2015 (ESSA, 2015). In earlier sections of my study, I refer to the NCLB. The change in ESSA (2015) did not affect my study in respect that school administration had to be accountable for every student's academic progress.

In the state of New Jersey, the NJDOE had been seeking educational reform by unifying school districts to implement similar professional development. Sciarra and Hunter (2015) stated that accountability must have equitable assessments such as those regarding teachers' professional development to provide quality education. The purpose of this quantitative correlational and descriptive study was to (a) determine and describe the teachers' perceptions about alignment of the PD program with the national standards and (b) understand the potential connection between teachers' reported self-efficacy and

attitudes with respect to the PD program and the teachers' perceived alignment of the program to the national standards

Definition of Terms

In this study, I defined the concepts associated with professional development and measurements of student achievement as follows:

Academic achievement problem: Bossaert, Doumen, Buyse, and Verschueren (2011) stated that one definition of the academic achievement problem was the difference in standardized scores of students on the lower end of the scale due to economic disparity compared to those at the higher end of that scale. One main difference and length in the disparity of higher-achieving students and lower-achieving students was the time in which students achieve educational objectives. The student achievement measured by the NJASK test categorizes the students' scores as proficient, partially proficient, and advanced proficient.

Achievement: In this study, the NJASK measured achievement scores for Grade 8 in language arts literacy and mathematics. The categories on the NJASK are partially proficient, proficient, and advanced proficient (NJDOE, 2011).

Attitude: George and Ogunniyi (2016) reported that attitude was the teacher's reaction to a situation in a positive or negative way. The reaction of the individual to the situation influences the outcomes.

Baseline: A baseline was an initial measurement of a behavior. If the behavior needs to change, teachers may introduce an intervention. Teachers may compare the

baseline measurement to later measurements to analyze the results of the desired behavior (Earley & Porritt, 2014).

iObservation: A computerized database system that tracks teacher performance evaluations. The teachers have access to library resources, discussions, conferences, and teaching videos embedded with the system (Learning Sciences International, 2012).

NJASK tests: New Jersey Assessment of Skills and Knowledge are standardized tests provided by the New Jersey Department of Education. The No Child Left Behind Act 2002 mandated that public school elementary students in Grades 3-8 be tested in mathematics and language arts literacy (NJDOE, 2011).

Professional development: An approach to enlightening principals' and teachers' in increasing student achievement (Vanassche & Kelchtermans, 2016).

Self-efficacy: Teachers' self-efficacy occurs when the learning and teaching actions achieve certain levels (Schunk & DiBenedetto, 2016).

Significance of the Study

The need for this study emanated from the lack of research conducted in New Jersey on uniformed professional development programs and teachers' self-efficacy when conforming to an educational mandate. Findings from this study may provide insight to administrators and teachers to reevaluate their uniform professional development practices in their districts. As the best practices of administrating the uniform professional development evolve from future research, educators may advocate for effective strategies to implement educational reform.

Marzano's causal teacher evaluation model and the iObservation tool was the professional development (PD) chosen to implement in District B. Because there were only a few uniform PD programs to choose from, District B chose the web-based PD as meeting the District B criteria to improve student achievement. Researchers stated that teacher PD based on national standards influences student achievement (Balch & Springer, 2015; Darling-Hammond, 2015; Harris & Sass, 2011; Putney & Robert, 2011). District B teachers provided data for this study on the PD alignment with national standards and teacher self-efficacy. Findings may encourage further research that leads to the identification of the strengths of a training model that trains teachers to improve student achievement.

With respect to its contribution to theoretical basis, while the scope of study stayed within identifying correlations pertinent to the core constructs, due to reasons pertaining to objective research conditions, including the pragmatic and praxeological orientation of the research as a Project Study, it is important to note that identifying associations is the first step in furthering this research topic into the realm of more complex modeling, ranging from simple regression-based predictions to multivariate analyses.

Concurrently with respect to the contribution to the practice, teachers' opinion is an expression of their implicit and explicit knowledge. Knowing the teachers' informed opinion, this study opens a feasible and relevant avenue to identifying both effective and non-effective mechanisms of professional development. Based on investigations on this

aspect, more effective PD programs can be developed and existing one can be improved. Moreover, the objectivity and comprehensiveness of the assessment of the PD programs was increased.

Research Questions and Hypotheses

I framed the research questions in relation to the problem and purpose of this study. The purpose of this quantitative correlational and descriptive study was to (a) determine and describe the teachers' perceptions about alignment of the PD program with the national standards and to (b) understand the potential connection between teachers' reported self-efficacy and attitudes with respect to the PD program and the teachers' perceived alignment of the program to the national standards. The following research questions guided this study:

RQ1: To what extent do teachers perceive that the School District B professional development program consisting of the Marzano causal teacher evaluation model and the iObservation tool training model aligns to the Learning Forward's standards for professional development?

RQ2: What is the extent of the relationship between the teachers' perception of self-efficacy and attitude toward the Marzano causal teacher evaluation and the iObservation tool training model professional development (PD), on the one hand, and the teachers' perception of the PD's alignment with Learning Forward's standards for professional development, on the other hand?

H_o2: There is no correlation between the teachers' perception of self-efficacy and attitude toward the Marzano causal teacher evaluation and the iObservation tool training model professional development (PD), on the one hand, and the teachers' perception of the PD's alignment with Learning Forward's standards for professional development, on the other hand.

H_a2: There is a significant correlation between the teachers' perception of self-efficacy and attitude toward the Marzano causal teacher evaluation and the iObservation tool training model professional development (PD), on the one hand, and the teachers' perception of the PD's alignment with Learning Forward's standards for professional development, on the other hand.

Review of the Literature

The purpose of this quantitative correlational and descriptive study was to (a) determine and describe the teachers' perceptions about alignment of the PD program with the national standards and to (b) understand the potential connection between teachers' reported self-efficacy and attitudes with respect to the PD program and the teachers' perceived alignment of the program to the national standards. To find relevant published research, I accessed many sources including peer-reviewed journals articles, various formulas of statistics, and other literature related to professional development, student achievement, and teacher self-efficacy. The databases included EBSCO and ProQuest. I also used the Google Scholar search engine. There are older seminal works, but of the 71 sources, 37 are articles published between 2014 and the present with at least two current

sources in each section of the literature review. The use of older sources indicated that educators have researched the topic over the decades, but the need for reform persisted.

The search terms used to identify the standards for professional development and the teachers' self-efficacy regarding professional development were vast. The terms included *No Child Left Behind*, *web-based professional development*, *student achievement*, *middle school*, *teachers*, *United States*, *education*, *self-efficacy*, *attitude*, *surveys*, *educational statistics*, *Race to the Top Act of 2011*, and various combinations of these terms. This literature review supported this study's research questions through examination of the problem over many years with effective professional development and teachers implementing the training to increase student achievement. In the literature review, there were 71 sources providing background of educational professional development and effectiveness of teachers in the classroom. Of these sources, 52% were dated 2014 to present. Due to the need to establish that the problem dated back to seminal works, the sources dated prior to 2014 were 48%. The sources were peer-reviewed articles, case studies, government publications, and educational statistics from a variety of sources. The literature review involved decades of the broader picture of the nature of professional development and how the teacher plays an important role in promoting student achievement.

The purpose of the literature review was to inform educational leaders, educators, and policymakers about the history of effective teacher professional development evaluation models such as the Marzano causal teacher evaluation model and the

iObservation tool (Learning Sciences International, 2012) training model, effective teaching to national standards, and student achievement in the continuum of educational reform. The literature review focused on social constructivist theories used throughout educational reforms including effective implementation of professional development.

Theoretical Foundation

This study adhered to the philosophical foundation of constructivism as the real-world focus needed to evaluate professional development programs. Almazroa and Al-Shamrani (2015) stated that teachers need experience-based knowledge when evaluating a professional development program that prepares the teacher to set higher standards including a structured approach to learning. Other researchers promoted constructivist theories, evaluated constructivist theories, and prepared to teach teachers with constructivist theories that have been effective in increasing student achievement (Auld & Morris, 2014; Ballou & Springer, 2015; Desimone & Garet, 2015). Filipe et al. (2015) found that the evaluation of professional development programs, emphasizing teaching constructivist problem-based solving approach, train and support teachers in strong pedagogical teaching styles through. The purpose of the study was to enhance the performance of the evaluated teachers (Filipe et al., 2015). Filipe et al. discovered the technology became a barrier in the pedagogical evaluation of the teachers.

According to Malik, Khurshid, Rehana, and Nazim (2013), Vygotsky was the father of social constructivism in educational practices. Malik et al. promoted Vygotsky's constructivism by supporting educational professional development programs that teach

students to learn by sharing each other's knowledge. Teachers collaborate to provide feedback about standardized training programs that utilize best teaching practices. One of the ways teachers may provide feedback is on certain valid surveys that help evaluate professional development programs (Smylie, 2014). Social constructivist methods and national standards prepare teachers to encourage students to interact with each other in small groups. While in the small groups, students construct solutions to real-life situations that help develop students' problem-solving skills (Smylie, 2014). A constructivist evaluator would gather data from a trained teacher who establishes a classroom environment that engages students in learning activities. The professional development program encourages the teacher to allow small groups of students to ask questions, analyze problems, and approach challenges based upon real-life situations. Collaborative learning, games, simulations, and technology are methods of social constructivism integrated into lessons allowing students to learn actively from each other. The pedagogy of small groups and collaboration are categories in national professional standards (Learning Forward the Professional Learning Association, 2015). These strategies promote national professional development standards categorized as learning communities, resources, and implementation.

Educators have supported the idea that professional development programs for teachers in public schools should train teachers to plan interactive, real-life lessons to increase student achievement (Chu, Tse, Loh, & Chow, 2011). Chu et al. (2011) supported seminal constructivist theorist Vygotsky's conceptual change approach fusing

graphics and mapping to increase student interaction when teaching. To promote conceptual change, Vygotsky (1978) explained that children's problem-solving and critical thinking skills develop beyond their level of cognitive skills by interacting in real-life experiences, especially when integrated with graphics. When evaluating professional development, the teaching of life skills will increase academic skills as students are able to record and account for life's experiences.

Web-Based PD and Alignment of Standards

The use of computers has aided in social constructivist teaching and evaluation processes. Huang, Liao, Huang, and Chen (2014) supported the evaluation of programs with computers, but teachers need continuous professional development in social constructivist research to help students use collaborative computer software. The teachers' learning curve on using computers will affect attitude and self-efficacy. Schunk and DiBenedetto (2016) stated that teacher self-efficacy is one of the most beneficial attributes within the classroom. Huang et al. explained that the professional development programs with national standards of learning design and outcomes taught with an integration of the computers, student collaboration, and online curriculum increased academic achievement.

Web-based training needs to be computer friendly. Hubbard and Levy (2016) evaluated programs in which teachers used software called computer-mediated social constructivist environment that allowed teachers and students to work at their own pace. The software encourages the teachers and students to interact with each other while also

allowing for individual learning environments. For example, iObservation is computer software that meets instructional and leadership national professional development standards by collecting, managing, and reporting data while still allowing differentiated teacher professional development to be effective in the classroom (Rafalski, 2015). Professional development programs that promote a social constructivist teaching strategy with the integration of computers give the learning community opportunities to brainstorm together in new ways. The brainstorming and social collaboration with the use of computers develops critical thinking by promoting interactive learning instead of relying on lecture and observation styles of instruction (Butler, 2013). When comparing interactive learning styles within professional development, Cohen, Horowitz, and Wolfe (2009) indicated that lecture and observation style instruction appeals only to 15% of the population, particularly to auditory learners. Dewey (1938) stressed the importance of teaching standards through experience to improve student outcomes and close the achievement gap between the high achievers and the low achievers. As a strong advocate of teacher professional development, Dewey stressed that training be grounded in real world applications to increase student achievement

Teachers have long sought educational reform and training in real-world applications. Educators such as Dewey (1938), Bloom (1956), Vygotsky (1978), and Piaget (1972), while researching the best effective teaching methods over time, created reform after reform. For example, in the 1970s, Piaget implemented an educational reform that emphasized students forming new knowledge based on previous experiences.

By the 1990s, Auld and Morris (2014) implemented one of the latest approaches to educational reform strategy that test scores provide accountability for student achievement. The educational reform of the 21st century combined the best of these reforms into the newest strategies for professional development.

Review of the Broader Problem

In the 21st century, a shift occurred from teaching rote academics to discovering the most effective professional development methods to increase student achievement. Witt and Ulmer (2010) studied the effects on middle school students. The experimental study used one control group as teachers taught by using the traditional professional development practice of rote, and a second group as the experimental group using memorization taught by middle school teachers who trained in real-life applications of constructivism. Witt and Ulmer reported that middle school students taught by trained teachers in constructivism were higher achievers than those taught in the traditional practice of rote memorization. Educators' research on teaching methods such as social constructivism had synthesized into the 21st-century educational reform (RTTT, 2011).

The ADA Education Reform Act of 2017 (ADA, 2017) provided each governor of each state in the United States with guidelines to determine how families, public schools, and charters will develop educational facilities in the coming years. The focus of the reform had been on teacher training of effective lessons and accountability to increase student achievement. Teachers need students to understand, synthesize, and apply curricula rather than memorize the facts as in the rote style of teaching (Edgar, 2012).

Edgar (2012) stated that students need to develop problem-solving skills. Also, the purpose of the student professional development programs support that memorizing curriculum demonstrates a student has proficient recall, but does not show whether the student understands and is able to apply the concept (Duncan & Redwine, 2019). By using a social constructivist approach, the teacher preparation program prepares teachers to assess students' demonstration of comprehension.

Professional development programs train teachers according to standards in assessment, curriculum, and accountability. At the end of the reform of the Race to the Top, Wright, Shields, Black, Banerjee, and Waxman (2018) researched the various educational training models. Wright et al. analyzed the relationship between the progress of the accountability of the model and the teachers' influence, attitude, and job satisfaction. The results of their study showed that student achievement plateaued and the teachers were not aware of their influence on the implementation of the professional development training models (Wright et al., 2018). The trained teacher should have flexibility to collect data from the students' recorded life experiences to assess students' strengths and weaknesses. In turn, administration can use all forms of collected data to provide administrative advice to teachers, parents, and student body. By using life experiences that are everyday events in students' lives, many public school leaders know that trained teachers influence daily decision-making by the applications of training standards in the school environment (Liu & Chen, 2010). Sahin and White (2015) completed a correlational study concerning the problem of the teachers' needs in a

professional learning environment. The strongest relationships between the teachers' needs and implementation of curriculum standards were the teachers needed adequate teacher resources and teacher recognition (Sahin & White, 2015). Administration was another stakeholder in the relationship of accountability for the teachers' training standards, learning environment, and documentation process of student achievement.

To support the learning environment, constructivist theorists, Zion and Mendelovici (2012) emphasized that a structured, linear social constructivist process should identify an appropriate question, collect data, and draw an evidence-based conclusion. Darling-Hammond (2015) studied educational programs across the nation and identified seven successful educational programs. The foundation of the success of student achievement prepared teachers well. As in an effective mathematics, science, or literacy lesson, the constructivist approach of the trained teachers will provide critical thinking simulations to improve student academic achievement (Shells, 2015). An example of training in Marzano is evaluating the teacher in a five-category scale from not using a teaching method to using an innovative method that allows students to construct, interact, synthesize, and analyze. As a result, teachers effectively employ how to teach daily activities, creating a learning environment that positively influences student academic achievement.

Reform Models of Professional Development

Educational reform models incorporate national professional teaching standards. The national professional teaching standards provide unacceptable, acceptable, and target

ratings for teaching in the areas of knowledge, experience, assessment, diversity, performance, and use of resources (DeLuca & Bellara, 2013). Students' standardized testing scores influenced the success of implementing the standards of professional development. Professional development standards assess categories in learning communities, resources, learning designs, outcomes, leadership, data, and implementation (Harrell-Williams, Sorto, Pierce, & Murphy, 2014). O'connor, Sanchez, Beach, and Bocian (2017) reported an increase in reading and mathematics scores from Grades K-8 when the teacher employed professional teaching standards and participated in professional development training. Teacher professional development has a strong influence on students in the classroom. Harris and Sass (2011) noted that the training of teachers in professional teaching standards had a direct causal effect on achievement in mathematics. In contrast, teachers who not trained effectively have a negative impact on student achievement. When considering the educational reform and teacher professional development, Tchoshanov (2011) indicated that a teacher well trained in content, knowledge and organized lessons increased middle school students' achievement by 10% over teachers not trained. Rothstein (2010) posited that the decline in the training of effective teachers caused a decline in the training of effective students. Researchers' findings show that effective teacher training has a direct effect on student achievement (Darling-Hammond, 2015). Therefore, the focus for educators is effective training, which includes teaching standards and effective professional development.

