MIDDLE SCHOOL TEACHERS' JUDGMENT OF ATTRIBUTES AND PROCESSES USED IN PROFESSIONAL DEVELOPMENT

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ABSTRACT

Most people would agree that education is imperative to the development of young people. However, the education that students need, and are receiving, is in a constant state of shift due to an ever-changing society. Some of the developmental needs of today's students are not the same as those in the past. As a result of these changes, as well as concerns regarding the education some students are receiving, the requirements and expectations for the education students receive are changing. Research has indicated that the role the teacher plays in the development of young is important. Teachers need to stay well informed of the developmental needs of current students along with new expectations and requirements.

Professional development will be important to a teacher's ability to keep up with students' current needs as well as changes in requirements and expectations. Research indicated that effective professional development can lead to changes in instruction. Guskey (2000) suggested that research shows very few, if any, significant advances in education take place without professional development. However, there are concerns regarding the professional development teachers are receiving. Reeves (2006) mentioned a gap exists between certain examples of professional development and the impact these activities have on classroom practices.

This mixed methods grounded research study was a three-phase investigation that included a meta-analysis, teacher focus group data analysis, and survey. Ten attributes emerged from the meta-analysis and focus group data analysis. These attributes included context of

learning, collaboration of teachers, adult learning, active learning, time for professional development, school focus, time to implement, teachers observing other teachers, school based professional development, and professional development for planning. Middle school teachers agreed with the meta-analysis and focus group findings when given an opportunity to agree or disagree when responding to a survey. This study was completed on the premise that if school leaders consider what teachers believe to be important when planning and implementing professional development, teachers will be more likely to implement newly learned activities into their classroom practice.

DEDICATION

This dissertation is dedicated to the following people:

- My dad, who taught me the importance of education
- My mom, who loved me unconditionally
- My mother-in-law, who encouraged me
- And finally, my wife, who has been patient with me, gave me time, and loved me throughout this process

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LIST OF ABBREVIATIONS

ESSA, Every Student Succeeds Act

HCDE, Hamilton County Department of Education

MSNS, Middle Schools for a New Society

PEF, Public Education Foundation

NCLB, No Child Left Behind

INTASC, Interstate New Teacher Assessment and Support Consortium

TNTP, The New Teacher Project

CCSS, Common Core State Standards

NSDC, National Staff Development Council

QUOROM, Quality of Reporting of Meta-Analysis

SPSS, Statistical Package for the Social Sciences

ANOVA, Analysis of Variance

PD, Professional Development

CHAPTER I

INTRODUCTION

Background

The speed at which society is changing impacts the education young people receive (Lieberman & Mace, 2010). As a result, today's students will need to master more complex material and develop a wider range of skills (Darling-Hammond & Bransford, 2005). Some researchers believe that schools are not helping students develop these skills. According to Sahlberg (2011), today's schools will not prepare students with the knowledge essential for future success. As a result of this outcome, educational reform may be more crucial now than in the past (Sahlberg, 2011). Fullan and Miles (1992) expressed the view that "Modern societies are facing terrible problems, and education reform is seen as a major source of hope in solving them" (p. 752). More knowledge and a greater set of abilities will be important for an individual's chances of success in today's society (Wagner et al., 2006). Education will be fundamental to this type of personal development (Darling-Hammond & Bransford, 2005), and teachers will serve a pivotal role in making changes that will ensure education is acquired (Beavers, 2009; Burridge & Carpenter, 2013; Lieberman & Mace, 2010; Owen, 2014).

If learning needs to improve for students, it will be important to engage in learning for teachers (Gulamhussein, 2013; Owen, 2014; W. M. Saunders, Goldenberg, & Galimore, 2009). Teachers will be vital to the transformation needed in teaching practices, and professional development will be fundamental for this transformation to take place (Burridge & Carpenter,

2013; Lieberman & Mace, 2010). Furthermore, teachers' development of knowledge and teaching ability will be crucial to providing the learning today's contemporary students need (Darling-Hammond & Bransford, 2005). For the sake of this study, professional development will be defined as "those processes and activities designed to enhance the professional knowledge, skills, and attitudes of educators so that they might in turn, improve the learning of students" (Guskey, 2000, p. 16).

Discussions regarding what should be taking place in schools have been part of the education horizon for most of the 20th century (Ravitch, 2001). Even earlier, in 1893, the Committee of Ten, a group of 10 educators who were mostly college administrators (Mirel, 2011), recommended that "all students have a rigorous and prescribed course of study" (Ravitch & Vinovskis, 1995, p. xiii). In another example, the 1957 launching of Sputnik led to an increased emphasis placed on science education in the United States as well as attention directed toward the public school system (Bybee, 1997; Olsen & Sexton, 2009; Powell, 2007).

Deci (2009) stated, "In the USA and other countries there is considerable discussion about an educational crisis, and numerous commentators have called for change in educational organizations with widely varied prescriptions for the changes" (p. 244). There is a belief that due to a poor education, high school students are not entering their post high school environment prepared for college or employment (Wagner et al., 2006). Too many students are leaving high school not equipped for college and unskilled for the workplace (Wagner, 2008). A study done by Achieve (as cited inWagner, 2008) identified what it means to be college ready. This research indicated that according to college professors, students were lacking in areas that would enable them to be college ready such as reading, thinking, writing, studying, researching, and problem solving skills (Wagner, 2008). A survey research report completed by the Public

Agenda (as cited in Wagner et al., 2006) indicated college professors and employers were not satisfied with the basic skills high school students possessed after graduation. The report showed that 58-75% of college professors and employers surveyed said students were lacking the skills of writing clearly, using correct grammar and spelling, organizing their time, arriving punctually, being motivated, or exercising conscientiousness. Failure to leave high school prepared for undergraduate studies and the work force could result in future difficulties regarding employment (Wagner, 2008).

As a result of these concerns, schools have engaged in a variety of reform and improvement initiatives over the past several years (Dlugash, 2014). Some reforms have been due to pressure and legislation from state and federal governments (Owen, 2014). One reform example was the set of Common Core State Standards that were introduced in the United States in 2009 (Common Core State Standards Initiative, 2015). A second example is the Every Student Succeeds Act (ESSA), which was signed into law by President Obama on December 10, 2015 (U.S. Department of Education, 2015b). Other reform initiatives were more localized. An example of a localized reform was demonstrated when the Hamilton County Department of Education (HCDE) engaged in the Middle Schools for a New Society (MSNS) school improvement process from the fall of 2005 through the spring of 2014 (Hardy, 2012).

Certain reforms identify the importance of professional development for teachers (Borko, 2004; Gulamhussein, 2013). Professional development can help improve a teacher's pedagogy that can lead to improved student learning (Borko, 2004). Guskey (2000) stated that professional development has been on the education horizon as early as the Greek society. Gulamhussein (2013) indicated that student learning should serve as the focus for professional development. However, there are concerns regarding some contemporary

professional development activities (Borko, 2004; Darling-Hammond, Wei, Andree, Richardson, & Orphanos, 2009; Gulamhussein, 2013; Guskey, 2000; Hirsch, 2011; McLester, 2012; Olsen & Sexton, 2009).

One concern is that teachers frequently believe ideas expressed at professional development activities are new fads that will go away as others have in the past (Olsen & Sexton, 2009). An example of a new initiative that changed rapidly occurred when the No Child Left Behind Act, signed into law in 2002, was modified by Race to the Top in 2009, and then was altered again when the ESSA was signed in 2015 (The White House & the United States Department of Education, 2014; U.S. Department of Education, 2015b; United States Department of Education, n.d.). Other concerns relate to the attitudes teachers have regarding the professional development in which they participate. One finding in a 2009 study by the National Staff Development Council, indicated that some examples of professional development activities are not believed by teachers to be beneficial (Darling-Hammond et al., 2009). One problem cited by this report was that time teachers spent on professional learning in the US was too short to have any impact on teaching practice (Darling-Hammond et al., 2009).

Other studies suggest that professional development is defective and lacking (Borko, 2004; Darling-Hammond et al., 2009). Borko (2004) identified some of these problems as "forms of professional development that are fragmented, intellectually superficial, and do not take into account what we know about how teachers learn" (p. 3). Darling-Hammond et al. (2009) mentioned that the professional development teachers receive is "poorly conceived" (p. 2) as well as "episodic, myopic, and often meaningless" (p. 2). Knowles, Holton, and Swanson (2015) argued that the adult learner could be trained to become dependent on their trainer

instead. Other researchers believe there is not a universal connection between professional development activities and instructional changes in the classroom (Reeves, 2006).

Planners of professional development activities should consider the voice of teachers who will participate in the development activity (Beavers, 2009; Knowles et al., 2015; Merriam & Bierema, 2014; Organization for Economic Co-operation and Development, 2011; Watson, Miller, Davis, & Carter, 2010). Additionally, these planners should understand the value teachers place on professional development activities and how teachers can be motivated to implement new strategies (R. Saunders, 2013). A teacher's perception of new ideas presented in professional development will be impacted by what they already know and believe (Borko & Putnam, 1995). Stronge (2002) mentioned that effective teachers have the desire to participate in individual professional development. Merriam and Bierema (2014) discussed the importance of adult training being "enhanced by knowing as much as we can about who learners are as well as how they learn" (p. 11). Adults will develop a certain responsibility when they determine they are accountable for their own decisions, but will develop negative attitudes toward circumstances they believe have been imposed on them (Knowles et al., 2015).

Professional development is important to the successful implementation of innovative ideas and practices into organizational structures (Crow, 2012; Mizell, 2012; Reeves, 2010). Guskey (2000) identified a link between professional development and improved education. "Every successful instructional improvement program, curriculum revision project, school restructuring design, or systemic reform initiative has at its center the provision of high-quality professional development" (Guskey, 2000, p. 4). Research shows that very few, if any, significant advances in education take place without professional development (Guskey, 2000). For example, the Race to the Top initiative identified developing teachers as a key focus (U.S.

Department of Education, 2015c). "The organizations that will truly excel in the future will be the organizations that discover how to tap people's commitment and capacity to learn at all levels in an organization" (Senge, 2006, p. 4). It is also important to know about and use organizational members' attitudes and abilities toward their own development (Senge, 2006).

Reeves (2006) discussed a gap that exists between certain professional development and the impact these activities have on classroom practices. This gap is demonstrated when a teacher attends a professional development session and then returns to the classroom and continues instruction as before (Reeves, 2006). Kent (2004) stated, "Ultimately, the individual teacher determines the extent to which any innovation occurs" (p. 427). The teacher will return to his/her classroom and decide if what s/he learned in the professional development activity will be implemented in classroom activities depending on how they view what was learned. Wlodkowski (2008) mentioned the role teacher motivation plays when developing professional learning activities. Teachers who are motivated about professional learning are more likely to make changes in the classroom (Wlodkowski, 2008).

While some researchers have indicated that it can be hard to determine the clear components of effective professional development (Bayar, 2014; Guskey, 2003; Guskey & Sparks, 2002; Wayne, Yoon, Zhu, Cronen, & Garet, 2008), assessment of professional development is important. Evaluation of professional development is necessary to determine its effectiveness (Desimone, 2009; Guskey, 2000; F. King, 2013; Knowles et al., 2015). One way to determine the effectiveness of professional development is to collect qualitative and quantitative data when evaluating the impact of adult learning activities (Knowles et al., 2015).

This investigation will include a case study examination of professional development activities that took place in middle schools that participated in the HCDE's and the Public

Education Foundation's (PEF) MSNS school improvement process. Early in the initiative, HCDE middle schools' improvement teams were provided funding that allowed ongoing teacher professional development. While topics addressed most likely varied in content, intensity, and quality, professional development was offered at each middle school.

In this study, themes regarding the attributes and processes important to HCDE teachers used during professional development provided during the 2005-2014 MSNS school years were identified. Reviews of comments found in existing longitudinal focus group data concerning professional development were utilized to ascertain these themes. The properties and processes that were identified by the review of the MSNS longitudinal data was examined further by surveying current HCDE teachers to determine if they agree. The survey allowed the evaluation of teacher support for thematic aspects of the professional development approaches used throughout the MSNS experience as well as a review of literature. This investigation provides data that will allow school leaders to know what teachers say about effective professional development.

Middle Schools for a New Society

MSNS was a school reform initiative that the HCDE's middle school faculty and staff participated in from the fall of 2005 through the spring of 2014. The overarching goal of this initiative was to "Transform our schools into high performing and humane organizations that ensure that every one of our students is well prepared to thrive in a rigorous high school" (PEF, n.d., p. 1). This program was a joint initiative between the PEF and the HCDE.

This initiative provided the HCDE middle schools an opportunity to assess themselves in relation to the following four process goals:

- MSNS Goal I. Personalization – Each student attends a school where s/he is known well and will complete a course of study that engages his/her passions and interests.
- MSNS Goal II. Flexibility – Students' motivations and performance increase through meeting their needs in flexible use of space and time.
- MSNS Goal III. Rigorous, Relevant Curriculum – Students benefit from a challenging, relevant, and engaging curriculum.
- MSNS Goal IV. Professional Learning Community – Students attend a school where teachers, principals and staff are provided the support and training necessary to achieve the vision of the school and district. (Hamilton County Department of Education, 2013, para. 3)

The MSNS initiative also emphasized outcome goals of literacy and math achievement as well as promotion rates (Hamilton County Department of Education, 2013).

During the MSNS implementation process, each middle school assessed its curriculum, instruction, and school environment relative to the above stated goals and then developed an improvement plan to address their related findings. Professional development served as a large part of the MSNS initiative. In this initiative, principals, assistant principals, and instructional coaches were provided professional development in exemplary practices and other relevant issues during principal collaborative meetings. These school leaders were encouraged to transfer the practices they learned at these meetings back to their schools and provide similar professional development for the educators in their buildings.

A variety of surveys and focus groups teachers were asked to participate in encompassed a second aspect of the MSNS initiative. A group of teachers from each school was given an opportunity to offer input regarding a variety of MSNS issues through a focus group process. A variety of surveys were also used at different times with groups of educators. The data collected during these surveys and focus groups could then be used by school leaders to determine the type and content of professional development needed by their schools. These data, collected for nine

years during the focus group process, served as the foundational data for one phase of this study. The questions used in this focus group data collection can be found in Appendix A.

Statement of the Problem

Many students are leaving K – 12 schools ill-prepared for post high school education (Venezia, Callan, Finney, Kirst, & Usdan, 2005). School leaders need to know how to study, develop, and implement professional development activities that help teachers cultivate classroom practices that promote learning for their students (Crow, 2012; Dragoo-Severson, 2012; Guskey, 2000; Mizell, 2012; National Commission on Teaching and America's Future, 1996). According to Beavers (2009) and Dragoo-Severson (2012), professional development will be required to improve teaching practices that will lead to the success of new initiatives and accountability measures teachers face. However, the problem is that some believe professional development currently taking place for teachers is ineffective (Beavers, 2009; Borko, 2004; Darling-Hammond et al., 2009; Guskey, 2000; Hirsch, 2011; McLester, 2012; Olsen & Sexton, 2009).

Another problem with professional development is that some advocates of this type of learning for teachers base their views on anecdotal support, not empirical evidence. It is important that this type of research is based on more than just opinions (R. B. Johnson & Onwueguzie, 2004). Research should be free from bias and emotional attachment (R. B. Johnson & Onwueguzie, 2004).

Purpose of the Study

The purpose of the current study is to identify and investigate attributes and processes used in professional development that are perceived important to teachers, and whether the importance as judged by teachers varies by length of service or type of school in which they are employed. Identification of the properties and processes considered important to teachers could provide school leaders with information that can be used to plan and implement effective professional learning. There can be a variety of processes in which professional development involve. OECD (2009) identified a variety of these ways:

- Informal dialogue to improve teaching
- Courses and workshops
- Reading professional literature
- Education conferences and seminars
- Professional development network
- Individual and collaborative research
- Mentoring and peer observation
- Observations to other schools. (p. 57)

This investigation was accomplished by three formats of inquiry. The first was a review of literature that explored what researchers determined about effective professional development for teachers. A second was an exploration of what HCDE teachers involved in the MSNS initiative during the 2007 and 2014 school years said about professional development. A third was a survey administered to current middle school teachers asking them to rank their level of agreement with the attributes and processes identified in the meta-analysis and MSNS focus group data.

As the list of needs and changes that schools must address grows, high performing teachers need to be employed and continually developed so additional requirements can be fulfilled (Schleicher, 2012). Olsen and Sexton (2009) discussed the need for highly qualified teachers when stating:

> Over the last several years, the policy culture in education writ large has engendered significant changes in how schools operate. For example, how to define and measure "highly qualified" teachers has affected teacher preparation and licensure; at the same time, it has also increased the scrutiny of and support for various "backdoor" alternative paths and internships into the profession. (p. 10)

All educators charged with teaching children will need to be trained and given opportunities to participate in professional development activities in order to bring about necessary changes (Crow, 2012).

School leaders must be well versed in how to evaluate, develop, and implement the type of professional learning that leads teachers to make improvements in their classrooms (Knowles et al., 2015; McLester, 2012; Mizell, 2012; Wallace, 2012). Programs used to address needed academic reform should be those that positively impact student achievement (Reeves, 2006). If school leaders use attributes and processes that are relevant to teachers, and also remember that teachers are adult learners, the end result of professional development will be teachers compelled to making the changes that are explored, ultimately improving instruction (Reeves, 2010; Wlodkowski, 2008). Reeves (2010) described an example of the impact of professional development where teachers and principals were aware of a needed activity that led to improved student achievement but were not prompted to implement it until they engaged in a certain type of professional learning. It was when the teachers and principals went through the process of action research that they realized the importance of the curricular activity. Adults who are

motivated about what they are learning are more likely to implement what they have learned into their classrooms (Wlodkowski, 2008).

Study Research Questions

The purpose of this research was to seek and investigate attributes and processes teachers report as important to professional development. Based on these reports, this study addressed five overarching questions regarding professional development for teachers:

1. Throughout the course of the MSNS initiative, what attributes and processes of professional development did teachers consistently report as important?
2. To what degree will the attributes and processes reported important to HCDE middle school teachers be consistent with the attributes and processes reported throughout the meta-analysis of literature?
3. At what level will current HCDE middle school teachers agree with the attributes and processes consistently reported as important by teachers (a) throughout the MSNS initiative focus group sessions and (b) through the meta-analysis of literature?
4. Will there be a difference in the level of agreement or disagreement of attributes and processes important to professional development between teachers who have different years of experience in the classroom?
5. Will there be a difference in the level of agreement or disagreement of attributes and processes important to professional development between teachers at schools that have different performance levels?

Rationale for the Study

The rationale for this study is to increase the knowledge and understanding of the planning and delivery of professional development for teachers. This rationale is based on four concerns: the importance of the role of educational leaders, the impact the classroom teacher has on the achievement of students, the negative sentiment that exists regarding professional development activities, and the current needs of the student regarding his/her achievement.

The role of the school leader is changing (Dragoo-Severson, 2012; Zepeda, Parylo, & Bengtson, 2014). In one example, Dragoo-Severson (2012) stated that education leaders are being asked to "adapt from a management role to that of primary teacher developer and architect of collaborative learning organizations" (p. 2). Other researchers have realized the importance of the delivery of effective professional development to bring about desired changes in teaching (Burridge & Carpenter, 2013; Darling-Hammond et al., 2009). By understanding the role of the teacher, how teachers learn, and what properties and processes teachers report are important to professional development activities, educational supervisors will be better equipped to provide professional development that will lead to improved student achievement (Merriam & Bierema, 2014).

The role a teacher has in the education of young people is vital (Cogshall, Behstock-Sherratt, & Drill, 2011; Guskey, 2003; Jerald, 2007), and research indicates that teachers have a great impact on the achievement of students (Bayar, 2014; Henson, 2001; National Commission on Teaching and America's Future, 1996; Viadero, 2012). Since the National Commission on Excellence in Education (1983) published its *Nation at Risk* report, there has been a steady increase of accountability placed on classroom teachers. As three examples, Tennessee's Education Improvement Act and Basic Education Program, passed in 1992, required schools to

meet specific standards; President Bush's No Child Left Behind (NCLB) law was signed in 2002, which required that teachers be highly qualified; and Race to the Top began in 2009, which emphasized the Common Core State Standards (Morgan, Smith, Detch, & Walton, 2004; The White House, 2009; U.S. Department of Education, 2004b). In some states this led to the evaluation of teachers every year. As of February 2015, 15 states postponed or withdrew from the implementation of Common Core Standards (Corona, 2015). The trend of change continued when in January of 2015, U.S. Secretary of Education, Arne Duncan, called for the reauthorization of NCLB (Common Core State Standards Initiative, 2015; U.S. Department of Education, 2015a). Professional development will be necessary in order for these initiatives to be implemented successfully. Useful professional development will be fundamental to ensuring that teachers have the knowledge and expertise to organize student centered instruction to address new conditions as they arise (Bryk, Sebring, Allensworth, Luppescu, & Easton, 2010).

While the accountability of the teacher has expanded, the time teachers have to implement new initiatives has not increased. Students are not spending any more time in school even though they are asked to learn more (National Education Commission, 2005). Golberg and Cross (2005) stated, "The length of the school day and the school year are virtually the same today as they were throughout the 20th century" (p. 2). This increased accountability, with no increase in time, shows the need for teachers to develop efficient and effective classroom practices to execute needed learning activities.

A third concern for this study is the importance of addressing teachers' belief that certain professional development activities are not valuable. If education leaders can identify and implement attributes and processes used in professional development that are pragmatically engaging, teachers might have a greater acceptance of the practices being introduced and be

more likely to use new learning in their classroom (Organization for Economic Co-operation and Development, 2011; Wlodkowski, 2008). Since there are concerns regarding certain types of professional development (Darling-Hammond et al., 2009; Guskey, 2000; Hirsch, 2011; McLester, 2012; Olsen & Sexton, 2009), school leaders need to know and understand how to provide professional development that is meaningful to teachers (Crow, 2012; McLester, 2012; Mizell, 2012; W. M. Saunders et al., 2009; Schmoker, 1999; Scribner, 1999; Wallace, 2012). If teachers have experienced so much ineffective professional development, it will be important for those who develop professional development to consider the role teacher voice has in relation to its effectiveness (Knowles et al., 2015).

Additionally, the skill set that students need to be college and/or career ready is constantly changing (Hannay & Earl, 2012; Wagner, 2008). Business leaders are concerned that in spite of new reforms, students are leaving high school unprepared for the work place (Wagner, 2008). The Common Core Standards initiative demonstrated that students were being asked to master different standards and in different ways (Alberti, 2013; Marrongelle, Sztajn, & Smith, 2013). However, according to Corona (2015), many states rescinded their decision to participate in the Common Core initiative due to political reasons. Professional development will be the key to see that teachers are able to provide the type of learning opportunities that students will need to become prepared for the 21st century (Darling-Hammond et al., 2009).

The link between what the teacher does and what the student achieves is important (Ashton, 1984; Guskey, 2003; Henson, 2001; Killion & Hirsh, 2011; Reeves, 2010; Sanders & Rivers, 1996; Viadero, 2012). After studying a cohort of students for a period of four consecutive years, Sanders and Rivers (1996) found that students who consistently had teachers with high effect scores that measure teacher impact (TN Department of Education, n.d.) out-

performed students with teachers with low effect scores. Professional development has an impact on the practice of a teacher (Dragoo-Severson, 2012; Guskey, 2000; Jaquith, Mindich, Wei, & Darling-Hammon, 2010; Killion & Hirsh, 2011). When teacher learning is reinforced, student achievement improves (Dragoo-Severson, 2012). A goal of the study was to identify attributes and processes that lead to effective professional development that will lead to improved instruction. Effective professional development will enable teachers to address issues that are a result of schools becoming increasingly more complex due to content changing on a regular basis (Callier & Riordan, 2009). The information provided by this study may help educational leaders plan, develop, and implement professional development that will be valued by teachers. One assumption of this study is that teachers will be more likely to implement change in their classrooms as a result of professional development if they value the attributes and processes in the learning activity. If classroom instruction improves, student achievement will also improve (Yoon, Duncan, Lee, Scarloss, & Shapley, 2007). Reeves (2010) commented that explicit instructional tactics were connected to particular increases in student achievement. One of the greatest influences on student learning occurs when teachers develop into students of their own practice (Hattie, 2009).

