

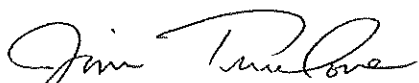
TEACHER PERCEPTION OF THE IMPACT OF PROFESSIONAL DEVELOPMENT
ON CLASSROOM TEACHING SKILLS AND STUDENT ACADEMIC
PERFORMANCE

© Copyright by
J. LLOYD HINSLEY
2018

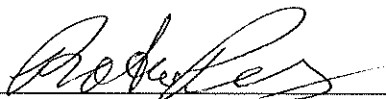
The undersigned, approved by the Department Chair of Graduate Studies in Education, have examined a dissertation entitled:

TEACHER PERCEPTION OF PROFESSIONAL DEVELOPMENT ON CLASSROOM
TEACHING SKILLS AND STUDENT ACADEMIC PERFORMANCE

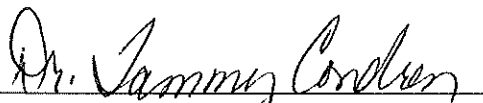
Presented by J. Lloyd Hinsley, a candidate for the degree of Doctor of Education and hereby certify that in their opinion it is worthy of acceptance.



Dr. Jim Truelove, Advisor/Chair
Dean, College of Education
Pittsburg State University



Dr. Robert Perry, Committee Member
Graduate Education
Southwest Baptist University



Dr. Tammy Condren, Member
Ed.D. Program Coordinator
Southwest Baptist University

TEACHER PERCEPTION OF THE IMPACT OF PROFESSIONAL DEVELOPMENT
ON CLASSROOM TEACHING SKILLS AND STUDENT ACADEMIC
PERFORMANCE

A Dissertation
Presented to
The Faculty of the Graduate Education Department
Southwest Baptist University

In Partial Fulfillment
of the Requirements for the Degree

Doctor of Education

By

J. Lloyd Hinsley, Ed.S.

Dr. Jim Truelove, Dissertation Advisor

2018

ACKNOWLEDGMENTS

I am grateful for the friendship, support, guidance, wisdom, and motivation of my advisor, Dr. Jim Truelove, whose expertise, patience, and generosity with his time made it possible for me to complete this project and move from the status of all but dissertation to that of Doctor of Education. Dr. Truelove, I am forever indebted to you and a Wednesday evening will never pass that I won't recall our weekly meetings!

I am hugely indebted to Dr. Robert Perry and Dr. Tammy Condren of the Graduate Education department of Southwest Baptist University for serving on my advisory team and for the valuable suggestions and contributions that they provided in making sure that this project could be its best and completed according to a set of high standards.

I would like to express my appreciation to my family, who inspires me. My gratitude goes to my wife, Teresa, for her support and encouragement in this project and every other academic pursuit and project that I have undertaken or aspired to achieve. Also, thanks to my sons, Justin and Reece who probably can't recall a day that I was not deeply involved in degree pursuits or projects and have been supportive and encouraging through each of them.

This project could not have been completed at all without the help of my dear friend Marsha Appleby, who is by far the most gifted and talented person that I know in dealing with the problems technology offers. There was no problem that I encountered too large or small that she was not able to correct or eliminate and her willingness to do so is something that I will forever appreciate. To me, she is the queen and ruler over all things Microsoft Word and Excel.

I would like to thank Dr. Pam Hedgpeth for making the trip to the school where I was employed at the time for the purpose of recruiting me to the doctoral program of Southwest Baptist University and for giving me the facts straight that it wouldn't be the easiest undertaking I ever performed, but it would certainly be one of the most rewarding. It certainly lived up to her statement.

I am grateful to Bruce Terry, former University of the Ozarks basketball coach, for whom I worked for as an undergraduate on a team that would ultimately be enshrined in the U of O sports Hall of Fame. There is not a place on earth that I wouldn't follow him into battle and my thanks to him for his lifelong friendship and for giving me the directive to finish this project.

I would also like to acknowledge all of my instructors and professors at every postsecondary level of education for reminding me that successes come from continuing forward through the trying times that are inevitable throughout life.

I am grateful to Anne Byers, who unfortunately passed away before she was able to see me complete this project. She was a person that gave me the belief that I could accomplish anything and no matter what I decided to do, she was there, providing motivation and encouragement.

I am greatly appreciative of Mr. R. Winston Reed, my friend and mentor without whom I would have never advanced as far in my career as I did. I learned so much from him, and not only listened to but heeded his advice and appreciate all the wisdom he passed on to me.

To all of my colleagues throughout my career, in Missouri public education, I appreciate you and all that you have given me over the years and finally,

To all my students during my career, I will never forget you!

TABLE OF CONTENTS

ACKNOWLEDGMENTS	ii
TABLE OF CONTENTS	v
LIST OF TABLES	ix
ABSTRACT	x
INTRODUCTION	1
Problem Statement	5
Theoretical Framework	5
Research Questions	6
Null Hypothesis	7
Rationale for the Study	7
Limitations	8
Delimitations	8
Summary	9
REVIEW OF RELATED LITERATURE	10
Introduction.....	10
Progression of Professional Development.....	12
Styles of Professional Development	13
Collaborative professional development	14
Participant-involved authentic professional development opportunities	15
Teacher partnership.....	18
Action research results inform the PLC.....	20

Online teacher professional development.....	22
Individual intrinsically motivated professional development	24
Preservice training as professional development.....	25
Professional development according to career stage	27
Teachers’ expectations of professional development activities.....	29
School administration standards of quality professional development	32
Legislation of professional development.....	33
Student success from quality professional development	36
Critiques of professional development	37
Summary	38
METHODOLOGY	40
Introduction	40
Research Participants	41
Instrumentation	41
Face Validity.....	42
Pilot Study Content Validity.....	44
Pilot Study Construct Validity	47
Pilot Study Principal Components Factor Analysis.....	48
Procedure	49
Full Study Principal Components Factor Analysis.....	51
Data Analysis	51
Demographics	51

Summary	51
ANALYSIS	53
Introduction.....	53
Research Questions.....	54
Null Hypothesis	54
Responses by Group	54
Instructional skills: Lowest.....	54
Instructional skills: Highest	55
Student performance: Lowest	55
Student performance: Highest.....	56
Results.....	57
Descriptive Statistics.....	58
Research Questions.....	59
Quantitative Statistics	60
Null Hypothesis	60
Summary	62
CONCLUSIONS AND RECOMMENDATIONS	63
Introduction.....	63
Findings	64
Research Question 1	65

Research Question 2	65
Research Question 3	65
Conclusion	66
Recommendations.....	67
REFERENCES	70
APPENDICES	77
Appendix A: Pilot Study Survey Questions	77
Appendix B: Full Study Survey Questions.....	80

LIST OF TABLES

Table 1: Table of Specifications	43
Table 2: Index of Item Objective Congruency	45
Table 3: Pilot Study Factor Analysis	48
Table 4: Full Study Construct Validity	50
Table 5: Participant Demographic Information	57
Table 6: Compilation of Responses to the Survey Questions.....	58
Table 7: t test of Teacher Responses in Each District-Ranking Group	61
Table 8: t test of Teachers Having or Not Having Input into Types of Professional Development Offered	61

ABSTRACT

Professional development is formal in-service training offered to teachers to improve their pedagogical skills, which ultimately increases the academic performance of their students. This study measured the perceptions of teachers employed by the 20 highest and lowest ranked Missouri school districts as ranked and reported by k12bigdata.com. Findings of this study could provide the basis for school leaders and professional development committees to consider during collaboration during professional development opportunity selection. Data analysis from participant teacher responses enabled specific conclusions regarding teachers' perceptions of professional development to be made. Overall, participant teachers held a favorable view of professional development participation. Teachers of both ranking groups preferred to have input into the professional development activities. Findings and conclusions of the study led to recommendations that include professional development participation should continue to be part of Missouri teachers' practice. Additionally, teachers should have input in selecting appropriate and meaningful professional development opportunities.

INTRODUCTION

Effective teaching is an important factor in student success and raising student achievement (Aaronson, Barrow, & Sander, 2007). Teacher quality has been cited as the single most important school factor that explains student achievement (Hanushek, 2007; Dash, de Kramer, Odwyer, Masters, & Russel, 2012). Professional development is formal in-service training to upgrade the pedagogical skills of teachers and is widely viewed as an important means of improving teaching and learning (Quint, 2011). Teacher professional development has been deemed a necessary component to improving teacher quality, specifically, their pedagogical practices (Dash, et al., 2012). Professional development has been adopted as a policy solution to improving the number of highly qualified teachers as well as helping all students to achieve high academic standards (Dash et al., 2012). Instinctively, educators may understand that effective teachers improve the learning experience for students. In addition, educators understand from empirical evidence that effective teachers also have a direct positive impact on improving student learning (Hattie, 2003). Research exhibits teacher effects on student performance to be evident. Additionally, research reveals that a small amount of the difference in teacher effectiveness can be explained by individual characteristics such as certification, education, and experience (Aaronson et al., 2007; Hanushek et al., 2008). As a result, educational decision makers have sought to require that teachers' evaluation, pay, and tenure or some combination of the above be linked to measures of their students' academic performance (Corcoran, Jennings, & Beveridge, 2011). In the same study, results indicated that of the individual teacher characteristics that generally identified quality teachers, there was a swifter decline in student performance on high-stakes state-

administered standardized tests than on lower stakes achievement tests. This could possibly lead stakeholders to conclude that to prevent erosion of student performance on high-stakes tests would produce the need for teacher professional development since tests of higher stakes could be perceived as more detailed and specialized.

The purpose of professional development programs in schools is to teach teachers. The object is for teachers to learn and transfer the new knowledge into a daily demonstration of best practices resulting in higher levels of student achievement (Avalos, 2011). Professional development for teachers can be effective if it is intensive, sustained, and content focused (Yoon, Duncan, Lee, Scarloss, & Shapley, 2007). Professional development for teachers is accepted as an important way to improve teaching and, in turn, increase student performance while concurrently introducing curriculum and pedagogical reforms (Petrie & McGee, 2012). Educational reforms that provide more specific and higher standards for students necessitate educators to improve the quality of their instruction. School districts responding to this challenge will have to provide a wider range of support that allows teachers to meet increased standards. Two ways proposed are by providing additional opportunities for teachers to learn with and from their colleagues and by improving the extent to which teachers' professional development opportunities meet their needs (Parise, Finkelstein, & Alterman, 2015).

In 1993, The Missouri legislature passed Senate Bill 380 (SB #380), which came to be known as the Outstanding Schools Act of 1993. The legislation contained a reform package for public elementary and secondary education in Missouri. The school foundation formula on the distribution of funds to all public elementary and secondary education was revised, and increased student testing and school district accountability

measures were also included called the Missouri School Improvement Program (MSIP). The legislators also included a provision for teacher continuing education and professional development. The Outstanding Schools Act of 1993 stated that 1% of all foundation formula money given to school districts must be used for professional development activities (Missouri Department of Elementary & Secondary Education, n.d.-a). The Missouri DESE identified professional development as an integral part of the educational program and all improvement initiatives (Missouri Department of Elementary & Secondary Education, n.d.-b). All school districts were required to have a six-part written plan for teacher professional development that included how professional development activities were applied for, funded, and reimbursed. Also included was a detailed description of how the professional development activities addressed what was to be taught, the instructional methods, and activities related to student achievement as described in the district's Comprehensive School Improvement Plan (CSIP). Professional development participation was made a job responsibility and expectation for every teacher. The MSIP also matches professional development activities with assessed needs of students. MSIP made data and information collecting on professional development activities a necessity to determine its effectiveness in increasing student achievement. Finally, MSIP (2006) required the provision of adequate time for all teachers to participate in professional development activities.

The Missouri 10 by 20 initiative was launched in 2009. The Top Ten by 20 effort is an improvement plan for Missouri students to rank among the top 10 states by 2020. The Top 10 by 20 program also contains wording on the subject of professional development. The third of four goals of the effort provides that Missouri will prepare,

develop, and support effective teachers (Missouri Department of Elementary & Secondary Education, n.d.-c). Teacher preparation programs will become effective at preparing teacher candidates at a higher level according to performance data as outlined in the annually increasing benchmarks of the Annual Performance Report for Educator Preparation Programs (APR-EPP), through Missouri's DESE (Missouri Department of Elementary & Secondary Education, n.d.-a). The second goal of the effort requires all schools to align their evaluation programs to six of seven essential principles by 2016 and add student performance as a portion of teacher evaluation by 2017 (Missouri Department of Elementary & Secondary Education, n.d.-a).

An indirect objective of professional development is to improve the learning of students. The Wenglinsky (2000) report, *How Teaching Matters: Bringing the Classroom Back Into Discussions of Teacher Quality*, provided the positive effects of teacher professional development. Specifically, Wenglinsky wrote that students whose teachers participated in professional development outperformed their peers on mathematics assessments by more than a full grade level. In addition, students whose teachers had received professional development in higher order thinking skills outperformed their peers on mathematics assessments by 40% of a grade level (Wenglinsky, 2000; Dash et al., 2012). Sometimes the objective of professional development is not communicated in a manner reflecting the goal of increasing student performance. It may be perceived as a personal encroachment on a teacher's skills and educational practices in the classroom. The results of this study may provide a point of reference for administrators to determine how teachers employed by the 20 highest and lowest school districts in Missouri receive and evaluate professional development opportunities. Professional development

opportunities are designed to improve instruction and raise student achievement. This study examined teachers' perceptions of professional development and its impact on student achievement in the classroom.

Problem Statement

Professional development opportunities are designed to affect the teaching and learning process by improving teachers' instructional practices in the classroom. Among the most important purposes of teacher professional development is improvement of schools via improving the quality of classroom instruction, increasing student performance results, and enhancing the overall teaching and learning experience (Opfer & Pedder, 2011). Some teachers may not favorably view professional development activities and may look upon them as a personal affront to their classroom teaching practices (Knight, 2000). Teachers with negative perceptions of professional development activities may believe professional development is a waste of time, money, and resources. The purpose of any professional development activity is to enhance the quality of teaching by improving a teacher's classroom methods. The sum total of the educational process within a school eventually may suffer if the teacher's perception of professional development is negative.