Professional development training includes an effective approach to teaching as well as teaching standards. Zion and Mendelovici (2012) recognized that the scientific approach supports the evidence-based conclusions about increasing student achievement. The scientific approach is a method that helps hands on learning and a logical approach to develop critical thinking skills. In the scientific method, students learn to synthesize, evaluate, and develop critical thinking skills. Bilgin (2006) asserted that scientifically approached skills increase student achievement and close the achievement gap. Teacher professional training programs may need to incorporate a constructivist, scientific approach to teaching to influence student achievement scores (Ladd, Clotfelter, & Holbein, 2015). Throughout all the reforms, the constructivist approach of hands on learning has been an influencing factor on learning.

Many studies such as Akers, (2016); Ballou and Springer, (2015); Chalmers and Gardiner, (2015) have focused on the investigation of effective teaching methods. Yucel and Habiyakare (2011) were strong social constructivists who emphasized that a multicultural approach to learning needed to increase academic achievement. Arbind (2012) explained that any new knowledge creates change, and the changes researched to prove that the new practices increase academic achievement. In the United States, 40 of the 50 states' departments of public education have required teachers to participate in effective professional development (Darling-Hammond & Snyder, 2015).

Findings from several studies, Egert, Fukkink, and Eckhardt (2018), Farley-Ripple, May, Karpyn, Tilley, and McDonough (2018), Garrett and Steinberg (2014) have

shown that comprehensive professional development training in a variety of best practices is necessary to increase student achievement. Academic achievement is the result and effective teaching is the process (Shapiro, 2011). Marzano developed the PD training model because of the 21st century educational reform. In Wilkins (2017) qualitative study, he discovered the Marzano model to include many of the successful educational theories and to be an effective framework in the professional development of teachers related to student achievement. Wilkin theoretical empirical and legal purpose of his study was to understand legal practice as one of the primary reasons to study about the teaching profession.

Need for Teacher Self-Efficacy in PD to Increase Student Achievement

In 2015, in review of the broader problem, Congress updated the No Child Left Behind Act and reauthorized the Elementary and Secondary Education Act as the Senate Bill 1177 - 114th The Every Student Achieves Act of 2015 (ESSA, 2015). Congress created the new Act and the Race to the Top Act of 2011 to meet not only students and parents' needs, but also local and national standards. In Congress reports, the law's initiatives included promoting career-readiness, updating the teacher work force, and allowing school districts to access federal funds while monitoring accountability for students.

Given the need for federal funds, the local school district in suburban New Jersey took the challenge of the Race to the Top Act of 2011 and decided to implement a new reformed system. Following the implementation of the reformed training system in some

form in the 50 states as well as in Canada, Australia, and in countries in Europe, Asia, and South America, student outcomes had improved and the achievement gap scores narrowed (Putnam, Frederick, & Snellman, 2012). To streamline the implementation, the new training system included a computerized matrix of best practices. The computerized matrix helped supervisors monitor teachers' applications of best teaching practices. In addition, the teachers can self-monitor and reflect on best teaching practices based on Learning Forward (Rockoff, Jacob, Kane, & Staiger, 2008). Self-monitoring and reflecting on best teacher practices becomes the routine of an effective teacher.

In web-based professional development programs, there are correlational relationships between the implementation of the professional development and the teachers. Ladd et al., (2015) explained that there is evidence that effective teachers improving student achievement have had professional development based on research and best practices building confidence and self-efficacy. Over decades, there have been diverse reform models. Today, finding the proper professional development to train the effective teacher according to national standards and effective implementation to build teacher self-efficacy should begin to improve student academic achievement (Darling-Hammond, 2015). Accordingly, the search for effective professional development is an ongoing process.

The failure to increase student academic achievement is an ongoing problem in the United States. As measured by PISA of Organization for Economic Co-operation and Development [OECD] (2014), U.S. students' scores have been falling behind those

students in other countries. Students' problem-solving skills and critical thinking skills have been decaying (Rothstein, 2010). In the educational environment of NCLB, critical thinking involves dispositions and cognitive skills. Over 50 years ago, Bloom (1956) researched that teachers need to teach levels of critical thinking as a higher order of cognitive thinking which is necessary for student achievement. Educators have considered many educational reforms over the decades to address the failure of improving academic student achievement.

Wijnia, Loyens, and Rikers, (2019) wrote the book on the strengths and weaknesses of various problem based learning techniques. In the book, research supported that students' achievement depends on the confidence of the teacher to improve students' achievement as measured by standardized testing. The training of teachers in using PD in this District B began in September 2012 and is an ongoing school district initiative. Harris and Sass (2011) explained that teachers with effective professional development training have the most positive impact on student achievement. School districts implemented and studied, in many U.S. districts including Cincinnati, Ohio; Reno, Nevada; Coventry, Rhode Island; and Los Angeles, California, the Marzano framework for effective teaching. One of the leading researchers of student achievement, Marzano and Toth (2017) categorized the best practices of teachers, created a computerized monitoring system, and implemented a model to train effective teachers. Through these best practices of the Marzano training model, educators believed that student achievement scores would increase. A few studies revealed that teachers, who

trained in the Marzano framework for effective teaching, were effective in the increase in student achievement (Patrikakou, Ockerman, & Hollenbeck, 2016). Rockoff et al. (2008) recommended that school districts should invest in trained, effective teachers because student achievement scores could increase as students learn from these trained teachers. As a result, the District B invested in the PD.

Marzano, Carbaugh, Rutherford, and Toth (2014) categorized teachers as most effective, effective, and ineffective. A teacher classified as "most effective" (i.e., at the 98th percentile in terms of his or her pedagogical skill) was expected to produce student achievement 54 percentile points higher than the achievement produced by a teacher classified as least effective (Akers, 2016). Over the decades, many educators and researchers studied the best educational techniques to increase student achievement. The lists of a few seminal theorists such as Dewey's (1938) model of learning by doing, and Vygotsky's (1978) social development model, are compared with Danielson's (2015) more recent framework for teaching model, and Marzano's (2011) framework for teaching. All the previous mentioned authors in this section have published works that documented effective methods of teaching to improve student academic achievement.

When evaluating the ongoing training, the self-efficacy of the teacher is an important concept to consider. Seibert, Sargent, Kraimer, and Kiazad, (2015) established a direct correlation between the development of a teacher and self-efficacy. The teacher that has strong self-efficacy becomes an effective leader in making the difference in student achievement. Swain (2015) completed action research involving middle school

teachers and online professional development. Swain posited that a key element of the professional development provides sufficient online training for the teacher to develop self-efficacy to feel comfortable teaching in the classroom. In addition to Marzano training meeting national standards, the method of training needs to develop a comfort level in web-based training for the teacher to use the professional development.

Since 2009, the national standards committee revised teacher training to increase student achievement. The Learning Forward created guidelines for teachers' standards to improve student achievement (Harris & Sass, 2011). Putney and Robert (2011) endorsed Marzano's model as an effective model for professional development for teachers to increase student achievement (Learning Forward the Professional Learning Association, 2015). Haystead and Marzano (2009) provided meta-analysis data for the relationship of professionally trained teachers and the increase in student achievement. Garrett and Steinberg (2014) incorporated the Marzano model by discussing the student achievement and Loertscher and Marzano (2010) wrote about excellence in teaching. Both articles stressed the need for training teachers in NSDC standards to improve student achievement.

Implications

At the beginning of 2017, Congress passed changes to the ADA Education Reform Act of 2017 (ADA, 2017). My study implications occurred under the timeframe of the Race to the Top Act because the New Jersey Department of Education newest mandate reform ADA Educational Reform Act of 2017 involving changes to the Every

Student Succeeds Act 2015 (ESSA, 2015) did not implement and enforce by in District B until September 2018. As a result of this study, the project focused on positive social change implications, strengths, and weaknesses of the alignment of the PD national standards training in respect to teacher self-efficacy and attitude, if any, and create future training to enhance and correct accordingly. For students to compete in the 21st-century global workforce, teachers need many web-based professional development resources to help students develop skills for critical thinking and problem solving (Ruano et al., 2016). Based on my findings from the data, I have analyzed the data to determine if the PD meets national standards and infuses training in self-efficacy and attitude.

Summary

The problem is that District B identified the need to implement the Marzano causal teacher evaluation model and the iObservation tool training model program (PD) due to the NJ regulations and student achievement concerns. However, District B does not know if (a) the implemented PD description aligned with the known national standards for PD effectiveness; and (b) to what extent, if any, of the teachers' levels of self-efficacy and attitudes toward the PD program with respect to the PD alignment to national standards.

The purpose of this quantitative correlational and descriptive study is to (a) determine and describe the teachers' perceptions about alignment of the PD program with the national standards and (b) understand the potential connection between teachers' reported self-efficacy and attitudes with respect to the PD program and the teachers'

perceived alignment of the program to the national standards. Through this quantitative descriptive, correlational research study, I began to research the standards and correlation of teachers' self-efficacy during the implementation of a professional development program.

The school district originally implemented the Marzano causal teacher evaluation model and the iObservation tool (Learning Sciences International, 2012) training model in the school year 2012-2013 to train teachers to increase academic achievement. In this study, the key points established the need for effective professional development aligned with national standards with emphasis on teacher efficacy. Many researchers (Darling-Hammond & Snyder, 2015; Feng & Sass, 2016; Gagnon, Hall, & Marion, 2016) stated that professional development and teacher efficacy beliefs have a strong influence within the classroom. The scholarship and discernment correlated in this study may provide insight to administrators and teachers to reconnoiter their own uniform professional development practices in their own districts. In addition, teachers play an important role in student achievement and demonstrate self-efficacy and positive attitude to increase student achievement and influence the outcomes. The literature review focused on social constructivist theories as used throughout educational reforms including effective implementation of professional development.

The overview of the rest of the study continued in section 2 on the methodology of data collection of the teachers' perceptions about the professional development based on Learning Forward's standards (NSDC, 2007) and any correlation of teacher efficacy

and the implementation of the PD. Empirical research over the years indicated that teachers who meet the teaching standards set by the National Board for Professional Teaching Standards (2007) were effective in promoting academic achievement (Ladd et al., 2015). Keren and Lewis (2014) explained that data analysis should support the research ideas. After a thorough literature review, I wrote section 3 supporting my study project involving information about effective national standardized professional development and the effects of teacher self-efficacy. Followed by section 4, I reflect and conclude the project study's strengths, limitations, alternative approaches, and reflection.

Section 2: The Methodology

Research Design and Approach

The purpose of this quantitative correlational and descriptive study was to (a) determine and describe the teachers' perceptions about alignment of the PD program with the national standards and to (b) understand the potential connection between teachers' reported self-efficacy and attitudes with respect to the PD program and the teachers' perceived alignment of the program to the national standards. When choosing the quantitative method, there are four designs: experimental, quasi-experimental, descriptive, and correlational. The experimental design was not applicable in my study because I did not have control over the assignment of participants to the experimental groups (the independent variable). Creswell (2017) stated that the experimental, fundamental design is to introduce a specific treatment and measure the outcome. Because I did not have control over the assignments of the participants, I was not able to introduce the treatment to a control and non-control group of participants to measure the outcome.

In the same respect, I was not able to do a quasi-experimental study because I was not interested in comparing different groups of students assigned to different teachers based on some preexisting independent variables or achievement scores. Ary, Jacobs, Irvine, and Walker (2018) stated that use of quasi-experimental design requires manipulation of an independent variable. The choice of causal design was not appropriate because I did not want to manipulate variables. I used a correlational design to describe

and understand relationships between the variables of teachers' perceptions of national standards and self-efficacy within a professional development program.

I chose a descriptive correlational quantitative design because the quantitative portions of my study allowed me to describe the independent variables and the correlational portion allowed me to study the relationship between the independent and dependent variables. The inventory and survey results supported my descriptive correlational design. The correlational design allowed the measurement of two or more variables to establish a relationship (see Creswell, 2017). The correlational design allows the comparison of many dependent and independent variables. Even though there is no causal relationship (the independent variable causes the result of the occurrences of the dependent variable), a researcher may establish a correlational relationship (Hammond, 2018). Meyers, Gamst, and Guarino (2016) characterized the correlational design as a way to collect numerical data, conduct inferential statistics, and establish a relationship between variables. Describing and correlating the SAI standards assessment inventory results with the SAI2 self-efficacy survey results lend credibly to many inferred relationships.

Setting and Sample

The setting for this study was a suburban middle school in District B in a Northeastern state that employed 231 middle school teachers. The residents established the first major district building in 1948 (see Horner, 2015). The school district is in a suburban area of New Jersey with a student population of 71.1% White, 14.4% African-

American, 8.6% Black, and 5% other students (ProximityOne, 2017). In District B, the student dropout rate for Grades K-9 is less than 3% and for Grades 9-12 is less than 8% (Local School Directory, 2017). The average household income is $101,327 (ProximityOne, 2017). The 231 middle school teachers were my population. The certified teachers' experience ranged from 3 years to 30 years.

Blackwell (2014) stated that the sample should be determined by the number of participants depending on the research design, type of analysis, independent variables, avoidance of bias, and the effect of generalized findings. The sample consisted of 80 teachers out of 231 who returned the surveys. The sample was one of purposive and convenience because Middle School 2 administration already hired the certified teachers and assigned students before I collected the data. After I received permission from Learning Forward for the self-efficacy and attitude surveys, I e-mailed the links of the SAI and SAI2 inventories to the teachers. I collected teacher data to compare the professional development standards with national teaching standards and to evaluate the web-based portion of the professional development. I collected 80 teachers' responses to the SAI questionnaire and SAI2 survey to create a margin of error of 12%.

In calculating the sample size, I used the G*Power 3.0.10 software using the statistical test of correlation with a test family of exact and a power analysis of sensitivity to compute given alpha, power, and sample size. I used parameters with a two-tailed test, effect direction of $r >= p$, α err probability of .05, power (1-β) of .78, sample size of 80, and a correlation of null hypothesis of 0. My output parameters yielded a lower critical of

-.219901, upper critical of .219901, and a medium effect size of .299862. The effect size of .3 was medium to estimate the correlation in the given population. If I sampled a population of 80 people, I would have a significance of 78% and only a 12% chance of not having significance (see Tatsuoka, 2014). New teachers hired after the professional development training were excluded from the study. Because there are 231 teachers employed in Middle School 2, I chose convenience sampling and inclusion criteria were any middles school teacher employed during the year that the PD was implemented (see Local School Directory, 2017). The request to complete the inventory and survey were e-mailed to all teachers and there were 80 teachers who responded. Those teachers were employed at least 1 year, were male or female, and taught different curricula within Middle School 2.

Instrumentation and Materials

To collect data from the teachers, I used Google Gmail, the Learning Forward Assessment Inventory, and the Self-Efficacy and Attitude Survey. I received permission from District B to use Google online to perform the survey. District B permits staff and students to use Google products throughout the district without blocking from computer security software. Therefore, using Google was more compatible with District B's network than other online survey tool software. Lalor, Lorenzi, and Rami (2014) found online survey tools to be appropriate, reliable, and confidential when electronically collecting data. Like District B professional development training, Lalor et al. focused on collecting data using online survey tools on constructivist and reflective teaching

practices analogous to the Marzano model of constructivist and reflective teaching practices. I obtained data about the professional development process using 60 Likert-style questions from the SAI and the 42 Likert-style questions from the survey of teachers' self-efficacy regarding teachers' perceptions of satisfaction, teacher learning, organization, pedagogy, student learning, and change in teaching staff attitude. Paypay (2011) stated that an assessment inventory is an economical and fast way to collect data.