Theoretical/Conceptual Framework

Four theoretical concepts will serve as the foundation for this research. The first concept is the idea that there are attributes and processes used to develop and implement professional development important to teachers, and these can have an impact on the likelihood of a teacher making changes in classroom practice. One example of these attributes and processes is relevance. Guskey (1995) argued that the relevance of professional development activities should be evident to teachers and must also address teacher concerns. Darling-Hammond et al.

(2009) stated, "American teachers say that much of the professional development available to them is not useful" (p. 5). One reason this professional development may not prove useful is that it is a one-time event and not sustained over time (Darling-Hammond et al., 2009). In a second example, Darling-Hammond et al. (2009) indicated that teachers valued professional development less if they did not have the opportunity to increase content knowledge or discover ways to ensure their students learned the subject matter. If teachers do not see the need for an initiative taught during a professional development session, they are less likely to adopt it into their classroom practices (Bridges, 2003; Darling-Hammond et al., 2009; Desimone, 2009; Mizell, 2012). As
a final example, teachers need to view professional development in light of the context in which they work (Scribner, 1999).

The second concept is leadership. It is important for school leaders and policy makers to advocate for professional development and show the relationship that exists between professional learning and improved teaching (Mizell, 2012), thus increased student learning. Militello (2011) explained, "Alternatively, needs may be understood but outcomes still suffer as a result of a misalignment between decision-making frameworks and the underlying circumstances to which they are being applied" (para. 5). Jaquith et al. (2010) indicated that "the importance of leadership and leadership teams" (p. 4) were found in states considered areas showing the potential for "innovative approaches to school and instructional improvement" (p. 4). The use of accountability measures is important to employing successful professional development (Jaquith et al., 2010; F. King, 2013; Militello, 2011). Due to the advancement of knowledge and its relationship to teacher pedagogy, Cardno (2005) stated, "Professional

development should be a critical concern of leaders" (p. 292). This will enable school leaders to provide effective learning opportunities for teachers.

A third theoretical concept is the idea that if teachers have a voice in the development selection and implementation of needed professional development, they will be more likely to value the professional learning activity. Guskey (2002) indicated that teacher attitudes regarding professional development should be investigated such that those "most crucial to professional growth and development" (p. 389) can be identified. The amount of input teachers put into decisions regarding professional development should be considered (Jaquith et al., 2010). "When decision-making on professional development and other school improvement policies is shared among a broader group of professionals, the strategies look quite different from those designed purely from the top down" (Jaquith et al., 2010, p. 6). Decision-making should be shared (Jaquith et al., 2010).

Professional development should consider teachers' orientations when planning development (Schoenfield, 2011). Teachers' interpretations, insights, and decision-making are impacted by their own individual practice and should be used as a basis to plan and implement professional development (Schoenfield, 2011). Van den Bergh, Ros, and Jeijaard (2014) identified the importance of "the collective participation of teachers" (p. 774) and considered it "preferable" (p. 774) when planning professional development. They continued by pinpointing "teachers' existing beliefs, perceived problems, and feedback" (Van den Bergh et al., 2014, p. 774) as central to designing professional development. Eraut (1995) discussed the importance of negotiation with individual teachers for the planning of professional development. It is also important to consider individual teacher expertise when developing professional development opportunities (Eraut, 1995).

The concept of adult learning will serve as a fourth theoretical concept for this study. Zepeda et al. (2014) argued that components of adult learning will be identified as attributes and processes that will be important to teachers and should be considered when designing and implementing professional development. One of the important components of adult learning has already been identified as the learner's voice, which indicates that the teacher should be a participant in the decision making regarding professional development activities (Beavers, 2009). It is important to consider the path a teacher believes is important to professional learning (Beavers, 2009). A study done by Gravani (2012) indicated the importance of using principles of adult learning when developing professional development for teachers. Thus, it is important to use an "andragogical design model" (Gravani, 2012, p. 421) emphasizing adult learning principles when designing professional development for teachers. Just as teachers are asked to know the characteristics of their students, professional developers should know the characteristics of their adult learners. Knowles et al. (2015) identified six assumptions of adult learning that are essential to the development of adult learning activities: (a) experience, (b) motivation, (c) need to know, (d) orientation, (e) readiness, and (f) self-concept. It will be important to keep these procedural assumptions in mind when designing learning opportunities for adults (Merriam & Bierema, 2014).

Significance of the Study

Schools are charged with ensuring that students leave with the content knowledge and skills that will be necessary to accomplish the ambitions of new reform efforts (Borko & Putnam, 1995). The National Commission on Teaching and America's Future (1996) reported, "Tens of thousands of people not educated for these demands have been unable to make a successful

transition into the new economy" (p. 11). In other words, students are not leaving school prepared to take part in a society that is constantly changing.

Data support that the teacher in the classroom has a powerful impact on the learning that takes place for students (Henson, 2001; National Commission on Teaching and America's Future, 1996; Viadero, 2012). School leaders must know how to provide professional development that will emphasize instructional practices that lead to positive growth in student achievement (Crow, 2012; McLester, 2012; Mizell, 2012; W. M. Saunders et al., 2009; Schmoker, 1999; Scribner, 1999; Wallace, 2012). Efficiency in classroom practices is important due to the amount of change in education (e.g., accountability, needs of students) in recent years (Fullan, 1995; Olsen & Sexton, 2009). While some states have opted out, and the extent of the ultimate influence remains to be seen, changes resulting from the Common Core Standards altered learner academic outcomes students are to meet and the way students are taught (Alberti, 2013; McTigue & Wiggins, 2012; National Commission on Teaching and America's Future, 1996). Student outcome changes are aligned with measures to judge progress. This led to a second example of change, which is new teacher accountability and evaluation systems that are in place across the United States. No Child Left Behind and states' involvement in the Race To The Top initiative have impacted this accountability (Association of Supervision and Curriculum Development, 2013).

Professional development will be important to the implementation of mandated changes and improvements in student achievement (Eraut, 1995; Van den Bergh et al., 2014). Professional development will also be beneficial if there are certain changes in instructional approaches because it will lead to improved student achievement (Guskey, 2002). Guskey (2002) identified the changing of teaching methodology as a common resolve of professional

development. Borko (2004) mentioned that research shows professional development can change teaching practices. However, Borko (2004) also identified new territories of professional development needed to be explored. One territory to be explored is researching whether professional development demonstrated to be successful in one subject area will be successful in another (Borko, 2004). In another example, Borko (2004) mentioned the importance of getting the educational research community involved in providing professional development for teachers. Kaufman and Stein (2010) stated institutional and educational research could provide information regarding the factors influencing teacher learning, especially during today's era of changing policy. Darling-Hammond (2016) identified the need to move teacher training from one which emphasized teaching techniques to activities emphasizing learning. Her work was based on standards developed by The National Board for Professional Standards and the Interstate New Teacher Assessment and Support Consortium (INTASC).

While the The New Teacher Project (2015) determined that the components of effective professional development are not clear, the literature suggests that there is a connection between professional development and the impact it can have on the achievement of students (Borko, 2004; F. King, 2013; Van den Bergh et al., 2014; Wayne et al., 2008; Yoon et al., 2007). However, there are concerns regarding professional development for teachers (Borko, 2004; Darling-Hammond et al., 2009; Guskey, 2000; Hirsch, 2011; McLester, 2012; Olsen & Sexton, 2009). One concern mentioned by Borko (2004) was that professional development does not take into consideration the studies that show the best ways teachers learn. A second concern is that there are too many teachers that have negative opinions about professional development activities they participate in (Darling-Hammond et al., 2009). The significance of this study lies in the assumption that professional development must lead to an impact on teacher practices.

The information learned will help address the concerns regarding professional development for teachers (Borko, 2004; Darling-Hammond et al., 2009; Guskey, 2000; Hirsch, 2011; McLester, 2012; Olsen & Sexton, 2009) and the unpreparedness of students (Wagner et al., 2006).

If professional development is effective, teaching and eventually student achievement, improves (Borko, 2004; Desimone, Porter, Garet, Yoon, & Birman, 2002; Wayne et al., 2008; Yoon et al., 2007). The significance of this study is that it will investigate what attributes and processes teachers report to be important to professional development. This information could ultimately prove helpful to planners of professional development

Definition of Terms

Common Core State Standards (CCSS) – A set of learning statements that emphasize thinking processes more than content knowledge. Initially 45 of 50 states, four territories, Washington D.C., and the Department of Defense Education Activity adopted the standards in order to prepare students to be college and/or career ready (Council of Chief State School Officers & National Governor Association of Best Practices, 2012).

Every Student Succeeds Act (ESSA) – This was a new law signed by President Obama in 2015 to update and replace the No Child Left Behind Law (U.S. Department of Education, 2015b).

Hamilton County Department of Education (HCDE) – A school system in southeast Tennessee that serves approximately 77 schools with a total of 41,214 students (Tennessee Department of Education, 2015).

Middle Schools for a New Society (MSNS) – An initiative that sought to improve the instruction and school leadership of the approximately 20 middle schools in the Hamilton County Department of Education (Hardy, 2012).

No Child Left Behind (NCLB) – A mandate that was signed into law on January 8, 2002. It was a reauthorization of the Elementary and Secondary Education Act of 1965. NCLB was regarded as the "landmark 2002 education legislation aimed at closing the achievement gap by holding schools more accountable" (Wagner, 2008, p. 3). NCLB held all public schools and districts accountable for ensuring that most teachers will be certified as highly qualified and all students will be proficient in reading, language arts, and math by the year 2014 (U.S. Department of Education, 2004a).

Professional Learning Community – "Educators committed to working collaboratively in ongoing processes of collective inquiry and action research to achieve better results for the students they serve" (Rebecca Dufour, Dufour, Eaker, & Many, 2006, p. 217).

Race to the Top – A grant funding initiative introduced by President Obama in 2009 to encourage states to develop curriculum and instruction programs based on high expectations, use student information to make curriculum decisions, recruit and develop high performing teachers, select and implement effective school improvement, and use creative and effectual methods to improve low performing schools (The White House, 2009).

Standards Movement – A standard is a grade level and subject area statement that identifies what a student should know and be able to do to show mastery of a certain content or

skill. A standards movement is a reform initiative where standards are used to drive the curriculum and instruction practices of teachers and schools (Marzano, 2000; Popham, 1997).

Teacher Efficacy – The beliefs and performance capacity of a teacher to impact the growth, development, learning, and performance of a student (Cho & Shim, 2013).

Teacher Professional Development – "The term 'professional development' means a comprehensive, sustained, and intensive approach to improving teachers' as well as principals' effectiveness in raising student achievement" (Learning Forward: The Professional Learnng Association, 2013, Definition of Professional Development, para. 3).

Teacher Voice – "In education, teacher voice refers to the values, opinions, beliefs, perspectives, expertise, and cultural backgrounds of the teachers working in a school" (The Glossary of Education Reform, 2013, para 1).

Methodological Assumptions

There are a number of assumptions that will be considered regarding this research project:

- Teachers have the desire to improve their practice.
- Teachers have the skill, knowledge, and understanding to comprehend and implement innovations addressed in professional development.
- It is assumed teachers were honest in the initial focus group sessions and the recorders were honest, consistent, and accurate when recording responses.

- The sample of teachers who participated in the survey care about their professional practice skills and want to participate in professional development to learn practices that will help them improve their instruction.
- Teachers were factual and honest when they filled out survey forms.
- Teachers will have had sufficient experience with professional development activities to understand the questions asked.
- The teachers who responded to surveys will serve as a reliable representation of the identified population of middle school teachers.
- If the attributes and processes that are important to teachers are used in the planning, development, and implementation of professional development, teachers will be more likely to implement the activities emphasized into their classroom instruction.
- Community factors that can negatively impact the implementation of innovations taught in professional development have not been present. For example, an incident created a negative atmosphere in the HCDE during the beginning of 2016. This negative atmosphere would likely impact the prospect of new innovations being implemented during this time.
- The meta-analysis findings were applicable to the study audience.

Delimitations of the Study

There are delimitations that will specify what the study will address:

- The variable that served as the focus of this study were the attributes and processes that teachers report are important to professional development. These variables were delimited by what was found in the literature, what teachers said in MSNS focus

groups, and how they responded when answering the survey about attributes and processes of professional development.

- This research was delimited to middle school teachers only.
- Responses from middle school teachers who taught during the time the MSNS initiative was in place were the only focus group data used in the study.
- Teachers outside of the HCDE were not asked to participate in this study. Only HCDE participated in the MSNS focus groups and only HCDE teachers were asked to respond to the survey.

Limitations of the Study

There will be certain concepts that could limit conclusions drawn during this study:

- Data could be limited by the large number of teachers who are part of the HCDE, however were represented by a small number of teachers in the MSNS focus groups.
- The number of HCDE teachers who participated in the survey could have impacted the data negatively if they consisted of a small number.
- The number of teachers who participated in the MSNS initiative who have left the system and have been replaced by teachers who have not participated could have impacted the data.
- The time lapse between the end of the MSNS initiative and the time the survey was administered could have influenced a teacher's response to questions.
- Data are limited to the respondent comments or rankings at the time of data collection. There was no effort to assure reliability across time in individual responses.

- Teachers' responses may have been influenced by professional development events that were being conducted at the time of data collection.
- Teacher responses to focus groups could have been impacted by a lack of understanding of the professional development that the participant teachers experienced.
- The attributes and processes identified in this study as important to professional development for teachers will not determine causality with teacher reported values, but will only show potential relationships.
- The number of attributes and processes important to professional development found in MSNS data could have been limited due to a small number of questions used during teacher focus groups that addressed professional development.
- The meta-analysis of the literature could contain a limited amount of research regarding properties of professional development.
- Procedural rules, regulations, policy, and other leadership issues may have had a negative impact on the implementation of or beliefs regarding innovations addressed in professional development, which could have a bearing on how teachers responded to survey.

CHAPTER II

REVIEW OF LITERATURE

Introduction

The overarching topic of this review of literature is professional development in an education setting and its impact on the classroom teacher. This literature review will demonstrate four overall themes that have emerged as a result of this examination. The first theme addresses the role that teachers have in regard to student learning. Literature clearly identifies the importance a teacher has in the academic growth of students (Ashton, 1984; Cogshall et al., 2011; Darling-Hammond et al., 2009; Guskey, 2003; Henson, 2001; Killion & Hirsh, 2011; National Commission on Teaching and America's Future, 1996; Sanders & Horn, 1998; Viadero, 2012; Wayne et al., 2008).

A second theme that emerged from this review of literature is the importance professional development has on the growth of a teacher (Callier & Riordan, 2009; Crow, 2012; Darling-Hammond et al., 2009; Desimone, 2009; Dragoo-Severson, 2012; Easton, 2012; Guskey, 2000; Killion & Hirsh, 2011; Mizell, 2012; W. M. Saunders et al., 2009; Wayne et al., 2008). Research indicates that the professional growth of a teacher can have an impact on the achievement of the student (Dragoo-Severson, 2012; Killion & Hirsh, 2011). The role of the teacher and teacher voice in relation to professional development has been identified as an area of concern for some researchers (Borko & Putnam, 1995; Gravani, 2012; Merriam & Bierema, 2014; Organization for Economic Co-operation and Development, 2011; Tucker, 2011; Watson et al., 2010).

While there is literature that indicate instances where professional development has been effective, other sources of literature express negative concerns regarding the current status of professional development for teachers (Borko, 2004; Darling-Hammond et al., 2009; Guskey, 1986, 2003; Hirsch, 2011; Mizell, 2012; Reeves, 2006; Richardson, 2007; Vescio, Ross, & Adams, 2008; Wagner, 2003). Research done by Vescio et al. (2008) about how professional learning communities can have an impact on teacher practices and student learning is one example of research that supports professional development that is effective. Other researchers found that professional learning that focused on content and development that is on-the-job led to educational productivity (Harris & Sass, 2008). However, other researchers have specified professional development activities are found to be disorganized, unfocused, and disconnected (Richard DuFour, 2004; Guskey, 1986; Wagner, 2003, 2008). Some researchers mentioned that some types of professional development are disjointed, meaningless, not envisioned well, and do not consider learning characteristics of teachers or teachers as adults when planning learning activities (Borko, 2004; Darling-Hammond et al., 2009; Knowles et al., 2015). Reeves (2006) mentioned that a connection between professional development and expected instructional changes in the classroom can be lacking. These negative concerns, that serve as the third theme of this review, will be addressed in this study.

A fourth and final theme addressed in this review is the characteristics of effective professional development. Reeves (2006) indicated that professional development should be research based and focus on a few significant foundational practices like feedback. Richard Dufour, Dufour, and Eaker (2008) emphasized the importance of professional learning communities. While there are researchers who have suggested that there are components of effective professional development (Choy, Chen, Bugarin, & Broughman, 2006; Desimone et al.,

2002; Guskey, 1999, 2003; Wayne et al., 2008; Zepeda et al., 2014), others mention that it is hard to identify components that have the greatest impact (Bayar, 2014; Guskey, 2003; Guskey & Sparks, 2002; Wayne et al., 2008).

Teacher Efficacy and its Impact on Student Learning

Guskey (2003) and Reeves (2010) identified the impact that teachers have on student learning as well as the importance of the role they play in student achievement. In order to prepare students for life after high school, schools will need teachers who are well versed in curriculum, instruction, assessment, and learning (Guskey, 2003; Killion & Hirsh, 2011; Reeves, 2010). Killion and Hirsh (2011) discussed how "student success" (p. 10) is dependent on "effective teaching" (p. 10). Many research studies have demonstrated that teachers have an overwhelming impact on the learning of students (Schroeder, Scott, Tolson, Huang, & Lee, 2007). Wright, Horn, and Sanders (1997) found that teacher effectiveness is the prevailing element that impacts student achievement. To improve student achievement, the approaches of effective teachers should be determined and then taught to other teachers (Wright et al., 1997).

There are data that demonstrate the difference individual teachers can have in the achievement of students. Work done by Sanders and Rivers (1996) showed that a student who has three years of teachers with high effect scores will out score, by as much as 50 percentage points, students who have three years of teachers with low effect scores. Another study indicated that the teacher and his/her expertise can lead to a 40% difference in students' reading and math test scores (Viadero, 2012). Henson (2001) found that students from the classrooms of efficacious teachers perform better than students from other classes. Ashton (1984) identified teacher efficacy as one trait that has a direct link to the achievement of students. Ashton (1984)

stated that the relationship between teacher efficacy and the survival of the profession is important. Teacher efficacy should serve as the basis of teacher professional development due to its emphasis on teacher beliefs and attitudes (Ashton, 1984). Hoy (2000) reported that research needs to be done to determine what characteristics professional development should have in order to affect a teacher's sense of efficacy.

Clotfelter, Ladd, and Vigdor (2007) found that teachers with more experience do a better job of raising student achievement. Klassen and Chiu (2010) said teaching experience should impact professional development content. Teachers with more experience will not need the same professional development content as those teachers with less experience (Klassen & Chiu, 2010). It is also important to note that teachers who instruct at schools that have a high poverty rate will have specific needs that can be met by professional development activities (Ruby, 2006). However, while schools serving high poverty students have the "potential to create the conditions that foster continuous professional learning" (Stosich, 2016, p. 45) these same schools "have the least capacity to do so" (Stosich, 2016, p. 45). These concepts demonstrate the importance of understanding the variety of issues that can impact a teacher's instruction and how this variety should be taken into consideration when planning professional development.

Need for Professional Development

Professional learning will serve a crucial role in preparing teachers to provide the learning activities that will prepare students for the 21st century (Callier & Riordan, 2009; Easton, 2012). Easton (2012) and Callier and Riordan (2009) indicate that training and learning are important for educators in schools. Dragoo-Severson (2012) identified the need for school leaders to support learning for educators because of the positive impact it can have on students.

Killion and Hirsh (2011) stated, "professional learning is the single most powerful pathway" (p. 10) to help teachers improve. Teachers will need the pedagogy and content knowledge necessary to ensure that students are prepared for the 21st century (Darling-Hammond et al., 2009). This learning will require professional development that is improved compared to current practices (Darling-Hammond et al., 2009).

Current Status of Professional Development

History shows that teacher professional development activities have existed as a result of large scale school reforms as early as the 1950s (Poekert, 2012). Guskey (2003), however, mentioned that the history professional development was thought to have had problems. These problems include times professional development is not related to what the teacher is doing in the classroom (Villegas-Reimers, 2003). A second problem is that teachers sometimes do not participate in deciding what professional development activities they will participate in because these decisions are made by central office leaders (Tucker, 2011). As a result, when teachers participate in professional development in which they had no input, they may not believe that the activity is very useful (Tucker, 2011).

Much of the literature is negative regarding past accounts of professional development. Guskey (1986) stated the "history of staff development is characterized primarily by disorder, conflict, and criticism" (p. 5) and how fragmented staff development is at times. Wagner (2003) mentioned that too much money is wasted on professional development that is erratic and on activities that are not focused. Another problem is a disconnect between the work of teachers and opportunities to learn about their work (Richard DuFour, 2004). Richard DuFour (2004) acknowledged that teachers work for roughly 180 days a year, but engage in professional

development for only four to five of these days. Other problems with teacher professional development activities have been limited time and little to no accountability or correlation to the needs of teachers or students (Loveless, 2014; Timperley, Wilson, Barrar, & Fung, 2007). Dunst and Raab (2010) indicated that while studies have determined certain types of workshops are ineffective in changing classroom practices, these types of workshops still serve as primary modes of professional development.

Another criticism regarding the history of professional development is the lack of evaluation. Knowles et al. (2015) concluded that program evaluation is a critical, complex, and difficult issue and is not being implemented well. Guskey (1999) reported that with the absence of an evaluation, one cannot guarantee professional development's effectiveness. An additional critique of professional development is that when teachers return to the classroom they do not use the concepts they learned. Richardson (2007) discussed a principal's confession that student learning was not a priority in planning professional development.
Teachers were returning to their classrooms and not implementing what they had learned from conferences they had attended.

Impact of Professional Development

As a result of the current research identifying the importance of the role and impact of the classroom teacher, there has been increased attention toward teacher professional development (Viadero, 2012). Hattie (2009) reviewed five meta-analyses and 537 studies to determine professional development had an overall .66 effect size on student achievement. This effect size, according to Hattie (2009), would demonstrate that professional development has a positive effect on student achievement. He identifies "the level of competence of the teacher" (Hattie,

2009, p. 1) as a difference between teachers. He explained that the highest impacts were found in science (.94) compared to other subjects and lower achieving or special education (.43) students compared to regular education (.18). While there is support for professional development's impact on students achievement, Hattie (2009) mentioned that the influence on teacher learning was greater than student learning. Darling-Hammond et al. (2009) indicated that efforts to develop teacher proficiencies will lead to improved student outcomes. Additionally, after a review of over 70 studies, Blank and de las Alas (2010) found "significant effect sizes for teacher development in relation to student achievement" (p. 3) in math and science. Jaquith et al. (2010) stated that professional development "makes a difference in student achievement" (p. 9). Teachers in the four states investigated for this study had high participation rates in professional development (Jaquith et al., 2010). Additionally, students from these states scored above the national average on the National Assessment of Educational Progress (NAEP) assessment (Jaquith et al., 2010).

A study of professional development in over 1,000 districts showed that it is imperative that "high quality" professional development be made available to teachers "if the challenges of the student population are to be successfully met" (Kent, 2004, p. 432). She also stated, "High quality professional development is crucial to the future of education" (Kent, 2004, p. 432). Her research showed a relationship between the money spent on professional development and improvements in student achievement. This research also indicated the more money spent on teacher development, the greater the student achievement. Kent (2004) mentioned student achievement was impacted by money spent on the development of teachers more than any other application. However, school systems are spending far too little money on staff development

and those that do are not doing so in a practical way that leads to teacher development (Kent, 2004).