Theoretical Framework

Marzano, Boogren, Heflebower, Kanold-McIntyre, & Pickering (2012) established a framework for their work that states effective teachers are made, not born. In terms of professional development, the researchers outlined ways school administrators can implement this adage into their schools for the purpose of improving student performance and increasing teacher training effectiveness (Marzano et al., 2012).

Marzano, (2007) described the need for schools to give teachers opportunities for feedback and practice in these two areas. Marzano's model of teacher development is unique in that teachers are active in their own professional development. Teachers select for themselves certain behaviors and methods they want to improve upon and then receive specific feedback through evaluation, self-assessment, and observation (Marzano et al., 2012). The teacher is active in selecting the area(s) of performance in which they desire improvement rather than participating in administrator-selected activities. Administrator-driven activities may be viewed as non-applicable to a teacher's individual situation, to the point that teachers are merely compliant but not focused, resulting in results similar to traditional professional development efforts that have little impact on classroom instruction (Knight, 2000). Teacher-driven activities that are directly linked to the classroom work teachers are performing may be viewed as more meaningful (Kedzior & Fifield, 2004). As a proponent of teacher growth, Marzano (2012) offered effective teaching as critical to student performance, and correct evaluation and mentoring can increase teacher effectiveness. Teachers who set teaching performance growth goals and work to achieve them, either alone or with a coach or administrator, improve their professional skills (Marzano, 2012).

Research Questions

Professional development may have a significant role in the eventual success of a school when considering student performance. The researcher examined the highest ranked and lowest ranked schools in Missouri based on the Missouri Assessment Plan (MAP) index. With the understanding of the importance of professional development within the school, these questions emerged:

1. What are the perceptions of Missouri educators employed by the 20 highest and lowest ranked school districts regarding the impact of professional development on increasing their skills?
2. What are the perceptions of the Missouri educators regarding the impact of professional development on increasing the performance of their students?
3. Are there any differences in teachers' perceptions of professional development between those employed by top-versus low-achieving schools?

Null Hypothesis

There will be no significant difference in teacher perceptions of professional development between those employed in the highest academic performing school districts according to the Missouri Assessment Plan (MAP) index and teachers employed in the lowest academic performing school districts as ranked by student performance according to each district's MAP index score.

Rationale for the Study

This study was performed for the benefit of decision makers of school districts such as school boards, school administrators, professional development chairpersons, and teachers. Quality of teaching plays a large role in student success (Tucker, 2005). For teachers to achieve the highest level of effectiveness and enable their students to learn at a high level, teachers increase their knowledge and skills through professional development (Mizell, 2010).

School boards set policy and appropriate funding dedicated to teacher professional development. School administrators oversee the spending of the dedicated funds monitoring where and how the money is spent, and how the newly attained

knowledge and programs will be implemented. Teachers are directly involved with students, leading the classrooms equipped with new knowledge and pedagogy methods and strategies.

Teachers may enter into participation of a professional development activity without the correct attitude or frame of mind. Many attend seminars, workshops, and conferences that are designed to yield higher quality instructors, but they may do so without a personal understanding of why they should participate or be involved. The researcher was focused on determining teachers' perceptions of professional development in Missouri school districts ranked as the 20 highest districts for student performance on the MAP index and the 20 lowest districts for student performance on the MAP index. Other factors were not considered.

Limitations

1. The research was limited to the integrity of the respondent in truthfulness in the responses.
2. The research was also limited to the potential participants' completion of the survey.

Delimitations

1. The research was delimited to survey participants consisting of teachers employed in Missouri public school districts with student achievement that ranked the district as one of the top 20 schools in student achievement or one of the 20 school districts with the lowest student achievement.

2. The data for determining Missouri public school districts that were included in the population of each ranked group was determined by their MAP index score created by K12bigdata.com (K12 Big Data, n.d.)

Summary

Schools exist to educate students. Perhaps never before in American history has the performance of our nation's schools been so highly scrutinized. Congress enacted the No Child Left Behind Act (NCLB, 2002) in response to concerns of an American crisis after comparisons of United States students showed them trailing students of other developed countries. Recently, the Every Student Succeeds Act (2016), which is a federal enactment, was created to address these concerns. In Missouri, Senate Bill #380, or the Outstanding Schools Act of 1993, and the Top 10 by 20 efforts are two state-level initiatives created to improve instruction and increase student achievement. Each contained language detailing professional development for teachers. Such positive impacts could include how professional development activities are perceived, received, and appreciated.

Professional development and continued education of teachers is a matter of establishing and adhering to raised standards. This research was conducted to show that teachers' perceptions as a facet of professional development may have been overlooked in research performed by others. The objective of this study was to determine that overlooked effect on student success in the classroom. Teachers' perception of professional development opportunities and their continuing education to increase their subject knowledge and classroom practices intent on improving student performance was the focus of this study (Yoon et al., 2007; Dash et al., 2012).

REVIEW OF RELATED LITERATURE

Introduction

Student academic performance is an important determining characteristic of teacher effectiveness. It has been well recognized in the research literature that highly qualified and highly effective teachers are key to students' academic success (Darling-Hammond & Berry, 2006; Lasley, Siedentop, & Yinger, 2006; Dash, et al., 2012). One year of ineffective teaching can set a student back years as compared to a student being taught by an effective teacher with all other factors remaining equal. What makes a teacher effective versus noneffective is debatable, but regardless of whether effective teachers come by their talents naturally or whether they are learned, teachers can develop and improve. Professional development is an effective way to change teacher practice and student achievement (Yoon et al., 2007).

Included in this review of literature is the history of professional development that outlines the progression from the traditional assembly of teachers receiving presentations from speakers to modern versions of participant-involved opportunities in which they interact and reflect on research-based methods used in the classroom, collaboration, action research, and job-embedded forms of instructional improvement. For any of these methods to be valuable, teachers must be receptive to the opportunities and be intrinsically motivated.

Preservice training is important to establish the necessary foundation for professional development in the future. Teachers who are trained to adapt to new methods in their teaching are more likely to be willing to try new professional development activities in the years to come. Teachers come with their own set of needs

and expectations during professional development sessions. It is vital for training to not only address goals predetermined by the district but also to contribute to the specific needs of teachers. Professional development is only valuable if it is implemented in the classroom; therefore it must be appealing in regard to real-life application. The perception of professional development by teachers varies not only by content area but also by career stage. Beginning teachers have different needs than more experienced educators, and special consideration needs to be made for all levels of training necessary within a staff (Darling-Hammond & McLaughlin, 1995).

School administrators often determine professional development activities for their buildings. Often professional development is seen as a one-day workshop that is superficial and disconnected from the needs of the teacher in his or her classroom and misses the objective of improving student performance because the information is fragmented and noncollective (Yoon, et al., 2007). Professional development is effective if it improves teacher subject matter knowledge, improves classroom teaching skills, and ultimately improves student learning (Yoon, et al., 2007).

Nationwide, school improvement and professional development have been mandated and influenced by legislation geared to increase student success. Administrators are now tasked to work within the framework of national expectations to achieve these goals. Examples of such are No Child Left Behind and Every Student Succeeds on a national level and state initiatives such as A Blueprint for Great Schools in California, Texas Literacy Initiative, and Missouri's Top 10 by 20 initiative at the state level.

Progression of Professional Development

Professional development for teachers has evolved over the years. Historically, professional development has been synonymous with teacher workshop. Models of early professional development were topics presented by an expert person to teachers gathered in a specific location for a single training seminar on a particular topic (Kedzior, & Fifield, 2004). Professional development in the workshop continued until the 1990s, when alternative methods began to emerge. Newer methods based on qualitative evidence provided the basis that for professional development to be effective it needed to be performed in an environment that fostered the exchange and reflection of teacher ideas associated with the set of skills targeted for improvement (Kedzior, & Fifield, 2004). Professional development should be a continuous, articulate process and be viewed as a professional responsibility of teachers focused on student performance (Wei, Darling-Hammond, & Adamson, 2010). Today, there are a number of actions and events that can be perceived as professional development opportunities. Because of the variety, teachers' perceptions of professional development are important. This determines their approach to it, how involved they will become in it, and what they will take from it. Professional development becomes the linchpin for reform (Gulamhussein, 2013).

Negative perceptions of professional development may have been established early in a teacher's career. Possibly the teacher did not have input into the professional development offerings in which they were expected to participate, or perhaps he or she found professional development activities nonapplicable to their subject matter. Also, professional development opportunities may not have addressed the individual weaknesses of the teacher he or she wished to strengthen. If the subject matter of

importance to the educator was not at the core of the professional development opportunity, the teacher could have become disinterested or apathetic (Hustler, McNamara, Jarvis, Londra, & Campbell, 2003). Ineffective professional development may also contribute to negative perceptions. Despite the importance of professional development, research has provided results that portray much of the professional development activities as ineffective (Hanushek, 2007; Opfer & Pedder, 2011). Reviews of research on professional development have stated that part of the problem is that researchers present a conceptualization that is simple in approach but it is not job embedded in either a teacher's working conditions or professional livelihood, and does not make clear how teachers learn from professional development (Opfer & Pedder, 2011). However, professional development for teachers can be effective if it is intensive, sustained, and content focused (Yoon et al., 2007).

Typically, the professional development model is perceived as a convention of teachers contained within an orderly space to receive input from a sole or group of speakers presenting a skill or set of skills decided on by a building-level administrator. Some teachers are fully engaged, others decline to give their complete attention, and others go about their business completely disengaged. This leads to questions as to the true benefits of professional development opportunities (Dever & Lash, 2013).

Styles of Professional Development

Collaborative professional development. Traditionally, educators have practiced their craft and learned about their profession through trial and error performed in isolation from their colleagues. Compared to classroom instruction today, in earlier education models, teachers progressed through the tasks of the profession without daily

supervision or continuous support (Prytula & Weiman, 2012). Teachers taught from textbooks and relied more on intuition and tradition rather than research-based strategies as they do today. During that time period, teachers were given little support, participated in little collaboration with colleagues, did not have opportunities to share their experiences, and had little or no input in departmental decisions. Since then, teachers have improved their practice and have enhanced the teaching and learning process in their classrooms in a variety of innovative ways. One of the improved strategies utilized is participation in an ongoing course of collaboration with other professionals in their department or building. Teachers engaging in collaboration have improved perceptions of their own identities (Prytula & Weiman, 2012). Successful collaboration includes approaches that provide for sharing, reflecting, and a certain amount of risk taking necessary to cause change (Vescio, Ross, & Adams, 2008). Some key indicators of the effectiveness of continuing professional development are opportunities to develop networks, a focus on student learning, and the facilitation of reflection on teaching practice (De Geest, Joubert, Sutherland, Back, & Hirst, 2008).

Professional collaboration is the encouragement of participation to combat the culture of privacy and isolation that exists within the school. More than a quarter of a century after Lortie's 1975 study, teacher isolation has been reexamined to find that very little has changed over the years, resulting in reduced classroom performance. When teachers become isolated, exposure to different methods is limited. Isolated teachers do not have the reassurance of shared successes with others that can be helpful during times of difficulty. Isolation of the teacher is the enemy of instructional improvement (Kanold, Tonchef, & Douglas, 2008; Prytula & Weiman, 2012). In isolation, teachers are left to

their own wherewithal to find the ways and means to discover new strategies to improve the learning process. Teachers have reported that the most useful professional development opportunities involved being able to learn from or with other teachers. Teachers benefit from collaborating to share ideas about providing instruction that involved more than just their classroom action. In addition, they collaborated over lesson plans, student work samples on assignments shared among them, and assessments (Parise, et al., 2015).

Elbousty and Bratt (2009) found that approximately one third of the teachers surveyed preferred to work in isolation despite the opportunity to work with others. Elbousty and Bratt concluded this percentage of teachers viewed their isolation as a benefit to their work. It enhanced their self-perception as experts in their practices. Collaboration to them was understood as being a mentor or advisor to less accomplished educators. Collaboration was seen as a nuisance that would ultimately impede their own progression. In reality, a collaborative school culture can be a very potent teaching and learning change agent. Teachers who engage in dialogue and interaction with fellow professionals within their discipline become familiar with and alerted to alternative methods and classroom strategies.

Participant-involved authentic professional development activities. The objective to having teachers participate in the professional learning community is not to bring resolution to a teacher's weaknesses, but rather to identify and share successful practices that are utilized in classrooms. This practice forms a base from which to improve and increase student learning. Several factors influence the quality of an educational professional development program. Research has been conducted in an effort

to identify a link determining what is most significant in increasing teacher learning and student production. Studies have been unsuccessful in determining any such link (Dever & Lash, 2013).

Instead of any single factor, several pieces must be present and connected in order for an increase in teacher learning to occur, and for that growth to have any actual impact on improving student learning. Much of the research has yielded many properties of effective professional development programs; however, often there is wide variance in findings and the data to support the claims are not consistent and are often conflicting (Dever & Lash, 2013). The components that make for a successful professional development event involve the type of activity, activity content, the role of administrators, the surroundings of the activity, and the level of collaboration by participants during the event (Dever & Lash, 2013). Educators are becoming less involved in professional development events in which they inertly receive knowledge and information. According to Dever and Lash (2013), educational practice is leaning towards events in which teachers are actively involved and participate in collaborative learning. This occurs through the use of activities that enable teachers to learn in authentic situations that require involvement, trial and error, and the ability to make the information applicable to their individual classroom setting (Sparks & Hirsh, 1997; Dever & Lash, 2013). In one case study, more than half of the teachers said that relevance to their classroom instruction was the primary component they used to measure the usefulness of a professional development activity. Specifically the teachers reported that they favored professional development sessions that offered things they could immediately implement in their classrooms (Parise, et al., 2015).