I used an inventory and a survey to collect data on effective teaching methods and to describe professional teaching standards. I chose the National School Development Council's Standards Assessment Inventory (Southwest Educational Development Laboratory [SEDL], 2003) now known as Learning Forward's Standard Assessment Inventory (SAI; Learning Forward the Professional Learning Association, 2015). Teachers participated in the Marzano's causal teacher evaluation model and the iObservation tool training model (Learning Sciences International, 2012) since the beginning of the school year in September 2012. Fullan and Hargreaves (2016) compiled case studies using the SAI to establish that effective professional development training for teachers results in increased student achievement.

Learning Forward Inventory (SAI)

Using the SAI published by Learning Forward, the District B Middle School 2 teachers assessed the quality of professional learning of the PD by comparing the PD to national standards. Koellner and Jacobs (2015) evaluated and distinguished models of professional development that met national professional development standards and

found that the professional development plans that apply the national professional development standards within the school environment influence student achievement. Kramarski and Michalsky (2015) stated that teachers trained in national standard professional development curriculum content and technology pedagogy create a student problem-solving environment that is effective in student achievement. Balch and Springer (2015) evaluated a professional development program that focused on rewards and rewarded the teachers who had the greatest increase in students' math and literacy scores. Balch and Springer's findings were that students' scores increased only after the first year of implementation of the teacher training. The teacher reward was not enough to sustain annual growth. To continue annually, the comprehensive training of teachers needed to include national standards and self-efficacy needs (Darling-Hammond, 2015). As a result, teachers need training on national standards because the trained teacher is one of the most influential factors within the classroom affecting student achievement.

The Learning Forward standards have shown those teachers who practice effective teaching will increase student achievement (Putney & Robert, 2011). Research has shown that teachers who feel comfortable with web-based training have been effective in the classroom (Filipe et al., 2015). Blazar (2015) stated that teachers implementing best practices in the classroom are effective in increasing student achievement. The SAI helped me to organize the effective professional development standards used in training and helped me to describe the important effect on student achievement.

The Southwest Educational Development Laboratory (SEDL), an educational organization, monitors the National School Development Standards. The SEDL integrates policy, research, and practice to improve learner outcomes, and it supports the teachers' use of the SAI (Learning Forward the Professional Learning Association, 2015). In determining the reliability of the Learning Forward Assessment Inventory (SAI), the National School Development Council determined the Cronbach's alpha for reliability was consistent and high with an alpha coefficient of .98 (Learning Forward the Professional Learning Association, 2015). Therefore, my choice to use the SAI to measure the quality of the training was because of the SEDL publication of the reliability of the SAI. The SAI assessed teachers' perceptions of a school's performance in broad categories of 12 teaching standards regarding the effectiveness of professional development toward academic achievement. The teachers' results from the assessment inventory provided data about the web-based Marzano training and its alignment with national standards.

In this study, the descriptive element included the standard assessment inventory (SAI). Roy and Killion (2011) used the same standard assessment inventory and documented that the SAI results provided findings of effective professional development in teaching and learning. When the District B Middle School 2 teachers completed the SAI, they rated the PD based on NSDC, now internationally called Learning Forward's standards (Learning Sciences International, 2012). Learning Forward supports a publication called Tools for Schools. Within this publication, Armstrong (2011) indicated

that SAI results based on national standards would determine whether the professional development aligns with national standards.

The Learning Forward Association designed the assessment inventory to collect data to determine whether professional development meets the previous NSDC standards as well as the new international standards. The teachers completed the National School Development Council's Standards Assessment Inventory (SAI) now known as Learning Forward's SAI, which provided an instrument for school districts to assess the quality of professional learning (see Learning Forward the Professional Learning Association, 2015).

In 2003, the committee of the Learning Forward Association formerly the National Staff Development Council created the SAI assessment inventory used in this study. Teachers and experts from the National Standards Committee considered the SAI a valid instrument, as "the inventory [was] confirmed for content validity through several iterations of item endorsement by teachers and four experts NSCD selected" (Vescio, Ross, & Adams, 2008, p. 85). The SEDL developed the assessment inventory, analysis, reliability, and validity of the instrument. The construct reliability of the 60 questions was consistent in three pilot studies conducted by the SEDL. The overall internal consistency reliability of the assessment inventory showed an alpha coefficient of .98 (Learning Forward the Professional Learning Association, 2015). Therefore, the SAI is a reliable instrument.

The SAI ordinal data reflected congruence with national standards after I calculated the statistical means in each of the categories. To collect data to determine how effective the training was for the teachers and its effects on student achievement, the SAI used to categorize the teachers' perception of the training as aligned with Learning Forward professional development standards. Marzano causal teacher evaluation model and the iObservation tool (Learning Sciences International, 2012) training model attempted to align professional development standards with Learning Forward's standards (Learning Forward the Professional Learning Association, 2015).

Kao, Tsai, and Shih Self-Efficacy and Attitude Survey

The second instrument was a survey. I e-mailed the second survey (SAI2)**,** Survey to Measure Self-efficacy and Attitudes toward Web-based Professional Development (Kao et al., 2014) using the Google Legend. After the 42 Likert style question SAI2 results, the ordinal data reflected congruence with teachers' self-efficacy and attitude. The Kao et al. (2014) study reported the overall Cronbach alpha values ranged from 0.92 to 0.85. The questions regarding the usefulness of the professional development web-based training Cronbach alpha was .92. The Cronbach alpha measures how closely related the questions in the survey related to each other. The Cronbach alpha regarding questions about affection was .87, anxiety was .88, and behavior was .93 (Kao et al., 2014). I have all raw data in MS Excel files and concerned reviewers may the files.

Data Collection and Analysis

Once teachers consented to participate in the assessment inventory, I included the SAI and SAI2 links after the consent form in the e-mail. I collected a cross-section of perspectives from the middle school teachers. With data collected from Learning Forward, I explored a relationship regarding the School District B professional development program consisting of the Marzano causal teacher evaluation model and the iObservation tool training model (Learning Sciences International, 2012) and an alignment to the Learning Forward's Standards for professional development. If the Marzano causal teacher evaluation model and iObservation tool (PD) aligned with national professional development standards, then a researcher may explore the relationship to teachers' effectiveness and student achievement.

SAI Data Collection

When organizing and describing the data from teachers regarding training, I used a scale of ordinal data from a Likert-style survey**.** From all the teachers who received the Marzano training; I measured the assessment inventory results by ordinal variables reflecting responses of the professional development as weak to strong in alignment with national standards. The survey consisted of 60 multiple-choice questions. Using a 5-point Likert-type scale, teachers answered 60 questions concerning content, context, and process of professional development regarding national standards.

SAI has the content, process, and context categorized in subscales within the SAI. The content data included the curriculum, communities, effective teaching, and

organizations. The process data included the design of training, evaluation, support, resources, and research; and the context data involve the quality of teaching leadership, equity, evaluation, values, and support within the educational environment (see Table 2).

Table 2

Survey Categories of Context, Process, and Content

Context	Process	Content
Communities	Data	Equity
Educational leadership	Evaluation	Quality
resources	Research	Environmental support
	Design	
	Learning collaboration	

Note. Adapted from Learning Forward. "Standards for Professional Development: Quick Reference Guide." *Learning Forward*. N.p., n.d. Web. 24 June 2015. Retrieved from http://learningforward.org/docs/pdf/standardsreferenceguide.pdf. Adapted with permission.

The groups of SAI inventory scores are three broad categories of 12 teaching standards concerning the effectiveness of professional development, which I used for descriptive statistics to support the first research question. After categorizing the results, I analyzed the SAI findings of the 80 teachers' perceptions into strengths and weaknesses of professional development by entering the teacher survey information into IBM SPSS Statistics for Windows, version 23 (IBM Corp., Armonk, N.Y., USA).

Because of the professional developers' desire to increase student achievement, the strengths of the professional development program may complement the skills necessary to increase student achievement. Therefore, once I received the statistics from

the online survey, I calculated descriptive statistics for each item comprising the SAI in response to the research questions. Creswell (2013) stated that descriptive statistics provided information about the central tendency, variation, confidence intervals, and effect sizes.

SAI2 Data Collection

The second survey (SAI2) helped to correlate the data to establish a relationship of the teachers' self-efficacy and attitude with the process of aligning the PD to national standards. I collected the ordinal dependent variables from SAI2 teachers' data from August through the end of September 2016. Kao et al. (2014) developed the survey of measure self-efficacy and attitudes of web-based professional development. Since PD is web-based, the self-efficacy survey measures the comfortability of teachers using the Marzano evaluation tool online. The second part of the self-efficacy survey measured the attitude of the teachers based on the web-based training research of Kao et al. (2014) research.

The SAI2 provided the information for the correlational analysis to support my second research question. I reported the data in Microsoft Excel and imported into IBM SPSS Statistics for Windows, version 23 (IBM Corp., Armonk, N.Y., USA) in the data analysis paragraphs. By using Pearson Correlated Product Moment, calculations to help answer the second research question if there was a relationship between the teachers' self-efficacy and attitude and the PD alignment with national standards.

Assumptions, Limitations, Scope and Delimitations

The assumptions in this study are beliefs to be common knowledge to the public. Studies generalize assumptions to the study's population. The following is a list of assumptions pertaining to this study.

- With regard to integrity, I assumed that the teacher participants answered the questionnaire and survey independently and truthfully.
- With respect to homogeneity, I assumed the 80 participants are a fair representative sample of the population.
- By e-mailing the links to the teacher participants, I assumed that there was a level of competency to open the link and understand how to use a Likert style scale.
- By law, New Jersey requires teachers to be highly qualified with a New Jersey license to teach their specific content curriculum (NCLB, 2002), and I assumed that the teacher participants understood how appropriately to answer the professional development questions and knowledge of national standards.
- I assumed that the teachers had sufficient time allocated to train in the professional development.

Limitations of a doctoral study are weaknesses in the study that may occur due to lack of finances or control over the environment. A limitation may be a normal restriction that may not affect the outcomes. The following are limitations within this doctoral study.

- The learning curve of teachers are different on web-based professional development and teachers may not have equal access to working technology.
- The study was limited to Middle School 2 in District B in the state of New Jersey.
- The teachers' assessment inventory is limited to the Learning Forward 12 standards assessing the quality of the professional development.
- Educators consider individual teaching styles and level of experience as limitations (Louws, Meirink, van Veen, & van Driel, 2017). This study did not consider these demographic variables within the study.

The scope of this study was specific to the participants of the one Middle School 2 in District B in New Jersey. The sample size of 80 teachers was a G*power of 78% which was sufficient to generalize the findings to other teacher populations in other school districts. Blackwell (2014) stated that the sample should have enough number of participants determined by the research design, type of analysis, independent variables, avoidance of bias, and the effect of generalized findings. District B is the third largest school district in New Jersey. The certified teachers range from 3 years' experience to 30 years' experience.

Under the scope of the study, the variables must align with the problem, the purpose, and research questions. In October 2012, all the teachers began the PD. The independent variable is the middle school group of the teachers' responses to the SAI. For this study, the same teachers completed two different questionnaires, SAI and SAI2.

Therefore, the independent variables are categorical in the Forward Learning Survey (SAI). The teachers' responses in the self-efficacy and attitude survey (SAI2) are dependent variables.

The scope defines my delimitations. In this study, I delimited the choices by my two research questions, my focus on using the survey instruments, the constructivist theories, and population. I delimited bias of my study's results because I did not categorize the teachers by race and gender. Although this study's participants were 80 middle school teachers, the findings should be of particular interest to all teachers. The individual teaching styles and level of experience are not in this study, and so I cautiously need to generalize the results of the study. The participants responded to an inventory and survey regarding standards of professional development and self-efficacy.

Protection of Participants Rights

When I collected data from the middle school teachers, teachers remained anonymous and I did not connect the data to any individual named teacher. Before collecting any data, I received permission from the School District through the implementation of Walden University Data Use Agreement form. Accordingly, I included the document the IRB application (IRB approval number 08-11-16-0263375) to remain in compliance with HIPPA and FERPA regulations. IRB ensures the protection of human rights in research and collection of data (Maloney, 2012). Participating schools' policies and Walden University Institutional Review Board require the safeguard of all

stakeholders' rights. After the publication of the study, I will secure and then destroy all 5 year archived data.

When providing confidentiality, I assigned the Middle School 2 groups numeric codes for teachers. I did not use in this study the names of the school, staff, and administrators. I secured the data collected from NJASK and results of the SAI on a password-protected computer. I was the only one with the password and access to the data. Maloney (2012) published a guide on federal regulations regarding research and humans. According to Maloney, researchers should keep collected data for three years after the completed research, and then I destroy the data.

Data Analysis Results

The descriptive analysis helped to answer the first research question to what extent, if any, does the School District B professional development program consisting of the Marzano causal teacher evaluation model and the iObservation tool training model align to the Learning Forward's standards for professional development reported by teachers. To summarize, once I organized the data using into IBM SPSS Statistics for Windows, version 23 (IBM Corp., Armonk, N.Y., USA) with descriptive statistics, the analysis reflected that the teachers with the highest means from the SAI had the strongest perception of satisfaction and demonstrated the strongest attributes of the Marzano professional development. I chose the genre of the quantitative descriptive correlational research study to describe the standards of an effective professional development and

correlate the most important facets of self-efficacy and attitude in regards to professional developments standards.

Accordingly, I included the descriptive statistics to help summarize each SAI Likert response into categories (see Table 3). These descriptive statistics included the mean scores and standard deviations of educators' responses from SAI. Descriptive analysis allows interpretation based on the statistical data to help answer the first research question, if the teachers' perceived the PD aligned with national standards.

Table 3

Questions Categorized in Context, Process, and Content

Question Categories	Context	Process	Content
Learning communities	9,29,32,34,56		
Leadership	1,10,18,45,48,		
Resources	2,11,19,35,49		
Data-driven		12,26,39,46,50	
Evaluation		3,13,20,30,51	
Research-based		4,14,21,36,41	
Design		15,22,38,52,57	
Learning		5,16,27,42, 53	
Collaboration		6,23,28,43,58	
Equity			24,25,54,60
Quality teaching			7,17,60
Family involvement			8.31.40.47,55

Note: Adapted from Learning Forward. "Standards for Professional Development: Quick Reference Guide." L*earning Forward*. N.p., n.d. Web. 24 June 2015. Retrieved from http://learningforward.org/docs/pdf/standardsreferenceguide.pdf. Adapted with permission. Data analysis from Learning Forward Standard Assessment Inventory results.

SAI Results

I analyzed the teachers' responses that the SAI inventoried regarding the alignment of the PD with 12 National School Professional Development Standards. When analyzing the standards of process, specific questions related to data-driven, evaluation, research-based, design, learning, and collaboration. Within the last category of standards, content, there were specific questions related to equity, quality of teaching, and family involvement. Using descriptive statistics, the results implied that the teachers perceived the Marzano causal teacher evaluation model and the iObservation tool training model to be effective and aligned with the National School Development Standards. The teachers' perceived the answers to the SAI about the Marzano training, for the most part, to be satisfactory and beyond with regard to alignment with national standards.

The 12 categories of national professional standards resulted in a mean score range of 3.2050 to 4.1175 (see Table 4). The teachers' perception of PD standards, using a Likert style scale (1-never to 5-always), ranged from sometimes (score of 3) to always (score of 5) with respect that the PD aligned with all national standards. The standard with the largest teacher mean of satisfaction was leadership within the content standards category with a score of 4.1175. Within the leadership standards, the teachers strongly perceived that the setting or context area of professional development supported changes to bring about the desired results. Within the context area of national standards, the 80 teachers' mean score indicated that all agreed upon some form of change within teachers' learning communities, leadership, and resources.

Table 4

Learning Forward Standard Assessment Inventory Strong Satisfaction Descriptive Statistics

	N	Min	Max	Mean	Standard deviation	Variance	Skewness stat	Kurtosis stat
Learning Communities	80	2.40	3.80	3.338	.252	.063	-1.960	5.74
Leadership	80	2.60	4.60	4.118	.491	.241	-.990	0.94
Design	80	2.60	4.40	3.530	.391	.153	-.273	0.40
Learning	80	1.60	4.00	3.205	.405	.164	-2.333	8.29
Collaboration	80	2.20	4.20	3.518	.698	.487	-.423	-1.49
Valid N	80							

Note. Adapted from Learning Forward. "Standards for Professional Development: Quick Reference Guide." *Learning Forward*. N.p., n.d. Web. 24 June 2015. Retrieved from http://learningforward.org/docs/pdf/standardsreferenceguide.pdf. Adapted with permission.