Recommendations for Effective Professional Development

There are a variety of organizations that provide recommendations for which attributes and processes must take place so that effective professional development occurs. Two examples of these recommendations are Learning Forward's standards of professional learning and Reeves's high impact professional learning (Learning Forward: The Professional Learning Association, 2014; Reeves, 2006). A third example is Seng's five pinpointed skills for organizational learning (Senge et al., 2000). The National Staff Development Council's (NSDC) basic principles, Gulamhussein's five principals of effective professional development, and the concept of a professional learning community are three other recommendations (Darling-Hammond et al., 2009; Gulamhussein, 2013; Owen, 2014).

There are seven standards of professional learning identified by Learning Forward: The Professional Learning Association (2014). These standards focus on the people, assets, records, and organization of the learning. Learning Forward: The Professional Learning Association (2014) indicated that following these standards when designing and implementing professional development will lead to the leadership and instruction that results in enhanced student achievement. Reeves (2010) reported professional development that had a strong influence on learning consisted of three features that range from centering on student development and assessment of teacher choices, to an emphasis on the activities of the people involved in the teaching and not the curriculum being used. In a third example, Senge et al. (2000) acknowledged that individual skill sets, thinking skills, group interaction, and idea processing

skills are necessary for professional groups to continue learning. Darling-Hammond et al. (2009), stated that professional development should be tied to what the teachers are doing in the classroom, be connected to the content and skills that students need to learn, address school improvement targets, and should lead to collegial professional interactions between teachers. Gulamhussein (2013) identified enough time to learn new approaches, support to implement new approaches, enough exposure and demonstration to understand new approaches, and specificity of new approaches as components of effective instruction.

Finally, the concept of a professional learning community has been identified as an effective environment for professional learning (Gulamhussein, 2013; Owen, 2014; Reeves, 2006, 2010). Owen (2014) summarized components of professional learning communities as organizations that stress mutual goals, emphasize student development, use action research, share practices with each other, use skills in team settings, try new approaches, and discuss practices that are taking place and their impact. Gulamhussein (2013) recognized a link between professional learning communities and improved student learning. These examples show the potential benefits of creating an atmosphere of professional learning and its potential for leading toward effective professional development. While each of the examples show some specific differences, they do show similarities.

While there are increasing efforts to provide teacher professional development, including increased examination of such efforts, there is limited evidence that supports any one characteristic having the greatest impact in the classroom (Guskey, 2003; Guskey & Sparks, 2002; Watson et al., 2010). Guskey (2003) analyzed 13 lists of characteristics found in professional development that were considered useful. He found that there was no one characteristic that was recorded on all of the lists, leading him to believe that there is "little

agreement among professional development researchers or practitioners regarding the criteria for 'effectiveness' in professional development" (Guskey, 2003, p. 13). Guskey and Sparks (2002) indicated that while specialists presume that a relationship exists between increased student learning and teacher professional development, the details of any relationship are not clear. Watson et al. (2010) indicated that a verdict itself is that no clear characteristic of quality professional development has surfaced. Stronge (2002) expressed that there is no single characteristic regarding effective teaching. He said that effective teaching is a combination of a variety of skills used in a variety of ways (Stronge, 2002). As a result of the complexity of the needs and strengths of specific teachers, as well as the contexts in which they teach, professional development should be designed to resolve the needs of each specific situation for each individual teacher (Stronge, 2002).

The Role of the Teacher in Professional Development

The role of the teacher as an adult learner and how learning best takes place should be considered when designing professional learning (Beavers, 2009; Gravani, 2012; Knowles et al., 2015; Merriam & Bierema, 2014; Zepeda et al., 2014). The experience of the adult in the learning activity should be contemplated as well (Knowles et al., 2015; Merriam & Bierema, 2014). Merriam and Bierema (2014) mentioned that adult learning should be developed based on an understanding of the learner and an awareness of the way they learn. Adults develop negative attitudes towards professional development situations that are dictated to them and may be less likely to engage in the learning (Knowles et al., 2015). In Australia, many states put the responsibility for professional development at the local school in order to have professional learning controlled by those engaged in the work (Patterson & Rowland, 2004).

Darling-Hammond et al. (2009) discovered that U.S. teachers are lacking in professional development opportunities compared to teachers in other countries. Japan provides time for teachers to engage in professional development by reducing their face-to-face time with students and increasing their planning as well as development time (Southwest Education Development Laboratory, 1997). While it is important to provide time for teachers to engage in professional development, it is also important for decision makers to allow the teacher to be involved in the planning of professional learning activities (Beavers, 2009; Choy et al., 2006; Knowles et al., 2015; Merriam & Bierema, 2014). "The conventional thinking is that professional development is something that's done to teachers. That needs to change" (Knight, Emm, & Wade, 2007, p. 8). Proponents of adult learning believe adults should have a level of self-confidence that makes it necessary to have teachers involved in the decision making regarding professional development (Knowles et al., 2015; Merriam & Bierema, 2014). Choy et al. (2006) determined two key elements of high quality professional development programs are (a) they are based on school needs and (b) they engage teachers in determining those needs. It is important to keep the emotions of teachers, how they might be affected and how they should be addressed, in mind during the planning and implementation of professional development (R. Saunders, 2013).

Schools and districts must realize that it is important to reverse a trend in professional development being determined at system level. Development needs to be initiated from teachers in direct contact with students (Callier & Riordan, 2009; Darling-Hammond et al., 2009; Gravani, 2012; Merriam & Bierema, 2014; National Commission on Teaching and America's Future, 1996; Van Driel & Berry, 2012; Zepeda et al., 2014). Due to the importance of teacher efficacy in the classroom, the research suggests that teachers themselves should be engaged in the choice, identification, development, implementation, and evaluation of professional

development (Callier & Riordan, 2009; Darling-Hammond et al., 2009; Gravani, 2012; Merriam & Bierema, 2014; National Commission on Teaching and America's Future, 1996; Zepeda et al., 2014). Teachers should also be given autonomy to decide how to use what they have learned in professional development (Van Driel & Berry, 2012). Partnerships in professional development may lead teachers to be more inspired in certain practices addressed because they have been a part of the goal development (Stewart, 2014).

Summary

Wagner (2008) identified the need to address the increasing rate of change in today's society when educating young people. Students living in the 21st century have access to a great deal of knowledge through the use of search engines and other resources. Since these students are not afraid to use technology to find information, they need to be taught how technological tools are relevant (International Education Advisory Board, n.d.). In some cases, the student may possess a better understanding of technology than the teacher (International Education Advisory Board, n.d.). However, Bauerlein (2008) cautioned the use of technology as a panacea for improving student achievement. While students may not be afraid of technology, some educators have observed that students do not use technology well for learning and information purposes (Bauerlein, 2008). Wagner (2008) discussed the role that technology plays in the life of today's students and their future careers as well as the importance of the role technology plays in the education of today's youth. He stated,

> The desire to multitask and be constantly connected to the net and to friends as well as the hunger for immediate results influence how young people today interact with the world – whether in school or at work or at home or while traveling – and must be taken into account by both educators and employers. (Wagner, 2008, p. 178)

Kirsch, Braun, Yamamoto, and Sum (2007) identified the importance of human capital and how

it is developed and distributed in the United States. The conclusion that there is a link between education and the economy, as well as their impact on human capital, should be considered (Kirsch et al., 2007). Content is constantly changing, and schools should provide opportunities that allow students to develop the skills that will enable them to critically investigate information (Callier & Riordan, 2009).

The literature is clear in regards to the importance of the teacher and the impact that teachers have on the learning of the individual student (Darling-Hammond et al., 2009; National Commission on Teaching and America's Future, 1996). Educators need to identify best practices and engage in reform when necessary (Muijs, Kyriakides, Creemers, Earl, & van der Werf, 2011). The literature places an emphasis on the role professional development will play in the development of teachers (Hattie, 2009; Kent, 2004). Hattie (2009) completed research that showed a positive effective size between professional development and student achievement. Choy et al. (2006) indicated the importance of professional development in light of today's education needs as well as attempts at educational reform and improvement.

Certain components are emerging that are considered important to the successful implementation of professional development. The role of the adult should be contemplated when designing professional development for teachers (Knowles et al., 2015; Merriam & Bierema, 2014). Teacher input should be considered when determining the properties and processes used to implement professional development. Yoon et al. (2007) and Wlodkowski (2008) identified teacher motivation as an item important to the application of professional development into classroom instruction. It is necessary that those in leadership roles who are responsible for developing and implementing professional development take teachers' input into consideration (Bayar, 2014).

When discussing guidelines important to professional development, Guskey (1994) stated, "the key to greater success in professional development, which translates to improvements in student learning, rests not so much in the discovery of new knowledge, but in our capacity to use deliberately and wisely the knowledge we have" (p. 22). The link between professional development and its impact on student achievement should be considered (Guskey & Sparks, 2002). The influence that professional development has on student achievement should be evaluated to ensure that educational priorities are being met (Guskey, 1999). Guskey (1999) considered student-learning outcomes "the bottom line in education," (p. 12). Whether it is learning opportunities that are used to enable teachers to prepare their students to be ready for new technology or to be ready to work and live in a global society, educators need to know that planning and providing professional development is complex (Haug & Sands, 2013).

Properly planned and delivered professional development is a complex process. However, the evidence supports the idea that benefits occur when effective professional development takes place. Effective professional development can change teacher attitudes (Villegas-Reimers, 2003) and help teachers improve their practice (Callier & Riordan, 2009; Crow, 2012; Darling-Hammond et al., 2009; Desimone, 2009; Dragoo-Severson, 2012; Easton, 2012; Guskey, 2000; Killion & Hirsh, 2011; W. M. Saunders et al., 2009; Villegas-Reimers, 2003; Wayne et al., 2008). Well planned professional development can provide ways for teachers to address changing curriculum and instruction (Callier & Riordan, 2009) as well as enhance educational reforms (Villegas-Reimers, 2003). Ultimately, effective professional development will lead to improved student achievement (Blank & de las Alas, 2010; Darling-Hammond et al., 2009; Hattie, 2009; Jaquith et al., 2010; Kent, 2004; Villegas-Reimers, 2003), providing the information students will need for the 21st century (Darling-Hammond et al.,

2009). While professional development may be complex, its effective development and implementation is necessary to ensure positive achievement for students.

CHAPTER III

METHODOLOGY

Overview

This research study was a mixed methods grounded theory approach to answer five research questions. In the first phase of the study, a meta-analysis of literature identified the status of professional development as well as themes that are considered essential to effective professional development. The second phase of this study was a review of focus group data that was collected during nine years of the MSNS initiative described in Chapter I. This review identified themes teachers indicated would be necessary for professional development to be effective. Following the second phase, a survey was developed based on the major themes identified in the data collected from the meta-analysis, and the MSNS focus group data review. In the third and final phase, current teachers were asked to respond to this survey to indicate whether or not they agreed or disagreed with the themes found in (a) the meta-analysis and (b) the focus group findings. Appendix B identifies the dependent and independent variables of this research.

According to Creswell (2015), this quasi-experimental study is termed a mixed methods study because of the inclusion of a combination of qualitative and quantitative research practices. The review of past studies, the analysis of the MSNS focus group responses, and the survey administered to current HCDE middle school teachers provided a means of triangulating the data collected that was used to address the research questions.

Participants

The population for this study were teachers in public middle schools in Hamilton County, Tennessee. There were, however, two potentially overlapping samples of teachers. The first sample included the teachers who participated in the MSNS focus groups. These were samples of 8-12 teachers from each middle school. Each school selected these samples in a variety of ways each year during the MSNS initiative. The selected sample (Gliner, Morgan, & Leech, 2009) that was used for the teacher survey came from middle school educators in the HCDE who were teaching at the time the survey was administered. All HCDE middle school teachers (approximate N is 477) who were employed at the time the survey was administered were invited to participate. The survey respondents included teachers who participated in the MSNS process during the entire duration of the program, some other time period in the program, and those who did not participate in the program at all.

Materials

Analysis of Existing Literature

The mining through meta-analysis of literature regarding professional development was the first material used in this study. Potential useful literature was identified from examination of the University of Tennessee, Chattanooga library data-bases and other resources.

Studies were considered useful if they met the following criteria:

- The topic focus for selected studies will be professional development for teachers (Blank & de las Alas, 2010).

- Studies contain sufficient descriptive data regarding the attributes and processes used in professional development for teachers (Boyd et al., 2003; Roorda, Koomen, Spilt, & Oort, 2011).
- Literature was published in or after the year 2000.
- Studies were sought that addressed students or teachers in grades Pre K through grade 12.
- Literature that was peer-reviewed was selected for this study.
- Studies were sought that were based on empirical data relevant to professional development for teachers (Grote et al., 2010).
- Studies ultimately selected for inclusion contained sufficient data and information to identify attributes and processes important to the development and implementation of professional development for teachers (Grote et al., 2010).

Attempts were made to find articles that assessed the value that teachers place on attributes and processes used in professional development (Grote et al., 2010).

MSNS Focus Group Data

Secondly, focus group data that were used as part of the MSNS school improvement process were appraised. The sample used to collect the existing focus group database was composed of teachers who came from all HCDE middle schools and who participated in the MSNS initiative between the years of 2007 and 2014. The samples for the focus groups were samples of convenience determined by the individual schools, although care was taken by schools to attempt to have adequate school representation across teaching areas and years of service. Some teachers participated in focus group sessions on more than one occasion, and the

same individual teacher may have participated at more than one school during the course of the 8-year longitudinal initiative. Approximately groups of 8-12 teachers from each of 23 HCDE middle schools served as members of these focus groups. Individual HCDE middle schools participated in these focus groups each year for eight years. This time-period began during the fall of 2006 and ended the spring of 2014. The results of these focus groups were made available to the researcher through the PEF. Four of the 13 focus group questions addressed professional learning and were used for this study. Two facilitators collected participant responses throughout the duration of the study and the questions remained the same throughout most of the eight-year data collection period. A yearly summary report was submitted to the initiative leadership as well as the individual schools at the end of each year. The responses from the following four questions from the MSNS process were analyzed:

- Thinking back over the past year of the MSNS initiative, how have your professional learning opportunities changed?
- What has been the most effective?
- Based upon the professional development experiences you have received through the MSNS initiative, what are the most effective changes in instructional strategies in your classroom?
- What next steps might be useful to build the best learning community for teachers?

Survey

The final research material used was a survey constructed from consolidating the findings of the meta-analysis and focus group responses. The survey questions asked respondents to rank their level of agreement with the attributes and processes consistently reported as important by

teachers throughout the MSNS initiative focus group sessions and through the meta-analysis of literature. It included asking for demographic information such as years of experience and the school in which they taught. This information helped determine if various characteristics may have had an impact on survey responses. This survey was developed after a review of the 10 steps mentioned by Rea and Parker (2014) during the planning process. These steps ranged from identifying the focus of the survey to analyzing the data collected.

The survey was the final process for this research study. The information gained from this part of the research may provide school leaders with information that will help them understand what teachers believe is important in the implementation of professional development for teachers. This information may help school leaders plan professional development that teachers will believe is valuable.

Procedures

Phase I

A process of grounded theory qualitative research was used to review existing studies regarding the attributes and processes used in the design of professional development for teachers. This grounded theory approach was used to categorize information that addresses the attributes and processes important to teachers that are used when developing and implementing professional development. This process was a work in progress (Creswell, 2013). A review of recommendations made by Creswell (2013), Corbin and Strauss (2008), Russo (2007), and Grote et al. (2010) took place during the planning portion of this research. This process began with a foundational systematic process but was modified as research was reviewed, data was collected, and concepts began to emerge (Corbin & Strauss, 2008; Creswell, 2013).

Once articles were identified using the criteria previously described, each study was reviewed to ascertain the major themes of the article (Corbin & Strauss, 2008). Following the initial review, a second examination took place to confirm the characteristics used when planning and implementing professional development for teachers (Corbin & Strauss, 2008; Creswell, 2013). The data extracted (Grote et al., 2010) from these reviews comprised the attributes and processes used in professional development that are considered important. Each article was assigned an identification number, title, and included a summary of the research and the concepts regarding the attributes and processes important to professional development for teachers found in each study (Corbin & Strauss, 2008). This organization can be seen in Appendix C.

After the processes identified above, this data collection organized the attributes and processes identified in each research article into categories. The identified attributes and processes of professional development were organized by the researcher in order to segment the information (Creswell, 2013). Coding processes were used to group the pieces of data into "major categories of information" (Creswell, 2013, para. 2). These coding processes allowed the data to be broken "down into manageable pieces" (Corbin & Strauss, 2008, p. 193). After this organization began to identify concepts to address, major attributes and processes began to emerge. As major attributes and processes began to emerge, the data was then grouped according to major categories that synthesized the data (Creswell, 2013). It was these categories, connected to what researchers indicated are important to professional development, which were used to help develop a survey teachers were asked to complete. Appendix D shows how specific articles were coded according to attributes and processes.

The information reviewed in each research project may have included the following components (Grote et al., 2010):

- Time and timeframe of study
- Grade level of teachers involved in study
- Sample size of teachers involved in study
- Attributes and processes considered important to the development and implementation of professional development to teachers
- Reliability and validity of results

During this process, developing categories were broken into potential attributes and processes used in professional development to suggest more refined data points (Creswell, 2013). This was completed by creating a list of attributes and processes found in the studies reviewed. Constructing a paradigm helped develop ideas that the researcher used to determine potential connections between attributes and processes found in each research article (Corbin & Strauss, 2008). In other words, the paradigm was based on the following question: What are the effective attributes and processes used in the development and implementation of professional development for teachers (Corbin & Strauss, 2008)? This information provided "cues for how to identify and relate" (Corbin & Strauss, 2008, p. 90) the attributes and processes to the effectiveness of professional development. Following the data analysis, a "unified theoretical explanation" (Corbin & Strauss, 2008, p. 107) was developed in regards to the attributes and processes researchers say make professional development effective (Corbin & Strauss, 2008). Following the meta-analysis of literature, using the information regarding concepts determined from the processes above, a directory of the important properties and processes of professional development was developed (Corbin & Strauss, 2008). This research used the attributes and processes that were above the cutoff when there was a substantial drop in data derived.

Constant comparison was used throughout the grounded theory process (Creswell, 2013). As information was analyzed, ideas were considered, and the predominate themes regarding attributes and processes important to professional development for teachers were identified and formulated.

Phase II

The focus of phase II was identifying and summarizing the attributes and processes that are important to professional development according to what teachers reported in the MSNS 2007-2014 focus group sessions. This phase examined what teachers reported about the professional development they participated in while engaged in the MSNS initiative. Eight years of longitudinal teacher focus group was examined in order to identify concepts and themes regarding the properties and processes of professional development found in teacher comments regarding professional development. This focus group data came from activities that occurred during the time HCDE middle school teachers participated in the MSNS initiative.

The Provalis QDA Miner Software was used to disaggregate the MSNS focus group data (PROVALIS, n.d.). This software assisted in the examination of the focus group data by enabling the researcher to analyze the comments made by HCDE teachers during the MSNS initiative. Provalis is a program that enables researchers to digitally

- Code and annotate focus group findings
- Memo and hyperlink certain annotated findings to others
- Geo tag and time tag data
- Cluster and scale findings
- Identify, explore, and describe patterns and trends

- Integrate statistical analysis tools
- Develop graphic organizers to demonstrate data findings. (PROVALIS, n.d.)

As the general idea of the attributes and processes important to teachers identified in the MSNS longitudinal data began to emerge, the following rule was used to determine which themes would be used in phase III of this study. In order for a theme to be considered, the attribute or process must have been identified sufficiently often that it is above the cutoff point. The cutoff point was subjectively determined and could not be established prior to data analysis.

A review of chronological yearly thematic changes also took place during the review of MSNS longitudinal data to determine if themes changed or remained the same during the life of the initiative. The following questions served as the foundation of this review.

1. What attributes and processes of professional development did teachers identify as important to professional development?
2. Which themes remained consistent throughout the life of the MSNS longitudinal data collection?

Similar to phase I, this process was planned but was modified as the MSNS focus group documents were reviewed, data was collected, and concepts and themes began to emerge (Corbin & Strauss, 2008; Creswell, 2013). This process, with the help of Provalis QDA Miner to help organize the MSNS focus group data, enabled the researcher to identify the attributes and processes that HCDE middle school teachers indicated are important to professional development throughout the length of the program (Creswell, 2013). An appropriate cutoff of usable attributes and processes was determined as the analysis proceeded.

Phase III

The third phase of the research was the development and administration of a survey to agree or disagree with the findings of the attributes and processes consistently reported as important by teachers through (a) the meta-analysis of literature and (b) the MSNS initiative focus group sessions. This survey was emailed to HCDE teachers who were teaching in a middle school at the time the survey was administered. These survey questions were tied to the themes identified in the attributes and processes reported as important by researchers and teachers through (a) the meta-analysis of literature or (b) the MSNS initiative focus group sessions. It was also be important to note the time that passed since the MSNS initiative ended and when the survey was taken.

Ten steps listed by Rea and Parker (2014) were reviewed during the planning phase of this research. They included:

- Stage 1: Identifying the focus of the study and method of research
- Stage 2: Determining the research schedule and budget
- Stage 3: Establishing an information base
- Stage 4: Determining the sampling frame
- Stage 5: Determining the sample size and sample selection procedures
- Stage 6: Designing the survey instrument
- Stage 7: Pretesting the survey instrument
- Stage 8: Implementing the survey
- Stage 9: Coding the completed questionnaires and computerizing the data
- Stage 10: Analyzing the data and preparing the final report (Stages of the Survey Process, para. 1)

Stage 1 took place when the focus of the study and method of research was identified. The focus of this study were the attributes and processes of professional development identified as being important to professional development for teachers. This survey used the information gained from the meta-analysis of the literature and the examination of the MSNS focus group data. The survey was a process of direct measurement where current HCDE middle school teachers were asked to agree or disagree with the attributes and processes identified in the research. The survey questions were written in a positive direction (Andrews & Walters, 2010) to measure teachers' level of agreement with the themes that emerged from the longitudinal data review and meta-analysis. The survey used a four-point Likert-type scale that ranged from strongly agree, agree, to disagree, and strongly disagree.

Stage 2 included determining the research schedule and budget. The time frame developed by (Sue & Ritter, 2012) was reviewed before the development of the survey. The review included the following steps:

- Week one should consist of drafting the invitation and questionnaire based on the findings of the meta-analysis of literature and the MSNS focus group data analysis.
- Week two should have the invitation and questionnaire reviewed by other researchers.
- During week three, the invitation questionnaire should be edited for the first time.
- During week four, non-HCDE participants should test the invitation and questionnaire.
- During week five, the invitation and questionnaire should be edited for the second time.
- During week 6, the online invitation and questionnaire should be sent to all respondents.

- Week seven and eight should entail sending reminders to HCDE survey respondents.
- Data downloading and analysis should begin during week nine.

This time frame and process was adjusted due to a variety of issues. The time frame was affected by the time it took for the survey to be developed, reviewed, edited, and approved by the University of Tennessee at Chattanooga and the Hamilton County Department of Education. The survey submission was also impacted by the standardized testing that took place in the HCDE schools.

For stage 3, the goals, objectives, and purpose of this research were established and identified as the prospectus was developed. The meta-analysis of literature and the MSNS focus group data provided the information necessary to establish an information base. An invitation letter was used to explain the goals, objectives, and purpose in detail to the potential survey respondents.

Stages 4 and 5 consisted of determining the sampling frame, determining the sample size, and sample selection procedures. Gliner et al. (2009) identified five concepts that should be considered when determining the sample of research. The first is the participants that are of concern in the study. For this study, the participants of interest were middle school teachers. The general population that was represented in this research were public school teachers. The theoretical population were the people of interest to this study and to whom the findings will be generalized. For this study, the theoretical population was teachers, more specifically, middle school teachers. The third representative sample for this research were the teachers who are available at the time of the study. Gliner et al. (2009) called this group the accessible population. For the MSNS focus group analysis the representative group were the teachers who participated. The representative group for the survey were the approximately 477 HCDE middle school

teachers who were employed at the time the survey was administered. The fourth group identified by Gliner et al. (2009) is the selected sample. This was the group of teachers who were asked to respond to the survey. The selected sample for this study were all of the HCDE teachers who were employed at the time the survey was administered. The final representative group this survey was considered the actual sample (Gliner et al., 2009). This was the group of teachers who responded to the survey and whose data was used in the study.