Professional learning communities (PLC) have been identified as an effective organizational approach for providing opportunities for teachers to engage in collaborative learning to improve their practice (Lieberman & Mace, 2008; Kelly & Cherkowski, 2015). A professional learning community provides opportunities for collaboration and reflection as well as opportunities for teachers to work together to learn and reflect on their practice with colleagues (Kelly & Cherkowski, 2015). Research reveals potential benefits of professional learning communities for school improvement (Stoll & Louis, 2007; Kelly & Cherkowski, 2015). The professional learning community has emerged as a powerful method of professional development in recent years and is the basis for assumption that PLC activities that involve teachers will increase knowledge and increase student learning (Vescio, et al, 2008). Accepted by administrators and educators alike, professional learning communities are being implemented to some degree nationwide. Exactly what a professional learning community is and the components that make up one remain vague. No two are identical, and there is widespread misuse of the title (Dever & Lash, 2013). Regardless of what each professional learning community consists of, if it is successfully constructed and managed, the returns from the investment may be numerous. Perhaps the best benefit a professional learning community offers is an increase in support for overall school improvement. Properly managed, it provides educators time to work together and collaborate on relevant topics and concerns, provides encouragement for professional involvement, and if not eliminates, at least reduces the amount of isolation (Dever & Lash, 2013). The concept of a professional learning community relies on the theory that practice should be altered and improved at the school level, therefore necessitating a

change in instructional practices (Kelly & Cherkowski, 2015). In addition, a professional learning community provides support for teacher development by increasing a teacher's content knowledge, ability to adapt instruction, and ability to remain committed to continuous professional change (Protheroe, 2004; Dever & Lash, 2013).

Teacher partnership. Regardless of the amount of research and writing on traditional professional development, there is still an increasing call for more collaboration among teachers to encourage teacher learning (Chou, 2011). This call for collaboration among teachers is rooted in the idea that new ideas and strategies, new information, and overall improvement do not come from teachers working in isolation. Instead, they come from communication between people meeting face-to-face. In addition, collaboration instills an intrinsic motivation for learners to become part of a culture and community that fosters and supports teacher learning (Chou, 2011).

The method by which teachers collaborate with each other and their building administrators is a significant factor in the success of a collaborative professional team and the professional learning community. Collaboration is at the core of any successful professional learning community. The goal of the collaboration and of the professional learning community is to create a zone in which learning occurs and students are positively impacted. It is important for anyone organizing a professional learning community or a professional development opportunity to insure it is not simply teachers being placed together and told to collaborate and exchange ideas. Unless adequate time is devoted to proper planning and to providing input to the teachers as to how the professional learning center is supposed to operate and be managed among them, then the probability increases that the opportunities for professional development will be lost.

Failure occurs when teachers have little or no motivation to work together (Dever & Lash, 2013).

During the formation of the professional learning community, one role of the building administrator is to eliminate obstacles and to remove barriers that are built by teachers that are resistant to the notion of the collaborative group or the professional learning community. Administrators also must discourage attitudes and stances by resistant teachers who wish to be independent and work alone. The goal should be to replace such attitudes and recalcitrance with the positive attributes of joint-development and collaborative instruction. Less than adequate attention to resistant teachers in a collaborative process could result in a group of frustrated teachers. Teachers may value the opportunity to learn, but believe the process has failed to reach its full potential or to provide the desired positive effects, as it never advanced beyond a minimal level due to less than adequate amounts of administrative support. This leaves teachers on their own to salvage and gain whatever they can from the experience (Dever & Lash, 2013).

From collaboration, patterns of classroom topics emerge that range from day-to-day tasks and problems to nonclassroom academic situations. The discussion patterns divulge the quality of discussion and collaboration that take place within the PLC. Patterns from the collaboration efforts associated with common planning time are generally centered on nonclassroom topics such as lesson planning, time management, and management of student behavior. The professional learning community develops topics and questions related to instruction and better presentation of classroom information to strengthen student performance (Dever & Lash, 2013).

Professional development can be found in many different forms and offerings. Teachers can gather for presentations, participate in activities, and perform their own self-directed professional development. As the number of qualified teachers dwindles and student numbers increasingly rise, colleges and universities are working to provide better induction processes for and develop a higher quality of teacher to meet the needs of today's students. As they do, many teachers are turning to conducting their own action research to grow professionally and achieve their goals. Action research is self-conducted inquiry in which a teacher develops a question, gathers their own data from observing their students' performance, and then analyzes the data to make informed decisions regarding their practice (Gilles, Wilson, & Elias, 2010). The recent trend to alter this perception of teacher professional development over the past several years has been to replace the traditional models with action research. The emphasis has become one of teachers identifying problems and formulating questions and gathering quantitative data to solve the problems and come to a conclusion based on actual evidence to ultimately enhance their individual practices (Darling-Hammond, & Berry, 2006; Chou, 2011).

Action research results inform the PLC. Professional learning communities benefit largely from action research. Action research improved the PLC by (a) providing better collaboration among the educators, (b) providing reflection as a means to start and continue regular researching, and (c) giving teachers a better sense of the power of dialogue and discussion (Gilles, et al., 2010). The researchers discovered that action research prompted teachers to create and strengthen their networks of collaboration. Through this process, teachers created deeper and wider collaboration groups, as action

research requires teachers to reach out to other teachers not only in other courses and other grade levels but to teachers teaching their future students as well. Collaboration dissolves the feeling of isolation that some teachers have as a result of lack of experience. Regular collaboration sheds light on the fact that newer teachers had the support of veteran teachers in addition to their regular mentors.

Effective, high-quality professional development is providing for improvements in teachers' knowledge and instructional practice that would result in student learning (Darling-Hammond, Wei, Andree, Richardson, & Orphanos, 2009; Masuda, Ebersole, & Barrett, 2012). Over the past decade, in a follow-up report to their research, Wei, et al., (2010) reported that among the trends and challenges in professional development, teachers now have less opportunity for continuous professional development. Course-specific professional development had actually increased over the same period (Wei, et al., 2010). Action research was viewed as a way for teachers to answer questions that arise throughout the course of the regular instructional day. Originally defined as a three-step spiraling process of planning, implementation, and evaluation, action research has several competing definitions that parallel the number of people that conduct it. It is conducted for the purpose of looking at what is wrong within the school as well as determining ways to repair and improve it. Thus, action research is a systematic inquiry into problems that exist within a teacher's classroom (Dever & Lash, 2013).

Action research is generally viewed somewhere within one of the following three categories or perhaps a combination of any of the three. First, technical action research is simply defined as the researcher or participants attempting to improve the results or outcomes of his or her own practice (Kemmis, 2009). Technical action research is thus

thought of as a way to produce results, or improvements made for improved outcomes. Technical action research is entirely participant led and the persons being observed are not regarded as objects of the researcher's actions; rather, participants are the research process. Practical action research, the second of the three categories, is much the same as technical action research, but rather than the subjects being objects of observation, they have involvement and a voice throughout the course of the project. In this method, the researcher remains open to their input, views, and contributions. Lastly, in critical action research, the research is conducted by the group as a whole and is at the opposite end of the spectrum of technical research in that all participants are not objects to be moved, manipulated, or have decisions made about and for them. Instead, it occurs in a setting in which everyone participating not only is capable of expressing views, but also of making decisions that could affect the outcome (Kemmis, 2009).

Online teacher professional development. Effective research-based professional development opportunities can be difficult to provide in rural settings. This may be especially true for select groups of teachers who are highly specialized and who are limited in number. These factors create complications when attempting to create groups for collaboration. School districts faced with these situations must become innovative in creating opportunities for teacher learning. Online professional development can solve some of the stress by connecting teachers in the same rare disciplines to others anywhere in the world (Erickson, Noonan, & McCall, 2012). Online professional development has been characterized as a professional development option in which a teacher can participate anytime and anywhere (Dash, et al., 2012). It provides flexibility by allowing participants to manage educational pursuits with work and personal responsibilities

regardless of their location (Dash, et al., 2012). Online professional development emerged out of the need for professional development that fits with the busy schedules of teachers. Online professional development provides access as well as ongoing support to important resources that might not otherwise be affordable or even available locally (King, 2002). The arrival of online professional development opportunities makes it possible to bring teachers together within and across school buildings, districts, states, and countries around the world that can create professional learning groups and broaden the professional learning opportunities available to teachers (Dash, et al., 2012).

Educators in both urban and rural settings deal with a wide range of challenges. In the rural setting, teacher needs for collaborative opportunities include a narrower curriculum overall, but such curriculum is taught by teachers assigned to a broader schedule of classes compared to those in the urban districts (Erickson, et al., 2012). The difficult issues of fewer resources combined with the arduous task of recruitment of high-quality educators to the rural districts in conjunction with the struggle to retain those educators has been a primary challenge (Erickson, et al., 2012). Research on this topic performed in national studies shows that one of the main hurdles to keeping teachers is isolation, whether it be social or geographical isolation (Hammer, et al., 2005). One study investigating solutions to teacher retention in the rural setting within the area of special education determined that the best and most practical strategy for retention is providing online connections (Erickson, et al., 2012).

Regular, consistent professional development is an effective means of retaining teachers and keeping them in the profession (Williams, et al., 2002; Erickson, et al., 2012). Among special education teachers, retention is associated with important

professional facets such as adequate administrative support and appropriate and meaningful professional development opportunities (Erickson, et al., 2012). Research over time has shown a positive correlation between teacher expertise and student achievement (Erickson, et al., 2012). When other means of developing and increasing teacher knowledge and expertise are not available, professional development opportunities arranged and presented online offer the potential for providing the necessary information, increasing teacher content knowledge as well as new methods and strategies. Online learning is still relatively new compared to traditional means of adult learning. Despite this fact, its popularity and attraction in terms convenience and flexibility cannot be overlooked. In 2007, 20% of all higher education students took at least one course online, and the growth rate of online education far outpaced that of face-to-face higher education courses (Erickson, et al., 2012). A comprehensive review of studies comparing student performance in online formats versus in-person class meetings determined that most studies comparing online and traditional classes concluded that both methods of delivery were adequate (Erickson, et al, 2012).

Individual intrinsically motivated professional development. For professional growth and development to occur, there must be a properly designed opportunity for the individual, a positive attitude on the part of the teacher that is to participate in the activities, and proper supervision and leadership to implement the newly learned strategies and methods according to the mission of the organization. Teacher professional development is the lifeblood of any reform. Change will only come about if there are trained and equipped educators that exhibit a willingness to accept new methods and strategies with a goal of improving instruction (Muzaffar, Malik, 2012). Many

improvement programs exist and are perhaps subscribed to at least in theory, but in practice, the ones that are not effective are those that are poorly accepted by an unmotivated group and suffer from a lack of regular and consistent professional supervision and leadership. Effective professional development plans update individuals' content knowledge and increase instructional results and also include the potential to increase achievement of both teachers and students (Muzaffar & Malik, 2012).

Just as internal motivation and personal enthusiasm are essential for one to make decisions for improvement, the lack of both are important factors contributing to the failure of programs. Programs that fail do so for many reasons, primarily absence of incentives, low motivation, and teacher's schedule and workload, as well as other stressors associated with the position. In addition, many times professional development opportunities are viewed as more theoretical than practical and the newly learned activities are not implemented in classroom instruction. Other reasons for program failure exist. At times, school personnel only attend professional development opportunities to satisfy a requirement or for the purpose of merely attending or receiving credit towards personal advancement (Muzaffar & Malik, 2012). Successful professional development experiences are evident in teacher behaviors and performance both in and outside the classroom. This is an important point, especially considering the quantity of teachers that enter the profession ill prepared (Muzaffar & Malik, 2012).

Preservice training as professional development. Collaboration in planning, implementation, and evaluation of programs are also important factors in moving the pendulum in teacher education programs from how students learn to the tradition of how teachers teach (Linek, Fleener, Fazio, Raine & Klakamp, 2003). One collaborative

project involving a university and a public school district with a goal of raising student performance was conducted by implementing a field-based opportunity with individuals prior to beginning as classroom teachers. The focus of the project was important because researchers who centered on teacher beliefs offered that university methods and strategy courses do not go very far in changing teachers' current beliefs from their own personal experiences (Linek et al., 2003).

The student teaching experience has long been thought of as the strongest facet of the preservice university education program (Linek et al., 2003). The objective of the study was to answer the question, "How is education in the public school affected when a school district and a university collaborate to provide a field based pre-service teacher education program and options for self development?" (Linek, et al., 2003, p. 79). The goals of the study were the result of a collaborative effort between the university and the school district and centered on raising the quality of education within a specific geographical area. The results of that study led to the conclusion that teaming was critical for the preservice as well as the in-service teacher with regard to classroom environment influence. The preservice teacher not only received exposure to authentic daily classroom experiences, he or she also received reinforcement and support from the experienced teacher. The mentor teacher participants not only were able to provide these experiences as teachers, but they also assumed the role of learner as well because it motivated them to elevate their methods and strategies for teaching because they were being observed. Also, it was determined that providing classroom teachers with responsibility for their professional growth increased awareness of themselves, their students, and their own professional behaviors in their practice of teaching in the

classrooms. The study finally concluded that student performance scores of the district had been raised to exemplary status by the end of the third year, and each subgroup of students were successful in reading, writing, and math. The collaborative teacher education program also provided data to conclude that both the in-service and preservice teachers noted changes in the way that they viewed the classroom. The in-service teacher obtained awareness of providing variety in course content, their methods and processes, and of the individual student learning styles. Both groups of teachers also noted a change in the level of respect that they had for their students, and how they would go about to meeting student needs.

Professional development according to career stage. Wei, et al. (2010) defined professional development intent as the willingness to participate in a professional development activity. Wei, et al. (2010) reported that teachers' attitudes and intent varied widely by career stage of the teacher. The preservice and novice teacher had greater intent as they appeared to view participation in professional development as an obligation to their position. Teachers at the middle stages of their careers generally participated in professional development to satisfy requirements or to receive credits--less for intrinsic purposes and more for extrinsic. Teachers in late stages of their careers or near retirement generally attend professional development if it was deemed worthwhile over any required or mandatory professional development. Regardless of the career stage of teachers, a common trait that joined each of them was a love for learning and an awareness of its necessity for professional growth. Viewing growth as important to improving the education for the students they served connected these educators. For professional development to be meaningful, teachers are unbending on the concept that

for any professional development to be meaningful, it must have an application element. The activity must be relevant to their teaching situations that included subject or grade/course level, or a connection to the demographic sector of students that they taught (Masuda et al., 2012).