The most favorable teachers' response (95% of the teachers) was in the context area when the survey topics related to the administrator's leadership style, mutual respect for decision-making, and interaction with the teachers. Kasemsap (2015) studied the problem concerned with teachers' behaviors of using technology. Kasemsap's sole purpose of his study was to seek training strategies to improve learners' technology behaviors. Kasemsap discovered one strategy to emphasize to his participants was that the web-based professional development offered more context benefits for the teachers because of availability and ease of use. The availability and ease of use in my study resulted in a satisfactory standard, but the standard deviation was high, indicating that the Middle School 2 teachers struggled with this area of context standards.

The lowest satisfaction score was the learning standard with a mean of 3.2050 using a scale of 1 (never) to 5 (always). Teachers answered questions about the process of professional development. The process standards involved the accountability toward data driven evaluations, research based design, and learning and collaboration with colleagues. Even though the process standards scored a satisfactory mean of 3.2050, 51% of the teachers (scores below a satisfactory of 3) had trouble using data standards to assess students' learning needs. In addition, the collaboration standard had an average mean satisfaction score of 3.5175 with the most inconsistency in responses, .69770 standard deviation. Even though the average teacher perceived scores aligned with every aspect of the PD national standards, 55 of the participants struggled with the standards of collaboration with colleagues and 40 of the participants experienced trouble with accountability of monitoring student progress.

SAI2 Results

Continuing with the rest of the analysis, the correlational analysis of the data from the self-efficacy and attitude survey helped to answer the second research question. What is the extent of the relationship between the teachers' perception of self-efficacy and attitude toward the Marzano causal teacher evaluation and the iObservation tool training model professional development (PD), on the one hand, and the teachers' perception of the PD's alignment with Learning Forward's standards for professional development, on the other hand. In my analysis, I found significant correlations. My conclusions based on

the results of my analysis proved to reject the null hypothesis. The hypothesis was as follows.

H_0: There is no correlation between the teachers' perception of self-efficacy and attitude toward the Marzano causal teacher evaluation and the iObservation tool training model professional development (PD), on the one hand, and the teachers' perception of the PD's alignment with Learning Forward's standards for professional development, on the other hand.

H_a: There is a correlation between the teachers' perception of self-efficacy and attitude toward the Marzano causal teacher evaluation and the iObservation tool training model professional development (PD), on the one hand, and the teachers' perception of the PD's alignment with Learning Forward's standards for professional development, on the other hand.

I correlated the SAI2 (self-efficacy and attitude) survey data with the individual scores from the SAI inventory for the individual participants. I used into IBM SPSS Statistics for Windows, version 23 (IBM Corp., Armonk, N.Y., USA) and Pearson correlation to calculate if there was a relationship between the variables (See Table 5). Product moment correlation is another name for Pearson correlation that is applicable for the metric variables. The dependent metric, ordinal variables used in this study involved the statistical relationship between the individual scores from the SAI2 self-efficacy and attitudes with the individual independent variables from SAI. As the data points pattern in

a linear direction, the correlation was positive. If the individual variable's value increased while the other variable decreased, then the correlation was negative.

Table 5

Correlation of the Teachers' Self-Efficacy and Attitudes

Variables	Usefulness	Ease of use	Affection	Anxiety*	Behavior
Applying self-efficacy (ASE)	0.64**	0.53**	0.02	0.58	0.49**
Interaction self-efficacy (ISE)	0.42**	0.55**	0.57**	0.30**	0.52**
General self-efficacy (GSE)	0.18**	0.35**	0.24**	0.27**	0.25**

Note. *a low coefficient indicates more anxiety. **$p < .01$.

The Table 5 reflects any correlation leading to an understanding of the potential connection between teachers' reported self-efficacy and attitudes with respect to the PD program and the teachers' perceived alignment of the program to the national standards.

The teachers' SAI2 self-efficacy answers provided the confidence level of what the teachers have learned in the web-based professional development. A number greater than zero is a positive correlation. A number less than zero is a negative correlation. All the teachers' responses of self-efficacy and attitude scored a positive correlation. According to Uttl, White, and Gonzalez (2017) the Pearson coefficient scores of absolute value with a correlation range of $r = (.001 - .19)$, $p < .01$ are very weak, $r = (.20 - .39)$, $p < .01$are weak, $r = (.40 - .59)$, $p < .01$ are moderate, $r = (.60 - .79)$, $p < .01$ are strong, and $r = (.8 - 1.0)$, $p < .01$ are very strong. When interpreting the correlation factor of anxiety, a

low coefficient indicates that there is a small chance of a relationship that the teacher had anxiety toward the professional development.

When analyzing the SAI2 data, the Pearson correlation ranged from r (80) = .02, $p < .01$ to r (80) = .64, $p < .01$. The Pearson correlation less than r (80) = .39, $p < .01$, (applying self-efficacy in the area of affection, interaction self-efficacy in the area of anxiety, and general self-efficacy in the area of usefulness, ease of use, affection, anxiety, behavior), have a weak to very weak relationship with the teachers' perception of the PD training. Therefore, the teachers' confidence level in these areas of applying self-efficacy, interaction self-efficacy, and general self-efficacy had a weak relationship in how the teachers perceived the PD national standards.

However, the other categories of self-efficacy and attitude Pearson correlations imply that there is a moderate to strong relationship between the teachers' perception of the self-efficacy and attitude with respect to the PD national standards and training. When teachers applied self-efficacy within the classroom, there is a strong relationship of a Pearson correlation (r (80) = .64, $p < .01$) of teachers' usefulness, which may have had a strong relationship to the teachers' responses about the national standards of the PD. The applied self-efficacy in the areas of ease of use (r (80) =.53, $p < .01$), anxiety (r (80) =.58, $p < .01$) and behavior (r (80) = .49, $p < .01$) indicates a moderate relationship with the PD national standards and training. The interaction self-efficacy moderate relationship is in the areas of usefulness (r (80) =.42, $p < .01$), ease of use (r (80) = .55, $r < .01$), affection (r (80) = .57, $p < .01$), and behavior (r (80) =.52, $p < .01$).

My findings were that the teachers' perception of the PD aligned with national standards and the teachers' perceptions of self-efficacy and attitude correlated with how the teachers perceived the PD national standards. Since the applied self-efficacy was moderate correlation in usefulness, ease of use, affection, and behavior toward the PD, there is a relationship with how the teachers perceived the PD national standards. The teachers had a moderate level of anxiety with the web-based PD, ease of use of the web-based PD, how useful the PD national standards are within the classroom, the affection (favorable or not) toward the PD, and behavior all influenced the standards of the PD and training. The interaction self-efficacy measured teachers' ability to interact with each other online. The moderate scores may indicate a relationship with how the teachers responded to the PD standards. The higher the self-efficacy and stronger the teacher attitude, the stronger the positive influence on scoring the PD alignment with national standards. Given that the Pearson correlation established a relationship, the critical value from the degrees of freedom (80 participants less 2) and this p value was 1% risk to determine that a discrepancy exists when there is not an actual difference. A null hypothesis is rejected when the level of significance is lower than the established p value. The null hypothesis in this paper (there is no correlation), was rejected.

The overall satisfactory results of the SAI denoted those teachers with higher scores regarding the PD also scored higher in the SAI2 revealing the stronger perception of decisive attitude and willingness to implement many facets of the PD. Specifically, those teachers with strong interaction self-efficacy scored the highest in low anxiety,

positive behavior, and ease of use. Therefore, the interaction self-efficacy is one of the most important teacher attributes in which to develop.

Given the relationships between self-efficacy and attitude, I reflect that the teachers who perceive a strong professional development in areas of web-based self-efficacy and attitude are able to learn and implement the professional development standards. Shaha, Glassett, and Copas (2015) stated one of the most important variables to increase student performance is the presence of the classroom teacher. The teachers perceived the findings of Marzano training portion of self-efficacy and attitude as satisfactory. The findings were correlations that the teacher training affected teacher performance and student achievement (r (80) =.53, $p < .01$). The results showed that the higher the teachers' self-efficacy and attitude toward the web-based Marzano training, the higher the teachers' willingness to participate in the Marzano training. For example, the teachers with higher self-efficacy scores also scored high in perceiving the Marzano training as useful. Except for the three areas mentioned above, the mean satisfaction of teachers' scores were 3 out of 5 or greater. The highest mean score of 4.7125 was teachers felt very comfortable keying in websites to connect to a specific website. The teachers scored one of the highest satisfaction rates in the category of general self-efficacy in the ability to find websites when actively using the professional development.

To summarize project outcomes, this project study engaged a descriptive correlational research design to acquire teachers' perception and experiences toward web-based professional development national standards. The descriptive analysis involved the

survey data concerning the professional development national standards. The correlation analysis involved investigating if there was a relationship of teachers' perception of self-efficacy and attitudes and the professional development standards. The study targeted a population of K-12 teachers using a convenience sampling technique.

Many researchers (Darling-Hammond & Snyder, 2015; Feng & Sass, 2016; Gagnon et al., 2016) agree that supporting teacher self-efficacy will increase higher job satisfaction. If the teachers' perceive stressors from their PD performance, then the result is lower job satisfaction. Creating PD small community sessions and tailor to the community learning curve, then teachers will apply what they have learned pertinent to the teachers' content area. This study's project aims to provide solutions to common obstacles experienced integrating the Marzano causal teacher evaluation model and iObservation tool. The following, Section 3, explains more about the details of this study's project.

Section 3: The Project

I created a professional development plan (PDP) to provide a learning environment for teachers to acquire and share knowledge, skills, and best practices to integrate national professional development standards with emphasis on self-efficacy throughout the classroom instruction. The data collected from Middle School 2, as well as recent literature, supported the need for further professional development training. This PDP highlights the strengths and weaknesses of the implementation of the PD national standards. The research findings supported classroom instruction and increased student learning. This PDP's purpose was (a) to demonstrate how curriculum standards may be more effective within the classroom, (b) to provide additional training for teachers and administrators to reflect on the importance of teacher self-efficacy, and (c) to provide teachers with an online resource for best practices.

Teachers completed two surveys providing data describing the professional development with national standards and reflecting on the professional development of web-based training that should create self-efficacy and attitude. Using the findings, I researched empirical literature on standards of the Marzano causal teacher evaluation model and the iObservation tool for teacher web-based professional development and any relationship between teacher self-efficacy and attitude regarding the professional development. The project was professional development and training curriculum based on the results of this study. Teachers need more training in the specific areas of teacher self-efficacy and attitude toward web-based professional development.

Professional Development

Because of the need for more training on self-efficacy and attitude toward web-based professional development, this study's project was a training plan to continue to build self-efficacy and positive attitude by continuing the PD in small community groups. The project was professional development and training curriculum based on the descriptive and correlational results of this study. The project included outlines, pacing guides, activities, and modules. There were PowerPoints and web-based materials to facilitate training including evaluation of the training. The community groups will be supportive of individual learning curves and implementing the facets of the PD. The teachers will create alternative standardized assessments to measure student achievement and the effectiveness of the teacher PD training.

The purpose of the additional professional development was to develop a higher percentage of teachers with strong self-efficacy and attitudes toward web-based professional development. Effective professional development helps teachers to guide students to achieve high standards (Darling-Hammond & Snyder, 2015; Feng & Sass, 2016; Gagnon et al., 2016). Teacher quality is one of the most important factors within the classroom (Andersson & Palm, 2017). Teacher quality produces increases in student achievement more than parental support, demographics, and absenteeism (Darling-Hammond, 2015). Effective professional development is a phenomenon occurring worldwide (Kaur, Bhardwaj, & Wong, 2016). The United States averages 12 hours of

professional development a year. According to Kaur et al. (2016), China, Switzerland, Germany, and Japan require professional development of more than 10 hours a week.

The goal of this project was to help the target audience of teachers and administrators allocate more time for PD to increase monthly PD time. The PD training includes purposes, goals, learning outcomes, and small community groups. Outlines, components, timelines, and session formats are included in the project for additional professional training. The project includes PowerPoints, implementation plans, and surveys used as evaluation plans. The District B will schedule an hour-by-hour detailed 3-day program throughout various in-service days, half days, and in-service days for faculty.

The educational committee involved in the national movement for reform of teacher evaluation encouraged the implementation of the PD (Desimone & Garet, 2015). Educational leaders recognized a need to reform teacher evaluation after the passage of Senate Bill 1177 - 114th The Every Student Achieves Act of 2015 (ESSA, 2015). Out of this reform, the Marzano training began to be more widely implemented. School staff may measure professional development in many different areas. Teachers are seeking new methods for content, context, and process categories of professional development. Effective and high-quality professional development is the successful tool in achieving higher standards of development and learning. Guskey and McTighe (2016), DuFour and Marzano (2015), and Killion (2016) noted that professional development standards must meet specific components to achieve higher standards of learning for students. In

evaluating professional development, there are categories of context, process, and content. The quantitative data I used to evaluate PD involved (a) teachers' responses to Learning Forward national professional development survey and (b) teachers' responses to the Kao et al. (2014) survey of teachers' self-efficacy and attitude.

Rationale

The rationale for the PD project came from the quantitative data I collected from the responses of 80 teachers to the Learning Forward national professional development survey (SAI) and to the Kao et al. (2014) self-efficacy and attitude survey (SAI2). After my analysis, the need for more teacher training became evident due to the teachers' perception of the PD's alignment to national professional standards and effectiveness of the PD training in self-efficacy and attitude (see Morningstar & Marzzotti, 2014). The goals and objectives of the additional PD were to assist teachers with expanding consequential knowledge, additional skills, and increased self-efficacy with web-based PDP instruction. There were three identifiable goals for this PDP:

1. To demonstrate how curriculum standards may be more effective within the classroom,
2. To provide the additional training for teachers and administrators to reflect on the importance of teacher self-efficacy, and
3. To provide teachers with an online resource for best practice strategies.

I based the timeline on the school calendar that allowed sessions scheduled during in-service days including early dismissal days. After the first session in person in small

community groups, the sessions may then be online with group participation using a software tool such as Google Zoom. Leaders may present future brief webinars at faculty meetings and department meetings. Overall, the PD trained teachers according to national standards including self-efficacy and attitude with respect to the web-based PD. The results indicated that the teachers were trained with a national standards PD and with more training in areas of self-efficacy and attitude, which could help students increase student achievement.

With respect to further training in self-efficacy, Early, Maxwell, Ponder, and Pan (2017) studied 486 teachers' effectiveness of their professional development within the classroom regarding teacher self-efficacy and teacher-child interaction. By using a questionnaire based on descriptive statistics, Early et al. found the process easier to implement within the school because random samples may be used. Early et al. estimated test scores in a linear function and test scores improved due to the emotional support of teacher-child interaction. Quantitative designs including questionnaires may offer advantages to researching the study problem. Creswell (2017) stated the quantitative use of a questionnaire provided results showing the progression and attitude of the participants. My study's participants answered the inventory and survey that helped support the study's rationale to continue to address professional development. My data analysis indicated that a strong correlation in certain areas of professional development standards and facets of self-efficacy and attitude. Therefore, I focused on the national standards description and the teachers' self-efficacy. The study's project was further PD

training in strengthening teachers' self-efficacy and attitude toward web-based professional development.

Review of the Literature

The purpose of this quantitative correlational and descriptive study was (a) to demonstrate how curriculum standards may be more effective within the classroom, (b) to provide the additional training for teachers and administrators to reflect on the importance of teacher self-efficacy, and (c) to provide teachers with an online resource for best practice strategies. To find relevant published research, I accessed many sources including peer-reviewed journals articles, various formulas of statistics, and other literature related to curriculum standards, teacher self-efficacy, and best practice strategies. The databases included EBSCO and ProQuest, SAGE, Premier, and ERIC. I also used the Google Scholar search engine. I used the terms *curriculum standards*, *professional development*, *effective teachers*, *student achievement*, *self-efficacy*, and *attitude* as interconnected terms throughout this study. There were 56 sources within the project literature review, all were 2014 to present except for the use of the seminal author, Bandura. Throughout the literature review, there were many sources published within the last 5 years supporting the research approach of understanding the components of national standards and infused with the concentration of teacher self-efficacy and attitude.