Designing the survey instrument is stage 6. The survey was developed with the help of the Qualtrics computer program. The survey design was developed after a review of the work of Rea and Parker (2014) and Sue and Ritter (2012). They mention that survey question writing should be based on the following characteristics:

- Survey questions should be unbiased, unambiguous, and well-structured in order to answer the appropriate research questions (Rea & Parker, 2014; Sue & Ritter, 2012).
- Survey questions should be meaningful to the respondent (Sue & Ritter, 2012).
- Questions should be worded in a way that is suitable for an on-line survey (Rea & Parker, 2014; Sue & Ritter, 2012).
- The majority of the questions should be a forced choice, closed ended, and fixed answer type (Rea & Parker, 2014; Sue & Ritter, 2012).
- The number of questions should be determined by the amount of time it takes to complete the survey. Surveys that are too long have lower response rates (Rea & Parker, 2014; Sue & Ritter, 2012).
- Rea and Parker (2005) identified 15 to 30 minutes as an appropriate time to complete a survey to ensure a positive respondent rate.

- Questions should be prioritized based on the strength of themes if the survey goes over the time limit and questions need to be eliminated.
- Rea and Parker (2005) identified "questionnaire clarity, questionnaire comprehensiveness, and questionnaire acceptability [as] critical factors" (pp. 31-32) to the design of effective questions.
- The source of the content questions were the attributes and processes consistently reported as important by teachers throughout the MSNS initiative focus group sessions or through the meta-analysis of literature.

Once the survey was complete, it was ready for stage 7, which was pretesting. A draft of the survey was presented to a group of teachers who would not be participating in the actual survey implementation. These teachers were asked to complete the survey and critique the process for legibility, accuracy, completeness, understanding, clarity, quality, implementation, and time (Rea & Parker, 2014; Sue & Ritter, 2012). Once the initial drafts were pretested, the survey was edited in order to be suitable for the real implementation.

The validity and reliability of the survey was established by three means. The survey was field tested with a group of educators who were not part of the study. They were asked to read and respond to the survey. These respondents were asked to critique the survey for clarity. Secondly, graduate assistants from the University of Tennessee at Chattanooga were asked to critique the survey for content and construct validity. Thirdly, a research methodologist and dissertation chair critiqued the survey. Modifications to the survey were made based on the critiques received.

Once the survey was pretested and edited, stage 8 occurred by sending it to the actual HCDE respondents. Before a survey is fully launched, Sue and Ritter (2012) recommended

sending out a pre-notification cover letter. This will provide the researcher an opportunity to introduce the survey to the respondents and emphasize its importance (Sue & Ritter, 2012). The survey included a brief introduction and invitation that explained the purpose and goals behind the survey. The survey also contained instructions for completing the survey followed by a link to the survey website. Sue and Ritter (2012) recommended that the survey be sent on a Tuesday or Wednesday morning as Mondays and Fridays are to be avoided for professionals. However, Zheng (2011) indicated that research shows that surveys sent on Monday resulted in the highest response rate. Research completed by Quintessential Marketing indicated conflicting results, but if you had to pick one day to send a survey it should be Wednesday due to emails sent during the middle of the week are the ones most likely to be read (Quinn, 2010). Although the research is not consistent regarding which day is best, the survey for this research was emailed on a Thursday due to communication from the HCDE contact person and timing issues. Rea and Parker (2014) mentioned the value of sending a reminder to those who have not responded approximately five days after the survey has been launched. A reminder was emailed to HCDE middle school teachers a week following the initial submission and a second reminder was sent one week after the first reminder.

Sue and Ritter (2012) also recommended that some sort of incentive be used to encourage respondents to complete the survey. Teachers who participated in the survey had an opportunity to enter a drawing for an opportunity to win one of four $50 Amazon gift cards. Four winners were chosen after the survey was completed. A response rate of 50% was sought in order to avoid nonresponse bias (Rea & Parker, 2014). However a response rate higher than 50% was hoped for to achieve "precise quantitative statements about the population" (Rea & Parker, 2014, p. 195). The response involved 156 respondents out of 477 attempts for a rate of 33%.

Stage 9 of the survey implementation entailed organizing the completed questionnaires and computerizing the coded data using Qualtrics. The responses received from the surveys were organized in order to be analyzed. Each response was entered into the Qualtrics software program as well as the Statistical Package for the Social Sciences (SPSS) analytics program. This information was entered into the appropriate software programs in order for research questions to be addressed. Stage 9 also involved cleaning up the data in order to move into the analysis stage (Sue & Ritter, 2012). Cleaning up the data entails addressing data entry errors, incomplete answers, and potential mistakes (Sue & Ritter, 2012).

The final stage of the survey process, stage 10, took place when the data collected were analyzed and summarized for a conclusion. Descriptive statistics was used to summarize the fundamental characteristics of the data collected from the survey (Sue & Ritter, 2012). This was a "research design in which the inquirer" attempted to construct "a general explanation (a theory) of a process, an action, or an interaction shaped by the views of a large number of participants" (Creswell, 2013, Chapter 4, Grounded Theory Research, Definiton and Background, para 1). While phases I and II used a grounded theory theme of analysis in order to compose and represent the data, phase III used a combination of qualitative and statistical analysis. As in phases I and II, this process began with a foundational systematic process but was modified as research was reviewed, data was collected, and concepts began to emerge (Corbin & Strauss, 2008; Creswell, 2013).

An attempt was made to use analysis of variance (ANOVA) to determine statistical significance, but in all cases assumptions were not met and a Kruskal-Wallis analysis was used to statistically analyze the data.

Analysis

There were no statistical analyses used for research questions 1 and 2. These research questions were analyzed by using descriptive qualitative research analysis procedures. The approaches used in phase I and phase II helped identify the attributes and processes important to professional development. The Provalis software program was used to help categorize the attributes and processes of professional development found in the MSNS focus group data that are important to teachers. The concepts and themes acknowledged by these activities were compared to one another to determine if there is an agreement between the meta-analysis of literature and MSNS focus group data regarding professional development attributes and processes important to teachers. Both sets of data were examined for similar major themes regarding attributes and processes important to teachers (University of Southern California: Annenburgh School for Communication & Journalism, n.d.). A category of findings was created that listed attributes and processes important to professional development that were found in both the meta-analysis of literature and MSNS focus group data. These sets of data were analyzed to evaluate the themes found only in one set of results or both the meta-analysis of literature and the focus group outcomes (University of Southern California: Annenburgh School for Communication & Journalism, n.d.).

The data collected from phase III was used to address research question 3. A survey was used to determine if and at what level current HCDE teachers agreed or disagreed with the concepts and themes identified from (a) the meta-analysis and (b) the MSNS focus group data examination. The attributes and processes identified in phases I and II, and used to answer research questions 1 and 2, served as the concepts and themes used to develop the specific survey questions used to address research question 3. The survey provided an opportunity for

current HCDE teachers to review findings as well as agree or disagree with the identified attributes and processes that were identified in the (a) meta-analysis and (b) MSNS focus group data. Descriptive statistics enabled the researcher to prioritize the attributes and processes according to their approval rating given by teachers who respond to the survey. A descriptive qualitative analysis compared the levels of agreement between categories of findings. This analysis allowed the researcher to identify which attributes and processes added the greatest value to professional development according to the teachers surveyed.

The independent variables for research questions 4 and 5 were the identified subgroups of teachers. These included the teachers' years of experience and the performance levels of the schools where the teachers are employed. These independent variables were chosen because of the impact they may have on the perceived need of professional development for teachers. The dependent variable was the level at which current teachers agreed or disagreed with indicated attributes and processes of professional development important to teachers (Rea & Parker, 2014). A one-way analysis of variance (ANOVA) was attempted with each of the dependent sources to determine if there are significant differences between the means of the survey responses between the subgroups of teachers with certain years of experiences and subgroups of teachers from schools with varying performance levels. However, due to assumptions not being met in order to use an ANOVA, Kruskal-Wallis tests were administered. The Statistical Package for the Social Sciences (SPSS) was also used to administer the ANOVAs and Kruskal-Wallis tests (Rea & Parker, 2014).

CHAPTER IV

RESULTS

The purpose of this study was to identify, and then confirm, attributes and process of professional development that are important to teachers. This was accomplished through three phases of study. Phase I included a review of literature that addressed professional development for teachers. This review examined 40 literature resources published post 2000 to identify various research studies determined to be important to professional development. Phase II consisted of an analysis of teacher focus group data to investigate what teachers concluded about the professional development engaged in while participating in the MSNS initiative. Phase III included the use of the findings of phase I and phase II to develop a survey that was sent to current HCDE middle school teachers to provide an opportunity to respond and indicate agreement with the literature review and the MSNS focus group findings.

Descriptive Qualitative Analysis

Phase I

The meta-analysis consisted of the review of 40 research articles. Of those 40 articles, 31 met criteria and were included in this analysis. Attributes and processes were then analyzed to determine potential themes that were emerging and five top themes surfaced (Figure 1). Of the 31 articles that were analyzed, 23 (74%) mentioned the importance of context, 22 (71%) identified collaboration as important, 16 (52%) discussed the value of time, 15 (48%)

acknowledged the worth of adult/teacher learning components, and 13 (42%) articles recognized the importance of active learning. Figure 1 shows the five major attributes of professional development that emerged from the meta-analysis. The Meta-Analysis Literature investigation table can be examined in Appendix C and the Meta-Analysis Attributes can be reviewed in Appendix D.

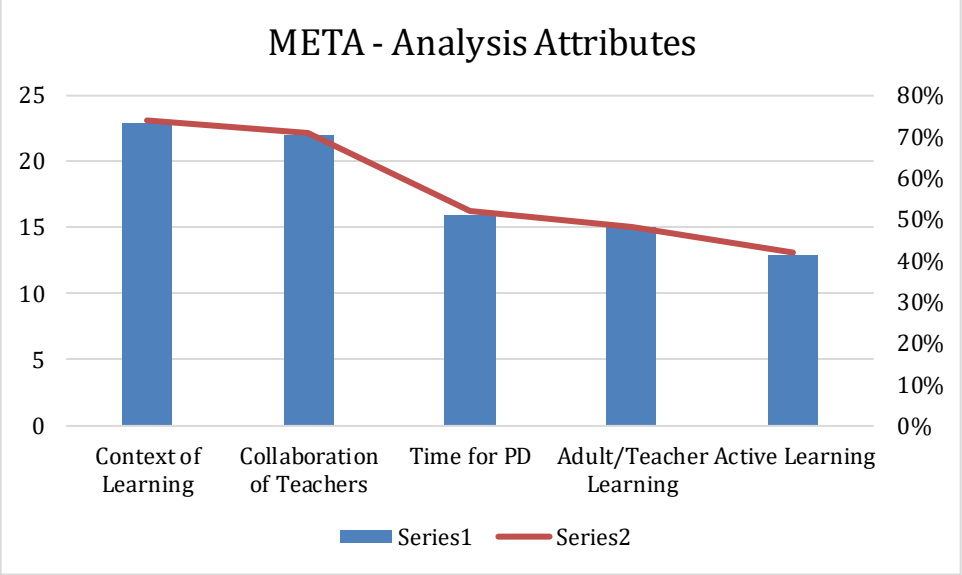

Figure 1 Bar Graph of Attributes of Professional Development Identified from Meta-analysis

The five attributes that emerged from the meta-analysis that were used for this study were Context of Learning, Collaboration of Teachers, Adult Learning, Active Learning, and Time for Professional Development (PD). These findings were used to address research question number two in phase II of the study.

Phase II

For the second phase of this study, focus group data that were collected during the MSNS initiative was assessed. Using the Provalis QDA Miner software program, a key word search of the MSNS focus group data was done. This search resulted in over 650 identified key words ranging from frequencies of 311 to 5. There were 38 key words identified with frequencies of 90 or more. Four key words: teachers, teacher, teaching, and teach combined resulted in a frequency of 472 incidences. These words combined into a category called the teacher. Figure 2 shows nine of the top single word frequencies. The MSNS Key Word Frequency chart can be examined in Appendix E.

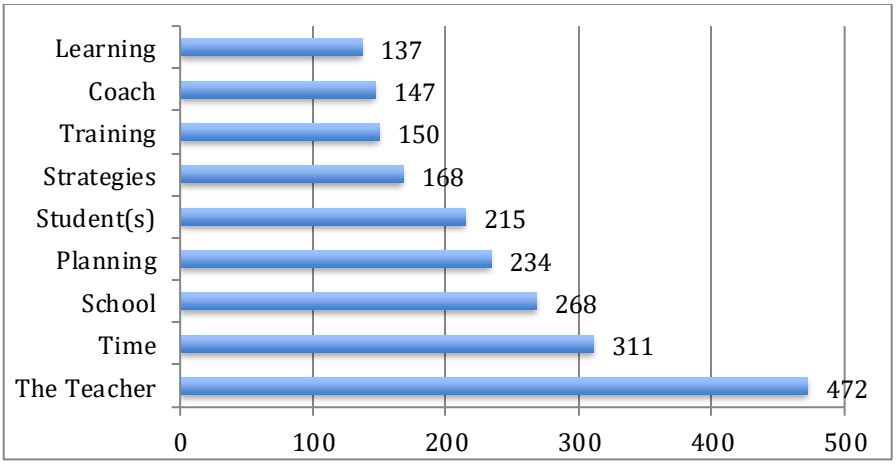

Figure 2 Nine Top Single Words Frequency Chart

A second analysis that took place with the use of QDA Miner was the frequency of key phrases identified in the MSNS data. There were 46 incidences of phrases with two or more words identified 10 or more times identified during this analysis. The Frequency of Key Phrases chart can be reviewed in Appendix F. There were six phrases that were used more than 50 times over the eight years data were collected. These phrases are shown in Figure 3.

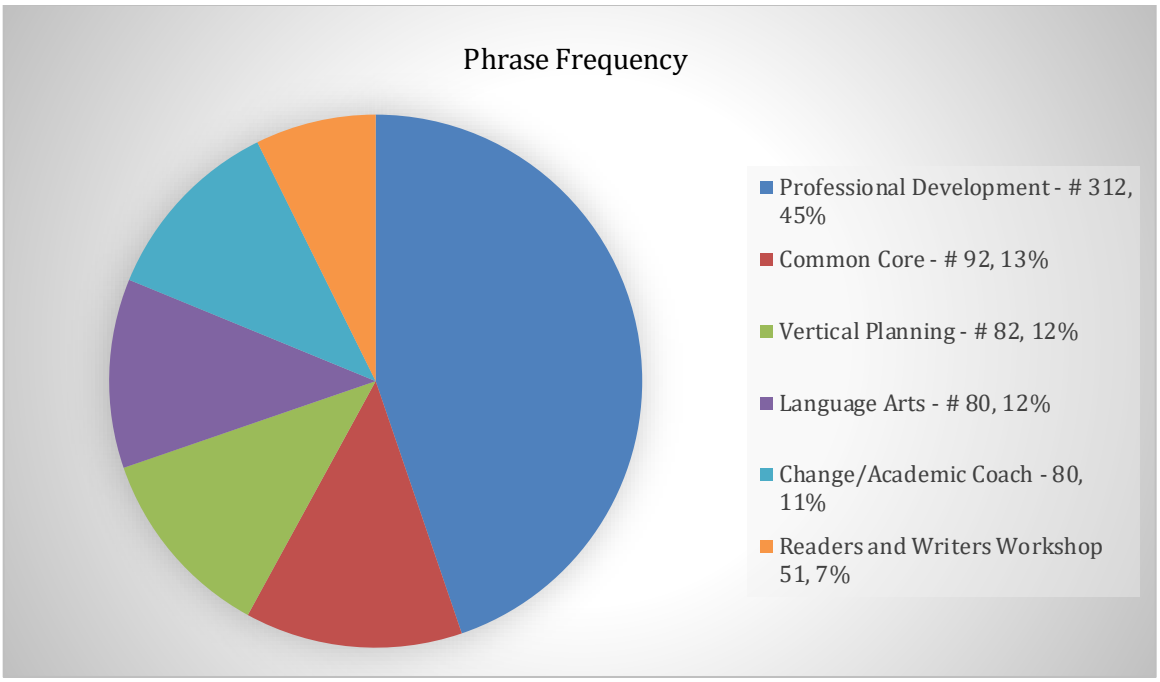

Figure 3 Six Top Phrase Frequencies Chart

The individual key words and phrases were combined to review the overall findings of the word search. Figure 4 shows the individual words and key phrases combined from the MSNS that were identified by the search.

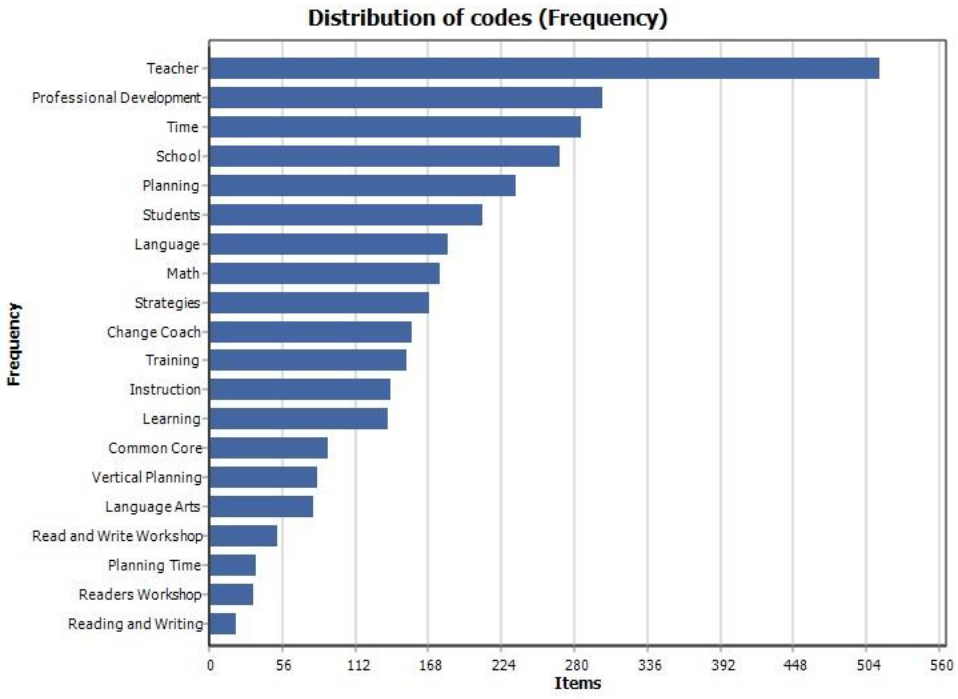

Figure 4 Chart of Combined Word and Phrase Frequencies

Upon completion of the phrase frequency, the researcher analyzed themes that emerged each individual year. This analysis demonstrated those themes that remained consistent throughout the life of the MSNS longitudinal data collection.

The MSNS focus group analysis data was edited so that the teacher focus group data from each individual year could be analyzed using Provalis QDA Miner. Each year's data were analyzed using word and phrase frequency reports. The MSNS attribute analysis by year findings can be reviewed in Appendix G. Five themes emerged that were consistent throughout all eight years the focus group data were collected. These themes included the teacher, time, professional development, the school, and planning. The year-to-year data from the MSNS focus group data were numerated three ways to determine the consistency of the identified themes. One method used to evaluate this consistency was to determine how many of the eight years the

focus group data were collected, themes would be found in the top 20 attributes identified each year. All five of these themes were found to be in the top 20 by word or phrase frequency in all eight years the data were collected. A second method used was to evaluate the data by determining how many of the professional development themes were found to be in the top 20, the top 10, and the top five by word or phrase frequency. If a theme was found to be in the top five groups all eight years, a total of 24 points would be assigned because the theme would have been found in the top 20, 10, and five rankings for all 8 years of the MSNS initiative. The total number of themes in each group were computed and the same five themes emerged at the top of the list. These data can be seen in Table 1.

Table 1 Theme Frequencies by Year Calculation

Theme	Top 20	Top 10	Top 5	Total
The Teacher	8	8	8	24
Time	8	8	5	21
School	8	8	5	21
Professional Development	8	7	5	20
Planning	8	6	2	16

The final calculation, shown in Table 2, was to score each top 20 theme (1 point), top ten theme (3 points), and top five theme (5 points) to determine the strength of each theme. If a theme appeared in the top five each of the 8 years, it would earn a total of 40 points. Again, the same five themes appeared at the top of the list.

Table 2 Theme Frequency by Strength Calculation

Theme	Top 20	Top 10	Top 5	Total
The Teacher			8	40
Time		3	5	34
School	1	2	5	32
Professional Development	1	2	5	32
Planning	2	4	2	24

Analyzing the teacher theme for focus group question number one demonstrated that teachers were participating in a variety of professional development activities. However, there was a variety of types of activities teachers were participating in. One activity consistently mentioned was the desire teachers had to observe other teachers. There seemed to be an emphasis on teaching strategies especially in language arts and mathematics. When reviewing comments from question two, while there were some negative comments regarding the professional development that took place, there were positive comments about a variety of development activities teacher were participating in. A theme that appeared in comments from focus group question number three were new strategies being used in teacher classrooms including those with more of a focus being student centered. Two themes emerged when evaluating the use of forms of the word teach from answers in question four. One was the need for collaboration among teachers and a second was the need for time.

The individual key word with the greatest frequency was time. While 48 comments indicated more time has been allocated to learning and implementing new strategies as well as collaboration, there were 228 comments stating that there was not enough time to implement all the activities that were being presented. Secondly, there was concern regarding the loss of planning time or lack of it. Some teachers indicated that this could be a result of all the time being focused on professional development activities.

Two themes were evident when reviewing the comments made about the school. One prevalent theme that emerged from the analysis of this word frequency review was the concept that professional development needs to focus on the individual school. Teachers made positive comments when discussing school based professional development. An additional theme that appeared was the need for a focus regarding initiatives that are taking place in individual schools. While there is a perceived need for professional development, there was an attitude that with so many initiatives simultaneously taking place, focusing on an individual project is difficult. When responding to focus group questions one and two, teachers indicated there was an emphasis on planning, especially vertical planning, when engaging in professional development. The theme of vertical planning was also evident when analyzing question three. When teachers were asked to respond to question number four, they denoted more time to plan and opportunities to plan collaboratively and vertically would be valuable.

The phrase that occurred more than any other was professional development. There were also 138 comments that used the initials PD, which resulted in the combined frequency for the concepts of professional development of 312. When the comments that included professional development were reviewed, certain themes began to emerge. One result of the MSNS initiative, was an emphasis on professional development, resulting in an increase in learning activities for teachers that took place. Teachers indicated that while county-wide professional development improved in some cases, PD that occurred at the individual school site was preferred. Comments indicated a desire to see professional development individualized as well as content driven. The phrase common core was mentioned 92 times. The common core was a required initiative at the time and teachers indicated a need for training in this area. Vertical planning was mentioned 82 times.

There was an indication that while an emphasis on professional development activities taking place was evident, it was indicated that more was needed. There was also an emphasis placed on language arts. This could be a result that one of the minor goals of the MSNS initiative emphasized an improvement in language arts. The second largest group of comments in this category was in response to question three. This could indicate that the professional development that was taking place regarding language arts was having an impact on the classroom activities of teachers.

When reading through the planning comments given as answers to focus group question one, while there was some concern that professional developing was taking planning time from teachers, there were several positive comments made regarding planning, specifically vertical planning. Answers to focus group question two continued the emphasis on vertical planning. Collaborative planning was mentioned as well. Similar to questions one and two, comments responding to question three identified vertical planning as an effective change as well as backward planning. When discussing what was needed to develop a learning community for teachers, comments focused on the need for time to plan. The vertical and common planning concepts were evident as well.

The five attributes that transpired for phase II that were used for the survey in phase III were School Focus, Time to Implement, Teachers Observing Other Teachers, School Based PD, and PD for Planning.