Teachers' views towards professional development for today's educational era are woven together with their concerns regarding individual accountability. For the most part, it is common that professional development activities are mandated and often have little impact on student achievement. In contrast, today's teacher seeks authentic experiences that enable them to become skilled at data analysis, give them the ability to make instructional decisions on their own collected data, and promote the use of technology and findings from research conducted by outside sources (Masuda, et al, 2012).

Teachers' attitudes and appreciation for professional development opportunities are more positive if the activity is a valued investment of their time. They are more willing, regardless of the career stage they are in, to participate if the benefit is greater than the expenditure of their time and effort involved. For any professional development opportunity to be looked upon as valuable, there must be something for teachers to take away and implement into their instruction to improve student performance. To be viewed as a high-quality, high-value, meaningful professional development activity, it must include research-based instructional practices, opportunities for active learning experiences, and opportunities to change the practices to meet the needs of a specific demographic or teaching context (Masuda, et al., 2012). A national emphasis regarding the need for ongoing effective professional development for teachers has been

determined to ultimately narrow the achievement gaps among subgroups of students, lower the number of high school dropouts, and increase college and career readiness. Effective professional development is collaborative and situated in real-world settings and is understood to be a greater alternative to traditional opportunities for professional learning. Teacher professional learning is a complex entity that involves interaction of student learning and teacher behaviors that take place in an environment with specific resources. Contributing to teacher learning are a variety of recognized and less recognized models of professional development that would include peer coaching, mentoring, professional learning communities, self-reflection, and classroom teacher conducted action research.

Professional development is not always beneficial to the teacher's development because so few programs and opportunities address teacher content knowledge or the professional behaviors they are to improve (Telese, 2012). Professional development meetings are not always an answer to meeting student needs in the classroom. Certain topics aside from teachers' content knowledge and professional behaviors and abilities may be as important as topics of traditional professional development. Professional development topics could also address how students learn as much as they should learn, teachers' training in actual content standards, available materials to teach the content standards, and how to use and implement proper technology and equipment.

Teacher's expectations of professional development activities. As a rule, teachers do not attend professional development opportunities as an empty vessel. They attend with an assortment of desires and actual needs (Liljedahl, 2014). The professional development of teachers can be arranged in three basic categories of material, strategy,

and evaluation of the professional development. The content or material portion's intent is to gather information regarding the teacher's knowledge, experiences, and overall content knowledge in both subject and execution during preservice and in-service teachers (Hill, Ball, & Schilling, 2008; Liljedahl, 2014).

Secondly, the content portion's intent is to gather research that concentrates on an actual model of professional development such as action research or experimental design (Jasper & Taube, 2004; Liljedahl, 2014). Also worthy of mention under the category of method is that collaboration plays an important role in instructional process change and that reform is built upon relationships among teachers (Liljedahl, 2014). Regardless of the subject of instruction, and no matter what external forces are perceived as barriers to change, collaboration that includes a level of competence among the participants, commitment, and common respect for each contributor, as well as universal activities, aims reform in a positive direction (Liljedahl, 2014).

Professional development has been described as being most effective when there is active engagement among the participating teachers. In addition, and perhaps equally as important in creating a meaningful and effective professional development opportunity, is strong leadership. Principals of high-achieving schools are able to identify the value of high-quality professional development and possess the ability to not only promote but to make possible a high percentage of teacher participation. These administrators can communicate the value of teacher development to all relevant stakeholders within the community. Findings of research promote the idea that professional development is successful if principals place a high value on teacher development and take proper steps to implement teacher development training.

Principals within this category may also prove to be a key component in improving achievement in higher poverty area schools (Moore, Kochan, Kraska, & Reames, 2011). The least useful professional development activities were those in which teachers were disconnected from their current or regular practice in the classroom. Others reported that they often felt it was either difficult or they were unable to apply or implement what they learned in professional development. Other problems with inadequate professional development opportunities were that teachers did not get adequate follow-up to their professional development and did not receive productive feedback to help them implement what they were learning. Also frustrating to teachers participating in professional development was time not being used well during the sessions. Teachers surveyed responded that they wanted more active time with other teachers and less time as an inert audience (Parise, et al., 2015).

Research over the past 10 years has revealed that quality professional development is a necessary component in causing real change in the professional practices of instructional leaders and classroom teachers and ultimately student learning and performance (Sparks & Hirsh, 1997; Sparks, 2005; Moore, et al., 2011). Providing professional development of this caliber usually necessitates a change in the way that professional development activities are constructed and implemented (Moore, et al., 2011). Changing the manner in which the activities are created and carried out is not sufficient. If professional development is to change in these two areas and produce the desired effect of teacher growth and development to enhance student learning, then the instructional leaders of the school must focus on creating a climate of professional

growth among the teachers that are investigative and insightful of the school's vision and mission (Gusky, 2000; Moore, et al., 2011).

School administration standards of quality professional development. Continuous and regular professional development is a factor in a teachers' lifelong learning pursuit. However, professional development is not always placed as a high priority item and is often viewed as a required directive issued by a building administrator.

Professional development is often fragmented at best and does not cover deficient areas in a teacher's practice (Loucks-Horsley, Love, Stiles, Mundry, & Hewson, 2003; Telese, 2012). A professional development activity is any activity that improves a teacher's knowledge and skill base. It can be any activity attended in a formal setting, from reading journals to conversations with a colleague before or after school. The moving trend of professional development is to connect all professional development to student achievement and at the same time to close the achievement gaps of student subgroups (Desimone, 2009; Loucks-Horsley, et al., 2003; Telese, 2012). Meeting the professional development goals and needs of the teacher and organization is a key facet in maintaining an educational climate providing for student growth and development at a high level of achievement. One of the primary responsibilities principals have as educational leaders is creating within their school a culture of educational inquiry (Cannon, Tenuto, & Kitchel, 2013). Individual and group growth and development are mainly influenced by the principal (Bredeson & Johansson, 2000; Cannon, et al., 2013).

School administrators are more likely to provide opportunity for professional development if the opportunity is viewed as important and meaningful. External forces affecting the decisions regarding those opportunities include smaller budgets and

available resources as well as the ability to correctly determine the needs of the teacher. Effective teachers have adequate and comprehensive knowledge of his or her discipline area; they have understanding of the best use of instructional practices. Additionally, they have the ability to augment their content knowledge and methods and strategies through the use of appropriate technology (Cannon, et al., 2013).

In the past, the principal had the responsibility of managing day-to-day activities within the school. As the role has changed to that of instructional leader, the principal's responsibility includes facilitation of an environment providing clear pathways and opportunities for development that allows teachers to grow professionally. To increase student achievement, students have a responsibility to be motivated learners. Proper development activities equip teachers with opportunities to increase their skill level to improve student motivation, and eventually overall achievement (Cannon,et al, 2013).

Legislation of professional development. Schools across America are engaged in the search for ways to increase student performance as a result of legislation (NCLB, 2001). Every Student Succeeds Act (2016) is a more recent piece of federal legislation that widens the boundaries for use of professional development allocations to include personnel other than classroom teachers. Within the legislation, Title II specifically names school leaders and paraprofessionals and also provides professional development opportunities to anyone involved with Title I students (Every Student Succeeds Act, 2016). The law provides a restructured definition of professional development that includes continuous job-embedded professional development and any activity that can influence positive changes in student performance. The act also extends new authorized residencies to help prepare principals and school leaders that have the responsibility daily

managerial duties or instructional improvement of the school (Every Student Succeeds Act, 2016).

The focus and pressure of raising student achievement is at a historical high in the United States (Ylimaki, 2007; Moore, et al., 2011). The push to improve has resulted in the need to improve school performance by utilizing highly trained and effective school leaders and teachers. The creation and implementation of high-quality, effective, and useful professional development programs for both principals and teachers have resulted from these efforts. The need for increasing student academic performance has been concentrated on schools identified as underperforming. By no coincidence, these schools contain students living in areas of high poverty (Moore, et al., 2011).

In the early 1990s, one of the topics investigated by educational researchers was how schools in high-poverty areas could experience success at the same levels as their advantaged cohorts. It was found that students from high-poverty areas experience school in a different way than do economically advantaged students (Moore, et al., 2011). Other studies indicated that students in high-minority areas with high-poverty rates were capable of success (Moore, et al., 2011). Students in high-poverty schools who have effective leaders and teachers with high goals and standards achievement and those who engage in professional development programs fostering and supporting positive environments have been found to produce higher levels of achievement scores (Desimone, 2007; Moore, et al., 2011).

Effective professional development activities are important pieces to the intricate puzzle of school improvement and to meeting the steep demands of legislation both state and federal (Hirsh, 2009; Moore, et al., 2011). Despite their importance and critical

essentialness to raising student achievement, professional development activities in many schools are often poorly planned and implemented and may barely reach the targeted students to have any long-lasting impact (Moore, et al., 2011). Though there are guidelines and models directing what effective professional development programs are, the elements that should be included within the professional development activity, and what the overall program should look like, many professional development opportunities are nothing more than what they have been for decades (DuFour, 2004; Moore, et al., 2011). Most professional development and school improvement activities are attended but rarely implemented or given time to have an effect. Therefore, they do very little to improve teachers' classroom teaching skills (Sparks & Hirsh, 1997; Moore, et al, 2011).

The NCLB act of 2001 (2002) has placed an intense focus on teacher quality. The result of that attention was the High Objective Uniform State Standard of Evaluation provision that allows teachers several avenues for demonstrating content knowledge including experience, completed coursework, and professional development. Positive impact on student achievement can result when professional development is centered on student learning and content knowledge (Telese, 2012). Often, there is the assumption that teacher professional development will ultimately lead to higher quality and more effective teaching. Whatever the answer to defining effective instruction, it would involve a combination of content knowledge of the teacher, teacher professional development, and obviously student performance. In addition to specific disciplines taught, teachers require an understanding of human development and the learning process in general. In addition, any assessment skills that result in insight into the way students understand material being presented in the classroom will aid in student success.

In 2007, under the guiding principles of NCLB (2002), which state that math teachers must have either passed a rigorous certification program or have majored in mathematics, most of the math teachers in the United States could be identified as highly qualified despite the variety of ways used to define highly qualified by each state (Telese, 2012). However, despite that fact, none of the studies performed that examined teacher preparation resulted in a direct relationship between a teacher's content knowledge and student achievement (Wilson, Florden, & Ferrini-Mundy, 2002; Telese, 2012). One of the mandates of NCLB is that teachers receive high-quality professional development, but it offers no definition or determining factors to define high quality (Telese, 2012). School administrators are left to assume that high-quality professional development is any activity that centers on improvement and on an increase of a combination of a teacher's content knowledge and ability to engage with and educate students in the classroom (Telese, 2012).

Student success from quality professional development. Of equal importance to meeting objectives and instigating change of classroom practices as a result of any professional development opportunity are the attitudes, values, beliefs, and perceptions of the importance and relevance by the classroom teachers. Teachers must hold the belief that professional development offers the path to improvement and a positive attitude towards the activity is reflected in all that they do (Moore, et al., 2011).

Since discovering the level of importance that professional development has on eventual student outcomes, the evaluation criteria and process has changed by necessity from merely obtaining a head count of the number of attendees. No longer can evaluation be based on finding the number of teachers who found the opportunity enjoyable and

informative to determine the amount of student performance improvement that will follow. An observation period from which meaningful data can be collected and analyzed in order to conduct a proper evaluation must occur (Moore, et al., 2011). When creating effective professional development opportunities, those that will improve both teacher practices and impact student performance, it remains paramount to keep in mind that the most effective professional development opportunities are those engaging teachers with an active role to participate in and experience it, rather than simply gathering in one location and receiving information. Discussing curriculum and instruction enhancement methods and strategies alone is not effective (Moore, et al, 2011).

Critiques of professional development. Critiques have emerged from scholars both within and outside of education. These critiques recommend teacher research practitioners assess the practice of teacher research. The three main critiques of teacher research are knowledge, methods, and ends. First, one may ask, what kind of knowledge is produced when teachers conduct their own research about their own classrooms and schools (West, 2011). Action researchers believe formal knowledge about teaching and learning exists and that it is distinguished from informal knowledge obtained from informal practice or by serendipitous means. The knowledge critique provides that teacher research does not generate real information about the teaching and learning processes unless it is generated by a measure of traditional means that are designed to produce knowledge such as a formal class, predetermined and prescribed professional development opportunity, or face-to-face transfer of information (West, 2011). A methods critique states it is very difficult if not impossible for a teacher to understand

events if they are a participant in them such as authentic teacher-involved professional development activities (West, 2011).

The ends critique is established in critical theory and holds the position that teacher research has the possibility to change practices and the role of the teacher. Its power is severely reduced if it is used to perpetuate the status quo (West, 2011). Action research should be used as a mechanism to motivate change from the traditional classroom practices. The ends critique, entrenched in critical theory, maintains that teacher researchers should be grounded in social structures and determined to bring about change within them. This is a goal that is often lost in the traditional teacher research efforts, which leads to a perpetuation of the same practices (West, 2011).

Teachers are isolated and are less involved with professional collaboration in general when compared to other groups of professionals outside the field of education, resulting in fewer new ideas, methods and strategies, designs, and models for improvement (West 2011). Teachers may not collaborate on improvement efforts with the exception of participation in predetermined, prescribed, structured, and aligned in-service meetings that are improperly identified as professional development.

Summary

The review of related literature provided enough insight to conclude that teacher professional development is designed to increase the professional performance of classroom teachers by providing training to improve their subject content knowledge and teaching strategies. Professional development has made a great deal of progress from an assembly of teachers convening at a single location to participating by sitting and listening to presenters who have had success in particular areas of their teaching duties.