Standards ensure the high quality of professional development. National standards include reflective practices, sustainable implementation, collaborative data, connection to

the classroom, experience, and research. The administration must support teachers in the alignment of professional development to improve student achievement (Kasemsap, 2015). Guskey and McTighe (2016), DuFour and Marzano (2015), and Killion (2016) confirmed the increased student achievement when teachers focus on the national standards domains of students' social, cultural, and cognitive skills. Administrators need to train teachers in all aspects of national standards so districts are accountable to improve student achievement.

In the reform of middle schools toward more accountability to improve student achievement, educational researchers are changing the paradigms (Kuhn, Alonzo, & Zlatkin-Troitschanskaia, 2016). Teacher professional development offers support for school improvement and addresses delays of middle school reform (Schaefer, Malu, & Yoon, 2016). According to school administrators, successful reform occurs when the implementation of professional development meets national standards in the areas of context, process, and content.

The literature review addressed the national standards related to web-based professional development and the importance of teacher self-efficacy. This project may help my target audience of teachers and administrators allocate more time for PDP to increase monthly professional development time. The PDP training includes purposes, goals, learning outcomes, and small community groups as the target audiences. The literature review explains each important facet of successful professional development.

These topics combined with the emphasis on teacher training in self-efficacy and attitude support the objective of the project.

The curriculum plan is the broad category that contains the 18 subcategorized standards. The Learning Forward National standards (2015) categorized the professional development in three main areas of context, content, and process. The Learning Forward national committee subdivided context standards in categories of resources, learning communities, and leadership. The Learning Forward committee categorized standards in research-based, data-driven needs of adult learning needs, teachers' needs, and collaborative opportunities. The committee subdivided the content standards into the quality of professional development, understanding of students and families, safe learning environment, and involving communities. All standards need to be present when school staff implement professional development. If any facet of the domains of professional development is lacking, then desired results will be less than optimum (Learning Forward the Professional Learning Association, 2015).

The context standards help to foster a professional learning community. The sub-categories are resources, learning communities, and leadership. The professional learning community, in turn, uses best-practiced resources as well as required supportive leadership. In doing so, teachers can provide a safe learning environment within an appropriate classroom. More focus should be on assessment. Assessment is the underpinning of context curriculum and teachers' need to devote full attention (Evensen, Berge, Thygesen, Matre, & Solheim, 2016). Since the newest reform focuses context

standards to have accountability, the need for creative context curriculum with project-based learning is needed (Bills, Griebling, & Waspe, 2018).

The second subcategory content is the learning communities. Teachers, administrators, students, and the community agree upon a mission and unified vision. Professional Development is mandatory in all public schools, and teachers consider a common event in middle schools. Kyndt, Gijbels, Grosemans, and Donche (2016) stated that learning communities should monitor what and how teachers learn. The professional learning community should employ professional development during the school day as part of a regular schedule. Teachers work collaboratively instead of in isolation when professional development becomes part of the school day (Brunton, 2016; Darling-Hammond, Bae, Cook-Harvey, Mercer, Lam, Podolsky, & Stosich, 2016). Collaboration helps teachers to connect, to create partnerships, and to compare teaching practices.

Another content category is Leadership. School districts need to ensure competent leadership to ensure effective teacher professional development (Guskey & McTighe, 2016). One of the strongest leaders is the principal who promotes the interaction of professional development among the teachers. Darling-Hammond, Hyler, and Gardner (2017) studied a problem relationship between leadership with high student achievement and a strong community involvement in her qualitative study. The purpose of the executive summary was to analyze leadership and the choice of the best professional development to prepare teachers including leadership and community involvement. The study findings were that teacher evaluations did not change and student achievement

fluctuated. On the other hand, if the school principal collaborates with stakeholders to choose, plan, and evaluate professional development (Swain, 2015), then all stakeholders will own the problem of choosing the best plan for teacher development. All stakeholders should be involved in the professional development process.

One of my last content categories is resources. There are many resources needed in the professional development context. Technology is a very important component for successful professional development. In the year 2004, the New Jersey Department of Education implemented the Enhancing Education through Technology (EETT) program that infused technology instruction into the curriculum to improve student achievement (Every Student Succeeds Act, 2015). Educational scholars, Philipsen, Tondeur, Roblin, Vanslambrouck, and Zhu (2019) reviewed improvements in professional development solving the problem for online and blended learning program. The authors agreed with EETT that teachers need a more efficient delivery of curriculum. With the use of technology, teachers may resource current research, results, and motivational techniques into any curriculum. As a result, districts are responsible for keeping teachers up-to-date with current technology and implementation of the technology.

The second curriculum category is process. Learning Forward established the standards for how professional development should impact teachers. The process standards include collaboration, coaching, learning, design, research, and understanding data. Zimmerman, Knight, Favre, and Ikhlef (2017) stated that professional development is effective if teachers participate in experimentation, questions, and inquiries. The

administration must afford teachers the opportunity for development and collaboration. Teachers need training in curriculum process standards, especially when infusing technology (Corum & Garofalo, 2016).

The first sub-category of the process curriculum is data driven. Every state board of education is required to provide data, analyze data, and create instructional decisions based on the collected data (Dartnow & Hubbard, 2015). The data I selected was from the classroom, school, district level, and federal level. Professional development that collects job-embedded data will have a strong effect on student and school success. Feng and Sass (2016) researched school districts and studied a correlation of increasing teacher quality, teacher licensing examination in scores, and longevity within district over a ten-year period and impacted a difference of 40% in students' reading and math scores. Professional development committees design training to address classroom needs based on data will improve student achievement (Desimone & Garet, 2015).

School districts must implement researched-based professional development to be effective and meet national standards. Teachers with the best practices that are researched base can incorporate pedagogy and further develop skills in content and student. Jackson (2016) doctoral dissertation researched that teachers increase student achievement when researched-based strategies engage student involvement.

A reflection is an effective tool for teachers to practice. Loughran (2016) stated that self-study and reflection is one of the teachers' best practice. The practice of reflection helps the teacher to review his/her teaching techniques. Williams and Hayler

(2016) indicated that reflection is the best practice to help teachers through transitions and transformations. Reflection is one of the tools that help the teacher seek meaningful data about the students' nature of learning.

The newest design for teachers is to prepare each for non-academic skills such as communicating with parents, try to implement new theories, and be innovative. Districts need to plan according to the instructional strategies, school policies, school curricula, and evaluation process of teachers. Designs need to plan to meet during the school day multiple times on any one given concept (Covay, Desimone, Caines, & Hochberg, 2016).

Besides meeting during the day on each new concept, Hilton, Hilton, Dole, and Goos (2016) explained that professional development design must be ongoing sessions of five or more. In their study, math teachers that met five or more times to learn math strategies had better success in middle school math than those teachers with only one introduction to the math strategies. The school must design professional development to be continuous throughout the school year.

Teachers need time for collaboration. Teachers are usually isolated within a classroom and impede a collaborative climate. Sharma (2016) offered that teachers are born with innate skills to become a teacher and need to learn collaboratively with other effective teachers. Sharma noted that there are teachers, especially those who remain in isolation, do not improve and become effective teachers.

The administration may schedule collaboration for teachers in teams with common preparatory or lunch blocks of time. Quaresma and Valenzuela (2017) studied

the best performing schools in low-income areas. Even in rough times, leadership, parents, and students need peer study groups, peer coaching, committees, leadership teams, common planning time, and a working computer network to be able to rise above the tough times. Districts need to minimize teacher autonomy and all staff made accountable for collaboration.

Coaching and mentoring have become a process in most teaching certifications. Some school districts hire coaches as specialists to teach literacy and math for different grade levels. The process of coaching is time-consuming and involves supporting teachers and administration, observation, feedback, and discussion. Adams, Forin, Chua, and Radcliffe (2016) researched the coaching characteristics needed to be included in the professional design. Adams, et al. concluded the most important facets of coaching to be companionship, feedback, analysis, and adaptation to students. Many teachers place too much emphasis on teaching the test material and not the curriculum. Coaching within the curriculum is more effective to teach the students to develop higher cognitive thinking skills (le Cordeur, 2014).

Teachers who perceive themselves with a high self-efficacy directly affect their confidence within the classroom. The more there is self-confidence, the more effective teaching. Zee and Koomen (2016) published a longevity study about teacher well-being and effectiveness in the classroom. The 40-yearlong study resulted in a strong correlation between student achievement and the teacher's ability to learn, well-being, personal accomplishment, and job satisfaction.

Ironically, the positive effects of self-efficacy seem to diminish the longer the teacher is in the profession. Ganzach, Stirin, Pazy, and Eden (2016) experimental quantitative study related a direct correlation that when rewards for the teacher are high then self- efficacy is high. When rewards for the teachers are low, then self-efficacy is low. Therefore, the teacher may experience negative challenges over time due to many years on the job and the teacher may perceive a reduction in self-efficacy.

As the administration and school policies change, teachers may need to adjust with change. Teachers' insecurity may develop with the lack of trust in the changes and evaluation system. Gagnon et al., (2016) stated that teacher evaluation across the country varies considerably. The states that received Race to the Top Act of 2011 government funding have more government control and less local school district control. Because of the different evaluation standards, student achievement has not risen to a level of total proficiency of all students in math and literacy. Students' standardized assessment scores reflect in the evaluation of the teachers. One study Polikoff, Le, Danielson, Sinatra, and Marsh (2018) researched the change in math curriculum because of the lack of progress and motivation from students. The experiment used toy cars as manipulatives for math. The curriculum was called speedometry. Polikoff, et al., used an experimental study with randomized trials with 1,615 students in 48 classrooms in 17 schools. The curriculum proved to be successful and implemented throughout the district.

The content areas of professional development involve teaching quality, equity, parents, and community. There are many issues of involving teacher and student equities.

There is a need for more professional development to prepare the teacher to manage all of the cultural diversities in the public-school system (Craig, Zou, & Curtis, 2016). Reflective practice is a strategy to help teachers with the community and cultural diversity. Covay et al. (2016) concentrated that the role of the teacher is to understand the differential effects of teaching the content of the quality, parents, and community.

Due to the diversity in the development stage of middle school students, many students' diversities challenge teachers. Sharma (2016) stated that a teacher must acquire flexibility without losing continuity, dedication, and integrity. Parker, Morrell, Morrell, and Chang (2016) studied 28 science, technology, engineering, and math faculty members regarding issues of classroom instruction and equity. The purpose of Parker et al. (2016) was to study the various professional development programs and influence of the understandings of the issues of equity and classroom practices. Parker et al. (2016) stated that only after the 28 faculty members tended professional development, did the members understand the constructs of national professional development aligns the instruction to remain in compliance with core curriculum standards.

The Learning Forward the Professional Learning Association (2015) council on professional development states that teachers affect students with daily impact of professional development. Teachers need to experience the same curriculum in which they expect their students to learn. Korthagen and Evelein (2016) queried 36 student teachers and found that the quality of teaching correlated directly with the teachers' prior knowledge and personal experiences. The standards for quality of teaching becomes

challenging when students are lacking support from home, struggle with learning, and school initiatives and policies are not enforced equally (Desimone, & Garet, 2015).

There is very little research on teacher professional development and parent and community involvement. Professional development must train the teacher to include guardians and community as part of the educational curriculum. Blanchard, LePrevost, Dell Tolin, and Gutierrez (2016) investigated the effects of 20 teachers over a 3-year period to incorporate technology to improve efficiency and effectiveness in communicating in a district heavily populated middle school in a low socioeconomic area. The study findings suggested that the large-scale changes in practices significantly increased standardized assessment scores. Timperley (2014) sates that using valid assessments supports effective professional development for teachers to help all students. Middle School 2 is a title I school, and there are lower socioeconomic students than other middle schools. Therefore, teachers need more professional development strategies to help the lower socioeconomic students achieve academic standards (Dynarski & Kainz, 2015). Within the diverse public schools' culture, the educational professionals need more research effectively to reach the community to help educate the diverse student population.

One of the seminal theorists of self-efficacy was Bandura (1977). Bandura, plus theorists, Stajkovic, Bandura, Locke, Lee, and Sergent, (2018), stated that self-efficacy is the belief that someone is capable of the accomplishment. They stated that among many personality traits, self-efficacy is one of the most influential on academic performance.

Huang, et al., (2014) found that teachers with high self-efficacy and positive attitude are willing to learn and accept new ideas using web-based technology. Accordingly, teachers' perceived confidence in applying technology is the success for assurance of involvement in the PD and infusing the PD concepts within the classroom.

Self-efficacy and attitude is an important concept in teaching, especially when infusing technology into daily teaching practices. Kay and Kibble (2016) researched 101 learning theories using seminole social constructivist Bandura (1977) cognitive theories including self-efficacy. Self-efficacy refers to the confidence that a teacher executes to teach content, process, and context. Studies have found that self-efficacy in teaching and learning may forecast the success of academic learning (Kramarski & Michalsky, 2015; Schunk & DiBenedetto, 2016; Seibert et al., 2015).

Schools with web-based professional development must train the teachers in technology-related self-efficacy and attitude. Schunk and DiBenedetto (2016) proved that self-efficacy and attitude determine strength in infusing technology and use of behaviors and intentions of teaching. As stated in the national professional development standards, school district needs to address self-efficacy when evaluating professional development training. Therefore, the self-efficacy and attitude SAI2 covered the valid questions in collecting data of attitude and emotion. The PD aligns with national professional development standards and satisfies the Kao et al. (2014) survey correlated the teachers' self-efficacy and attitude having a strong correlation to the effectiveness of the web-based professional development.

Herman, Hickmon-Rosa, and Reinke (2018) study suggested interventions to help teachers strengthen self-efficacy. Their study focused on the teachers' stress, burnout, and self-efficacy and found a direct correlation to student achievement. Teachers' professional development needs to address the computer self-efficacy to help teachers strengthen their belief that they can seek learning online and implement desired activities. To learn from web-based professional development, professional development needs to address internet self-efficacy. In doing so, internet self-efficacy challenges the teachers' confidence in general computer and internet skills. The teachers' attitude toward the web-based professional development directly affects the participation and performance outcomes. Furthermore, Herman et al. (2018) stated the lack of teacher participation and performance has a negative result in student achievement.

Throughout the project, analysis will be ongoing and the project generates new perspectives. Interconnecting themes of effective training, accountability, and self-efficacy will provide useful insights. Further quantitative study using research and the current collected data from the project is one of the best methods for comprehending the convolution of educational practice. While national professional development standards would not fully decide the curriculum within a classroom, it provides a framework for how teachers intellectualize the facets of the standards. As the professional development strengthens the self-efficacy and attitude of the teacher, the implementation of the national standards improve and the effective teaching improves.

Project Description

The project description is professional development training, including curriculum and materials. One of the many researchers, Cakir and Bichelmeyer (2016) used a quantitative research approach to study the problem of the positive qualities of an effective teacher on student development. The results of their study suggested that primary teaching field, teaching experience, and degree, did not have a significant effect on the students. The teachers' knowledge and infused professional development standards and self-efficacy had a significant impact on student development. Similarly, my project is based on my results for the need of more professional development standards with an emphasis on teachers' self-efficacy and attitude. In Appendix, there is more detail about the materials, units, and lessons. The project includes outlines, timelines, notes, and module formats. A brief description of the PowerPoints and evaluation plan are included. The minimum 3 day training with hour-by-hour sessions is available. The research questions that guided this study focused on the national standards of the Marzano training and the effectiveness of the teacher training in respect to self-efficacy. The SAI and SAI2 asked questions of the teachers' overall perceptions of the Marzano training regarding the development and quality experiences in the middle school 2. By examining the strengths and weaknesses of the professional development, teachers agreed that the evaluation of Marzano was acceptable and future District B committees will focus to strengthen these weaker areas. The project is a series of small community groups composed of educators who are able to gather for trainings with a focus on self-

efficacy and attitude. The project will use webinars, face-to-face workshops, and other forms of technology reinforcing the teachers' practice of all the national standards as well as strengthen their self-efficacy.

Resources, barriers, and solutions are always a concern in a school district. Time to have participants gather during a school day will present a problem. After an initial training, the school district has time allocated during teacher preparatory block periods during the school day and built into teachers' schedules. Online lessons after face-to-face training about web-based training may be a solution to time. Computers or digital devices are available to assist with instruction, but groups should be limited to 25 participants or less. With planning, solutions are available to overcome the daily school day hurdles.