Similarities and Differences

In considering research question number two, this section will address where there may have been similarities between Meta-Analysis and MSNS analysis findings as well as identify

individual issues. One attribute that was identified in both analyses is the importance of time. The meta-analysis reported the importance of professional development being long enough for participants to learn acknowledged practices. The MSNS review identified the significance of enough time being available to implement the practices learned in professional development activities. A second comparison could be made between the context of learning acknowledged in the meta-analysis and the issue of school based versus district based professional development highlighted in the MSNS analysis. The meta-analysis accentuates the importance of relevance to the teacher and the MSNS focus on school based professional development and suggests the importance of local concerns being addressed. This may be why the MSNS focus group data suggested that school based professional development was preferred over district based as well as a reason the meta-analysis suggested that adult learning components, teachers having input into the development of their professional learning, was important. There could be some similarity between the concept of collaboration identified in the meta-analysis and the concept of teachers observing other teachers' classrooms found to be evident in the MSNS focus group analysis in that both concepts indicate that teachers would be working together. However, there could also be differences in how teachers collaborate as they work through various professional development activities and how they collaborate as they watch each other's classrooms and then discuss their findings. The issue of vertical planning emerged as an attribute from the MSNS findings and could also be considered collaborative, but the issue of planning was not emphasized in the meta-analysis.

In summary, it appears the meta-analysis and MSNS focus group data can be compared to some degree. For example, the meta-analysis showed that context was a key and the MSNS review revealed that school focus was important to professional development. However, in other

cases, there were attributes and processes that appeared in the meta-analysis but did not appear in the MSNS review. To illustrate, the meta-analysis denoted that professional development for teachers should be active but the MSNS focus group feedback did not indicate this.

Phase III

In order to address research questions three, four, and five, in phase III of this research, a survey was developed and submitted to all of the middle school teachers employed by the Hamilton County Department of Education. Ten of the survey questions were based on the findings of the phase I meta-analysis. These questions were developed based on the five attributes of Context of Learning, Collaboration of Teachers, Time for PD, Adult Learning, and Active Learning. Ten additional questions were constructed based on the findings of the phase II MSNS review. The MSNS review attributes and processes included the Teacher Observing Other Teachers, Time to Implement, School Focus, School Based Professional Development, and PD for Planning. Two questions were written for each attribute identified. This was done to increase the validity of the agreement level for each attribute. These paired questions were listed apart from one another on the survey. The attributes and related survey question chart can be reviewed in Appendix H.

The clarity of survey questions was evaluated in a variety of ways. Survey questions were submitted to the dissertation committee approximately seven times and were appraised by graduate assistants. A third means of assessing survey clarity was completed when the survey was reviewed by a group of teachers who would not take part in the actual survey. Each method of evaluation resulted in feedback that was considered, and many suggestions were incorporated into the survey question development.

The completed survey was submitted to the Hamilton County Department of Education for approval. After HCDE permission was received, the IRB was updated and submitted to the University of Tennessee at Chattanooga for approval. Following IRB approval, the survey was sent to approximately 477 HCDE middle school teachers through the HCDE Department of Testing and Research. An introduction to the survey was included in the survey submission to teachers. This letter can be reviewed in Appendix I. Reminders were emailed to teachers each week for two weeks following the initial survey submission. These letters can be reviewed in Appendices J and K.

Demographic Data

The 33.1% return rate to the overall survey was a result of 158 out of 477 teachers responding to the survey. The individual questions had a range of 158 to 152 responses, which resulted in return rates ranging from 33.1 % to 31.8%. Of the 158 teachers who responded to the years of experience demographic question, 59 (37.34%) had 0-5 years of experience, 35 (22.15%) had 6-10 years of experience, 26 (16.46%) had 11-15 years of experience, 18 (11.39%) had 16-20 years of experience, 9 (5.7%) had 21-25 years of experience, and 11 (6.96%) had 25+ years of experience. Figure 5 show these demographics.

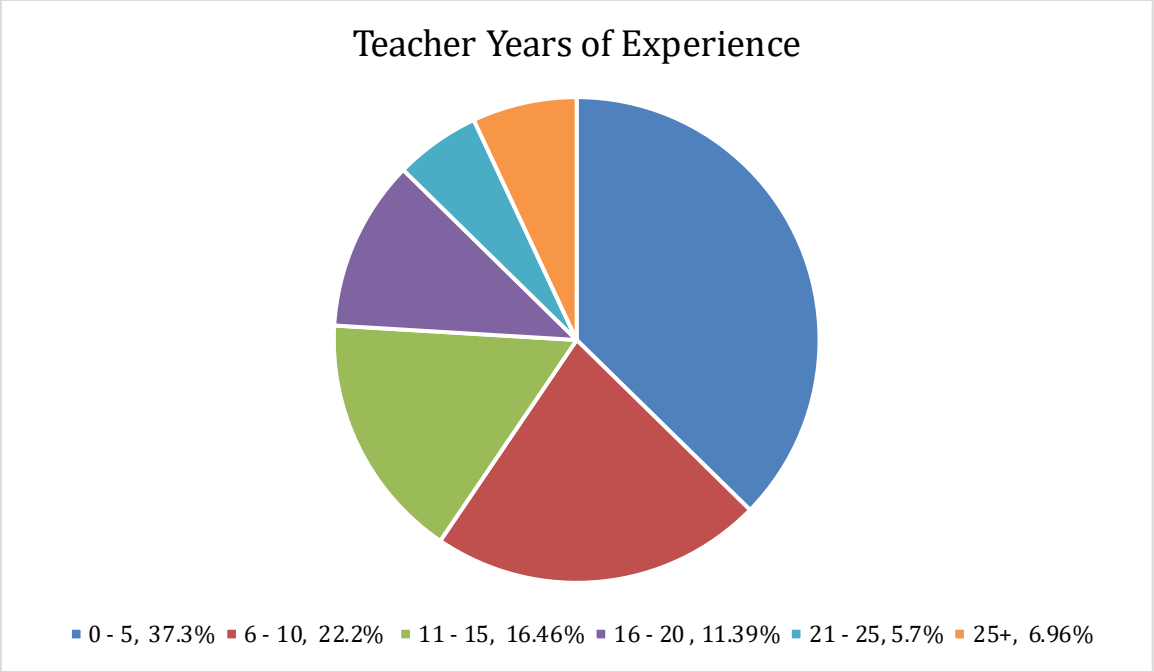

Figure 5 Teacher Years of Experience Demographics

The next survey question asked the teacher to identify the school where s/he was currently teaching. This information was collected in order to determine the performance level of the schools responding to the survey. These levels were determined by reviewing schools' 2016-2017 Tennessee State Report Card based on end-of-year standardized testing. Two areas of school performance were examined.

Areas examined to determine school performance level were achievement scores in English/language arts, math, and science. The operational definition for a school to be considered proficient in achievement was 50% or more of students scoring in the proficient or advanced range compared to those students scoring in the basic or below basic range. A second area reviewed was the Tennessee Value Added Assessment Scores. The operational definition for a school to be considered proficient in value added scores was based on the Tennessee Department of Education's description of these scores. A school with a score of three indicated

that the school was meeting expected yearly growth, a score of four or five indicated that a school was exceeding growth, and a school with a score of one or two indicated that the school was not making expected growth. Schools that were below the levels indicated in the operational definitions were considered not proficient. Schools at or above the indication of making expected growth levels were considered proficient.

Of the 24 schools from which teachers responded to the survey, six (25%) were proficient in both areas, two (8.3%) were proficient in achievement but not value added, five (20.8%) were not proficient in achievement but were in value added, and 10 (41.7%) were not proficient in either area. In this study, schools that were below operational definition levels in both areas were considered level one schools and schools who were above operational definition levels in value added but not in achievement were considered level two schools. Schools that were above in achievement but not value added were labeled as level three schools and schools that were above in both areas were considered level four schools.

Of the 157 individual teachers who answered the survey question regarding what school they were associated, one teacher indicated that s/he was involved with more than one school so s/he was disregarded from this statistic. As seen in Figure 6, there were 32 (21%) teachers from schools who were level four schools, 16 (10%) teachers from level three schools, 49 (31.4%) from level two schools, and 59 (37.8%) teachers from level one schools. Responses to this question were used to determine school performance levels of survey respondents.

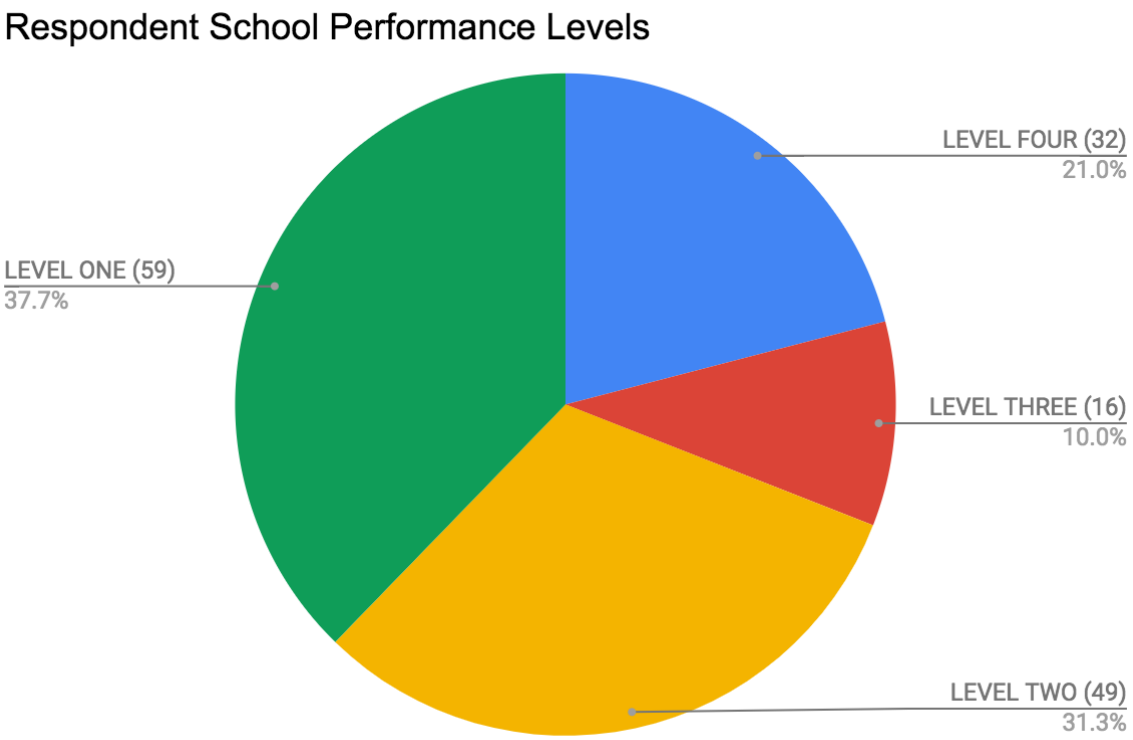

Figure 6 Performance Levels of Survey Respondent Schools

Overall Survey Data Disaggregation

The next stage that took place in disaggregating the survey data was to organize it in a manner where results could be used to address research question three. The survey software program Qualtrics was used to accomplish this task. Quantification as well as determining percentages for each Likert-type scale level for each question that comprised the survey was completed. Each survey question was then weighted contingent on the percentages of each level of its Likert-type scale response. This weight was determined by multiplying the percentage of Strongly Agree responses by 4, Agree responses by 3, Disagree responses by 2, and Strongly Disagree responses by 1. Finally, each category was weighted by combining the total weights of the two questions asked for each attribute. A sample of this data organization can be seen in

Table 3 and the entire graphic organizer showing the survey results and survey questions by category can be reviewed in Appendix L.

Table 3 Survey Data Organization Sample

CONTEXT OF LEARNING (META)	Category Weight Total 721		
	Number of responses	Percentage	Weight
Survey question 3. The professional development I participate in needs to be relevant to my individual instructional practices.			
Likert-type level			
Strongly Agree	107	67.7%	270.8
Agree	44	27.8%	83.4
Disagree	7	4.4%	8.8
Strongly Disagree	0	0.00%	0
			Total
			363
Survey question 13. Issues that are pertinent to my teaching practices should be addressed by the professional development activities that I participate in.			
Likert-type level			
Strongly Agree	91	59.10%	236.4
Agree	62	40.30%	120.9
Disagree	1	0.70%	0.7
Strongly Disagree	0	0.00%	0
			Total
	154		358

The first and overall finding of this survey is that teacher respondents agreed with all 10 of the attributes identified on the survey with at least 72.9% agreement. Findings also

demonstrated that the data analysis revealed that teachers who responded to the survey agreed with all five of the attributes identified in the meta-analysis at a greater weight than the five attributes recognized in the MSNS focus group review. The teacher respondents agreed with the attribute category Context of Learning/Relevance with the greatest weight (721) with the category Collaboration of Teachers only one point behind (720). The next three attribute weights were Adult Learning/Teacher Input (711.6), Time for PD (699.2), and Active Learning (693.3). The Meta-analysis categories were then followed by the five attributes identified in the MSNS teacher focus group review: Time for Implementation (688), School Focus (675.5), the Teacher Observing Other Teachers (671.3), School Based Professional Development (629.4), and finally PD for Planning (620.6). Table 4 shows this in a chart form.

Table 4 Total Weights of Attribute Categories

Attribute	Total Weight
Active Learning META	689.9
Adult Learning META	711.2
Collaboration of Teachers META	720.2
Context of Learning/ Relevance META	721
Time for PD META	699.3
PD for Planning MSNS	620.6
School Focus MSNS	675.5
School Based PD MSNS	629.4
Teacher Observing Other Teachers MSNS	671
Time to Implement MSNS	688

When analyzing the categories by reviewing the attribute category strongly agree responses by percentage, a trend similar to the one identified above appeared. All five of the attributes that resulted from the meta-analysis were agreed with strongly by teachers as shown by higher percentages than the attributes that stemmed from the MSNS focus group analysis. The group of meta-analysis attributes had an average of 59.74% strongly agree responses and the five

MSNS focus group attributes had a 44.02% average of strongly agree responses. These trends can be reviewed in Table 5.

Table 5 Average Percentages of Strongly Agree Responses per Attribute Category

STRONGLY AGREE PERCENTAGES	CATEGORY	PERCENT
Collaboration of Teachers	META	65%
Context of Learning/Relevance	META	63.40%
Adult Learning/Teacher Input	META	57.90%
Active Learning	META	57.50%
Time for PD	META	54.90%
School Focus	MSNS	49.70%
Time to Implement	MSNS	48%
Teacher Observing Other Teachers	MSNS	44.9%
School Based PD	MSNS	43%
PD for Planning	MSNS	34.50%

Examining the data when the percentage of strongly agree and the agree responses are combined, the results differed somewhat. The first, second, and the fourth levels strongly agree and agree response percentages consisted of attributes found in the meta-analysis, but the third and fifth were from the MSNS focus group data review. The seventh, ninth, and tenth attributes in this review were from the MSNS focus group review while the sixth and eighth were from the meta-analysis. One finding that is important to note is that the Active Learning attribute fell from fourth on the strongly agree list to eighth on the combined attribute chart. This data shows that while 57.85% strongly agree only 31.4% agree. Table 6 shows this data.

Table 6 Percentages of Strongly Agree and Agree Combined Responses per Attribute

STRONGLY AGREE AND AGREE PERCENTAGES	CATEGORY	PERCENT
Adult Learning	META	97.55 %
Context of Learning	META	97.45 %
Time to Implement	MSNS	96.4 %
Collaboration of Teachers	META	95.55 %
School Focus	MSNS	94.75 %
Time for PD	META	94.55
Teacher Observing Other Teachers	MSNS	91.6 %
Active Learning	META	88.8 %
PD for Planning	MSNS	79.8 %
School Based PD	MSNS	74.3 %

A fourth disaggregation was completed when the 20 individual questions were analyzed by weights. The teachers again responded with stronger weight to attributes that came from the meta-analysis. This was demonstrated when eight out of the top 10 weights came from attributes identified through the meta-analysis and the seven lowest attribute weights by individual question came from the MSNS focus group data review. One MSNS individual question attribute that had a strong individual weight (#9) was a question that addressed time to implement and the second MSNS individual question attribute that was included in the top 10 was a question that addressed professional development that was school focused (#10). The two meta-analysis individual questions that did not make the top 10 were questions that addressed Active Learning (#17) and Time for PD (#15). Table 7 shows individual questions ranked by weight.

Table 7 Individual Questions Ranked by Weight

Question	Attribute	Category	Weight	Rank
4	Collaboration of Teachers	META	367	1
5	Time for PD	META	366.6	2
3	Context of Learning/Relevance	META	363	3
9	Time to Implement	MSNS	361.3	4
16	Adult Learning/Teacher Input	META	358.7	5
13	Context of Learning/Relevance	META	358	6
14	Collaboration of Teachers	META	353.2	7
6	Adult Learning/Teacher Input	META	352.5	8
7	Active Learning	META	347.4	9
10	School Focus	MSNS	345.4	10
18	Teacher Observing Other Teachers	MSNS	345	11
17	Active Learning	META	342.5	12
15	Time for PD	META	332.5	13
20	School Focus	MSNS	330.1	14
19	Time to Implement	MSNS	326.7	15
8	Teacher Observing Other Teachers	MSNS	326	16
22	School Based PD	MSNS	317.2	17
11	PD for Planning	MSNS	314.3	18
12	School Based PD	MSNS	312.2	19
21	PD for Planning	MSNS	306.3	20

To compute an overall final ranking to determine the attributes the teachers who responded to the survey agreed with the most, four data analyses were combined. The four analyses used were category weight, individual question weight, percentages of strongly agree responses, and percentages of strongly agree and agree responses. The category with the highest weight or percentage was ranked a 10 in each investigation and the category with the lowest weight or percentage was ranked a 1. The top four ranked attributes were from the meta-analysis with Context of Learning/Relevance ranked number one. The bottom four ranked attributes were from the MSNS focus group analysis with PD for planning ranked at the bottom.

In summary, this final investigation suggested three findings that would help address research question three. Teachers agree that all 10 of the identified attributes are important to professional development. Secondly, teachers agree more with the meta-analysis attributes than the MSNS attributes. A third finding is that teachers agree with the importance of the context of professional development along with the ability to collaborate with other teachers the most. Table 8 demonstrates these overall findings.

Table 8 Attribute Ranking Based on Four Investigations

Attribute		Category Weight	20 Question Individual Weight	20 Question Individual Weight	Strongly Agree Percentage	Strongly Agree and Agree Percentage	Total
1. Context of Learning/ Relevance	META	10	18	15	9	9	61
2. Collaboration of Teachers	META	9	20	14	10	7	60
3. Adult Learning/Teacher Input	META	8	16	13	8	10	55
4. Time for PD	META	7	19	8	6	5	45
5. Time to Implement	MSNS	5	17	6	4	8	40
6. Active Learning	META	6	12	9	7	3	37
7. School Focus	MSNS	4	11	7	5	6	33
8. Teacher Observing Other Teachers	MSNS	3	10	5	3	4	25
9. School Based PD	MSNS	2	4	2	2	1	11
10. PD for Planning	MSNS	1	3	1	1	2	8

Years of Experience Subgroups Data Disaggregation

The next analysis addressed research question number four. The survey responses were analyzed according to the years of experience the teachers had in the classroom. This information demonstrated that while teachers agreed with the meta-analysis attributes more than the MSNS data, there was a difference in the level of agreement between teachers who have different years of experience in HCDE middle schools.

The attributes found in the top level of the ranking by years of experience analysis, those with the greatest weight, all surfaced from the meta-analysis. This information can be reviewed in Table 9.

Table 9 Years of Experience Subgroups Compared to Weight

Years of Experience	0 - 5	6 - 10	11 - 15	16 - 20	21 - 25	25+
	Collaboration of Teachers META 734.32	Context of Learning/ Relevance META 701.43	Collaboration of Teachers META 738.45	Time for PD META 711.11	Context of Learning/ Relevance META 733.34	Context of Learning/ Relevance META 772.73
	Context of Learning/ Relevance META 729.21	Time for PD META 701.23	Context of Learning/ Relevance META 715.38	Context of Learning/ Relevance META 705.58	School Focus MSNS 711.08	Collaboration of Teachers META 772.73
	Time for PD META 711.38	Collaboration of Teachers META 682.9	Active Learning META 711.96	Time to Implement MSNS 694.45	Collaboration of Teachers META 700.01	School Focus MSNS 754.55
	Active Learning META 702.43	Time to Implement MSNS 682.36	Teacher Observing Other Teachers MSNS 696.6	School Focus MSNS 688.88	Time for PD META 700	Adult Learning/Teacher Input META 736.77
	Time to Implement MSNS 696.17	Teacher Observing Other Teachers MSNS 673	Adult Learning/Teacher Input META 696.13	Collaboration of Teacher META 685.32	Teacher Observing Other Teachers META 677.71	Active Learning META 736.77
	School Focus MSNS 694.65	Adult Learning/Teacher Input META 654.89	Time for PD META 685.06	Active Learning META 683.37	Adult Learning/Teacher Input META 666.66	Time to Implement MSNS 727.27

	Teacher Observing Other Teachers MSNS 687.86	Active Learning META 643.34	Time to Implement MSNS 684.59	Adult Learning/Teacher Input META 677.8	Active Learning META 666.64	Time for PD META 709.09
	Adult Learning/Teacher Input META 683.72	School Focus MSNS 638.14	School Focus MSNS 665.42	School Based PD MSNS 672.25	School Based PD MSNS 666.64	School Based PD MSNS 700.07
	School Based PD MSNS 627.25	PD for Planning MSNS 617.63	PD for Planning MSNS 665.36	Teacher Observing Other Teachers MSNS 616.65	Time to Implement MSNS 633.33	PD for Planning MSNS 681.79
	PD for Planning MSNS 603.69	School Based PD MSNS 582.36	School Based PD MSNS 615.38	PD for Planning MSNS 605.57	PD for Planning MSNS 566.61	Teacher Observing Other Teachers MSNS 645.42

All the attributes found in the bottom two levels were from the MSNS focus group analysis. The top level attributes included Collaboration of Teachers, Context of Learning, and Time for PD. The Context of Learning Attribute was found in either the number one or two levels in each years of experience sub-group while Collaboration of Teachers was found in either level one, two, or three. PD for Planning was found in either the ninth or the 10th level. All school-based PD weights were found in the eighth to 10th levels.

Context for Learning/Relevance in the 25+ experience category was weighted the highest (772.73), Collaborating with Teachers in the 11-15 years of experience category was second (738.45), and the attribute PD for Planning in the 21-25 experience category had the lowest weight (566.61).

One trend noticed was the progression of School Focus weights. Teachers with less experience agreed with the importance of school focus with less weight than teachers with more experience. Teachers between 0-15 years of experience agreed with it at a weight found in the bottom half levels. Teachers with 16-25+ years of experience agreed with it with a weight in the upper 50% levels on the chart. In a second trend, teachers with 0-10 years of experience agreed with Time to Implement at a greater weight than teachers with 20-25+ years of experience.

A second means of reviewing the years of experience sub-group data responses entailed disaggregating the data depending on the number of teachers who strongly agreed and agreed with each attribute. These results can be reviewed in Table 10.