Professional development is now viewed as teachers directly participating in the event through collaboration with other professionals, coming to their own conclusions about their experience, and then reflecting on their experience with their fellow participants. Professional development can have as many definitions as the number of persons asked. To some, having a professional development topic selected by a ranking individual and being required to attend provides them with reinforcement to methods currently used, if not new methods and strategies to be implemented for instructional improvement. Others may choose models of professional development that have surfaced through the course of professional development evolution in which they are actually involved in the activity and their discoveries. The information learned is then shared with their colleagues during a period of reflection and collaboration of the individual discoveries made by their peers during their engagement in the professional development opportunity.

Teachers are not limited in their pursuit of professional development. Teachers can obtain their own data from their classrooms through active research. Their obtained data becomes the basis for their educational decisions to enhance the classroom experience for their students and increase student learning.

METHODOLOGY

Introduction

Increased accountability that schools and educators are faced with requires classroom teachers to equip themselves with information and strategy to provide the best classroom experience that will produce increased student learning. A purpose of consistent professional development participation is to provide teachers with that advantage. Not every teacher perceives professional development opportunities equally as an important facet to their professional growth as a teacher. By investigating the various perceptions of professional development among teachers in the 20 highest and lowest ranked school districts in Missouri according to the MAP index, the researcher's goal was to determine if teachers' views and perceptions of professional development opportunities played a role in the eventual outcome of their students' performance and were reflected by the district's ranking according to their district's MAP index results.

The design of the study was quantitative and descriptive. Educators in districts of the 20 highest ranked districts and the 20 lowest ranked districts were surveyed without intervention regarding their perceptions of professional development opportunities as professional development related to their development and also as it related to their opinions of professional development in raising student outcomes. Twelve questions were developed to survey teachers' perceptions of professional development opportunity's ability to increase teachers' teaching methods in the classroom. In addition, 12 questions were developed to survey teachers' perceptions of participation in professional development opportunity's ability to increase student achievement.

Research Participants

The population surveyed were teachers employed by school districts of Missouri that were ranked 1-20, and teachers of Missouri school districts that were ranked 539-559 according to the district's MAP index results reported on the internet website, K-12bigdata.com (K12 Big Data, n.d.). The MAP index score was calculated by adding each school district's English Language Arts score + Math score + Science + Social Studies and dividing the sum by the number of content areas tested. It was an equation developed by persons employed and/or associated with the website k12bigdata.com, which was a website that was developed to present public data in an easy to understand format for district stakeholders, administrators, and decision makers of Missouri school districts. Data obtained and posted by the reporting website were from the 2016 testing period.

All teachers within each categorized district were eligible to participate. Participation was not limited by building or any specific grade level. Differences among participants were considered to examine if the differences could impact their responses. Demographics that could impact participants' responses had been identified as differences in gender, career stage of the participant, and level of education beyond a baccalaureate degree. Other differences considered were location of the buildings within specific districts that employed the participants, urban versus suburban and or rural, and the socioeconomic level of the districts that employed the participants.

Instrumentation

The survey questions (Appendix A) were developed based on a broad review of related literature. Survey questions were developed to determine two characteristics of

professional development. The instructional improvement section of the survey, examined teachers' perceptions of professional development in terms of how professional development participation increases ability to provide effective instruction. The improvement of student performance section of the survey measured participants' perceptions of how their participation in professional development impacts student performance. The basis of the each survey section was the review of literature conducted for this study and the professional experience of the researcher. Additionally, the perceptions of professional development of educators that surrounded the researcher were taken into account as the survey questions were developed. Following development of the survey questions, the questionnaire was uploaded into the QuestionPro, a survey software company that provides the means for creating, designing, and analyzing survey data. Consent to use data obtained from the questionnaire was obtained by an acknowledgement statement explaining to each survey participant that participation in the survey gave his or her consent for the researcher to use each participant's contributions as data to complete the research. An acknowledgement statement was provided in the survey explanation and was required to be checked as knowingly giving consent prior to the participant beginning the survey.

Face Validity

The researcher conducted a pilot study to test the validity and reliability of the instrument (Appendix A). To ensure face validity, the researcher conducted a careful review of the literature, drew from professional experiences, and consulted with colleagues to develop the research questions. A Table of Specifications (Table 1) was developed to show the alignment of questions with the theorized scales.

Table 1: *Table of Specifications*

Survey Questions	Inst.	Student
I believe that participation in regular ongoing professional development opportunities is one of the most important things that I can do.	x	
To improve as a teacher I must be a participant in professional development opportunities.	x	
I am motivated to participate in professional development opportunities in order to provide a higher level of instruction in my classroom.	x	
Professional development activities often provide information and proper training that improve my classroom teaching methods.	x	
Professional development activities are often overrated in terms of improving teacher performance.	x	
My classroom experience will help me develop into a better educator more so than my participation in professional development activities.	x	
My participation in professional development activities has had a positive impact on the quality of my teaching.	x	
Receiving advanced degrees supersedes participation in professional development opportunities in developing me to be an effective teacher.	x	
The training that I received at the college/university (minus advanced degrees) level combined with the experience that I have is adequate training for the subject that I teach.	x	
Participation in at least two professional development activities during each school year will make me a better teacher.	x	
I am willing to use personal funds to attend professional development activities that my district might refuse to provide.	x	
I believe I can be a great teacher without participating in professional development activities because I will improve each year that I teach.	x	
I believe that my students perform at a higher level in the classroom because I implement the teaching strategies that I gain from participating in professional development.		x
I believe there is a direct correlation between my students' assessment performance and my participation in professional development activities.		x
I am a better teacher and my students perform better due to my participation in professional development.		x
I actively participate in professional development because ultimately I know my students will perform at a higher level.		x
Reducing the time I participate in professional development activities will result in a lower level of student performance.		x
Student performance is impacted by a teacher's commitment to continuing education through professional development.		x
Teachers that are active participants in professional development have students that achieve higher on their assessments.		x
Professional development provides the teacher with the evidence-based teaching strategies that will result in higher student achievement results on their assessments.		x
The highest achieving students are those that have teachers that are active participants in professional development activities.		x
Professional development participation supersedes teacher education and classroom experience in producing students that achieve at a high level.		x
Teachers that do not participate in professional development will have students that achieve lower than those who are active participants in professional development opportunities.		x
Professional development participation is the single-most important thing a teacher can do to ensure his or her students are successful and are higher achievers.		x

Pilot Study Content Validity

To ensure content validity, the researcher employed the use of an index of item objective congruence by Rovinelli and Hambleton (1977). The pilot study survey was presented to a panel of four professional colleagues and experts from the Southwest Baptist University graduate department and an elementary principal employed by a local school district who had recently completed an Ed.D. program. The panel of individuals was chosen because of their professional status as university professors and/or their years of experience in the field of education. Additionally, each had extended experience within the realm of professional development. Each member of the panel reviewed and rated each question of both sections of the survey to ensure from their viewpoint if each question measured its intent. Each expert of the panel read and scored the questions contained in both sections of the survey to measure their perceptions regarding each scale. The experts scored each question on a scale of -1, 0, or +1. If the question matched the intent of the survey, the question was given a score of +1. If the question did not match the intent of the survey, it was given a -1. Questions that the expert panel remained neutral of were given a score of 0.

One question from each section was removed for being invalid based on the average score they received by the panel of experts in the Rovenelli-Hambleton (1977) inventory. Despite receiving an acceptable average score, one question was rewritten to make its wording potentially less confusing by participants taking the actual survey. The remaining 22 questions used in the survey were those that scored at a level that identified them as reliable survey questions. Cronbach's alpha provided a solid degree of internal

consistency among the items. A table (Table 2) was developed to present an index of item objective congruency for each survey question.

Table 2: *Index of Item Objective Congruency*

Survey Statement	Index
I believe that participation in regular ongoing professional development opportunities is one of the most important things that I can do.	0.80
To improve as a teacher I must be a participant in professional development opportunities.	1.00
I am motivated to participate in professional development opportunities in order to provide a higher level of instruction in my classroom	0.80
Professional development activities often provide information and proper training that improve my classroom teaching methods.	1.00
Professional Development activities are often overrated in terms of improving teacher performance.	0.80
My classroom experience will help me develop into a better educator more so than my participation in Professional Development activities.	1.00
My participation in professional development activities has had a positive impact on the quality of my teaching.	1.00
The training that I received at the college/university (minus advanced degrees) level combined with the experience that I have is adequate training for the subject that I teach.	0.80
Participation in at least two professional development activities during each school year will make me a better teacher.	0.80
I believe I can be a great teacher without participating in professional development activities because I will improve each year that I teach.	1.00
I believe that my students perform at a higher level in the classroom because I implement the teaching strategies that I gain from participating in professional development.	1.00
I believe there is a direct correlation between my student's assessment performance and my participation in professional development activities.	1.00
I am a better teacher and my students perform better due to my participation in professional development.	0.80
I actively participate in professional development because ultimately I know my students will perform at a higher level.	1.0
Reducing the time I participate in professional development activities will result in a lower level of student performance.	0.80
Student performance is impacted by a teacher's commitment to continuing education through professional development.	1.00
Teachers that are active participants in professional development have students that achieve higher on their assessments.	1.00
Professional development provides the teacher with the evidence based teaching strategies that will result in higher student achievement results on their assessments.	1.00
The highest achieving students are those that have teachers that are active participants in professional development activities	1.00
Teachers that do not participate in professional development will have students that achieve lower than those who are active participants in professional development opportunities.	0.80
Professional development participation is the single-most important thing a teacher can do to ensure his or her students are successful and are higher achievers.	0.80

The scores of the questions were averaged and a final score of .67 or below would require a review of the test item. The researcher used the Likert scale in which teachers

selected a response that coincided most directly with his or her opinions about participation in professional development opportunities impacting their teaching and their students' learning. To ensure reliability, the surveys were presented to a pilot group consisting of similar persons to the test population that were not participants in the actual investigation. The pilot group consisted of teachers with varying levels of education and experience that were employed by nine public school districts in southwest Missouri, which made up the Spring River Valley Conference of schools. A 10th conference member school was not included in the pilot because it was a private school that did not participate in the series of state assessment tests that the nine other conference schools did.

The nine schools were divided into two groups representing the highest four student performance achieving group and the five schools with the lowest student achieving groups. The test group school districts received the link to the survey electronically with an attached invitational message explaining the importance of the pilot study survey results to the overall investigative dissertation research project and that their participation was important and vital to ensuring validity of the survey prior to sending it to the participants of the actual investigation.

Once the survey was sent to teachers identified for the pilot study, the groups were given a period of 7 school days to participate before the survey was closed. Participants of the pilot study survey represented a sampling of teachers of the included districts with varying degrees of education and teaching experience. All teachers that participated in the survey were assured of anonymity. Upon completion of the study, the

results of each survey were saved for the researcher but electronically deleted from the site and computer hardware utilized in the study.

Pilot Study Construct Validity

To determine construct validity, the survey was sent to 87 certified teachers employed by nine of 10 school districts that made up the Spring River Valley Conference of schools. One of the 10 school districts was not a participant in the pilot study. Because of its status as a private school district, it did not participate in the state assessment tests that the public schools did. The pilot study results data were collected and uploaded to the statistical package for the social science (SPSS) software digital statistical compiling software for the purpose of performing factor analysis to determine construct validity. Construct validity is defined as the level to which a test measures what it claims, or purports, to be measuring. The survey of the factor analysis was conducted to determine if the statements clearly measured the two constructs. Table 3 provides specific factor analysis data for the pilot study. Using + and - as a basis, the statements at or near a score of -1 were observed closer for use in the finalized survey being sent to teachers in the identified districts for the investigation. Following factor analysis examination, one statement from each scale was deleted and an additional statement in each scale was edited for clarity. Table 3 provides data results of the pilot study factor analysis.

Table 3: *Pilot Study Factor Analysis*

Survey Statement	Scale	
	Instructional	Student
I believe that participation in regular on-going professional development opportunities is one of the most important things that I can do.	.879	.191
To improve as a teacher I must be a participant in professional development opportunities.	.796	.199
I am motivated to participate in professional development opportunities in order to provide a higher level of instruction in my classroom	.839	.159
Professional development activities often provide information and proper training that improve my classroom teaching methods.	.717	.201
Professional Development activities are often overrated in terms of improving teacher performance.	.618	.108
My classroom experience will help me develop into a better educator more so than my participation in Professional Development activities.	.116	.601
My participation in professional development activities has had a positive impact on the quality of my teaching.	.854	.179
The training that I received at the college/university (minus advanced degrees) level combined with the experience that I have is adequate training for the subject that I teach.	-.074	.611
Participation in at least two professional development activities during each school year will make me a better teacher.	.691	.080
I believe I can be a great teacher without participating in professional development activities because I will improve each year that I teach.	.274	.691
I believe that my students perform at a higher level in the classroom because I implement the teaching strategies that I gain from participating in professional development.	.774	.475
I believe there is a direct correlation between my student's assessment performance and my participation in professional development activities.	.748	.428
I am a better teacher and my students perform better due to my participation in professional development.	.797	.477
I actively participate in professional development because ultimately I know my students will perform at a higher level.	.741	.469
Reducing the time I participate in professional development activities will result in a lower level of student performance.	.613	.536
Student performance is impacted by a teacher's commitment to continuing education through professional development.	.637	.516
Teachers that are active participants in professional development have students that achieve higher on their assessments.	.676	.496
Professional development provides the teacher with the evidence based teaching strategies that will result in higher student achievement results on their assessments.	.686	.486
The highest achieving students are those that have teachers that are active participants in professional development activities	.639	.500
Teachers that do not participate in professional development will have students that achieve lower than those who are active participants in professional development opportunities.	.712	.369
Professional development participation is the single-most important thing a teacher can do to ensure his or her students are successful and are higher achievers.	.576	.413

Pilot Study Principal Components Factor Analysis

The data collected from these surveys were used to determine the internal consistency of the survey. Cronbach's alpha was determined through the use of SPSS.

The alpha value for the first scale was .895. For the second scale, the alpha value was .962. The values for the scales were above .7, indicating the scales were reliable.