With the appropriate mapping of the professional development-training project placed on the school district calendar the previous year of implementation, a timetable should include in-service days, early dismissal days, and input from teachers' availability for scheduled online sessions. Implementation will be web-based with outlines, pacing guide, activities, and module formats as teachers are comfortable with the web-based material.

Project Evaluation Plan

The questions that guided this study focused on the evaluation of the Marzano training and the effectiveness of the teacher training to help increase student achievement. The SAI and SAI2 asked questions of the teachers' overall perceptions of the Marzano training regarding the development and quality experiences in the Middle

School 2. By examining the strengths and weaknesses of the professional development, the evaluation of Marzano proved to be acceptable with improvement.

The justification for the evaluation plan of the project training is to train teachers to become aware of the strengths and weaknesses of controlling their andragogy of learning. The survey evaluation of the project will strengthen and empower the participants. The evaluation will help to increase self-efficacy and effective teaching. The analysis showed that the teachers were comfortable completing web-based survey for the national professional development related closely to the SAI results. The statistics in every category of the survey determined the survey results established the professional development to be effective. When professional development training is effective, the teachers can influence student achievement (Lai & McNaughton, 2016). Andersson and Palm (2017) reported that student achievement significantly increased when teachers' standardized professional development included the standards of the process of teaching, content knowledge in the classroom, and the formative assessment. The Learning Forward Association designed the assessment inventory to collect data to determine whether professional development meets the previous NSDC standards as well as the new international standards (Learning Forward the Professional Learning Association, 2015). After data collection, I analyzed them from the SAI and developed the findings to provide statistics regarding the project, PD.

Professional development needs to meet all the categories within context, process, and content to prepare teachers to be effective in the classroom. The teachers perceived

that the PD aligned with national standards. More important, teachers' self-efficacy and attitude had a strong correlation regarding the perception of the PD standards. As this study has stated, the teachers' self-efficacy affected on the implementation of the PD. Public schools may measure effectiveness in many different methods, but most public-schools use high stake assessments (Berliner, 2011). The teachers perceived that the Marzano model met all the national professional standards. The teachers also felt that the Marzano model prepared them in self-efficacy and constructive attitude.

To continue to see results in goals and objects of student achievement, the training in PD needs to continue. The District B should address the lowest mean scores of the survey results in the few areas of unsatisfactory of the training. Demands on teachers' time to devote to web-based learning and changes need a careful pacing guide. In contrast to all the satisfaction questions, there were only three questions with teachers' mean score of unsatisfactory with less than a mean of three. Those three questions' results are in an abbreviated Table 6.

Table 6

Learning Forward Standard Assessment Inventory Analysis Summary

PD factors	Research standard	Teachers' perception favorable	Teachers' perception unfavorable
Context	Learning Community Questions 9,29,32,34,56	90% of participants perceived training to meet learning community standards.	71 % - question 9. Teachers meet as a whole staff to brainstorm ways to improve teaching and learning
Context	Leadership 1,10,18,45,48,	95% of participants Leadership perceived training to meet standards.	
Process	Data driven 12,26,39,46,50	85% of participants perceived training to meet data driven standards.	51% - question12. Teachers at Middle School 2 school learn to use data to assess students' learning needs
Process	Research based 4,14,21,36,41	88% of participants perceived training to meet research-based standards.	63% - question 14. Based on the research that evidently improves student performance, teachers choose decisions about needed professional development.
Process	Design questions 15,22,38,52,57	86% of participants perceived training to meet process standards.	

Note. Adapted from National Commission on Educational Statistics (Hussar & Bailey, 2019). Questions asked, "If the web-based professional development provides an interesting and attractive environment." The next question of unsatisfactory (mean of 2.7089) asked, "Using web-based professional development can improve my teaching ability." The third question, question number 36 on the SAI2, was one of unsatisfactory in the anxiety area. The mean unsatisfactory score was 2.9114 and asked, "Using web-based professional development makes me feel anxious." The standard deviation for this anxiety question was 1.50375 that signifies that the range spanned an extreme teachers' low anxiety of 1.408 to an extreme high of anxiety (4.425) regarding Marzano training.

The importance of the strength and weaknesses of the professional development may influence the three major components (context, content, and process) of professional development. This table reflects only the teachers' responses with strengths of 85% and greater in the major professional development components of context, content, and process. Respectively, the major components of the specific standards reflected in the table were evident within the professional development by 85% of the teachers. In the same respect, the last column reflects the weakest areas of context, content, and process by 85% of the teachers. The importance of the weakest teachers' responses may find that in 85% or more of teachers are not practicing those areas of context, content, and process. Desimone and Garet (2015) researched that teachers' best practices infuse a balance of professional development learning standards. The ideal professional development should reflect that many of the teachers in all areas of standards reflect satisfaction.

There have been research articles studying students and their self-efficacy, but very few researchers studied professional development and teachers' self-efficacy. Kavanoz, Yüksel, and Özcan (2015) studied pre-service teachers' self-efficacy, and stated the results that teachers need time and training to build confidence in the multitude of web-based professional development. Results show that District B teachers need to create a systematic five-year plan in collaboration with an administration that explicitly establishes the expectations of web-based goals. In Appendix, is a PowerPoint outline of training sessions and focus on the PD. The PowerPoint explains the purpose of continuous evaluation of the professional development plan, curriculum, scope and

sequence, objectives, activities, assessments, evaluations, and reflections. The project goals are as follows:

- To offer a comprehensive, learner-centered sessions that offer the professional educator with the cognitive information national standards necessary to provide students with higher academic achievement,
- To present learning environments focused on enhancing professional practice self-efficacy in the delivery of care to patients requiring biocontainment, and
- To offer effective training so participants will understand why Marzano is effective based on researched best practices.

These goals can be used to design an evaluation instrument capable of assessing both qualitatively and quantitatively the teachers' assessments as to the efficacy of the Project, and other relevant stakeholders' perceptions.

Stakeholders will understand the growth and development of teachers and realize that the Marzano causal teacher evaluation model and iObservation tool is part of everyday practice. Also, teachers will feel that tracking student progress is a step by step technique to lessons. The relationship between effective teaching and student achievement will become obvious. The participants will become familiar with the strengths and weaknesses of self-efficacy and attitude. To continue to see results in goals and objects of student achievement, the training in PD needs to continue. The planning committee should address the lowest mean scores within this study of the teacher self-

efficacy results to focus on improving the concerns in the few areas of unsatisfactory. The committee should follow my suggested plan for more training. Schmoker (2012) studied the madness of school districts seeking the best teacher professional development framework; the Marzano model packaged all in a user-friendly web-based model assessments, evaluations, and reflections were highly recommended.

Project Implications

Finding effective professional development that meets the needs of all staff has been a challenge for many school districts. At the beginning of 2017, the last school reform, Race to The Top Act (2011), ended with the signing of the ADA Education Reform Act of 2017 (ADA, 2017). My project implications are the results under the Race to the Top Act because the New Jersey Department of Education newest mandate reform ADA Educational Reform Act of 2017 (ADA, 2017) involving changes to the ESSA have not implemented and enforced in New Jersey, yet. DuFour and Marzano (2015) attempted to offer professional development that meets the daily needs of the teacher, administration, and school district. The findings of the Learning Forward Standard Assessment Inventory (2011) and the Kao et al. (2014) self-efficacy and attitude survey found that the teachers perceived that the satisfactory alignment of the professional development to the Learning Forward's national professional development standards. Even though all the mean scores from the survey were satisfactory or higher, the lowest of mean scores were in the national professional development standard area of learning. Based on these findings, future professional development needs to focus on strengthening

teachers' perceived self-efficacy and attitude. I found two process categories of learning that might need improvement. The school district B should concentrate on the teachers' development around continued support. Examples of support may allow the teacher coverage in the classroom or time to work with colleagues on new concepts. Especially, the support should continue for any new implementation of an initiative to improve student learning. Another area of improvement is in the standards of the process in the category of learning. Díaz, Nussbaum, Ñopo, Maldonado-Carreño, and Corredor (2015) studied the standards of web-based professional development and curriculum and concluded that an orchestrated and collaborated plan of teaching pedagogy needs proper implementation of successful outcomes of student achievement. My study's findings suggest that the professional development should concentrate more on teachers' in-depth understanding of the content related material.

Researchers need to survey teachers' perceptions to create policies for professional development to meet the needs of the district to increase student achievement. The SAI and SAI2 established that teachers need more than 25% of their teaching time to be devoted to professional development (Bishop, Lumpe, Henrikson, & Crane, 2016). Since the study established a benchmark for the first year of the Marzano training, there was academic improvement in the achievement of students.

Section 4: Reflections and Conclusions

Project Strengths and Limitations

Section 4 includes the (a) project strengths and limitations, (b) recommendations for alternative scholarship, (c) project development, (d) reflection on importance of the work, and (e) implications, applications, and direction of future research. Section 4 also include my reflection on the doctoral journey. Reflection is known as one of the best self-assessments (Foley et al., 2019). The scholarly writing addresses the research process in the doctoral study and project, but in reflection from a perception of change and leadership. After a very long doctoral journey, my subjective view to my doctoral degree will be evident by learning to live the remainder of my life balanced in thoughts that I have made a difference and in the satisfaction that I have contributed to a labor of freedom and freedom and flexibility (see Reynolds et al., 2018).

Throughout the experience of writing the doctoral research study, my scholarship, research, collaborative interaction, literature review, and scholarly writing skills significantly improved. In reflection, there were strengths and few limitations in this study. The results of the project findings apply to all grade levels or all districts as similar findings in similar studies have done the same (see Bilgin, Karakuyu, & Ay, 2015). The difference is I conducted this study in one suburban middle school. Lai and McNaughton (2016) found a similar correlation between national standard professional development for teachers and an increase in student achievement. My study's Middle School 2 teachers' perception of all the 12 national professional development standards from the

Marzano training had met the Learning Forward national standards with a range of a minimum of 3.2050 (more than satisfied) to the highest mean score of 4.1175 (more than frequently satisfied) in Leadership. This finding from the self-efficacy and attitude survey indicated that the teacher's PD had a positive relationship with the results of SAI2.

The moderate Pearson correlation (r (80) =.53, $p < .01$) indicated teachers' strong interaction and application of self-efficacy and demonstrated a willingness to participate in the PD. In addition, the interaction self-efficacy had the strongest influence on the other variables of anxiety, behavior, and ease of use of the PD. Teachers' perceptions of anxiety, accessibility, and behavior should be the prime focus of the professional development (Herman et al., 2018). Using the results of the study as a needs assessment, I determined that the statistical correlations supported the need for my study's project. Teachers' resoluteness in the PD is one of the most important concepts so that the teacher develops confidence in implementing lessons to improve student achievement. In finding the teachers' resoluteness in the PD, I conducted my descriptive correlational research study to quantify the variables and examine the relationships between the variables. According to Creswell (2017), the use of a correlational design prevents any causal findings, and the size and nature of my sample may limit the generalizability of results.

Middle School 2 participants found the professional development satisfactory, and findings may apply to other teachers in the school at the same grade level. All grade level teachers may benefit from a project study based on teachers' needs including their students (Allen et al., 2018). The teachers' assessment inventory was limited to the

Learning Forward 12 standards, assessing the quality of the professional development. I did not consider the individual teaching styles and level of experience in this study. Therefore, stakeholder generalizing from the findings needs to be cautious. The project strengths were the evaluation of the Marzano model, which established a benchmark for future analysis. I analyzed the information to offer the school district data to improve areas of the Marzano model, which may improve the teachers' effectiveness within the classroom. The project of further professional development is a necessity to support the teachers' self-efficacy and attitude (Herman et al., 2018). I based recommendations made in the implementation of the Marzano model on the middle school level. The rest of Section 4 includes my reflections and conclusions; recommendations for alternative approaches; scholarship, project development, and evaluation; leadership and change; importance of my work; and implications, applications, and directions for future research.

Recommendations for Alternative Approaches

There are alternative approaches to improve the Marzano model. In future research, I recommend that researchers collect data from other middle schools where students did not meet proficiency on standardized assessment scores and had chosen the Marzano model for the current educational reform. My study was limited to one middle school, and stakeholders may find value in extending the research to other grade levels. Researching other schools in other districts may provide similar results, which showed that teachers had difficulty with teaching from accountability scores provided by student assessments. Qualitative studies may reveal more information about teachers' self-

efficacy and attitude toward accountability and student achievement. Districts with similar profiles may be able to share the results.

My study highlighted the lowest of the average score results to help strengthen the weakest areas of professional development. My project was created with an alternative strategy of meeting online with the small groups of educators, which may help coordinate the professional development constraints for the teacher by lengthening teaching time in the classroom. The SAI helped collect teachers' perceptions of the implementation of the Marzano model and alignment with national professional standards. Future researchers could extend the survey to administrators' perception of the Marzano model's strengths and weaknesses. A correlation may exist between administration, leadership styles, and teachers' performance.

Scholarship, Project Development Evaluation, and Leadership and Change

As I reflect on my scholarship as an educator, I am aware of the confidence, knowledge, and skills I have acquired in processing and designing a project based on my study's results. The main lesson I have learned is that education must be grounded in research and best practice in content of the given population. Today's educator must synthesize the best researched teaching methods infused with technology to increase I-generation (students born 1997 and later) academic achievement. During my study, I faced challenging obstacles, but I was determined to find ways to accomplish the impossible. As a result, my passion to identify my problem and purpose within my local learning environment increased with intensity.

The research questions were the most important to construct. The research questions kept me focused on analyzing my results and findings, which led to the development of my professional development project. Since the start of my doctoral journey, I have had to reconstruct and rewrite my study and project more than three times. The least time-consuming was the respect for my participants' rights and their ensuing protection. Collecting the data and protecting rights were deciding factors in the design of my study. Because I have graduate degrees in mathematics, I found myself making data analysis more rigid and complicated than necessary. I became confident when paragraphs and pages would pass editing and go unmarked. I felt as though I was accomplished a new level of writing. Project development and evaluation helped me appreciate how complicated and intricate all facets of education are. After spending years researching leadership strategies and developing my study, I see how each national standard must occur each day at some level within the classroom. After four chairpersons and committees, I gained the knowledge that allowed me to successfully complete my doctoral journey. Results from my study supported the need for my 3-day project of continuing professional development. As I shaped the professional development program, I developed scholarly traits and had a deeper respect for the tedious process research within the educational environment.

Throughout the research process, I realized that leadership and change are a balance of seminal theorists' standards, current economic practice standards, and future standard goals. A leader in educational theory needs to have a skill set to respond to

change in environments of poverty, mental health, and future vision while trying to improve current life events among colleagues, students, and community (MacKinnon, Young, Paish, & LeBel, 2019). Throughout my doctoral journey, I experienced the relationship between leadership and change. The research process teaches to focus on strong leaderships skills, assess the environment, and find the root cause of a problem. Research and leadership are similar in approach. Once the problem and purpose are established, data are collected to find solutions and a plan is implemented to solve the problem to improve quality of life for all stakeholders. Teachers need positive, concrete feedback from leaders and stakeholders to support teacher self-efficacy and attitude. I have a deeper respect for those who are great leaders in education. I can identify the many components that need to be in place for stability. The research has helped me identify the specific areas that require a change to be a great leader.

Reflection on Importance of the Work

The results of my study indicated a significant correlation between the implementation of standards and teachers' self-efficacy and attitude toward professional development. Those results provided support for the professional development project based on teachers' needs and collaboration of all stakeholders (see Loertscher, 2014). The professional development project may serve as a model for creative professional development offerings. These offerings may be created through the teachers who become the leaders within their community.

The project was based on data that I collected from the spreadsheets and the teachers' assessment inventory responses. Findings were not attributable to any individual. As a result, I did not violate confidentiality. The descriptive data from the SAI and the Pearson Correlation inferential information from the SAI2 were processed using IBM's SPSS (see Green & Salkind, 2015). The study's findings provided statistical information to answer the study's research questions. The findings yielded Pearson correlation statistics to support evidence of the teachers' impact of effective professional development training of teachers. My project is important because it establishes the prerequisite that professional development needs to be a team-based leadership approach in which many teachers participate as the leaders within each small community group. Each member of the group learns from each other. Administrators and teachers all participate in the project so that all stakeholders can agree on solutions to the problem.