Table 10 Years of Experience Subgroups Compared to Strongly Agree and Agree

Total SA/A 0 - 5 Experience	Total SA/A 6 - 10 Experience	Total SA/A 11 - 15 Experience	Total SA/A 16 - 20 Experience	Total SA/A 21 - 25 Experience	Total SA/A 25+ Experience
Context of Learning META 198.31	Time to Implement MSNS 197.06	Collaboration of Teachers META 196.15	Time to Implement MSNS 200	Adult Learning/Teacher Input META 200	Adult Learning/Teacher Input META 200
Collaboration of Teachers META 198.18	Context of Learning META 191.43	Teacher Observing Other Teachers MSNS 192.42	Context of Learning META 194.45	Context of Learning META 188.89	Context of Learning META 200
Time to Implement MSNS 196.37	Time for PD META 188.23	Context of Learning META 192.31	School Focus MSNS 194.44	Time for PD META 188.89	Time for PD META 200
School Focus MSNS 195.55	Collaboration of Teachers META 179.66	Active Learning META 184.72	Adult Learning/Teacher Input META 177.7	Collaboration of Teachers META 188.89	Collaboration of Teachers META 200
Teacher Observing Other Teachers MSNS 194.82	Teacher Observing Other Teachers MSNS 176.89	Adult Learning/Teacher Input META 184.61	Time for PD META 177.78	School Focus MSNS 188.88	Time to Implement MSNS 200

Time for PD META 194.64	Adult Learning/Teacher Input META 176.73	Time for PD META 180.88	Collaboration of Teachers META 176.8	Time to Implement MSNS 166.67	Active Learning META 200
Adult Learning/Teacher Input META 184.11	PD for Planning MSNS 173.53	Time to Implement MSNS 180.78	Active Learning META 172.33	Active Learning META 166.66	School Focus MSNS 190.91
Active Learning META 180.66	School Focus MSNS 173.5	School Focus MSNS 180.78	PD for Planning MSNS 166.67	School Based PD MSNS 166.66	School Based PD MSNS 190.91
School Based PD MSNS 146.11	Active Learning META 165.12	PD for Planning MSNS 169.23	Teacher Observing Other Teachers MSNS 166.66	Teacher Observing Other Teachers MSNS 155.54	PD for Planning MSNS 181.81
PD for Planning MSNS 144.92	School Based PD MSNS 135.3	School Based PD MSNS 142.31	School Based PD MSNS 155.56	PD for Planning MSNS 133.32	Teacher Observing Other Teachers MSNS 172.72

While analyzing the ranks would indicate that the majority of the attributes ranked in the top 50% of this chart were from the meta-analysis, and Context of Learning/Relevance was the overall highest ranked and PD for Planning and School Based PD were the lowest ranked, this data review demonstrated more variety throughout the ranking. One notable finding in this analysis was that teachers with 25+ years of experience responded to the top six attributes in their ranking at 100% strongly agree and agree.

A third review that took place regarding the years of experience subcategories was the percentages of teachers who strongly agreed with each attribute. These rankings can be viewed in Table 11.

Table 11 Years of Experience Subgroups Compared to Strongly Agree

Total SA 0 - 5 Experience	Total SA 6 - 10 Experience	Total SA 11 - 15 Experience	Total SA 16 - 20 Experience	Total SA 21 - 25 Experience	Total SA 25+ Experience
Collaboration of Teachers META 136.14	Time for PD META 113.02	Collaboration of Teachers META 142.3	School Based PD MSNS 122.23	Context of Learning/Relevance META 144.45	Context of Learning/Relevance META 172.73
Context of Learning/Relevance META 131.9	Collaboration of Teachers META 112.77	Active Learning META 130.87	Active Learning META 111.12	School Focus MSNS 122.22	Collaboration of Teachers META 172.73
Active Learning META 122.07	Context of Learning/Relevance META 110	Context of Learning/Relevance META 123.07	Context of Learning/Relevance META 111.11	Collaboration of Teachers META 111.12	School Focus MSNS 163.64
Time for PD META 117.12	Teacher Observing Other Teachers MSNS 101.51	Adult Learning/Teacher Input META 115.54	Collaboration of Teachers META 108.5	Time for PD META 111.11	Active Learning META 136.47
School Focus MSNS 100.1	Active Learning META 89.93	Time for PD META 103.96	Adult Learning/Teacher Input META 100	School Based PD MSNS 100	Adult Learning/Teacher Input META 136.36
Time to Implement MSNS 99.78	Time to Implement MSNS 88.28	Teacher Observing Other Teachers MSNS 103.96	Time to Implement MSNS 94.45	Active Learning META 100	Time to Implement MSNS 127.27

Adult Learning/Teacher Input META 99.63	Adult Learning/Teacher Input META 81.1	Time to Implement MSNS 103.85	School Focus MSNS 94.44	Teacher Observing Other Teachers MSNS 77.77	Time for PD META 109.99
Teacher Observing Other Teachers MSNS 92.66	School Focus MSNS 64.7	PD for Planning MSNS 96.15	Time for PD META 88.89	Adult Learning/Teacher Input META 66.66	School Based PD MSNS 109.1
School Based PD MSNS 90.26	School Based PD MSNS 52.94	School Focus MSNS 84.62	Teacher Observing Other Teachers MSNS 55.55	PD for Planning MSNS 66.66	PD for Planning MSNS 100
PD for Planning MSNS 68.42	PD for Planning MSNS 50	School Based PD MSNS 80.77	PD for Planning MSNS 50	Time to Implement MSNS 55.55	Teacher Observing Other Teachers MSNS 72.72

This disaggregation showed similarities to the other reviews in that the attributes that were strongly agreed with that had the greatest percentage were from the meta-analysis. However, there were more attributes from the meta-analysis in the top five levels of this ranking than there were in strongly agree responses combined with agree responses. The two attributes, Context of Learning/Relevance and Collaboration of Teachers, both from the meta-analysis, were ranked almost equally in the top levels. Teachers with more years of experience strongly agreed more with Context of Learning/Relevance while teachers with less experience strongly agreed more with Collaboration of Teachers. PD for Planning was ranked at the bottom.

To develop a final ranking of the teacher responses based on their years of experience teaching in a HCDE middle school, the data from the Total Weight, Strongly Agree and Agree, and the Strongly Agree disaggregations were combined. This disaggregation can be seen in Table 12.

Table 12 Combination Rankings of Teacher Years of Experience Subgroups

0 - 5 Years	6 - 10 Years	11 - 15 Years	16 - 20 Years	21 - 25 Years	25+ Years
Collaboration of Teachers META 29	Time for PD META 27	Collaboration of Teachers META 30	Context of Learning/Relevance META 26	Context of Learning/Relevance META 29	Collaboration of Teachers META 30
Context of Learning/Relevance META 28	Context of Learning/Relevance META 27	Active Learning META 24	Time to Implement MSNS 23	School Focus MSNS 24	Context of Learning/Relevance META 27
Time for PD META 20	Collaboration of Teachers META 24	Context of Learning/Relevance META 25	Time for PD META 20	Collaboration of Teachers META 24	Active Learning META 22
Time to Implement MSNS 19	Time to Implement MSNS 22	Adult Learning/Teacher Input META 19	School Focus MSNS 19	Time for PD META 21	School Focus MSNS 20
Active Learning META 18	Teacher Observing Other Teachers MSNS 19	Teacher Observing Other Teachers MSNS 22	Active Learning META 18	Adult Learning/Teacher Input META 18	Adult Learning/Teacher Input META 19
School Focus MSNS 18	Adult Learning/Teacher Input META 14	Time for PD META 15	Collaboration of Teachers META 18	Active Learning META 14	Time to Implement MSNS 16
Teacher Observing Other Teachers MSNS	Active Learning META 12	Time to Implement MSNS 12	Adult Learning/Teacher	Teacher Observing Other Teachers MSNS	Time for PD META 13

13			Input META 16	12	
Adult Learning/Teacher Input META 11	School Focus MSNS 9	PD for Planning MSNS 7	School Based PD MSNS 14	School Based PD MSNS 11	School Based PD MSNS 9
School Based PD MSNS 6	PD for Planning MSNS 7	School Focus MSNS 8	Teacher Observing Other Teachers MSNS 6	Time to Implement MSNS 8	PD for Planning MSNS 6
PD for Planning MSNS 3	School Based PD MSNS 4	School Based PD MSNS 3	PD for Planning MSNS 5	PD for Planning MSNS 4	Teacher Observing Other Teachers MSNS 3

All of the first level ranked attributes in each category were from the meta-analysis. The majority of the attributes in the top half of the chart were also from the meta-analysis. Context of Learning/ Relevance was found in the top levels of each years of experience category while PD for Planning was found in the bottom levels. In each of the years of experience subgroup categories but one, Context of Learning/Relevance was found to be ranked in the first or second level rankings. Collaboration of Teachers was ranked in most categories in levels one, three, and six. PD for Planning was ranked in the bottom three levels with three of the years of experience categories ranking it last. While there are differences in how much each subgroup agreed with each attribute category there did not seem to be any trends or movement in any specific direction of any attribute from lower years of experience subgroups to higher years of experience subgroups or higher years of experience subgroups to lower years of experience subgroups. It is again important to note that while there were differences, each of the subgroups agreed overall with the importance of each attribute category.

In summary, the disaggregation of the survey response data depending on years of experience, resembled the overall data. Each group of teachers based upon their years of experience agreed with the attributes from the meta-analysis review more than those from the MSNS review. Four of the years of experience categories had at least four attributes from the meta-analysis in the top five levels and two had three compared to the MSNS review. The bottom three levels all contained attributes that were from the MSNS analysis but one. However, there were some differences between the teaching experience groups and how much they agreed with some of the specific attributes.

School Performance Level Subgroups Data Disaggregation

The final descriptive analysis was completed to address research question five. As has already been mentioned, the schools these respondents are associated with were considered a level one, two, three, or four school depending on their end of year standardized testing based on achievement and value added scores. This review consisted of four analyses to disaggregate the subgroups' survey results: (a) their weighted levels, (b) strongly agree and agree percentages, (c) strongly agree percentages, and (d) the combination of all attribute rankings found in reviews a, b, and c.

The rankings of the attributes according to weight by each of the school performance level subgroups are found in Table 13.

Table 13 School Performance Level Subgroups Compared to Weight

Level 4 Schools Weight	Level 3 Schools Weight	Level 2 Schools Weight	Level 1 Schools Weight
Context of Learning/Relevance META 737.57	Collaboration of Teachers META 725.9	Collaboration of Teachers META 725.59	Context of Learning/Relevance META 719.67
Collaboration of Teachers META 720.01	Context of Learning/Relevance META 720.54	Context of Learning/Relevance META 710.17	School Focus MSNS 712
Active Learning META 713.33	Active Learning META 720.54	Time for PD META 700.01	Collaboration of Teachers META 710.16
Time to Implement MSNS 690	Adult Learning/Teacher Input META 706.25	Active Learning META 693.82	Time for PD META 704.09
School Focus MSNS 680.01	Time to Implement MSNS 692.86	Adult Learning/Teacher Input META 791.81	Time to Implement MSNS 684.14
Time for PD META 673.36	Time for PD META 683.93	Time to Implement MSNS 685.71	Teacher Observing Other Teachers MSNS 672.71
Teacher Observing Other Teachers MSNS 663.34	Teacher Observing Other Teachers MSNS 673.22	Teacher Observing Other Teachers MSNS 681.61	Adult Learning/Teacher Input META 664.74
Adult Learning/Teacher Input META 659.97	School Focus MSNS 649.97	School Focus MSNS 675.52	School Based PD MSNS 662.28
School Based PD MSNS 643.34	PD for Planning MSNS 635.72	PD for Planning MSNS 646.07	Active Learning META 660.95
PD for Planning MSNS 626.7	School Based PD MSNS 592.86	School Based PD MSNS 606.25	PD for Planning MSNS 594.62

These data suggest that each sub-group of teachers agreed with the attributes from the meta-analysis more than they do the attributes from the MSNS analysis. All but five of the attributes (94%) found in to top 50% of the rankings based on school performance were from the meta-analysis. Context of Learning/Relevance was ranked number one by level four and one schools while level two and three schools ranked it second. Collaboration of Teachers was ranked high as well. Collaboration was ranked one by level three and two schools, two by level four schools, and three by level one schools. Active Learning was ranked third by level four and three schools, level two schools ranked it fourth but level one schools ranked it ninth. PD for Planning was ranked 10th by level four and one schools and level three and two schools ranked it ninth. School Based Learning was ranked towards the bottom as well. One finding showed that three of the four different subgroups ranked School Focus differently. Level one schools ranked it second, level four schools ranked it fifth, but level two and three schools ranked it eighth. Attributes addressing time were found consistently in the middle of the rankings. Level four schools Context of Learning/Relevance attribute had the highest weight score at 737.57 while level two schools weighted School Based PD the lowest at 606.25.

A second disaggregation was completed to determine rankings based on the percentages of the teachers who responded strongly agree or agree with survey questions that focused on the attributes of professional development. Findings were also based on the performance levels of the schools from which respondents taught. These rankings were determined by combining the percentages of the respondents who answered strongly agree or agree to the two survey questions that addressed each attribute. While all four levels agreed with all the attributes listed in the survey with at least 68.73 % either strongly agreeing or agreeing, there were differences among the school performance level subgroups. This information can be reviewed in Table 14.

Table 14 School Performance Level Subgroups Compared to Strongly Agree and Agree

SA/A Level Four Schools	SA/A Level Three Schools	SA/A Level Two Schools	SA/A Level One Schools
Context of Learning/Relevance META 196.81	Time to Implement MSNS 200	Context of Learning/Relevance META 197.95	Context of Learning/Relevance META 191.5
Collaboration of Teachers META 196.67	Context of Learning/Relevance META 193.75	Time to Implement MSNS 193.88	School Focus MSNS 191.33
Time to Implement MSNS 196.67	Adult Learning/Teacher Input META 193.75	Collaboration of Teachers META 193.79	Time to Implement MSNS 189.54
School Focus MSNS 193.34	Collaboration of Teachers META 192.86	Time for PD META 189.80	Time for PD META 187.93
Active Learning META 183.33	Teacher Observing Other Teachers MSNS 192.86	Teacher Observing Other Teachers MSNS 185.71	Collaboration of Teachers META 182.64
Teacher Observing Other Teachers MSNS 186.67	Time for PD META 192.86	Adult Learning/Teacher Input META 187.71	Teacher Observing Other Teachers MSNS 179.36
Adult Learning/Teacher Input META 186.66	School Focus MSNS 192.85	School Focus MSNS 183.68	Adult Learning/Teacher Input META 175.95
Time for PD META 183.34	Active Learning META 186.61	Active Learning META 181.62	Active Learning META 163.75
PD for Planning MSNS 170.01	PD for Planning MSNS 185.72	PD for Planning MSNS 174.17	School Based PD MSNS 153.46
School Based PD MSNS 160	School Based PD MSNS 171.43	School Based PD MSNS 174.17	PD for Planning MSNS 137.91

This analysis found that three of the four school performance levels ranked Context of Learning/Relevance number one. The four school performance level categories differed in their level two rankings while three out of the four subgroups differed in the level three rankings. All four subgroups ranked School Based PD and PD for Planning in the ninth or 10th ranks. These data disaggregation suggests that the lower the performance level the more they agreed with the attribute Time for PD. This overall ranking was one of the most consistent attribute rankings between each of the subgroups disaggregated.

The third disaggregation that took place regarding the school performance level subgroups was the review of the percentage of strongly agree responses. These rankings were determined by combining the percentages of the respondents who answered strongly agree to the two survey questions that addressed each attribute.

The majority of top 50% attributes ranked were from the meta-analysis. Collaboration of Teachers was ranked number one by level two and level one schools while level three and two schools ranked it third. Context of Learning/Relevance was ranked first by level four schools, ranked second by level one schools, and ranked third by level two and three schools. The Active Learning attribute was ranked second by level four and level two schools but only ranked sixth by level one schools. All four performance levels ranked the attribute of PD for Planning 10th but their percentages of strongly agree decreased from level one schools (77.52%) to level three schools (50%). These findings can be reviewed in Table 15.

Table 15 School Performance Level Subgroups Compared to Strongly Agree

SA Level Four Schools	SA Level Three Schools	SA Level Two Schools	SA Level One Schools
Context of Learning/Relevance META 140.68	Active Learning META 133.93	Collaboration of Teachers META 131.8	Collaboration of Teachers META 130.96
Active Learning META 130	Collaboration of Teachers META 133.04	Active Learning META 112.24	Context of Learning/Relevance META 128.17
Collaboration of Teachers META 123.34	Context of Learning/Relevance META 126.79	Context of Learning/Relevance META 112.24	School Focus MSNS 120.71
Time to Implement MSNS 93.33	Adult Learning/Teacher Input META 112.5	Adult Learning/Teacher Input META 106.12	Time for PD META 116.1
Time for PD META 90	Time to Implement MSNS 92.86	Time for PD META 110.21	School Based PD MSNS 108.56
School Focus MSNS 86.67	Time for PD META 91.07	Teacher Observing Other Teachers MSNS 95.92	Active Learning META 99.85
School Based PD MSNS 83.34	Teacher Observing Other Teachers MSNS 80.36	School Focus MSNS 91.84	Teacher Observing Other Teachers MSNS 98.51
Teacher Observing Other Teachers MSNS 76.67	School Based PD MSNS 71.43	Time to Implement MSNS 91.83	Time to Implement MSNS 96.35
Adult Learning/Teacher Input META 73.33	School Focus MSNS 57.14	School Based PD MSNS 66.03	Adult Learning/Teacher Input META 90.53
PD for Planning MSNS 56.67	PD for Planning MSNS 50	PD for Planning MSNS 65.9	PD for Planning MSNS 77.52

The final means of disaggregating the data from the school performance level subgroups was based on a combination of the rankings of the attributes in all three of the previous data disaggregations. This disaggregation used the rankings found in the total weight, strongly agree and agree, and the strongly agree data reviews. The ranking score for each attribute for the school performance subgroups was determined by assigning points to the attribute depending on where it was ranked in the specific data disaggregation set. If an attribute was ranked number one at the top of the list it received 10 ranking points. If an attribute was ranked number 10 at the bottom of the list it was given one ranking point. The other attributes were assigned points for their ranks accordingly. The ranking points from each attribute from the individual data disaggregations were then added together to determine a total ranking score. Table 16 shows the total ranking scores of all three of school performance sub-group categories combined.

Table 16 Combination Rankings of School Performance Subgroups

Level Four	Level Three	Level Two	Level One
Context of Learning/Relevance META 30	Collaboration of Teachers META 26	Collaboration of Teachers META 28	Context of Learning/Relevance META 29
Collaboration of Teachers META 26	Context of Learning/Relevance META 26	Context of Learning/Relevance META 27	School Focus MSNS 26
Active Learning META 23	Adult Learning/Teacher Input META 22	Time for PD META 21	Collaboration of Teachers META 25
Time to Implement MSNS 22	Time to Implement MSNS 22	Active Learning META 19	Time for PD META 22
School Focus MSNS 18	Active Learning META 21	Adult Learning/Teacher Input META 18	Teacher Observing Other Teachers MSNS 15
Time for PD META 14	Time for PD META 15	Time to Implement MSNS 17	Time to Implement MSNS . 13
Teacher Observing Other Teachers MSNS 12	Teacher Observing Other Teachers MSNS 14	Teacher Observing Other Teachers MSNS 15	School Based PD MSNS 11
Adult Learning/Teacher Input META 9	School Focus MSNS 9	School Focus MSNS 11	Adult Learning/Teacher Input META 11
School Based PD MSNS 7	School Based PD MSNS 5	PD for Planning MSNS 5	Active Learning META 10
PD for Planning MSNS 4	PD for Planning MSNS 5	School Based PD MSNS 4	PD for Planning MSNS 3

These data showed that teachers from schools in the four performance levels ranked the attributes from the meta-analysis overall higher than the attributes from the MSNS focus group. Of the attributes found in the top 50% of the strongly agree ranking, 15 out of 20, derived from the meta-analysis. The Context of Learning/Relevance attribute had an overall ranking of number one by level three with 30 points and level one school with 29 points. Level two schools ranked Collaboration of Teachers number one with 28 followed by Context of Learning/Relevance at number two with 27 points. Level three schools ranked Collaboration of Teachers and Context/Relevance equally at the top with 26 points. Active Learning was ranked number three by level four with 23 points, number four by level two with 19 points, number five by level three with 21 points, and number nine by level one with 10 points. PD for Planning and School Based PD were once again found at the bottom of the rankings. Level four, three, and one schools ranked PD for planning last, whereas level two schools ranked PD for Planning ninth. Level two schools ranked School Based PD 10th with four points, level four schools ranked School Based PD ninth with 7 points, but level one schools ranked School Based PD higher in seventh with 11 points. Attributes addressing time were found in the middle of the rankings.

Summary of Qualitative Descriptive Analysis

The variety of survey data disaggregations showed that teachers agreed with all of the 10 categories attributes listed in the survey. However, there were differences in the levels of agreement between the individual teachers, teachers from schools with different performance levels, and teachers with varying years of experience in the middle school classroom. The majority of disaggregations demonstrated that the individual teachers, as well as the different

subgroups of teachers, agreed more with attributes that emerged from the meta-analysis than they did with the attributes from the MSNS focus group analysis. Overall, the individual teachers as well as the different subgroups of teachers agreed the strongest with the attributes of Context of Learning/Relevance and Collaboration of Teachers and the least with PD for Planning and School Based PD. Attributes regarding time usually appeared somewhere in the middle of the various rankings. There were individual differences between weight scores, percentages, and rankings among the identified subgroups based on years of teaching experience and performance levels of the schools where the teachers were employed.

Statistical Quantitative Analysis

Overall Descriptive Statistics

The first part of the statistical analysis demonstrates the findings of the descriptive statistics as reported by SPSS. It is important to remember that the professional development attribute survey asked for teacher agreement at the following levels: 4 – Strongly Agree, 3 – Agree, 2 – Disagree, and 1 – Strongly Disagree. Table 17 shows the mean scores and standard deviations for all of the teacher responses broken into the 10 individual attributes. The means in this figure show that overall, teachers agreed positively with each individual attribute identified in the professional development attribute survey. The means ranged from 3.61 to 3.11.

Table 17 Means and Standard Deviation for 10 Individual Attributes

Attribute	Survey Questions	N	Minimum	Maximum	Mean	Std. Deviation
Context	3 and 13	158	2.50	4.00	3.6108	0.41709
Collaboration	4 and 14	157	1.00	4.00	3.5987	0.52636
Time for PD	5 and 15	157	2.50	4.00	3.4968	0.49516
Adult Learning	6 and 16	157	2.00	4.00	3.4108	0.54744
Active Learning	7 and 17	157	1.00	4.00	3.4459	0.69471
Teacher Observation	8 and 18	157	1.00	4.00	3.3535	0.5753
Time to Implement	9 and 19	155	2.00	4.00	3.4419	0.46275
School Focus	10 and 20	155	2.00	4.00	3.4452	0.53926
PD for Planning	11 and 21	155	1.00	4.00	3.1065	0.76868
School Based PD	12 and 22	155	1.00	4.00	3.1387	0.82481

Survey Comparisons

The second part of this statistical analysis includes four comparisons of the survey responses of the two subgroups of teachers. These analyses will address all 10 of the attributes and processes combined compared to the two subgroups of teachers based on years of experience in the classroom and school performance levels. These analyses will also include reviewing the data of the individual attributes and processes compared to the same two subgroups of teachers. These analyses will be used to address research questions four and five.

Due to the characteristics of the data, an attempt was made to use an ANOVA to compare these groups. These characteristics included one dependent variable, one

independent variable broken into categories, and the observations are independent of each other (Laerd Statistics, 2017). A second assessment, the non-parametric Kruskal-Wallis test, took place in cases where the assumptions for using an ANOVA were not met.

All Attributes Combined Compared to Years of Experience

The first statistical analysis implemented was a comparison between the mean score of all 10 attributes combined and the teacher years of experience subgroups. This analysis was used to help address research question four. The first process implemented was to check each years of teaching experience subgroups for outliers (Laerd Statistics, 2017). This procedure was accomplished by running an Explore process through SPSS. An inspection of the boxplots showed that there were three outliers in the 6-10 Years of Experience subgroup and one outlier in the 21-25 Years of Experience subgroup.

It was decided to leave the data set as is, with the outliers remaining, due to the following reasons: there were so few outliers compared to the total number of responses, the outliers that were evident ranged only from 2.0 to 4.0, a Kruskal-Wallis test would be implemented in the event that the other assumptions for an ANOVA could not be met and "some statisticians recommend that extreme values always remain in the data file unchanged" (Sue & Ritter, 2012, p. 149).