Procedure

Following the pilot study, a finalized survey was prepared by the researcher (Appendix B). Necessary revisions and edits identified in the pilot were made before being sent to teachers targeted for participation in the study. The survey was sent by e-mail to over 2,000 teachers employed by the 20 highest and lowest ranked Missouri school districts. The e-mail addresses of teachers to whom the survey was sent to were obtained through district websites open to the public, which contained contact information for their personnel. No statement forbidding contact to personnel for the purpose of research was posted by any of the districts employing specific teachers. An implied consent statement was included in the invitation letter attached to the survey. The survey was open for a period of 10 school days. In an effort to gather more participants, an e-mail reminder in the form of a letter and survey link identical to the original correspondence was sent on the 7th day to teachers that had not participated. Table 4 provides construct validity data for each survey question of the two scales.

Table 4: *Full Study Construct Validity*

Survey Statement	Scale	
	Instruction	Student
I believe that participation in regular on-going professional development opportunities is one of the most important things that I can do.	.416	.760
To improve as a teacher I must be a participant in professional development opportunities.	.334	.788
I am motivated to participate in professional development opportunities in order to provide a higher level of instruction in my classroom.	.419	.767
Professional development activities often provide information and proper training that improve my classroom teaching methods.	.485	.561
Professional Development activities are often overrated in terms of improving teacher performance.	.289	.589
My classroom experience will help me develop into a better educator more so than my participation in Professional Development activities.	.054	-.486
My participation in professional development activities has had a positive impact on the quality of my teaching.	.629	.534
The training that I received at the college level combined with the experience that I have is adequate for instructing my students	.037	-.308
Participation in at least two professional development activities during each school year will make me a better teacher.	.582	.395
I believe I can be a great teacher without participating in professional development activities.	.324	.500
I believe that my students perform at a higher level in the classroom because I implement the teaching strategies that I gain from participating in professional development.	.775	.326
I believe there is a relationship between my student's assessment performance and my participation in professional development activities.	.816	.232
My students perform better due to my participation in professional development.	.830	.309
I actively participate in professional development because ultimately I know my students will perform at a better.	.808	.311
Reducing the time I participate in professional development activities will hinder student performance.	.640	.234
Student performance is impacted by a teacher's commitment to continuing education through professional development.	.694	.247
Teachers that are active participants in professional development have higher achieving students.	.783	.175
Professional development provides the teacher with the evidence based teaching strategies that will improve student performance.	.770	.248
Student performance is better for students that have teachers that are active participants in professional development activities.	.808	.200
Teachers that do not participate in professional development will have students that achieve lower than those who are active participants in professional development opportunities.	.726	.096
Professional development participation is the single-most important thing a teacher can do to ensure his or her students are successful and are higher achievers.	.585	.207

Full Study Principal Components Factor Analysis

The data collected from these surveys were used to determine the internal consistency of the survey. Cronbach's alpha was determined through the use of SPSS. The alpha value for the first scale was .718. For the second scale, the alpha value was .938. The values for the scales were above .7, indicating the scales were reliable.

Data Analysis

Descriptive statistics were utilized to analyze the overall perceptions of the respondents regarding how professional development increased their ability to provide effective instruction and how their participation in professional development impacted student performance. Tests of significance (*t* tests and ANOVAs) were used to determine if any differences existed in the perceptions of educators on these issues.

Demographics

Differences that could possibly affect the way participants respond to the survey items included the gender of the survey participant, the career stage of the survey participant, the location of the district in which participant was employed (urban, suburban, or rural), the core/non-core subject taught by the survey participant, and whether or not teachers had or did not have input opportunities in the selection of professional development activities within their school district.

Summary

Depending on a teacher's experience, the attitudes toward participating in professional development will vary. There are many variables that could cause the varying perceptions and levels of reception, which could impact student performance.

The survey questions developed for this study were associated with teachers' perceptions of professional development and their opinion of its impact on student performance.

The study surveyed teachers employed by the 20 highest performing school districts of Missouri and the 20 lowest performing school districts of the state ranked according to their MAP index rating compiled and ranked by k12bigdata.com (K12 Big Data, n.d.). The Likert scale was chosen to quantify teachers' perception of professional development and its impact on student classroom performance. Participants were able to convey their attitudes, perceptions, and level of reception easily and without having to spend time producing written narratives to answer questions raised in the survey.

ANALYSIS

Introduction

Data offered in this chapter provide insight into the perceptions of Missouri educators employed by the school districts identified by k12bigdata.com (K12 Big Data, n.d.) as either a top 20 or lower 20 performing school district in Missouri. School districts were placed in one of the two categories based on the academic performance of students on state-mandated tests and ranked by k12bigdata.com (K12 Big Data, n.d.). The intent of the study was to discover differences that might exist in the perceptions of professional development participation among teachers working in the highest and lowest ranked school districts in Missouri. As the study progressed two areas of professional development emerged in the review of related literature.

Professional development activities and teacher participation alone were not specific enough. The two focuses that became clear reasons for offering professional development opportunities and encouraging teacher participation were improving instructional teaching skills and improving student performance and achievement (Yoon, et al., 2007). Upon narrowing the focus to these two areas, the researcher began working from the premise that perhaps there were fundamental differences in the perceptions of teachers in the highest and lowest ranked Missouri school districts that would in turn create the differences in the district rankings.

Descriptive statistics were utilized to ascertain an overall look at perceptions of teachers in the identified school districts on the two scales. Inferential statistics were utilized to learn potential differences between teachers' perceptions in the highest and lowest ranked Missouri school districts.

Research Questions

This study sought to answer the following research questions:

1. What are the perceptions of Missouri educators employed by the 20 highest and lowest ranked school districts in Missouri on the impact of professional development participation increasing their classroom teaching skills?
2. What are the perceptions of Missouri educators employed by the top and bottom twenty ranked school districts in Missouri regarding the impact of professional development participation increasing student performance?
3. Are there any differences in teacher's perceptions of professional development participation between those employed by the top twenty ranked schools vs. lowest twenty ranked schools in Missouri?

Null Hypothesis

In an effort to answer the aforementioned research questions, the following null hypothesis was investigated:

There will be no significant difference in teacher perceptions of professional development between those employed in the highest academic performing school districts according to the Missouri Assessment Plan (MAP) index and teachers employed in the lowest academic performing school districts as ranked by student performance according to each district's MAP index score.

Responses by Group

Instructional skills: Lowest. Perceptions of teachers responding in the lower ranked group had a mean on the instructional skills scale questions ranging from 2.3 to 3.6, indicating general agreement with the statements of the survey. Question 8 and

Question 11 had a mean of 2.3. Question 8 read as follows: Receiving advanced degrees supersedes participation in professional development opportunities in developing me to be an effective teacher. Question 11 was as follows: Participation in at least two professional development activities during each school year will make me a better teacher. Question 11 was the only disagree statement. The mean responses of the lower performing schools' participants to the 12 questions indicated a positive perception of the impact of professional development on increasing their skills. Based on the response to the 12 questions the researcher determined the perceptions of educators regarding the impact of professional development on increasing their skills was positive in the lower group.

Instructional skills: Highest. Perceptions of teachers responding in the highest ranked group had a mean on the instructional skills scale questions ranging from 2.3 to 3.2, indicating general agreement with the statements of the survey. Question 11 was the question with the 2.3 mean, placing it in the disagree category. Question 1 was as follows: I believe that my students perform at a higher level in the classroom because I implement the teaching strategies that I gain from participating in professional development. The mean responses of the high-performing schools' participants to the 12 questions indicated a positive perception of the impact of professional development on increasing their skills.

Student performance: Lowest. Perceptions of teachers responding in the lower ranked group had a mean on the student academic performance improvement scale questions ranging from 2.1 to 3.0, indicating general agreement with the statements of the survey. Questions 1, 5, and 12 were three questions with means of 2.3, 2.4, and 2.1,

respectively, placing them in the disagree category. Question 1 was as follows: I believe that my students perform at a higher level in the classroom because I implement the teaching strategies that I gain from participating in professional development. Question 4 was as follows: I actively participate in professional development because ultimately I know my students will perform better. Question 12 was as follows: Professional development participation is the single-most important thing a teacher can do to ensure his or her students are successful and are higher achievers. The mean responses of the low-performing schools' participants to the 12 questions indicated a positive perception of the impact of professional development on increasing student academic performance.

Student performance: Highest. Perceptions of teachers responding in the highest ranked group had a mean on the student academic performance improvement scale questions ranging from 2.0 to 2.9, indicating general agreement with the statements of the survey. Questions 5, 10, and 11 were three questions with means of 2.3, 2.3 and 2.0, respectively, placing them in the disagree category. Question 5 was as follows: Reducing the time I participate in professional development activities will result in a lower level of student performance. Question 11 was as follows: Teachers that do not participate in professional development will have students that achieve lower than those who are active participants in professional development opportunities. Question 12 was as follows: Professional development participation is the single-most important thing a teacher can do to ensure his or her students are successful and are higher achievers. The mean responses to the 12 questions indicated a positive perception of the impact of professional development on increasing student academic performance.

Results

One hundred and eighty three respondents participated in the research survey. Table 5 provides the demographic information of the participants. The survey responses were collected automatically by QuestionPro and were uploaded to SPSS software for statistical analysis. The demographic portion of participants' responses was utilized to group participants. The groups were compared utilizing an independent sample *t* test to determine if there was a significant difference between the groups. Group demographics compared participant responses with regard to gender, years of professional experience as a teacher, the location of the district in which the participating teacher was employed, the subject taught by the teacher, and whether or not he or she had input into the type of professional development activity provided by the district.

Table 5 *Participant Demographic Information*

Characteristic	Categories with <i>n</i>			Total of <i>N</i>
Gender	Male (<i>n</i> = 42)	Female (<i>n</i> = 140)		182
Years of Teaching Experience	1-9 (<i>n</i> = 74)	10-19 (<i>n</i> = 83)	20-30 (<i>n</i> = 22) 30+ (<i>n</i> = 3)	180
District Location	Urban (<i>n</i> = 59)	Suburban (<i>n</i> = 91)	Rural (<i>n</i> = 47)	
Subject Taught	Math (<i>n</i> = 37)	English (<i>n</i> = 40)	Science (<i>n</i> = 16) Non-Core (<i>n</i> = 94)	187
Input into Professional Development	Yes (<i>n</i> = 115)	No (<i>n</i> = 68)		183

The researcher sought to determine teachers' perceptions of the impact of professional development participation on increasing teaching methods and skills and

improving student performance. The following tables provided the data calculations needed to answer the research questions and test the null hypothesis.

Descriptive Statistics

The data for table 6 addressed 13 questions of the scale that focused on improvement of teachers’ skills through professional development participation, and 13 questions of the scale that focused on teachers’ improving student academic performance through professional development participation. Table 6 provides specific descriptive statistics data for the research.

Table 6: Compilation of Responses to the Survey Questions (N= 183)

Scale	Ranking Level	<i>n</i>	Mean	Std. Deviation
Instructional Improvement	Highest	112	23.5	4.10
	Lowest	71	22.2	3.86
Student Performance	Highest	110	25.7	6.07
	Lowest	71	24.9	6.3

The means and standard deviations for the two scales of this survey instrument are displayed in Table 6. Larger standard deviations indicate a wider variety of responses whereas smaller standard deviations indicate a smaller variety of responses. Table 6 provides the means used in the calculation of an independent sample *t* test to determine if there was a significant difference between the perceptions of teachers employed in the identified districts in the highest and lowest 20 ranked Missouri school districts as ranked by k12bigdat.com. (K12 Big Data, n.d.). Results are in the quantitative data section.

Research Questions

1. What are the perceptions of Missouri educators regarding the impact of professional development on increasing their skills?

The Improvement of Teaching Skills Scale was created to determine teachers' perceptions of the impact of participation in professional development on improving instructional methods in the classroom. The mean for this scale was 23.0. The standard deviation was 4.05 and the range of possible scores was 14 to 34. A mean of 23.0 indicated teachers held a favorable view of professional development participation improving their instructional skills in the classroom. The standard deviation of 4.05 gave indication that the participants' responses were not widely distributed and were close to the mean in the way that participants responded to survey items. Overall, from the responses on both scales, teachers held favorable perceptions of professional development participation having positive impact on increasing student performance.

2. What are the perceptions of Missouri educators regarding the impact of professional development on increasing the academic performance of their students?

The Improvement of Student Academic Performance Scale was developed to determine teachers' perceptions of the impact of professional development participation on improving students' academic performance. The mean for this scale was 25.46. The standard deviation was 6.1 and the range of possible scores was 11-44. A mean of 25.46 indicated teachers held a favorable view of professional development participation's impact on improving students' academic performance. The standard deviation of 6.17 indicated that responses were more widely distributed and were further from the mean in the way that participants responded to the survey statements.

Quantitative Statistics

Analysis of the *t*-test results of differences in each of the demographic categories examined gender, years of teaching experience, location of the school district, and subjects taught. The data determining the impact of professional development on increasing students' academic performance were not significant at $p < .05$.

3. Are there any differences in teacher's perceptions of professional development between those employed by top vs. low achieving schools?

There was a significant difference in teacher perceptions between teachers employed in the highest ranked school districts and those employed by the lowest ranked districts. Differences of teacher perception questions were developed to determine if a difference between the two ranked groups existed. The mean for this scale was 22.21. The standard deviation was 3.86. A mean of 22.2 indicated teachers of the lowest ranked districts held a statistically significant ($p = .036$) more favorable view of professional development's impact on improving teachers' professional teaching skills. The standard deviation of 3.86 indicated that responses were distributed close to the mean in the way participants responded to the survey statements. Table 7 provides specific quantitative statistics data for the research.

Null Hypothesis

There will be no significant difference in teacher perceptions of professional development between those employed in the highest academic performing school districts according to the Missouri Assessment Plan (MAP) index and teachers employed in the lowest academic performing school districts as ranked by student performance according

to each district's MAP index score. Table 7 provides data utilized to reject or fail to reject the null hypothesis.