Implications, Applications, and Directions for Future Research

The findings of my doctoral study may effect positive social change at the local level. Findings from my study were supported by many other researchers (Andersson & Palm, 2017; Balch & Springer, 2015; Chalmers & Gardiner, 2015; Desimone & Garet, 2015) and provided a plan for positive social change because of the focus on the national standards and teachers' self-efficacy with respect to student achievement standards. Findings from my study may facilitate professional development of lifelong learners to become productive professional teams for perfecting standards and self-efficacy to improve student achievement (see Means, Padilla, & Gallagher, 2010). Future research is

necessary to validate my study's findings and to identify the traits of professional development teams to collaborate on standards and self-efficacy. Future research is needed to train educators in the most effective and cost-efficient way to maximize benefits to all stakeholders.

The basic results of my study for application and direction find the effectiveness of the Marzano causal teacher evaluation model and iObservation tool model has on teachers' professional growth. The teachers perceived the Marzano model to meet national standards and the web-based portion to provide self-efficacy and constructive attitude. Since the study established a benchmark for the first year of the Marzano training, there were individual improvement in the effectiveness of the teachers' self-efficacy and implementation of national standards as shown in improvement in achievement of Grade 8 scores after the first year of training. Marzano believes that the family and community play an important part in working as a team for the success of the student (Marzano & Toth, 2017). Organizational change is needed to develop strong leaders to train teachers and become leaders who ultimately are the strongest impact on the students (Darling-Hammond, 2015).

Future research should repeat the tracking of standardized scores including the surveys for professional standards and self-efficacy and attitude. Over the years, the findings may reflect the trend the Marzano framework has on teachers' practice. There is a need for future research using a larger population regarding the monitoring of the Marzano framework to measure the teachers' effectiveness on student achievement.

Conclusion

Increasing national as well as local concerns about preparing teachers to effectively implement national standards and increase student achievement is of great concern. My quantitative descriptive correlational study, supported by Vygotsky's social constructivism theory, examined relationships between teachers' attitude and their perceived self-efficacy and the implementation of national professional development standards. Data results suggested a more intimate formal professional development program accompany the Marzano causal teacher evaluation model and iObservation tool training with drills in professional practice of self-efficacy. As a result- a 3-day professional development program for educators was developed. Prerequisites for participation in this program established all stakeholders to team collaborate with small community groups while sharing ideas using available technology. My study facilitates positive social change by creating an educational plan that supports the development of professional self-efficacy for educators.

In conclusion, I have not violated any confidentiality while I collected data from the teachers' assessment inventory responses. The PD presented material aligned with national standards. The teachers' response to SAI influenced the results by their perception of strengths and weaknesses in the areas of self-efficacy and attitude toward the web-based PD. Future studies should continue analyzing the effectiveness of the PD and teachers' self-efficacy and attitude. Šebjan and Tominc, (2015) stated that using the SPSS assisted with the human rights protection when collecting data for the research

process. They also concluded the usefulness of SPSS and the impact of supporting teachers in accountability of student achievement. The study's findings provided statistical information to support the study's research questions. The study's findings yielded statistics to support evidence of the impact of effective professional development training of teachers, especially self-efficacy and attitude, to improve student achievement, as that the analysis and findings unfolded the research of this study.

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Appendix: The Project

Web-based Professional Development Teaching and Learning

Professional Development Plan

by

Arlene Wacha

Introduction

I created a Professional Development Plan (PDP) to provide a learning environment for teachers to acquire and to share knowledge, skills and best practices, and to integrate national professional development standards with emphasis on self-efficacy throughout the classroom instruction. Both the data collected from the school district Middle school 2 from the quantitative research study and the recent literature support the need for further professional development training. This PDP incorporates the strengths and weaknesses found in my research findings in order to support classroom instruction and to increase student learning. This PDP's purpose is (a) to demonstrate how curriculum standards may be more effective within the classroom, (b) to provide the additional training for teachers and administrators to reflect on the importance of teacher self-efficacy, and (c) to provide teachers with an online resource for best practices.

Goals and Objectives

One of many objectives of the PDP is to assist teachers with expanding consequential knowledge, additional skills, and increased self-efficacy with web-based PDP instruction. There are three identifiable goals for this PDP:

- To demonstrate how curriculum standards may be more effective within the classroom,
- To provide the additional training for teachers and administrators to reflect on the importance of teacher self-efficacy, and
- To provide teachers with an online resource for best practices.

Teachers will be able to provide students with more meaningful learning experiences because of the knowledge, skills, experience and self-efficacy gained from attending the PD sessions.

The following outlines the objectives for each day of the mentor training days

Day 1 Objectives

Lead Teachers will be able to address:

•Why Use web-based PDP?,

•Enhancing Teacher Functions,

•Promoting Teaching and Learning Methods, and

•Web-based PDP Best Practices

Day 2 Objectives

Lead Teachers will be able to address:

•Overview of Goals and Outcomes of PLCs, and

•Roles and Responsibilities

Day 3 Objectives

Lead Teachers will be able to address:

•Strategies,

•Create members within each small community,

•Create calendar of training sessions, and

•Accountability based on data

Timeline

The study project of professional development is designed for three consecutive days. The school calendar may not permit consecutive sessions. Therefore, the scheduled sessions are adaptable during in-service days plus early dismissal days. After the first session in person in small community educator groups, the sessions may then be online with small group participation using a software tool such as Google Zoom. Leaders may present future brief webinars at faculty meetings and department meetings. One 75 minute sessions during in-service days and early dismissals (first two days of school year, October Columbus Day, November (during parent conferences), and PARCC testing days. The entire three day plan may be found in the rest of Appendix. The session's time frame are as follows:

- DURATION: 75 minutes,
- Introduction: (5 minutes),
- Introduce the activity,
- Direct teacher and admin to the activity,
- Activity: (55 minutes),
- Facilitate and provide assistance for teachers and admin to complete tutorial,
- Wrap-up: (15 minutes),,
- Summarize learning outcomes with some measure of accountability,
- Assessment/Extended Learning: (2-5 minutes), and

- Teachers and admin complete survey

Day 1: Introduction and networking

8:30 a.m. - 11:45 a.m.: Attendance and teachers will have access to information in a shared Google folder, facilitate the PDP session, and provide teachers and administrative leadership with a demonstration of the overview and results of the quantitative study and the request to implement subsequent PDP sessions.

11:45 a.m. – 12:45 a.m. Lunch (Small groups may decide to have a working lunch and finish the day one hour earlier).

12:45 -2:00: Use a top down approach with a focus on academic problem-solving. A top down approach, also known as a step down approach, is a strategy to help the teachers gain insight to the complex, multiple sub-systems engineered in to the teaching day. The information of all each session is saved into a Google drive that is shared with teachers. The PowerPoint will include the shared the responsibilities of leadership and effective leadership. The session will end with focus on self-efficacy. Teachers will research effective self-efficacy and leadership quotes and strategies.

Day 2: Define behaviors of forced educational collaboration and collaborative educational participation (Loertscher, 2014).

8:30 a.m. – 11:45. Attendance and teachers will share behaviors of how to incorporate national professional standards and excel in self-efficacy and attitude. The session will conclude with a team building where teachers list attributes of and discuss how strategies to overcome the frustrations of web-based training. .

11:45 p.m. – 1:45 p.m. lunch (Small groups may decide to have a working lunch and finish the day one hour earlier).

12:45 p.m. – 3:00 p.m. Teachers will develop an understanding that individualistic goals and team goals often work together to develop a team. The session will have teacher leaders hold discussions with team members on individual national standards and the implementation of standards including alignment with the school's vision and goals.

Day 3: How collaborative PDP participation reveals underlying issues related to educational operation procedures that affect organizational behaviors.

8:30 a.m. – 11:45 a.m.: Teachers will discuss how participating in collaborative PDP uncovers underlying issues that affect organizational behaviors. Teachers will collaborate on how to change from unwritten organization behaviors to a system of accountability.

12:45 p.m. – 1:45 p.m.: Lunch (Small groups may decide to have a working lunch and finish the day one hour earlier).

12:45 p.m. – 2:00 p.m.: The focus of this session is on school-wide academic achievement and establish team and school protocols that sustain the distributed leadership framework (Morettini, Luet, Vernon-Dotson, Nagib, & Krishnamurthy, 2018). Teachers and administrative leadership will consider team improvement plans and school-wide improvement plans and discuss how the two are related. If the team improvement plans and school-wide improvement plans are not aligned, teachers and

administrative leadership will work together to align the plans. Teachers and administrative leadership will discuss barriers to efficiently implement the plans and develop strategies to overcome the barriers.

Responsibilities and Roles

The PowerPoint is one of the many technology tools that the trainers will use during the 3-day training and during the year. The content of the sessions are included in the PowerPoint. To help with presentation, the timing is also included in the PowerPoint.

Objectives and over all goals

Learning: Participants will understand why Marzano is effective based on researched best practices**.** Stakeholder will:

- Understand the growth and development of teachers,
- Realize that the Marzano causal teacher evaluation model and iObservation tool is part of everyday practice,
- Tracking student progress,
- Step by step, apply techniques to lessons,
- What is the relationship between effective teaching and student achievement?,
- Review the research and findings in Literature Review and data analysis,
- Stress weakness and strengths of the findings of the research, and
- Teacher Self-Efficacy.

Teachers implementing standards of high expectations in academic achievement for all students will contribute to student achievement (Blazar, 2015):

- Marzano causal teacher evaluation model and iObservation tool

  Framework of Marzano Model,
- Four areas,
- Specific elements for each objective,
- Video lessons,
- Four domains shared among teachers, and
- Planning and questions designed for critical thinking.

The Marzano causal teacher evaluation model and iObservation tool *Practice areas are:*

- Design Questions,
- Teach web-based tools,
- Practice each domain online,
- Review all the elements in each domain,
- Complete practical and objective goals,
- Self-Assessment, and
- Quick and Easy evaluation of any lesson.
- There are 41 elements that require:

  Raise one, two, three, or four fingers.

- I understand the lesson,

  I am almost comfortable with the lesson,

- I am confused and ask for assistance with parts of the lesson, and
- I have no idea about the lesson and I need on-on-one instruction.

Which **creative strategy** will I employ to execute and communicate learning objectives, record student progress & acknowledge success?

- Provide rubrics of learning objectives,
- Celebrating succession,
- Are these elements part of your **daily practice** as a classroom educator?,
- Consult the composition in area of the first question, and
- Recording and analyzing student progress is element one.

The teacher facilitates tracking of student progress on one or more learning goals using a formative approach to assessment:

- Example of tracking student progress during an observation,
- Scale of rating oneself in tracking student progress,
- Marzano Suggested Classroom Observations, and
- Long & Short Form Observations

Long Form Observations:

- Full class period,
- More data points/feedback provided, and
- Pre and post observation conferences occur.

Short form observations will be:

- Minimum of 10 minutes in duration,
- Fewer data points/feedback provided, and
- Post observation at the request of teacher or observer.

Reflection and self-assessment will be:

- Teacher needs to develop reflective questions,
- Think about design question for personal growth,
- Think about challenges for the year, and
- Think about gaining support from colleagues.

Evaluation Plan

After each session, the lead teacher will provide a digital survey to allow feedback. Administration will allocate to each participant who completed an opportunity to win a "perk" such as a free pass for no hall duty. The ongoing training will be from volunteer lead teachers who feel comfortable in a particular software. These teachers will be the course trainers or expert in the particular implementation and integration of the best practice. The lead volunteers will schedule training sessions through webinars, faculty meetings, prep periods, and in-service days. The lead volunteers will also receive rewards for their services such as no hall duty, leaving early after they dismissed students, preferred parking, or any special acknowledgement permitted with union contract.

Tools, Resources and Materials

The lead teachers will use the available resources and tools. Each small learning community needs will dictate the materials, tools, and resources. Each learning community will request software, skill, and best practice. Some online training may include, but not limited to the following:

- Google Classroom (https://classroom.google.com),
- Jigsaw Classroom (www.jigsaw.org),
- Khan Academy (www.khanacademy.org,
- Microsoft Office (Word, Excel, PowerPoint),
- TeacherTube (www.teachertube.com),
- KaHoot (https://getkahoot.com), and
- Socrative (www.socrative.com).

The outline of the PowerPoint, relationship of PDP standards and teachers' Self-efficacy, with pacing for the three days is as follows.

- Three Day PDP

Day 1 8:30 am 9:45 am, Break 9:45 – 10 am, 10 am – 11:45 am, 11:45 -12:45 pm break for lunch, 12:45 pm – 2:00 pm

- Each session is 75 minutes or 4 slides with activities in 1.25 hours,

  15 minute breaks, 13 slides with activities in a day. Slides 1-13

Day 2 8:30 am 9:45 am, Break 9:45 – 10 am, 10 am – 11:45 am, 11:45 -12:45 pm break for lunch, 12:45 pm – 2:00 pm

- Each session is 75 minutes or 4 slides with activities in 1.24 hours, 15 minute breaks, 13 slides with activities in a day. Slides 14-27

  Day 3 8 am – 11 am, 11-12pm break for lunch, 12pm – 3 pm

  8:30 am 9:45 am, Break 9:45 – 10 am, 10 am – 11:45 am, 11:45 -12:45 pm break for lunch, 12:45 pm – 2:00 pm

- Each session is 75 minutes or 4 slides with activities in 1.25 hours, 15 minute breaks, 13 slides with activities in a day. Slides 27-40+
- Group Activity 1: Identify Standards to be Implemented

  Day 1 - 75 minute sessions including 15 minute summaries

- Identify and Introduce trainer
- Read activity for beginning session
    - Only review 3 standards in one session at a time
    - Within each category, focus on only one category within each standard in one session.
- Prepare to summarize on conclusions from your group discussions
- Three 75 Minute sessions
- Group Activity 1: Analyze the "Standard and Question Averages Report"
- Identify a Facilitator and Recorder
- Read online activity 1.1.1 – 1.1.2 (do not do entire activity)
    - 1.1.2 – Circle and calculate only 2 "highest" and 2 "lowest" averages.
- Prepare to summarize on conclusions from your group discussions.

- 30 Minutes
- Objectives and over all goals

Learning: Participants will understand why Marzano is effective based on researched best practices

Stakeholder will:

1. Understand the growth and development of teachers
2. Realize that the Marzano causal teacher evaluation model and iObservation tool is part of everyday practice

Tracking student progress

1. Step by step, apply techniques to lessons

- What is the relationship between effective teaching and student achievement?
- Review the research and findings in Literature Review and data analysis

Stress weakness and strengths of the findings of the research

- Guiding Question

What is the extent of the relationship between the teachers' perception of self-efficacy and attitude toward the alignment of standards of web-based PDP?

- Break time
- Desired Outcomes

Participants Will:

- Gain an overview of the SAI and SAI2 instrument as the tool used to provide data.

- Prepare to attend more PDP to improve self-efficacy and attitude and implementation of national PDP standards within the classroom.
- Group Activity 1:

  Identify Standards
- Identify 1-3 Standards
- Increase understanding of the standards
- Discuss the potential for enhancement in school improvement.
- Marzano causal teacher evaluation model and iObservation tool

Self-efficacy, for example, refers to an individual's beliefs in his or her capabilities of performing a particular function or task (Bandura, 1977) Self-efficacy is a complex coordination of traits, and a compilation of beliefs that molds one's self-view of successfully performing a particular task

- Standards Assessment Inventory (SAI)
- Perceptual survey of PDP processes and practices in your school.
- 60 items – 5 for each of the NSDC PL Standards.
- Valid and reliable.
- Results delivered in two electronic reports.
- Review
- Lunch time
- Group Activity 2

  Analyze the Standards Selected –Day 2

- Identify a Facilitator and Recorder
- Read 2.1.1 – 2.1.2 (Do not do full activity)
    - Use only one of the standards you identified in the last activity
    - Concentrate on the first two questions.
- Prepare to summarize on conclusions from you group discussions.
- 45 Minutes with 15 minute summary
- Group Activity 2

  Analyze the Standards Selected

- To clarify staff understanding of the SAI items defining each selected standard.
- To begin the process of staff consensus on the meaning of selected standards.

  What does the school district need to know?

- Why use the Marzano causal teacher evaluation model and iObservation tool*?*
- Does the model effectively train teachers?
- *How does* Marzano causal teacher evaluation model and iObservation tool *work?*
- Teacher Self-Efficacy

  Teachers implementing standards of high expectations in academic achievement for all students will contribute to student achievement (Grissom &Youngs, 2016).