A Shapiro-Wilk test (Laerd Statistics, 2017) was used to determine if all 10 attributes combined compared to the years of teaching experience subgroups were normally distributed. The Professional Development Attribute Survey score was normally distributed for the 6-10, 11-15, 16-20, 21-25, and 25+ Years of Teaching Experience subgroups as assessed by Shapiro-Wilk's test ($p > .05$) but not for the 0-5 sub-group ($p < .05$).

Due to not all 10 Attributes Combined Compared to Years of Teaching Experience Subgroups having data that was normally distributed, the assumptions for running an ANOVA were not met, a Kruskal-Wallis test was implemented. The Kruskal-Wallis test was run to determine if there were differences in the Professional Development Attribute Survey score between six groups of teachers with different years of experience in the classroom: 0-5 years, 6-10 years, 11-15 years, 16-20 years, 21-25 years, and 25+ years. Median Professional Development Attribute Survey scores were not statistically significantly different between subgroups $H(5) = 8.902$, $p = .113$ (Laerd Statistics, 2015).

Individual Attributes Compared to Years of Experience

A second statistical analysis was executed in order to determine if any of the Professional Development Attribute Survey scores for the individual attributes were statistically significantly different between the Years of Teaching Experience subgroups. This analysis was also used to help address research question number four. This process entailed determining if the data sets met the assumptions for using an ANOVA. This process was accomplished by completing an Explore process through SPSS to look for outliers, using a Shapiro-Wilk test to determine of the data sets had normal distributions and implementing a Levene's test to determine if there was homogeneity of variances in the data.

Executing an Explore process through SPSS determined that 17 outliers were found in the Teaching Years of Experience subgroup data sets. These findings can be reviewed in Appendix M. Using Shapiro-Wilk test it was determined that only seven of the 60 data sets from the Teaching Years of Experience subgroups had normal distributions. These findings can be reviewed in Appendix N.

Using Levene's test for equality of variances, one finding was homogeneity of variances in six of the ten attribute categories among the Teaching Years of Experience subgroups based on the mean. This analysis can be reviewed in Appendix O.

This analysis demonstrated that only seven out of 60 subgroups had data that was normally distributed and three of the attributes had data with homogeneity of variances which indicated that the ANOVA should not be used due to certain assumptions required not being met. As a result, a Kruskal-Wallis H test was computed to determine if there were differences in Professional Development Attribute Survey scores between six groups of participants with different years of teaching experience levels: 0-5, 6-10, 11-15, 16-20, 21-25, and 25+ years of experience groups. Median survey scores were not statistically different between groups in any of the 10 attributes. This information is shown in Table 18.

Table 18 Individual Attributes Compared to Years of Experience Subgroups

Attribute	ANOVA	Kruskal-Wallis	Statistically Significant
Context	No	$H(5) = 8.084$, $p = .152$	No
Collaboration	No	$H(5) = 7.041$, $p = .218$	No
Time for PD	No	$H(5) = 4.009$, $p = .548$	No
Adult Learning	No	$H(5) = 4.737$, $p = .449$	No
Active Learning	No	$H(5) = 4.919$, $p = .426$	No
Teacher Observation	No	$H(5) = 7.043$, $p = .217$	No
Time to Implement	No	$H(5) = 4.623$ $p = .464$	No
School Focus	No	$H(5) = 11.042$, $p = ..051$	No
PD for Planning	No	$H(5) = 6.007$, $p = ..306$	No
School Based PD	No	$H(5) = 2.286$, $p = .200$	No

All Attributes Combined Compared to School Performance Level

In an attempt to address research question number five, an ANOVA was planned to compare the mean score of all 10 attributes combined to the four school performance subgroups. An inspection of the boxplot showed that there were four outliers in the school performance level four sub-group.

A Shapiro -Wilk test results (Laerd Statistics, 2017) was then used to determine if the Performance Level subgroups were normally distributed. This analysis found that the Professional Development Attribute Survey score was normally distributed for the School Performance Level Two and School Performance Level Four subgroups as assessed by Shapiro-Wilk's test ($p > .05$) but not for School Performance Level One and School Performance Level Three subgroups ($p < .05$).

Since the assumptions for running an ANOVA were not met, a Kruskal – Wallis test was computed to determine if there were differences in the Professional Development Attribute Survey score between four groups of teachers from schools of differing performance levels: Performance Level 1, Performance Level 2, Performance Level 3, and Performance Level 4. Distributions of Professional Development Attribute Survey scores were similar for all groups, as assessed by visual inspection of a boxplot. Median Professional Development Attribute Survey scores were not statistically significantly different between subgroups $H(3) = .283$, $p = .963$ (Laerd Statistics, 2015).

Individual Attributes Compared to School Performance

The final statistical analysis was executed in order to determine if any of the Professional Development Attribute Survey scores for the individual attributes were statistically significantly

different between the teachers School Performance Level subgroups. This analysis was also used to help address research question number five.

This process entailed determining if the data sets met the assumptions for using an ANOVA. This process was accomplished by completing an Explore process through SPSS to look for outliers, using a Shapiro-Wilk test to determine of the data sets had normal distributions and implementing a Levene's test to determine if there was homogeneity of variances in the data.

Executing an Explore process through SPSS determined that 25 outliers were found in the School Performance subgroup data sets. These findings can be seen in Appendix P. It was again decided to leave the data set as is, with the outliers remaining, due to the following reasons; there were so few outliers compared to the total number of responses the impact to the total outcomes would be minimal, and the outliers that did emerged ranged only from 1.0 to 4.0.

Using Shapiro -Wilk test it was determined that only one of the 40 data sets from the School Performance Level subgroups had normal distributions. Teacher Observation in the School Performance Level Three sub-group had distributions that were normally distributed. This information can be seen in Appendix Q.

Using Levene's test for equality of variances, it was found that there was homogeneity of variances in six of the ten attribute categories among the School Performance Level subgroups based on the mean including Context, Collaboration, Time for PD, Teacher Observation, School Focus, and School Based PD. This analysis can be reviewed in Appendix R.

The above information indicates that none of the 10 attributes compared to the performance level subgroups of teachers met the assumptions for running an ANOVA. As a result, a nonparametric Kruskal-Wallis analysis was used to determine if there were significant statistical differences between the School Performance Level subgroups of teachers and their

responses to the Professional Development Attribute survey responses for all 10 individual attributes.

Each individual attribute analyzed compared to the school performance level subgroups. The assumptions for running an ANOVA were not met in each attribute case due to data that was not normally distributed. A Kruskal-Wallis H test was computed to determine if there were differences in Professional Development Attribute Survey scores between four groups of participants from schools with different performance levels: Level 1, Level 2, Level 3, and Level 4 groups. Median survey scores were not statistically significantly different between groups in any of the 10 attributes as shown by Table 19.

Table 19 Individual Attributes Compared to School Performance Levels

	ANOVA	Kruskal-Wallis	Statistically Significant
Context	No	$H(5) = 2.559$, $p = .465$	No
Collaboration	No	$H(5) = .663$, $p = .889$	No
Time for PD	No	$H(5) = 1.376$, $p = .711$	No
Adult Learning	No	$H(5) = 2.226$, $p = .527$	No
Active Learning	No	$H(5) = 5.307$, $p = .151$	No
Teacher Observation	No	$H(5) = 3.189$, $p = ..363$	No
Time to Implement	No	$H(5) = .048$ $p = .997$	No
School Focus	No	$H(5) = 6.317$, $p = .097$	No
PD for Planning	No	$H(5) = .671$, $p = .880$	No
School Based PD	No	$H(5) = 4.236$ $p = .237$	No

Summary

This chapter presents the results of the analyses that were performed in an attempt to answer five research questions. There were five attributes that emerged from the review of the MSNS initiative focus group data as research question one was analyzed. These attributes

included School Focus, Time to Implement, Teacher Observation, School Based PD, and PD for Planning. When addressing research question two, five additional attributes appeared from the meta-analysis. These attributes were Collaboration of Teachers, Context of Learning, Adult Learning, Active Learning, and Time of PD. When comparing the attributes that were identified in the MSNS focus group analysis to those from the meta-analysis, two similar issues, and a possible third, emerged from both analyses. The issue of time appeared in both analyses. A second similarity was when context emerged from the meta-analysis and school focus was identified in the MSNS focus group analysis. A third potential similarity existed between the concept of collaboration identified in the meta-analysis and the concept of teachers observing other teachers' classrooms found to be evident in the MSNS focus group analysis. Both of these attributes might suggest that teachers would be communicating with other teachers. The remaining four attributes did not seem to indicate any similarities.

When addressing research question number three, the Professional Development Attribute Survey showed that approximately 70% or above of the teachers agreed with all 10 attributes identified on the survey. It was important to note however, that the teachers agreed with the attributes that were identified in the meta-analysis more than those that emerged from the MSNS focus group analysis.

Initially the researcher planned to use an ANOVA to determine if statistically significant differences existed between the survey results of the Years of Teaching Experience subgroups to examine research question number four. However, the assumptions necessary for this type of test were not met so a Kruskal-Wallis nonparametric test was used. There were no significantly statistical differences between these subgroups indicated by the Kruskal-Wallis analysis.

An ANOVA was also planned to be used to find out if statistically significant differences were evident between the performance levels of the school the survey respondents were from. Again, the data did not meet the assumptions to use the ANOVA so a Kruskal-Wallis was also used to answer research question number five. Similar to the teaching years of experience, there were no statistically significant differences between the survey responses of teachers from schools of different performance levels.

In summary, teachers agreed with all of the 10 attributes that emerged from the meta-analysis and the MSNS data review. The analysis showed that this sample of teachers agreed with the attributes from the meta-analysis more than they did with the attributes from the MSNS focus group data review. However, there were no statistically significant differences between the levels of agreement of the variety of attributes between the different sets of subgroups of teachers.

CHAPTER V

DISCUSSION AND CONCLUSION

The purpose of this research was to investigate attributes and processes of professional development for teachers. More specifically, the objective of this study was to examine what teachers indicated to be important for the professional development in which they participated. This investigation was a mixed methods grounded theory research study that analyzed data from three different sources. The first analysis was a review of literature regarding what various research studies concluded to be effective attributes and processes of professional development for teachers. The second investigation was a review of data that were gathered during teacher focus groups over a nine-year middle school improvement initiative. The findings of the first two analyses were then used to develop and subsequently analyze a 20-question survey administered to current middle school teachers. The survey was designed to determine if teachers agreed with the attributes and processes identified in the review of literature and middle school improvement initiative. This study was based on the premise that if school leaders use attributes and processes that are relevant to teachers, the end result of professional development will result in teachers who are more likely to make the changes that are explored, resulting in improved instruction (Reeves, 2010; Wlodkowski, 2008).

Summary of the Statement of the Problem

A changing society impacts the education young people receive (Lieberman & Mace, 2010). As a result of these shifts, today's students will need to master more complex material and develop a wider range of skills (Darling-Hammond & Bransford, 2005). However, there is a belief that due to a poor education, high school students are not entering their post high school environment prepared for college or employment (Wagner et al., 2006). Too many students are leaving high school unequipped for college and unskilled for the workplace (Wagner, 2008). As a result of these conditions, educational reform may be more crucial now than in the past (Sahlberg, 2011). If learning needs to improve for students, it will be important to engage in learning for teachers (Gulamhussein, 2013; Owen, 2014; W. M. Saunders et al., 2009). Professional development can help improve a teacher's pedagogy that, in turn, can lead to improved student learning (Borko, 2004; Curry, Mania-Singer, Harris, & Richardson, 2018; Resources for Learning, 2017; Wake & Mills, 2018). However, there are concerns regarding some contemporary professional development activities (Borko, 2004; Darling-Hammond et al., 2009; Gulamhussein, 2013; Guskey, 2000; Hirsch, 2011; McLester, 2012; Olsen & Sexton, 2009). School leaders need to know how to study, develop, and implement professional development activities that help teachers cultivate classroom practices that promote learning for their students (Crow, 2012; Dragoo-Severson, 2012; Guskey, 2000; Mizell, 2012; National Commission on Teaching and America's Future, 1996).

Methodology Review

This dissertation process attempted to address five research questions using a mixed methods approach involving three phases of investigation. The research questions focused on

three areas of concern regarding professional development for teachers. These three areas of concern included:

- What did current researchers identify to be important for effective professional development for teachers?
- How did middle school teachers respond to four MSNS school initiative focus group questions regarding professional development?
- At what level would current middle school teachers agree with the findings of the meta-analysis of literature and the MSNS focus group questions review?

Additionally, the research questions concentrated on two attributes of teachers:

- Teachers' years of classroom experience
- The performance level of teachers' schools regarding end of year testing scores

The five research questions were addressed with data collected through a three-phase process. Phase I included a review of 40 research articles. Phase II involved a qualitative analysis of teacher focus group data that were collected during a nine-year MSNS school improvement initiative. Phase III involved developing and administering a Likert-Type survey based on the findings from phases I and II.

Summary and Conclusions: Research Question #1

An analysis of the MSNS focus group data was used to address research question #1, an examination of attributes and processes of professional development to determine those attributes and processes of professional development teachers consistently reported as important. This analysis concentrated on analyzing what teachers answered in regard to four of 13 focus group questions. These questions ranged from asking respondents how their professional

development opportunities have changed, what has been the most effective professional development practices, how learning communities can be created for teachers, and what changes in teachers' classrooms have resulted from professional development experiences.

Of the attributes and processes that emerged from the word search used in this analysis, forms and phrases regarding the word teacher occurred most frequently. Comments ranged from teachers seeking out their own interests, professional development being more individualized, less top down professional development, as well as the need for teacher input. One teacher made the comment "I need for my professional judgement to be respected" (MSNS Focus Group, personal communication, Fall Semester 2011) and another "teachers need voice" (MSNS Focus Group, personal communication, Fall Semester 2011). One implication here is that school leaders need to take the concerns of the individual teacher into consideration. Another teacher mentioned that teachers should be given "vouchers to select and attend professional development of our choice" (MSNS Focus Group, personal communication, Spring Semester 2010). An additional theme that emerged was the desire teachers had to observe other teachers teach. When asked how professional development has changed, one teacher mentioned "peer observations done in school" (MSNS Focus Group, personal communication, Spring Semester 2008), another said "doing peer observations (3 or more per year)" (MSNS Focus Group, personal communication, Spring Semester 2008), and a third said "I think seeing other teachers teach is a good professional development concept" (MSNS Focus Group, personal communication, Spring Semester 2009).

Teachers were concerned that there was not enough time to implement all of the new learning into their classrooms. One teacher expressed the concern that teachers should "focus on one thing each year until we get good at it" (MSNS Focus Group, personal communication, Fall

Semester 2011), while another mentioned teachers need "time to implement" (MSNS Focus Group, personal communication, Fall Semester 2011). Another issue that was raised regarding time was the loss of planning because of increased professional development activities.

Two other issues that emerged from the MSNS analysis were the ideas that professional development should have a school focus and be school based. Teachers made positive comments when discussing school based professional development. An additional theme that appeared was a better focus upon initiatives that are taking place in individual schools. Teachers seemed to indicate an appreciation of "professional development within the building" (MSNS Focus Group, personal communication, Spring Semester 2014) and that "more of it is in-house, with our colleagues" (MSNS Focus Group, personal communication, Spring Semester 2014). One teacher mentioned that "team based approaches here on campus are best" (MSNS Focus Group, personal communication, Spring Semester 2014) and another stated that "in-house is more relevant" (MSNS Focus Group, personal communication, Spring Semester 2014). A third teacher stated, "professional development should be more specific" (MSNS Focus Group, personal communication, Spring Semester 2014), while a fourth mentioned that there is a "need to focus with colleagues" (MSNS Focus Group, personal communication, Spring Semester 2009).

A fifth topic that emerged during this component of the investigation was an emphasis on planning. When asked how their professional learning opportunities changed, teachers made comments that addressed vertical planning, common planning, and collaboration. One teacher mentioned "need common planning periods" (MSNS Focus Group, personal communication, Spring Semester 2007) and another mentioned "need collaborative planning" (MSNS Focus Group Data, personal communication, Spring Semester 2007) among their department's faculty.

A third teacher stated "weekly collaboration meetings" (MSNS Focus Group, personal communication, Spring Semester 2011) when asked about changes in professional development activities that have been effective.

In conclusion, this MSNS focus group data review identified five attributes and processes that researchers believe are beneficial to professional development. These attributes and processes include professional development that considers the individual teacher when planning professional learning. Teachers should be given choice in the professional development activities that they participate in. Teachers need to be given power over and provided the opportunity to make decisions regarding their individual professional development (Resources for Learning, 2017; Wake & Mills, 2018). Teachers also expressed the idea that it is beneficial for teachers to observe other teacher's classrooms.

Time is important to teachers as well. One implication from this analysis is that while teachers appreciate the increased emphasis on professional development, they need to be given enough time to implement the new individual activities they've learned into their classrooms before they are required to start learning and implementing a second new practice. For example, Fullan and Quinn (2016) identified "initiative fatigue" (p. 4) as an issue that teachers are facing. They recommend that schools focus on only a few initiatives at a time (Fullan & Quinn, 2016).

School leaders should also respect the time that teachers need to implement normal daily activities. Leaders should be careful to avoid depriving teachers of planning time, for example, in order to require them to participate in professional learning. School leaders should also concentrate on school based and individual school focused professional development. It was promising to note that teachers considered planning together an improved changed in profession learning opportunities. Teacher leaders should keep this idea in mind, especially in light of the

point that this could be done in individual schools with the only cost coming from securing substitute teachers.

An additional implication is that school leaders should attempt to see that professional development is focused on the needs of the individual school. Wake and Mills (2018) mentioned that effective professional development should be "focused on content and standards enacted in classrooms" (p. 92) and "enacted and integrated with daily school practice and culture" (p. 92). Curry et al. (2018) indicated that a form of action research enacted by teachers can be used to determine areas of professional development to be addressed. Using this method, teachers can engage in research, using data to determine specific areas to develop and then design their own plan to address identified issues.

Summary and Conclusions: Research Question #2

The results of the MSNS focus group data examination along with the meta-analysis were used to address research question #2 when an attempt was made to compare and contrast the findings of the two investigations. As was noted earlier, five attributes and processes important to professional development emerged from the meta-analysis of literature. The importance of context was addressed in 74% of the articles reviewed. Zhang, Lundeberg, and Eberhardt (2011), when discussing problem based learning in professional development, mentioned that approaches should involve teachers in discussing "problems in their practice" (p. 343). Klein and Riordan (2009) identified the importance of addressing content knowledge when executing professional development. These findings would be consistent with findings that were identified in the MSNS data review. The idea of professional development being individualized, geared toward specific subject areas, and "we have been allowed more freedom to focus on what we feel

we need" (MSNS Focus Group, personal communication, Spring Semester 2009) was identified in the teacher focus group data. Additionally, it is important to note that teachers indicated the importance of professional development being school focused and school based.

Collaboration emerged in 71% of the articles reviewed. It is important that opportunities of learning activities allow teachers to collaborate with other teachers (Sun, Penuel, Frank, Gallagher, & Youngs, 2013). Michaud (2016) found that teacher professional learning collaboration has the greatest capacity to transform the learning opportunities for students. It is important for teachers to learn collectively (Patton, Parker, & Tannehill, 2015). The meta-analysis identification of collaboration would be consistent with the MSNS focus group data indicating teachers' desires to plan vertically with other teachers as well as visiting other teacher's classrooms to view their teaching. One teacher mentioned "not enough collaboration time" (MSNS Focus Group, personal communication, Spring Semester 2009) was a specific concern of professional development while another indicated that "collaboration with partners" (MSNS Focus Group, personal communication, Spring Semester 2014) was an effective improvement.

A third attribute and process important to professional development surfaced when 52% of the resources reviewed indicated the importance of time. C. C. Johnson, Kahle, and Fargo (2007) found that professional development needs to be sustained and requires time to become employed into daily applications. Wee, Shepardson, Fast, and Harbor (2007) mentioned that in order for teachers to learn how to appropriately apply new activities into classroom practices, professional development should be ongoing. Penuel, Fishman, Yamaguchi, and Gallagher (2007) observed that time was necessary for teachers to employ activities learned in professional development into classroom practices. This identified attribute from the meta-analysis is

consistent with the issue of time that emerged from the MSNS focus data review. Teachers indicated that it is important to have enough time to implement new initiatives as well as apply new learnings before being presented a second new activity to learn.

An attribute mentioned in 48% of the reviewed resources was the importance of adult/teacher learning. Grenier (2010) indicated that the essential issues for and concerns of teachers should be considered when developing certain professional development programs. Klein and Riordan (2009) noted that teachers should be engaged in discussions regarding how professional development is executed. The consistency between these findings and the findings of the MSNS focus group data is demonstrated when observing the desire teachers have to participate in professional development that has considered their input and voice, as well as assignments that are less authoritarian.

Active learning for teachers was found to be important in 42% of the resources reviewed. Blair (2016) found that activities that engage the learner in the learning was important to the success of professional development activities. The author stated that the learning that teachers participate in should be active and involve "problem solving or inquiry-based" (Blair, 2016, p. 142). K. P. King (2004) identified the significance of professional development activities being learner focused and active. While there wasn't a clear message identified in the MSNS focus group data that teachers had a desire to participate in professional development that was active, there were comments made by teachers about certain professional development activities they believed to be beneficial that may have been based on a learning-by-doing learning style.

This analysis would suggest that both the meta-analysis and the MSNS teacher focus group data review agreed that context of professional learning is important to teachers. Both analyses indicate that collaboration during professional learning is important as well. A third

finding is the importance of time. Professional learning activities need to be long enough for teachers to understand new initiatives being taught and teachers need to be given enough time to implement new activities into their classrooms before they are encouraged to learn another one. This information would also suggest that teachers should have decision making opportunities in the content presented and choice of attendance in professional development activities.

Summary and Conclusions: Research Question #3

A survey based on the five attributes that emerged from the meta-analysis and the five attributes that emerged from the MSNS focus group data review was developed and administered to 477 current HCDE teachers. The responses to this survey were used to address research question #3 when this process attempted to determine if current HCDE teachers would agree with the findings of the MSNS focus group and meta-analysis findings. The survey included two questions for each characteristic in an attempt to increase the validity of the agreement level for each attribute for a total of 20 nondemographic questions. Each question used a four level Likert-Type scale. There was a 33.1% return rate of the survey. The majority of the respondents (37.34%) were teachers with between 0-5 years of teaching experience. Demographic analysis demonstrated that the more experience a teacher had, the lower the response rate was except for teachers with 25+ years of experience responded at a rate of 6.96% and those with 21-25 years of experience had a response rate of 5.70%. A second subgroup of teachers was based on the performance level of teachers' schools. The largest majority of respondents (37.8%) were from schools that were not proficient in either achievement or value-added standardized testing scores. The smallest percentage of respondents (10%) were from schools that were proficient in achievement but not proficient in value added scores.

Three findings resulted from the analyses. The first was that teachers generally agreed that all 10 of the attributes are important to professional development with a minimum of 72.9% of respondents agreeing or strongly agreeing with each attribute. The second finding was that the teachers agreed more with the attributes that emerged from the meta-analysis than they did from the MSNS focus group data review. Only one MSNS attribute appeared in the top five overall attributes (Time for PD). It was interesting to note that while the meta-analysis determined that active learning was important to professional development, teachers indicated that the MSNS attribute time for professional development was more important. The third finding from this overall analysis was that teachers agreed more with the meta-analysis attributes of context of learning and collaboration of teachers than the other eight attributes.

This overall survey review seemed to confirm the literature based meta-analysis findings. The top two findings in the meta-analysis review were context (74%) and collaboration (71%) and similarly the two attributes that emerged at the top of the overall survey analysis were context of learning and collaboration of teachers. Comments regarding content and collaboration were also made by teachers in the MSNS focus groups. The survey analysis also confirmed the meta-analysis finding of the importance of adult learning and teacher input. The teacher respondents agreed with the attribute adult learning/teacher at the third highest level in the overall findings while the meta-analysis analysis had adult learning identified in 48% of the resources examined. Teacher comments from the MSNS also indicated that it was important for teachers to have a voice in the professional development in which they participate. A fourth attribute that was evident in all three studies was time. Time for professional development from the meta-analysis (4^{th}) and time to implement from the MSNS (5^{th}) emerged in the top five agreed upon attributes in the overall survey findings. The attribute of time was found to be

identified in 52% of the meta-analysis articles and was also indicated to be important in the MSNS teacher review.