Table 7: *t test of Teacher Responses in Each District-Ranking Group*

Category	<i>n</i>	Mean	Std. Deviation	Sig < <i>p</i> .05
Highest Group responses	112	23.5	4.10	
Lowest Group responses	71	22.2	3.86	.036

A *t* test was calculated and $p < .036$, meaning a significant difference existed between the response of teachers in the highest group and the response of the teachers in the lowest group. Teachers in the lowest group had higher perceptions of the impact of participation in professional development activities on improving their instructional skills in the classroom.

A *t* test was calculated (see Table 8) to determine if there was a difference in the mean responses between those that perceived they had input into the type of professional development offered and those that perceived they had no input into the type of professional development offered.

Table 8: *t test of Teachers Having or not Having Input into Types of Professional Development Offered (N = 181)*

Category	<i>n</i>	Mean	Std. Deviation	Sig < .05
Have Input	112	24.6	5.59	
Have no Input	69	26.8	6.84	0.28

The *t*-test results in Table 8 provided evidence to conclude if there was a difference in the mean responses between those that perceived they had input into the type of professional development offered and teachers who had no input into the type of

professional development offered. The results of the *t* test was significant at a level of 0.28, indicating a difference in perception of the value of professional development if teachers had or had no input into the type of professional development offered.

Summary

Statistical analysis was performed and provided the basis to factors in which there were no significant differences between the perceptions of professional development between teachers working in the highest or lowest ranked school districts in the area of gender, school district rank, subjects taught, years of experience, or district type. Overall, teachers in both district-ranked groups held a favorable opinion of professional development if they had input into the selection of professional development activities.

Results of an independent sample *t test* provided the basis to conclude that a significant difference existed between participants in the ranked groups when surveyed to measure their perceptions of the impact of professional development on improving their instructional skills. While professional development was favored overall by the two ranking groups, teachers employed by the lowest 20 ranked districts valued professional development more than the highest ranked districts for ability to improve their instructional skills and practices ($p = .036 < .05$). Results of an independent sample *t test* conducted in the remaining scale provided no basis to conclude that a significant difference existed between participants in the ranked groups when surveyed to measure their perceptions of the impact of professional development on improving student academic performance ($p = .390 > .05$).

CONCLUSIONS AND RECOMMENDATIONS

Introduction

The purpose of this study was to determine the perceptions of teachers employed in the 20 highest performing Missouri public school districts and teachers employed in the 20 lowest performing Missouri public school districts regarding professional development's impact on improving their instructional practices and increasing their students' academic performance. Forty school districts identified for this investigation consisted of the 20 highest and 20 lowest ranked Missouri public school districts as ranked and reported by k12bigdata.com (K12 Big Data, n.d.). Once survey participants were identified by their district ranking they were invited by the researcher to complete a survey via an electronic message with a link to the survey; an implied consent statement was included in the letter along with a statement of confidentiality. Research participants were assured anonymity and confidentiality, as well as informed how their responses would be kept and how responses would be used during the study. Participants were also assured that all documents containing survey responses would be destroyed and all digitally saved data would be irretrievably deleted upon completion of the study.

The instrument utilized in the study was a researcher-developed attitudinal survey designed to gain insight into the participating teachers' perceptions of professional development and its impact on improving teachers' instructional practices and their students' academic performance. The survey was confirmed statistically valid and reliable and will be available to future researchers in conducting related professional development investigations. Prior to the actual inquiry, a pilot study was initiated during the spring of 2017 involving a panel of collegial experts that scored potential survey

statements according to the standards of the Rovenelli-Hambleton (1977) index of item-objective congruency. Following statistical analysis of the survey statements, it was determined that one statement from each scale would be removed due to receiving scores of less than .67 on Cronbach's alpha. The pilot study's population of participants was from nine Missouri public school districts. The pilot group of teachers had similar characteristics as the selected participants in the 20 highest ranked school districts and those in the lowest 20 ranked school districts, but were not associated with the actual participants invited to take part in the study.

Findings

The survey data collected and statistically analyzed indicated that teachers generally perceive professional development as having a positive impact on the improvement of their teaching skills and perceived it as a positive activity for professional growth. The data also indicated teachers perceived the addition of professional development as not only increasing their teaching skills, but the increase in their teaching skills led to increased student achievement in the classroom and on annually administered state-mandated achievement tests. One finding not sought in the research questions but that may be important was that teachers in the lowest ranked school districts held a statistically significant higher favorable opinion of professional development's impact on increasing their teaching skills than did teachers representing the top 20 ranked districts in Missouri.

An additional important finding not addressed in the research questions was that teachers who indicated they had input into what professional development opportunities would be offered held a more favorable opinion of professional development

participation as a whole over teachers that had no input into the professional development activities in which they engage. This finding reinforces the studies of Prytula and Weiman (2012), Vescio et al., (2008), and Dever & Lash (2013), all of whom have contributed to writings on the subject of successful teacher professional development participation involving collaboration by participating teachers. The research questions for the study and the researcher's conclusion for each question follow.

Research Question 1. What are the perceptions of Missouri educators regarding the impact of professional development on increasing their skills? Teachers in both the highest ranked school districts and teachers in the lowest ranked school districts indicated professional development had a positive impact on increasing their skills.

Research Question 2. What are the perceptions of Missouri educators employed by the top and lowest twenty school districts regarding the impact of their participation in professional development increasing the performance of their students? Participant survey responses indicated Missouri educators overall in both the highest ranked performing school districts and the teachers in the lowest ranked performing school districts held a favorable opinion of their participation in professional development as having an impact on improving the academic performance of their students.

Research Question 3. Are there any differences in teachers' perceptions of Professional Development between those employed by the top and lowest achieving schools? The researcher found a significant difference between the two groups of teachers' opinions of professional development participation being that the lower ranked school district's teachers held a more favorable perception of what participating in

professional development could offer them in terms of increasing instructional skills over the opinions of those ranked in the highest group of 20 school districts.

Conclusion

The researcher concluded based on the results of the study and previous research that regardless of high or low school ranking, teachers did appreciate the opportunities for professional development, and not only had a positive perception of what it could do in terms of improving their teaching skills, but also they tried to incorporate the material and/or techniques they learned into their daily routine when appropriate. According to survey participant responses, teachers participated in professional development because they perceived it to be valuable in improving their classroom performances, leading to an increase in student achievement. Based on their appreciation and reception of professional development opportunities, participating in professional development is something that teachers have a desire to do. Additionally, they have a greater appreciation and reception of it if they are permitted to have a voice in choosing appropriate activities that address their specific needs instead of it being chosen for them entirely by individuals from administration or other departments.

Teachers in Missouri's lowest ranked school districts indicated a more favorable perception of professional development. The finding that teachers from the 20 lowest ranked school districts favored professional development more than teachers in higher ranked school districts was an intriguing discovery. All teachers have the duty and expectation to provide the best possible education to all students. The reasons that the lower ranked districts held a more favorable view of professional development participation could be numerous and difficult to specifically identify. One possible

explanation could be that teachers employed by the highest ranked districts may not have seen a need for improvement because they may perceived their district's high performance as successful, thus they did not see the need to either improve their classroom performances nor the academic achievement of their students. All teachers surveyed indicated a positive perception of professional development, perceiving that it added to their practice. Administrators in each district regardless of ranking should capture and build upon their favorable perception and regularly encourage their input on professional development topics as well as their participation in as many opportunities as possible during each school year. Administrators might also recognize the need to motivate and encourage teachers that do not hold participation in professional development activities in a high regard. By providing opportunities for teachers to be involved with the selection of appropriate professional development sessions, it might not only serve them better, but also cause them to desire to participate in professional development more regularly.

Recommendations

The results and conclusions of this study support the research in making recommendations to those having the responsibility of choosing and implementing professional development opportunities and activities for teachers. Since it was found that professional development was positively received as having an impact on improving teacher performance and skills in the classroom, then professional development activities should be a component of a teacher's professional practice. District personnel charged with making decisions about professional development activities should determine if annual professional development offerings are sufficient to meet the needs of teachers in

improving professional skills and in turn academic performance of students.

Additionally, since there was a statistically significant difference indicating teachers held a more favorable opinion of professional development if they were afforded input into the professional development activity selection, decisions concerning which activities will be offered should include input from teachers and participation in the selection of potential opportunities and activities.

The researcher recommends the need for future study on the topic of teachers' perceptions of professional development that would be performed with a wider range of school districts and a larger number of participants. Originally, the research began seeking to determine if differences existed between the highest and lowest ranked school districts in Missouri. Upon discovering from the participant responses in this study that professional development was considered to be an important component to improving teacher practice and student performance regardless of district ranking, further and more in-depth research is recommended in order to expand upon the concept and practice. Instead of limiting future study to simply teachers, all school personnel who have direct daily contact with students, could be surveyed to determine their perceptions of professional development in their role with the school.

The final recommendation by the researcher may be one of the most important ones. Educators are in consistent need for additional funding to support professional development participation. State legislators acknowledge the need but are limited in the ways to increase additional funds already allocated for education. Previously, Missouri required school districts to set aside 1% of all foundation money to be used exclusively for professional development. When the economy worsened and budget pressures were

felt, this mandate was erased, and is no longer the case in the state. With the increasing demand for academic results, it is recommended that a return of that policy be revisited.

REFERENCES

- Aaronson, D., Barrow, L., & Sander, W. (2007). Teachers and student achievement in the Chicago public high schools. *Journal of Labor Economics*, 25(1), 95-135.
- Avalos, B. (2011). Teacher professional development in teaching and teacher education over ten years. *Teaching and Teacher Education*, 27(1), 10-20.
- Birman, B. F., Desimone, L., Porter, A. C, & Garet, M. S. (2000). Designing professional development that works. *Educational Leadership*, 57(8), 28-33.
- Bloom, G., & Vitcow, B. (2010). PLCs: A cultural habit built on trust. *Leadership*, 39(4), 24-27.
- Borko, H. (2004). Professional development and teacher learning: Mapping the terrain. *Educational Researcher*, 33(8), 3-15.
- Bredson, P.V., & Johansson, O. (2000). *The school principal's role in teacher professional development*. *Journal of In-Service Education*, 26(2), 385-401.
- Cannon, J., Tenuto, P., & Kitchel, A. (2013). Idaho secondary principals' perceptions of cte teachers' professional development needs. *Career and Technical Education Research*, 38(3), 257-272.
- Caskey, M., & Carpenter, J. (2012). Organizational models for teacher learning. *Middle School Journal*, 43(5), 52-62.
- Chou, C. H. (2011). Teachers' professional development: Investigating teachers' learning to do action research in a professional learning community. *The Asia-Pacific Education Researcher*, 20(3), 421-437.
- Clark, D. C, Smith, R. B., Newby, T. J., & Cook, V. A. (1985). Perceived origins of teaching behavior. *Journal of Teacher Education*, 36(6), 49-52.
- Colbert, J. A., Brown, R. S., Choi, S., & Thomas, S. (2008). An investigation of the impacts of teacher-driven professional development on pedagogy and student learning. *Teacher Education Quarterly*, 35(2), 135-154.
- Comer, J. (2001), Schools that develop children, *American Prospect* 12(7): 30-35.
- Corcoran, S. P., Jennings, J. L., & Beveridge, A. A., Society for Research on Educational Effectiveness, (2011). *Teacher effectiveness on high-and low-stakes tests*. Evanston IL: Society for Research on Educational Effectiveness.

- Criffith, J. (2002), A multilevel analysis of the relation of school learning and social environments to minority achievement in public elementary schools. *The Elementary School Journal* 102(5): 349-367.
- Darling-Hammond, L., & Berry, B. (2006). Highly qualified teachers for all. *Educational Leadership*, 64(3), 14-20.
- Darling-Hammond, L., & McLaughlin, M.W. (1995). Policies that support professional development in an era of reform. *Phi Delta Kappan*, 76(8), 597-604.
- Darling-Hammond, L., Wei, R. C., Andree, A., Richardson, N., & Orphanos, S. (2009). State of the profession: study measures status of professional Development, *Journal of Staff Development*, 30(2), (42-44, 46-50)
- Dash, S., de Kramer, R. M., O'Dwyer, L. M., Masters, J., & Russell, M. (2012). Impact of Online professional development on teacher quality and student achievement in fifth grade mathematics. *Journal of Research on Technology in Education*, 45(1), 1-26.
- Dede, C., Ketelhut, D. J., Whitehouse, P., Breit, L., & McCloskey, E. M. (2009). A research agenda for online teacher professional development. *Journal of Teacher Education*, 60(1), 8-19.
- De Geest, E., M. Joubert, R. Sutherland, J. Back and C. Hirst. 2008. Researching Effective Continuing Professional Development in Mathematics Education (RECME). *International Conference of Mathematics Education Monterrey, Mexico*
- Desimone, L., Smith, T. M., & Phillips, K. J. R. (2007). Does policy influence mathematics and science teachers' participation in professional development? *Teachers College Record* 109(5), 1086-1122
- Desimone, L. M. (2009). Improving impact studies of teachers' professional development: Toward better conceptualizations and measures. *Educational Researcher*, 38, 181-199
- Dever, R., & Lash, M. J. (2013). Using common planning time to foster professional learning. *Middle School Journal*, 45(1), 12-17.
- Dufour, R. (2004). What is a learning community? *Educational Leadership*, 61(8), 6-11.
- Elbousty, J. M., & Bratt, K. (2009). Establishing a professional learning community in a high school setting. *NERA Conference Proceedings*, 1-21.