- Break
- Marzano causal teacher evaluation model and iObservation tool

  Framework of Marzano Model

  Four areas

- Elements
- Lessons
- Domains
- Questions
- The Marzano causal teacher evaluation model and iObservation tool Practice areas
- Design Questions
- Each lesson should choose a design question and strategy.
- Example: Think, pair, Share
- Lunch
- Design Question 1

  Tracking student progress is element one

  The teacher facilitates tracking of student progress on one or more learning goals using a formative approach to assessment.

- Lunch time
- Teach web-based tools
- Practice each domain online.
- Review all the elements in each domain.
- Complete practical and objective goals.

  Self-Assessment

  Quick and Easy evaluation of any lesson

There are 41 elements that require:

Raise one, two, three, or four fingers.

1. I understand the lesson
2. I am almost comfortable with the lesson.
3. I need help with parts of the lesson.

4. I have no clue about the lesson.

- Summarize (15 Mins.)
- What did you learn about your standard by discussing the survey items for that standard?
- Which standard did you identify as high impact on student success? Why?
- If we were a faculty, what strategies might we use to come to consensus on which standards to pursue?
- Training questions about this activity?
- Staff Activity 3: Study the Standards to Focus the Vision
- To begin to develop the deep, mutual understandings of the selected standards the staff will need to develop an informed plan for improvement.
- To see the relationships between each standard and improved staff and student performance.
- To begin to build a sustainable staff vision of your school as a community of learners.
- Staff Activity : Assess Standards and Action Planning

- Innovation Configuration Maps
    - Standards are “What” and IC Maps are “How”
    - Identify current status and next steps
- Action Planning Process Tools
    - A “Think Piece” not a full plan
- Staff Activity : Assess Standards and Action Planning
- To assess the current level of implementation of selected standard by learning to use the IC Maps
- To translate SAI data and resulting staff learning and discussion into action plans for the school.
- What will I do to establish and communicate learning goals, track student progress & celebrate success?
- Provide rubrics of learning objectives
- Celebrating success

Are these elements part of your daily practice as a classroom teacher/specialist?

- Example of tracking student progress during an observation
- Scale of rating oneself in tracking student progress (Marzano, 2013).
- Break
- Marzano Suggested Classroom Observations (Marzano, 2013).
- Long & Short Form Observations

Long Form Observations:

- Full class period
- More data points/feedback provided
- Pre and post observation conferences occur

Short Form Observations:

- Minimum of 10 minutes in duration
- Fewer data points/feedback provided
- Post observation at the request of teacher or observer

Reflection and self-assessment

- Teacher needs to develop reflective questions
- Think about design question for personal growth
- Think about challenges for the year
- Think about gaining support from colleagues
- Staff Activity 3: Study the Standards to Focus the Vision
- Rational Statements from NSDC
- Norms and Discussion Questions (HO 3.1 and HO 3.2.1-3.2.4
    - Study and discuss the Rationale Statements
    - Study and discuss the Discussion Questions
- Major Learning Activity – Take your time!
- School Vision for improvement
- Lunch

- Training/implementation Options
- One hour sessions
- Half-Day Training
- Full-Day Training
- 3-day Training Module (This PowerPoint will be based on the 3-day training module.
- Summarize (10 min.)
- Which Standards did you choose for Part A?
- Which Standards did you choose for Part B?
- Were they different? If so, why?
- Interesting anomalies in the data?
- Training questions about this Activity?
- National Staff Development Standards
- 1. Learning Communities
- 2. Leadership
- 3. Resources
- 4. Data-Driven
- 5. Evaluation
- Next Steps
- What do we need to do in our school (or school district) to use the SAI results to enhance school improvement?

    - Who to involve in planning?
    - Logistics?
    - Resources (TIME!)
    - Preparation?
    - Discuss 15 min. in your team
- Share with the group
- Summarize (15 min)
- Give a good example of at least one “interesting” distribution.
- What are the ways you decided you might explain that distribution?
- Given one of your explanations, how might you approach helping your staff to come to consensus on that item?
- Training questions about this activity?

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Relationship between Teacher Perceptions of Acceptable Professional Development and the Learning Constructs towards Student Achievement

Walden University
Arlene Wacha

Three Day Professional Development

Day 1 8:30 am 9:45 am, Break 9:45 – 10 am, 10 am – 11:45 am, 11:45 - 12:45 pm break for lunch, 12:45 pm – 2:00 pm

- Each session is 75 minutes or 4 slides with activities in 1.25 hours, 15 minute breaks, 13 slides with activities in a day. Slides 1-13

Day 2 8:30 am 9:45 am, Break 9:45 – 10 am, 10 am – 11:45 am, 11:45 -12:45 pm break for lunch, 12:45 pm – 2:00 pm

- Each session is 75 minutes or 4 slides with activities in 1.24 hours, 15 minute breaks, 13 slides with activities in a day. Slides 14-27

Day 3 8 am – 11 am, 11-12pm break for lunch, 12pm – 3 pm

8:30 am 9:45 am, Break 9:45 – 10 am, 10 am – 11:45 am, 11:45 -12:45 pm break for lunch, 12:45 pm – 2:00 pm

- Each session is 75 minutes or 4 slides with activities in 1.25 hours, 15 minute breaks, 13 slides with activities in a day. Slides 27-40+

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Group Activity 1: Identify Standards to be Implemented

Day 1 - 75 minute sessions including 15 minute summaries

- Identify and Introduce trainer
- Read activity for beginning session
  - Only review 3 standards in one session at a time
  - Within each category, focus on only one category within each standard in one session.
- Prepare to summarize on conclusions from your group discussions
- Three 75 Minute sessions

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Group Activity 1: Analyze the "Standard and Question Averages Report"

- Identify a Facilitator and Recorder
- Read online activity 1.1.1 – 1.1.2 (do not do entire activity)
  - 1.1.2 – Circle and calculate only 2 "highest" and 2 "lowest" averages.
- Prepare to summarize on conclusions from your group discussions.
- 30 Minutes

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Objectives and over all goals

Learning : Participants will understand why Marzano is effective based on researched best practices

Stakeholder will:

1. Understand the growth and development of teachers
2. Realize that the Marzano causal teacher evaluation model and *iObservation® tool* is part of every day practice

Tracking student progress

1. Step by step, apply techniques to lessons

- What is the relationship between effective teaching and student achievement?
- Review the research and findings in Literature Review and data analysis Stress weakness and strengths of the findings of the research

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Group Activity 1: Identify Standards

- Identify 1-3 Standards
- Increase understanding of the standards
- Discuss the potential for enhancement in school improvement.

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Marzano causal teacher evaluation model and *iObservation® tool*

Self-efficacy, for example, refers to an individual's beliefs in his or her capabilities of performing a particular function or task (Bandura, 1977)

Self-efficacy is a complex coordination of traits, and a compilation of beliefs that molds one's self-view of successfully performing a particular task

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Standards Assessment Inventory (SAI)

- Perceptual survey of professional development processes and practices in your school.
- 60 items – 5 for each of the NSDC PL Standards.
- Valid and reliable.
- Results delivered in two electronic reports.

- Review

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Discuss National Professional Standards as they relate to Marzano causal teacher evaluation model and *iObservation® tool*

- Overall Effective Use
- Details

Group Activity 2
Analyze the Standards Selected –Day 2

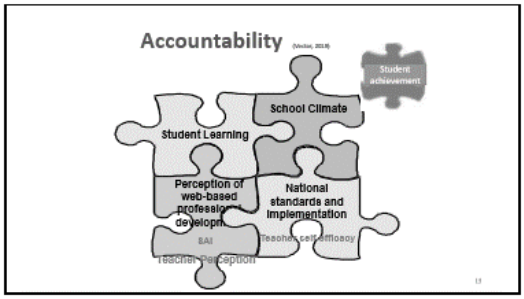
- Identify a Facilitator and Recorder
- Read 2.1.1 – 2.1.2 (Do not do full activity)
  - Use only one of the standards you identified in the last activity
  - Concentrate on the first two questions.
- Prepare to summarize on conclusions from you group discussions.
- 45 Minutes with 15 minute summary

Group Activity 2
Analyze the Standards Selected

- To clarify staff understanding of the SAI items defining each selected standard.
- To begin the process of staff consensus on the meaning of selected standards.

What does the school district need to know?

- Why use the Marzano causal teacher evaluation model and *iObservation® tool?*
- *Does the model effectively train teachers?*
- *How does* Marzano causal teacher evaluation model and *iObservation® tool work?*



Teacher Self-Efficacy

Teachers implementing standards of high expectations in academic achievement for all students will contribute to student achievement (Grissom &Youngs, 2016).

Marzano causal teacher evaluation model and *iObservation® tool*

Below is a table taken from Haystead and Marzano (2009) listing the skills that improve using Marzano Causal Model (Haystead & Marzano, 2010).

Note Taking	17%	Building Vocabulary	20%
Practice	14%	Effort and Recognition	14%
Setting Goals/Objectives	25%	Graphic Organizers	13%
Student Discussion/Chunking	17%	Homework	15%
Summarizing	19%	Identifying Similarities and Differences	20%
Tracking Student Progress and Using Scoring Scales	34%	Interactive Games	20%
		Nonlinguistic Representations	17%

Framework of Marzano Model

Four areas

- Elements
- Lessons
- Domains
- Questions

Self Assessment

Quick and Easy evaluation of any lesson .

There are 41 elements that require:
Raise one, two, three, or four fingers.

1. I understand the lesson
2. I am almost comfortable with the lesson.
3. I need help with parts of the lesson.
4. I have no clue about the lesson.

summarize (15 Mins.)

- What did you learn about your standard by discussing the survey items for that standard?
- Which standard did you identify as high impact on student success? Why?
- If we were a faculty, what strategies might we use to come to consensus on which standards to pursue?
- Training questions about this activity?

Staff Activity 3: Study the Standards to Focus the Vision

- To begin to develop the deep, mutual understandings of the selected standards the staff will need to develop an informed plan for improvement.
- To see the relationships between each standard and improved staff and student performance.
- To begin to build a sustainable staff vision of your school as a community of learners.

Staff Activity : Assess Standards and Action Planning

- Innovation Configuration Maps
  - Standards are "What" and IC Maps are "How"
  - Identify current status and next steps
- Action Planning Process Tools
  - A "Think Piece" not a full plan

The Marzano causal teacher evaluation model and *iObservation® tool Practice areas*

Domain 1: Behavior and Strategies
Domain 2 : Preparation and Planning
Domain 3: Reflection
Domain 4: Collegiality

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Design Questions

- Each lesson should choose a design question and strategy.
- Example: Think, pair, Share

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Design Question 1

Tracking student progress is element one

The teacher facilitates tracking of student progress on one or more learning goals using a formative approach to assessment.

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Teach web-based tools

- Practice each domain online.
- Review all the elements in each domain.
- Complete practical and objective goals.

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Staff Activity : Assess Standards and Action Planning

- **To assess the current level of implementation of selected standard by learning to use the IC Maps**
- **To translate SAI data and resulting staff learning and discussion into action plans for the school.**

District-wide Goal: Design Question 1

What will I do to establish and communicate learning goals, track student progress & celebrate success?

- Provide rubrics of learning objectives
- Celebrating success

Are these elements part of your daily practice as a classroom teacher/specialist?

Example of tracking student progress during an observation

2. Tracking student progress

The teacher facilitates tracking of student progress on one or more learning goals using a formative approach to assessment (Marzano, 2013).

Teacher Evidence:	Student Evidence:
❑ Teacher helps student track their individual progress on the learning goal ❑ Teacher uses formal and informal means to assign scores to students on the scale or rubric depicting student status on the learning goal ❑ Teacher charts the progress of the entire class on the learning goal	❑ When asked, students can describe their status relative to the learning goal using the scale or rubric ❑ Students systematically update their status on the learning goal
What else do you see the teacher do?	What else do you see the students do?

Scale of rating oneself in tracking student progress (Marzano, 2013).

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Scale

Not Using	Beginning	Developing	Applying	Innovating
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Reflection Questions

Not Using	Beginning	Developing	Applying	Innovating
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Marzano Suggested Classroom Observations (Marzano, 2013).

TENURED TEACHERS	PROBATIONARY TEACHERS
✓ 2 Observations ✓ 1 announced long form ✓ 1 unannounced; can be either long form or short form	✓ 4 Observations ✓ 2 announced & 2 unannounced ✓ All are long form, but 1 can be replaced by 3 short form observations

Long & Short Form Observations

Long Form Observations:
- Full class period
- More data points/feedback provided
- Pre and post observation conferences occur

Short Form Observations:
- Minimum of 10 minutes in duration
- Fewer data points/feedback provided
- Post observation at the request of teacher or observer

Reflection and self-assessment

- **Teacher needs to develop reflective questions**
- **Think about design question for personal growth**
- **Think about challenges for the year**
- **Think about gaining support from colleagues**

Staff Activity : Study the Standards to Focus the Vision

- **Rational Statements from NSDC**
- **Norms and Discussion Questions (HO 3.1 and HO 3.2.1-3.2.4**
  - **Study and discuss the Rationale Statements**
  - **Study and discuss the Discussion Questions**
- **Major Learning Activity – Take your time!**
- **School Vision for improvement**

Training/implementation Options

- **One hour sessions**
- **Half-Day Training**
- **Full-Day Training**
- **3-day Training Module (This power point will be based on the 3-day training module.**

National Staff Development Standards

- 1. Learning Communities
- 2. Leadership
- 3. Resources
- 4. Data-Driven
- 5. Evaluation
- 6. Research-Based
- 7. Design
- 8. Learning 9. Collaboration
- 10. Equity
- 11. Quality Teaching
- 12. Family Involvement

Next Steps

- **What do we need to do in our school (or school district) to use the SAI results to enhance school improvement?**
  - Who to involve in planning?
  - Logistics?
  - Resources (TIME!)
  - Preparation?
- **Discuss 15 min. in your team**
- **Share with the group**

Summarize (15 min.)

- **Which Standards did you choose for Part A?**
- **Which Standards did you choose for Part B?**
- **Were they different? If so, why?**
- **Interesting anomalies in the data?**
- **Training questions about this Activity?**

Summarize (15 min)

- **Give a good example of at least one "interesting" distribution.**
- **What are the ways you decided you might explain that distribution?**
- **Given one of your explanations, how might you approach helping your staff to come to consensus on that item?**
- **Training questions about this activity?**

References

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Evaluation Survey

Survey online and available at the end of each day

The date the professional development took place	**Date**
Please rate the following	**Please circle your best satisfaction level 0 Not satisfied – 10 Extremely satisfied**
1.I am glad I invested time in today's session	0 .1 .2. 3. 4 .5. 6 .7 .8. 9 .10
2.Session information were useful and engaging	0 .1 .2. 3. 4 .5. 6 .7 .8. 9 .10
3.Time in the workshop was adequate to collaboration	0 .1 .2. 3. 4 .5. 6 .7 .8. 9 .10
4.The sessions were well planned, interactive and collaborative	0 .1 .2. 3. 4 .5. 6 .7 .8. 9 .10
5.The presenter was on target	0 .1 .2. 3. 4 .5. 6 .7 .8. 9 .10
6.The environment was interesting, unbiased, enthusiastic, and welcomed participation	0 .1 .2. 3. 4 .5. 6 .7 .8. 9 .10
7.I will benefit from the sessions and increase my instructional	0 .1 .2. 3. 4 .5. 6 .7 .8. 9 .10
8.I will benefit from the sessions and increase my instructional	0 .1 .2. 3. 4 .5. 6 .7 .8. 9 .10
9.I will benefit from the sessions and increase my instructional	0 .1 .2. 3. 4 .5. 6 .7 .8. 9 .10
10.I will benefit from the sessions and increase my instructional	0 .1 .2. 3. 4 .5. 6 .7 .8. 9 .10

11.I will benefit from the sessions and increase my instructional	0 .1 .2. 3. 4 .5. 6 .7 .8. 9 .10
12.I will benefit from the sessions and increase my instructional strategies	0 .1 .2. 3. 4 .5. 6 .7 .8. 9 .10
13.I highly recommend these sessions in the future	0 .1 .2. 3. 4 .5. 6 .7 .8. 9 .10