- Erickson, A. S. G., Noonan, P. M., & McCall, Z. (2012). Effectiveness of online professional development for rural special educators. *Rural Special Education Quarterly*, 31(1), 22-32.
- Every Student Succeeds Act, U.S.C. 42 114th Congress. § 117 (2016).
- Gilles, C., Wilson, J., & Elias, M. (2010). Sustaining teachers' growth and renewal through action research, induction programs, and collaboration. *Teacher Education Quarterly*, 37(1), 91-108.
- Gordon, R., Kane, T. J., Staiger, D. O., Brookings Institution, W. D. (2006). *Identifying effective teachers using performance on the job*. (Hamilton Project Policy Brief No. 2006-01). Washington D.C. Brookings Institution,
- Gulamhussein, A. (2013). *Teaching the teachers: Effective professional development in an era of high stakes accountability*. Alexandria, Va: Center for Public Education.
- Gusky, T. (2003). What makes professional development effective? *Phi Delta Kappan* 84(10), 748-750.
- Hanushek, E. A. (2007). The single salary schedule and other issues of teacher pay. *Peabody Journal of Education*, 82(4), 574-586.
- Hattie, J. (2003, October). *Teachers make a difference: What is the research evidence?* Paper presented at the Australian Council for Educational Research Annual Conference on Building Teacher Quality, Melbourne, Australia.
- Hill, H., Ball, D. L., & Schilling, S. (2008). Unpacking pedagogical content knowledge: Conceptualizing and measuring teacher's topic-specific knowledge of students. *Journal for Research in Mathematics Education*, 39(4), 372-400.
- Hirsh, S. (2009). A new definition. *Journal of Staff Development* 30(4), 10-16.
- Hustler, D., McNamara, O., Jarvis, J., Londra, M., & Campbell, A. (with Howson, J). (2003). *Teachers' perceptions of continuing professional development*. Nottingham, England: Department for Education and Skills.
- Jasper B., & Taube, S. (2004). Action research of elementary teachers' problem solving skills before and after focused professional development. *Teacher Education and Practice*, 17(3), 229-310.
- Joyce, B., & Showers, B. (2002), *Student Achievement through Staff Development*, 3rd edn. Alexandria, VA: Association for Supervision and Curriculum Development.
- K12 Big Data. (n.d.). School data made simple.
Retrieved from <http://k12bigdata.com>

- Kanold, T., Tonchef, M., & Douglas, C. (2008). Two high school districts recite the abcs of professional learning communities. *Journal of Staff Development, 29*(3), 22-27
- Kedzior, M., & Fifield, S. (2004). *Teacher Professional Development*. Retrieved from University of Delaware Education Research & Development Center website: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2019768.
- Kelly, J., & Cherkowski, S. (2015). Collaboration, collegiality, and collective reflection: a case study of professional development for teachers. *Canadian Journal of Educational Administration and Policy, 169*, 1-27.
- Kemmis, S. (2009). Action research as a practice-based practice. *Educational Action Research, 17*(3), 463-474.
- Knight, J. (2000, April). *Another damn thing we've got to do: teacher perceptions of professional development*. Paper presented at the Annual Meeting of the American Educational Research Association, New Orleans, LA.
- Lasley, T. I., Siedentop, D., & Yinger, R. (2006). A systemic approach to enhancing teacher quality: The Ohio model. *Journal of Teacher Education, 57*(1), 13-21.
- Lortie, D.C., (1975). *School Teacher: A Sociological Study*. Chicago: University of Chicago Press.
- Lieberman, A., & Mace, P. (2008). Teacher learning: The key to educational reform. *Journal of Teacher Education, 59*, 226–234.
- Liljedahl, P. (2014). Approaching professional learning: What teachers want. *The Mathematics Enthusiast, 11*(1), 109-122.
- Linek, W. M., Fleener, C., Fazio, M., Raine, I. L., & Klakamp, K. (2003). The impact of shifting from “how teachers teach” to “how children learn.” *The Journal of Educational Research, 97*(2), 78-89.
- Loucks-Horsley, S., Love, N., Stiles, K. E. Mundry, S., & Hewson, P. W. (2003). *Designing professional development for teachers of science and mathematics*. Thousand Oaks, CA: Corwin Press.
- Marzano, R. J. (2007). Using action research and local models of instruction to enhance teaching. *Journal of Personnel Evaluation in Education, 20*(3-4), 117-128.
- Marzano, R. J., Boogren, T. H., Heflebower, T., Kanold-McIntyre, J., & Pickering, D. J. (2012). *Becoming a reflective teacher*. Bloomington, IN: Marzano Research.

- Masuda, A. M., Ebersole, M. M., & Barrett, D. (2012). A qualitative inquiry: Teachers' attitudes and willingness to engage in professional development experiences at different career stages. *Delta Kappa Gamma Bulletin*, 79(2), 6-14.
- Missouri Department of Elementary & Secondary Education. (n.d.-b). *Senate Bill 380 Outstanding Schools Act*. Retrieved from <http://dese.mo.gov/governmental-affairs/legislation/previous-legislation/SB380>
- Missouri Department of Elementary & Secondary Education (n.d.-a). MO School Improvement Program. Retrieved from: <https://dese.mo.gov/quality-schools/mo-school-improvement-program>
- Missouri Department of Elementary & Secondary Education (n.d.-c). State board approves Top 10 by 20 plan. Retrieved from: <http://dese.mo.gov/communications/news-releases/state-board-approves-top-10-20-plan>
- Mitchell, C., & Sackney, L. (2009). *Sustainable improvement: Building learning communities that endure*. Rotterdam, Netherlands: Sense.
- Mizell, H., (2010). Why professional development matters. Oxford, OH: *Learning forward, missouri school improvement program*, (2006) Retrieved from <https://dese.mo.gov/quality-schools/mo-school-improvement-program>
- Moore, S. D., Kochan, F. K., Kraska, M., & Reames, E. H. (2011). Professional development and student achievement in high poverty schools: Making the connection. *International Studies in Education Administration*, 39(2), 65-79.
- Muzaffar, M., & Malik, S. Y. (2012). Attitude of teachers towards professional development trainings. *Language in India*, 12(8), 304-322.
- No Child Left Behind Act of 2001, Pub. L. No. 107-110, § 115, Stat. 1425 (2002).
- Opfer, V. D., & Pedder, D. (2011). Conceptualizing teacher professional learning. *Review of Educational Research*, 81(3), 376-407.
- Parise, L. M., Finkelstein, C., Alterman, E., (2015). "We always want to get better": *Teachers' voices on professional development*. New York, NY: MDRC.
- Petrie, K., & McGee, C. (2012). Teacher Professional Development: Who is the learner?. *Australian Journal of Teacher Education*, 37(2).
- Protheroe, N. (2004). Professional learning communities. *Principal*, 83(5), 39-42.
- Prytula, M., & Weiman, K. (2012). Collaborative professional development: An examination of changes in teacher identity through the professional learning community model. *Journal of Case Studies in Education*, 3, 1-19.

- Rovinelli, R. J., & Hambleton, R. K. (1977). On the use of content specialists in the assessment of criterion referenced test item validity. *Dutch Journal of Educational Research*, 2.
- Quint, J., (2011). *Professional development for teachers: What two rigorous studies tell us*. Retrieved from Social Science Research Network website: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2019768.
- Richards, A.M. (2004). Rural transistion: Know no bounds. *Rural Special Education Quarterly*, 23(3), 36-40
- Riveros, A., Newton, P., & Burgess, D. (2012). A situated account of teacher agency and learning: Critical reflections on professional learning communities. *Canadian Journal of Education*, 35, 202–216.
- Robinson, M. (2003). Student enrollment in high school ap sciences and calculus: How does it correlate with stem careers? *Bulletin of Science, Technology & Society*, 23(4), 265-273.
- Rojewski, J.W. (1999). Career-related predictors of work-bound college-bound status of adolescents in rural and nonrural areas. *Journal of Research in Rural Education*, 15, 141-156.
- Russell, M., Carey, R., Kleiman, G., & Venable, J. D. (2009). Face-to-face and online professional development for mathematics teachers: A comparative study. *Journal of Asynchronous Learning Networks*, 13(2), 71-87.
- Stoll, L., & Louis, K. S. (2007). *Professional learning communities: Elaborating new approaches*. Professional learning communities: Divergence, depth and dilemmas Berkshire, UK: Open University Press.
- Sparks, D. (2005), *Leading for Results*. Thousand Oaks, CA: Corwin Press.
- Sparks, D., & Hirsh, S. (1997). *A new vision for professional development*. Alexandria, VA: Association for Supervision and Curriculum Development.
- Tallent-Runnels, M. K., Thomas, J. A., Lan, W. Y., Cooper, S., Ahern, T. C., Shaw, S. M., & Liu, Xiaoming. (2006). Teaching courses online: A review of the research. *Review of Educational Research*, 76(1), 93-13
- Telese, J. A. (2012). Middle school mathematics teachers' professional development and student achievement. *The Journal of Educational Research*, 105(2), 102-111.
- Vescio, V., Ross, D., & Adams, A. (2008). A review of research on the impact of professional learning communities on teaching practice and student learning. *Teaching and Teacher Education*, 24(1), 80-91.

- Wei, R. C., Darling-Hammond, L., & Adamson, F. (2010). *Professional development in the United States: Trends and challenges*, Dallas, TX: National Staff Development Council.
- Wenglinsky, H., (2000). *How Teaching Matters: Bringing the Classroom Back into Discussions of Teacher Quality*. Princeton, NJ: Milken Family Foundation.
- West, C. (2011). Action research as a professional development activity. *Arts Education Policy Review*, 112(2), 89-94.
- Ylimaki, R. (2007). *Instructional leadership in challenging US schools*. *International studies in Educational Administration*, 35(3), 11-19
- Yoon, K. S., Duncan, T., Lee, S. W., Scarloss, B., & Shapley, K. L. (2007). Reviewing the evidence on how teacher professional development affects student achievement REL 2007-No. 033. *Regional Educational Laboratory Southwest*.

Appendix A: Pilot Study Survey Questions

Section I

Participant Demographic Information

1. I am a ___ Male ___ Female.
2. I am currently in year _____ 1-9, _____ 10-19, _____ 20-30, _____ 30+ of my teaching career.
3. The district in which I am employed is considered Urban/Suburban/Rural.
4. I Currently teach ___ Math ___ English ___ Social Studies ___ Science ___ Non-core subject.
5. I ___ have ___ do not have regular input about Professional Development choices.

Section II

Instructional Improvement

1. I believe that participation in regular ongoing professional development opportunities is one of the most important things that I can do.
2. To improve as a teacher I must be a participant in professional development opportunities.
3. I am motivated to participate in professional development opportunities in order to provide a higher level of instruction in my classroom.
4. Professional development activities often provide information and proper training that improve my classroom teaching methods.
5. Professional Development activities are often overrated in terms of improving teacher performance.

6. My classroom experience will help me develop into a better educator more so than my participation in professional development activities.
7. My participation in professional development activities has had a positive impact on the quality of my teaching.
8. The training that I received at the college/university (minus advanced degrees) level combined with the experience that I have is adequate training for the subject that I teach.
9. Participation in at least two professional development activities during each school year will make me a better teacher.
10. I am committed to professional development participation.
11. I believe I can be a great teacher without participating in professional development activities because I will improve each year that I teach.

Section III

Increasing Student Performance

1. I believe that my students perform at a higher level in the classroom because I implement the teaching strategies that I gain from participating in professional development.
2. I believe there is a direct correlation between my students' assessment performance and my participation in professional development activities.
3. I am a better teacher and my students perform better due to my participation in professional development.
4. I actively participate in professional development because ultimately I know my students will perform at a higher level.

5. Reducing the time I participate in professional development activities will result in a lower level of student performance.
6. Student performance is impacted by a teacher's commitment to continuing education through professional development.
7. Teachers that are active participants in professional development have students that achieve higher on their assessments.
8. Professional development provides the teacher with the evidence-based teaching strategies that will result in higher student achievement results on their assessments.
9. The highest achieving students are those that have teachers that are active participants in professional development activities.
10. Teachers that do not participate in professional development will have students that achieve lower than those who are active participants in professional development opportunities.
11. Professional development participation is the single-most important thing a teacher can do to ensure his or her students are successful and are higher achievers.

Appendix B: Full Study Survey Questions

Demographic Information

1. I am a Male/Female.
2. I am currently in years 1-9, 10-19, 20-30, 30+ of my teaching career.
3. The district in which I am employed is considered Urban/Suburban/Rural.
4. I currently teach a Math/English/Social Studies/Science/Non-core subject

Instructional Improvement

1. I believe that participation in regular ongoing professional development opportunities is one of the most important things that I can do to ensure my students are receiving the best educational methods and strategies in the classroom.
2. To improve as a teacher I must be a participant in professional development opportunities.
3. I am motivated to participate in professional development opportunities in order to provide a higher level of instruction in my classroom.
4. Professional development activities often provide information and proper training that improve my classroom teaching methods.
5. Professional development activities are often overrated in terms of improving teacher performance.
6. My classroom experience will help me develop into a better educator more so than my participation in professional development activities.
7. My participation in professional development activities has had a positive impact on the quality of my teaching.

8. Receiving advanced degrees supersedes participation in professional development opportunities in developing me to be an effective teacher.
9. The training that I received at the college/university (minus advanced degrees) level combined with the experience that I have is adequate training for the subject that I teach.
10. Participation in at least two professional development activities during each school year will make me a better teacher.
11. I am willing to use personal funds to attend professional development activities that my district might refuse to provide.
12. I believe I can be a great teacher without participating in professional development activities because I will improve each year that I teach.

Student Performance

1. I believe that my students perform at a higher level in the classroom because I implement the teaching strategies that I gain from participating in professional development.
2. I believe there is a direct correlation between my students' assessment performance and my participation in professional development activities.
3. I am a better teacher and my students perform better due to my participation in professional development.
4. I actively participate in professional development because ultimately I know my students will perform at a higher level.
5. Reducing the time I participate in professional development activities will result in a lower level of student performance.

6. Student performance is impacted by a teacher's commitment to continuing education through professional development.
7. Teachers that are active participants in professional development have students that achieve higher on their assessments.
8. Professional development provides the teacher with the evidence-based teaching strategies that will result in higher student achievement results on their assessments.
9. The highest achieving students are those that have teachers that are active participants in professional development activities.
10. Professional development participation supersede teacher education and classroom experience in producing students that achieve at a high level.
11. Teachers that do not participate in professional development will have students that achieve lower than those who are active participants in professional development opportunities.
12. Professional development participation is the single-most important thing a teacher can do to ensure his or her students are successful and are higher achievers.