In conclusion, these findings suggest that all 10 of the attributes identified in the meta-analysis and MSNS focus group data review should be considered when planning professional development. However, there were certain attributes that appeared to be more important to teachers than others. School leaders can use this information as a list of priorities to be used when developing and implementing professional development for their teachers. According to the teachers who responded to this survey, it is evident that planners of professional development should realize context of learning should be considered and teacher collaboration with other teachers should be used in these activities. Teachers should also be given the opportunity to have input and choice in the professional development activities in which they participate. It will also be important for school leaders to consider the time it takes to provide professional development as well as the time that is provided for teachers to implement new learning into their classrooms, especially before introducing a new initiative.

Summary and Conclusions: Research Question #4

Survey results were also used to determine if there was a statistically significant difference between teacher agreement level of the attributes and processes identified through the meta-analysis and focus group findings and subgroups of teachers based on their years of experience in the classroom. This analysis was disaggregated in two ways. The first analysis compared the teachers' years of experience subgroups to the agreement level of all the attributes combined. While there were slight variations in the mean scores of the individual teacher years of experience subgroups, there were no statistically significant differences. For example, the 25+

teacher years of experience group had a mean level of agreement of 3.61 and the 6-10 teacher years of experience group had an average mean of 3.30. However, according to the results of a Kruskal-Wallis analysis, there were no statistically significant differences between any of the teaching years of experience subgroups.

A second analysis took place when the individual attributes were compared to the teaching years of experience subgroups. The results of this analysis were similar to the first analysis in this category. For example, the highest level of agreement mean scores (3.86) were found in the 25+ teacher years of experience in the attribute categories of context and collaboration and the lowest mean score (2.83) was found in the 21-25 teacher years of experience subgroup in the PD for planning attribute category. But again, according to a Kruskal-Wallis analysis, there were no statistically significant differences between the individual attributes and various teacher years of experience subgroups and the individual attributes of professional development.

In conclusion, there were no data in this analysis that would indicate there were any statistically significant differences between the level of agreement of attributes regarded to be important in the meta-analysis and MSNS focus group data review and teacher years of experience.

Summary and Conclusions: Research Question #5

The final analysis that took place during this research project was used to determine if there were any differences in survey levels of agreement between the attributes found to be important to professional development in the meta-analysis and the MSNS focus group data and the subgroups of teachers' school performance level. This analysis was disaggregated in two

ways. The first analysis compared the teachers' school performance level subgroups to the level of agreement of all the attributes combined. While there were slight differences in the mean scores of the individual teachers' school performance level subgroups, there were no statistically significant differences. Similar to the teacher years of experience disaggregation, a second analysis took place when the individual attributes were compared to the teachers' school performance level subgroups. The highest level of agreement mean scores (3.70) were found in the school performance level four in the attribute categories of context and the lowest mean score (2.97) was found in the school performance level two sub-group in the PD for planning attribute category. However, again no statistically significant differences were found.

In conclusion, there were no data in this analysis that would indicate there was any statistically significant differences between the level of agreement of attributes regarded to be important in the meta-analysis and MSNS focus group data review and teacher school performance levels.

Summary

The purpose of this study was to identify attributes and processes that are important to the development and implementation to professional development for teachers. This dissertation topic was chosen because of concerns raised about the professional development teachers were participating in. Concerns for professional development for teachers have also been confirmed by past researchers (Borko, 2004; Darling-Hammond et al., 2009; Gulamhussein, 2013; Guskey, 2000; Hirsch, 2011; McLester, 2012; Olsen & Sexton, 2009).

Additionally, teachers have been asked to participate in improvement initiatives (Dlugash, 2014). Some of these reforms were due to pressure and legislation from state and

federal governments (Owen, 2014). Professional development will be required to improve teaching practices that will lead to the success of new initiatives and accountability measures teachers face (Beavers, 2009; Dragoo-Severson, 2012; Wake & Mills, 2018). The premise of this study was that if planners of professional development use attributes and processes of professional learning that are relevant to teachers themselves, they will be likely to implement newly learned initiatives in their classrooms, ultimately improving instruction for students (Reeves, 2010; Wlodkowski, 2008). School leaders can use the findings of this study to enhance the development and implementation of the professional development they provide for their teachers.

While teachers agreed or strongly agreed with the importance of all 10 attributes and processes identified in the meta-analysis and MSNS focus group data review, one overarching finding in this study was there were four attributes of professional development that were identified and/or confirmed in all three phases of this dissertation process. One finding was the significance context plays in the professional development in which teachers participate. The meta-analysis, MSNS focus group review and the survey results disaggregation all confirmed context of professional development as a priority. Emphasizing the attribute of context could also address the preferences that professional development contain a school focus and be school based. A second attribute, confirmed in all three phases of the study, is the opportunity for teacher collaboration while engaging in professional learning. Providing teachers the opportunity to collaborate, leads professional development to be more active as well. In this regard, active learning was an additional attribute identified in the meta-analysis.

All three phases of the study identified and confirmed time as an attribute important to professional development. It is important that professional development is long enough for

teachers to learn the topics and practices being presented in professional learning activities. It is also important that teachers have time to implement newly learned activities into their classrooms before they are asked to consider another new initiative. Additionally, engaging in professional development should not take time away from other professional obligations. The fourth attribute important to professional development, confirmed by all three phases of the studies, is the idea that teachers should be given the opportunity to have input and choice into the professional development activities they participate in.

This study suggests that school leaders need to ensure that the professional development they provide for their teachers is relevant, collaborative, timely, and provides teachers with opportunities to have a voice in their own professional learning. Results from a national survey implemented in 2016 and reported in 2017 confirmed many of these findings. Resources for Learning (2017) recommended that effective professional development opportunities should include "job-embedded profession learning, application in daily practice, collaboration with peers, time to test in the classroom, and include teachers in decision making about their own professional learning" (p. 14).

Implications for Further Research

This dissertation process focused on the findings from a meta-analysis, the MSNS school improvement focus group data review, and a sample of middle school teachers indicated was important to professional development for teachers in a survey. However, there are several concepts that could serve as topics for future research studies that emerged. One concept that could be considered for further research is initiative overload. A teacher who was interviewed during the MSNS teacher focus groups indicated that it was important that they be allowed to

learn and understand professional development learning and implement into their classroom practices before they are asked to learn and implement another. Fullan and Quinn (2016) mentioned that schools should only focus on one initiative at a time. Research could be done to determine the impact of asking teachers to implement too many initiatives at the same time and how this issue can be addressed.

A second concept that could be considered for future investigation is the impact of action research as a form of professional development. This type of professional learning may lend itself to many of the issues that were identified in this research study. Action research provides the teacher an opportunity to identify specific learning needs they may have and methods to use to enhance those needs. "When teachers conduct their own inquiry into their teaching practices, they become better informed and can make better decisions about factors that influence student learning" (Curry et al., 2018, p. 174). A study could be implemented to determine the influence of action research on professional learning for teachers.

Thirdly, the impact of academic coaches and their impact on the professional learning of teachers could serve as a focus for further study. A comment that was noticed several times while reviewing the MSNS focus group data was the appreciation teachers had for their academic coaches. It might be important for school leaders to understand the impact the academic coaches have on the professional learning for teachers. Resources for Learning (2017) agreed with this finding: "One type of job-embedded professional learning is instructional coaching in which a coach gives ongoing support and feedback to the teacher in the form of modeling, demonstrations, observations, and follow-up conversations about teaching strategies" (p. 14).

Researchers indicate that professional development should be linked to student achievement (Curry et al., 2018; Resources for Learning, 2017). Thus, a fourth study that could be considered is an investigation on how the attributes and processes identified by this project regarding professional development directly impacts student achievement. This study might be accomplished by comparing student achievement to the attribute agreement levels in specific subgroups of teachers.

Certain subject areas can face barriers to professional development such as economics and lack of time to engage in PD (Sarama, 2002). It could be effective for educational leaders of to identify what potential barriers are to professional development and determine ways to eliminate those barriers. This research topic might lead to findings that demonstrate by removing certain barriers, professional development can be more effective.

While the analyses that were completed to answer research questions three and four found no statistically significant differences between the subgroups of teacher years of experience and teacher school performance levels, it might be useful to determine how important certain attributes are related to certain subgroups of teachers. Researchers have determined that it is important for professional development to be tailored to individual teachers (Wake & Mills, 2018). Studies that determine how certain subgroups of teachers respond to certain attributes of professional development might be helpful to school leaders.

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APPENDIX A

MSNS FOCUS GROUP DATA QUESTIONS

Ia. Thinking back over the past year of the MSNS initiative, how have your professional learning opportunities changed?

Ib. What has been the most effective?

IIa. One of the goals of the MSNS initiative is to personalize the learning environment for the student. What is happening in your school to make the environment more personal for most students?

IIb. What next steps might be useful to build the best learning community for teachers?

IIIa. Based upon the professional development experiences you have received through the MSNS initiative, what are the most effective changes in instructional strategies in your classroom?

IIIb. How are you addressing the level of rigor in your classroom and how is it being assessed?

IIIc. What strategies do you think are most effectively moving students from proficient to advanced as well as improving value added data?

IIId. What evidence has been gathered to make sure this is indeed happening?

IV. While it seems difficult for us to determine exactly what good teaching looks like, what elements would you suggest are usually incorporated in good instruction?

Va. What impact has the evaluation process "Project Coach" had on you or your school thus far?

Vb. How has the feedback you received from "Project Coach" been helpful in improving your classroom instruction?

VI. What can colleagues/the school/the district do to help you improve student learning?

VII. Other comments

APPENDIX B

IDENTIFICATION AND ANALYSIS OF VARIABLES OF SURVEY

Research Question 1: Throughout the course of the MSNS initiative, what attributes and processes of professional development did teachers consistently report as important? There are no independent nor dependent variables addressed in research question. This research question will be addressed by qualitative descriptive content.

Research Question 2: To what degree will the attributes and processes reported important to HCDE middle school teachers be consistent with the attributes and processes reported throughout the review of literature? There are no independent nor dependent variables addressed in research question 2. This research question will be addressed by qualitative descriptive content.

Research Question 3: At what level will current HCDE middle school teachers agree with the attributes and processes consistently reported as important by teachers (a) throughout the MSNS initiative focus group sessions and (b) through the meta-analysis of literature? There are no independent nor dependent variables addressed in research question 3. This research question will be addressed by qualitative descriptive content.

Research Questions 4 and 5: Will there be a difference in the ratings of attributes and processes of professional development between teachers who have different years of experience in the classroom or teach at schools that have different performance levels.

	Variable Labels	Levels of the Variable	Scale of Measurement
Dependent Variable	Teacher agreement or disagreement of attributes/processes of professional development important to teachers in the literature, in the focus group data, and both the literature and focus group data on the survey.	Strongly Agree-Strongly Disagree	Interval
Independent Variables	Attributes/Processes used in professional development according to: Teachers' years of experience Performance levels of schools	Teachers' years of experience. Categories are: 0 – 5 6 – 15 16 – 25 25+ Performance Level of Schools as per Tennessee's TCAP TNReady Categories are: Below Basic Basic Proficient Advanced	Nominal

APPENDIX C

META-ANALYSIS LITERATURE ANALYSIS

Article #	Year	Authors	Peer Reviewed	Title	Source	Research Summary	Grade Level	Data Collected	Attributes Identified	included
1	2014	VandenBergh, L. Ros, A., & Beijaard D.	Yes	Improving Teacher Feedback During Active Learning: Effects of a Professional Development Program	American Educational Research Journal	This research addressed feedback teachers give to students during active learning. The study assessed the effects of a Professional Development Program on teachers beliefs, perceived problems, and practices regarding feedback given during active learning. The PD program was developed according to a review of literature addressing feedback and active learning.	16 Elementary School Teachers	Observations - Beliefs Instruments - Perceived Problems Scale - Questionnaires - Observations - Video Taping - Meetings -	Goal-Directedness - Build PD on teachers' beliefs, perceived problems and classroom practices - Concrete and Practical Ideas - Day to Day Practices in the Classroom - Coherence - Teacher Collaboration - Active Learning - Duration - Guided Practice -	Yes

2	2015	Allen, C. Penuel, W.	Yes	Studying Teachers' Sensemaking to Investigate Teachers' Responses to Professional Development Focused on New Standards	Journal of Teacher Education	A case study where researchers evaluated the PD used in two schools addressing the Next Generation Science Standards over a 16 month time period. This study examined what might lead to potential ambiguity and uncertainty teachers experience while engaging in and following PD. The researchers also evaluated how teachers used sensemaking when making decisions regarding their instruction.	Three teachers - Two middle schools -	Field notes - Classroom videos -Teacher online logs - Teacher survey - Teacher Interviews - Artifacts of teaching"	Conflicting/Changing Goals - Competing Messages - Timing Conflict - Absence of Measures - Limited Resources - Perceptions of Incoherence - Organizational Structures - Collaboration - Active Learning - Differentiation - Innovation - Risk Taking -	Yes

3	2013	Sum, S., Penuel, W., Frank, K., Gallagher, H., & Youngs, P.	Yes	Shaping Professional Development to Promote the Diffusion of Instructional Expertise Among Teachers	Educational evaluation and Policy Analysis	This study investigated a middle school PD program on writing. This study sought to determine if certain characteristics used in PD Impact the number of teachers participants would be likely to help with their writing instruction. The study also attempted to determine if teachers who did not attend PD will be more likely to change their classroom instruction after consulting with teachers who became skilled as a result of PD?	Certified teachers in 39 schools.	Surveys	Active Learning - Duration - Collegial Interactions - Teacher Collaboration - Broader Range of Focused Content - Ask for Help - Sharing Instructional Expertise - The Spillover Effect -	Yes

4	2017	NEA, Learning Forward Corwin	No Evidence	The State of Teacher Professional Learning: Results from a Nationwide Survey	Report Developed by Resources for Learning	A 60 item national survey was completed by more than 6,300 teachers from all over the United States. This survey addressed the beliefs teachers had regarding the professional development they participated in compared to Learning Forward's Standards for Professional Learning	6,300 Teachers	Survey	Variety of data to determine PD needs - Consider characteristics of teachers, experience, backgrounds, learning needs - Evaluate PD - Develop PD plan - Involve teachers in decision making - PD during school hours - Collaborative learning - Time to practice and apply - Feedback through observations - Job embedded -	No

5	2007	Penuel, W. R., Fishman, B.J., Yamaguchi, R., Gallagher, L. P.	Yes	What Makes Professional Development Effective? Strategies That Foster Curriculum Implementation	American Educational Research Journal	This studied examined a variety of professional development features and the impact they had on teachers understanding and skill needed to apply a specific science program in their classroom.	454 Teachers - 28 PD Presenters -	Surveys	Duration - Content - Student Inquiry - Consistent with goals and other reform initiatives - Coherence - Reform Like - Collective Participation - Support - Focus on Student Inquiry - Context - Time to plan and implement for teachers - Coherence to teacher and district goals - Teacher interpretation of PD - Active Learning - Provide needed resources -	Yes

6	2015	Desimone, L. M., Garet, M. S.	Received 2-6-15 Accepted 9-6-15	Best Practices in Teachers' Professional Development in the United States	Psychology, Society and Education	A review of research regarding five identified features of effective PD. Content Focus, Active Learning, Coherence, Sustained Duration, Collective Participation.	Analysis of U. S. Research	Literature Review	Content Focus - Active Learning - Coherence - Sustained Duration - Collective Participation - Differentiated - Mentors and Coaches - Linked to classroom - Role of Leadership - Link PD to Evaluations - Rigorous Evaluations of PD -	No

7	2014	Kisa, K., Correnti, R.	Yes	Examining Implementation Fidelity in America's Choice Schools: A longitudinal Analysis of Changes in Professional Development Associated With Changes in Teacher Practice	Educational Evaluation and Policy Analysis	This research used survey responses from 1,722 teachers from 31 schools that implemented America's Choice school reform model and the PD it entailed over a 4 year period of time. This research evaluated the difference between schools regarding the content and processes they incorporate when implementing PD. This research also evaluated the impact reformed based PD had on teacher practices throughout the life of the study.	1,722 Literacy teachers - 31 Schools -	Annual Surveys -	Reform aligned content - Reform aligned processes - Intervention fidelity - PD should change as the needs of individuals change - Impact of population change -	Yes

8	2017	Reiser, B. J., Michaels, S., Moon, J., Bell, T., Dyer, E., Edwards, K. D., McGill, T. A. W., Novak, M., Park, A.	Yes	Scaling Up Three-Dimensional Science Learning Through Teacher-Led Study Groups Across a State	Journal of Teacher Education	This was a study where 24 teachers were trained in a specific type of science instruction and assessment then were asked to lead study groups regarding the same activities. The research attempted to determine how PD with a specific focus impacted teachers ability to implement said science instruction, teachers assurance regarding learning and teaching of program, and teachers pedagogical content knowledge relative to program.	241 Teachers	Pre and Post PD Surveys	Engage in practices - Connect what teachers learn to classroom practices - Incorporate teachers views of goals of science learning and beliefs of how students learn - Situated teacher learning - Focus PD on high level practices - Teacher study groups - Peer facilitators -	Yes

9	2009	Webster-Wright, A	Yes	Reframing Professional Development Through Understanding Authentic Professional Learning	Review of Educational Research	This is a study that is critical of current PD practices that focus on content. Instead, this researcher proposes a different delivery of PD that focuses on learning. This proposal is based on a review of literature. The researcher proposes an emphasis on professional learning.	Not clear	Critique of PD Literature	Learning versus development - Holistic versus atomistic - Authentic Professional Learning - Embedded in Real Life - Certainty - Differentiation - Context - Time - Role of the Learner - Active Learning - Action Research - Reflection - Communities of Practice - Adult Learning -	No

10	2013	Hill, H. C., Beisiegel, M., Jacob, R.	Yes	Professional Development Research: Consensus, Crossroads, and Challenges	Educational Researcher	There has been a consensus for what constitutes effective professional development for the past 20 years. However, recent studies have shown these researchers that results of PD with a consensus of characteristics are limited. Researchers propose that PD evaluation should be rigorous, cross-site and early.	Professional Development	Reviews key evidence to support a proposal of PD Assessment	PD should be piloted - Assess relationships between program and outcomes - Evaluate throughout... beginning, middle and end - Modify - Assess multiple studies - PD should focus on how student learn - PD should focus on content pedagogy -	No

11	2013	Moore, S., Kochan, F.	International Journal of Educational Reform	Principals' Perceptions of Professional Development in High-and Low-Performing High-Poverty Schools	International Journal of Educational Reform	This study compared the barriers and other factors to PD that were evident in high poverty schools which were high performing to high poverty schools which were low performing. Used NSDC's Standards Assessment Inventory.	High poverty and high performing schools. Torchbearer schools in Alabama - High poverty and low performing schools. Non-Torchbearer schools in Alabama -	NSDC Standard's Assessment Inventory - Principal Survey -	Utilization of student data - Collaboration - Shared leadership - Leadership Teams - Teachers serving as instructional leaders - Focus on culture, diversity, and family - Time - Follow up - Partnerships - Use of Educational Research - Learning Communities - Use factors from one's environment -	Yes
12	2016	Gonzalez, G., Deal, J. T., Skultety, L.	Yes	Facilitating Teacher Learning When Using Different Representations of Practice	Journal of Teacher Education	This research analyzed the way PD was facilitated when using animations and videos. It also investigated the facilitators role, and his/her practices in providing PD.	Five High School Geometry Teachers - Four Schools -	Video Recordings - Audio Recordings -	Facilitator - Examination of Student Thinking - Goals of teaching are more important than type of representations of teaching used - Facilitator knowing when to perform a specific move -	Yes

13	2016	Michaud, R.	Yes	The Nature of Teacher Learning in Collaborative Data Teams	The Qualitative Report	This study examined how and what teacher learning took place while teachers worked collaboratively in teams as they collaborated around student data.	Five Teachers - One Reading Specialist - One School	Audio Recordings - Interviews - Document Artifacts - Field Notes - Reflective Memos -	Context - Proximity stimulated collaboration - Frequency of collaboration - Attendance of teachers - Community of Practice - Joint enterprise - Connection to team -	Yes
14	2015	Bannister, N. A.	Yes	Reframing Practice: Teacher Learning Through Interactions in a Collaborative Group	The Journal Of The Learning Sciences	This was a case study that examined the interactions between high school math teachers who met on a daily basis to discuss curriculum and instruction. The study investigated the community of teachers as an adaptive avenue of learning.	11 high school teachers from one high school	Qualitative Data - Audio Records - Field Notes - Artifacts - Teacher Interviews -	Teacher comfort level with other teachers, CI Coaches, and University members - Llinked to classroom instruction - Collective framing practices - Community of practice -	Yes

15	2017	Kutaka, T. S., Smith, W. M., Albano, A. D., Edwards, C. P., Ren, L., Beattie, H. L., Lewis, W. J., Heaton, R. M., Stroup, W. W.	Yes	Connecting Teacher Professional Development and Student Mathematics Achievement: A 4-Year Study of an Elementary Mathematics Specialist Program	Journal of Teacher Education	This study sought to determine the impact of a specific Math program on teachers' knowledge of Math for teaching, attitude towards learning Math, and their views regarding teaching and learning. The study also compared the achievement of the students the teachers in the PD taught to teachers who did not participate in the PD.	Three cohorts of teachers - One Control Group K - 3 Teachers -	Posttests - Knowledge, Attitudes, and Beliefs Surveys -	Specific content - Build a coherent set of learning experiences - Active learning - Collective participation - Sufficient duration - Supportive professional communities -	Yes

16	2004	King, K. P.	Yes	Both Sides Now: Examining Transformative Learning and Professional Development of Educators	Innovative Higher Education	This research used a mixed methods approach, using an interview and surveys to determine the amount of perspective transformation that occurred while educators were engaged in graduate work.	58 Educators - One Professor -	Survey - Interview -	Support and challenge by professor - Discussions - Journals - Personal Reflection - Class Activities - Classmate support - Relationships - Readings - Active Learning - Group work - Learning that engages teachers in new ideas, reflection, and dialogue - Support and confidence - Learn and understand the process of learning - Provide activities that allow educators to experience questioning and critical reflection - Engaged as learners - Remove barriers - Transformative Learning - Active learning - Critical questioning - Reflective learning - Cooperative learning - Educators have the final say - Professors need to be reflective practitioners themselves -	Yes

17	2002	Desimone, L. M., Porter, A. C., Garet, M. S., Yoon, K. S., Birman, B. F.	Yes	Effects of Professional Development on Teachers' Instruction: Results from a Three-year Longitudinal Study	Education and Policy Analysis	This study looked at a variety of PD features and their impact on changes in teaching practice in math and science. It included a sample of 207 teachers in 30 schools,	207 teachers 30 schools 10 districts Five states	Survey	Content focus - Reform type - Duration - Collective Participation - Active Learning - Coherence -	Yes
18	2009	The Council of Chief State School Officers	No Evidence	Effects of Teacher Professional Development on Gains in Student Achievement: How Meta-Analysis Provides Scientific Evidence Useful to Education Leaders	A Report by the CCSSO	In 2006 the CCSSO, with a grant funded by the National Science Foundation, implemented a meta-analysis of teacher PD. Their intent was to identify information that would enable school leaders to provide PD that would result in improved student achievement. This study emphasized teachers who taught Science and Math.	K through 12	Meta-Analysis	Subject Content - Pedagogical Content - Follow Up Reinforcement of Learning - Help with implementation - Support for Teachers - Mentors - Duration - Relate to curriculum - Measure Teacher Development - Measure Student Achievement -	No

19	2007	Johnson, C. C., Kahle, J. B., Fargo, J. D.	Yes	A Study of the Effect of Sustained, Whole-School Professional Development on Student Achievement in Science	Journal of Research in Science Teaching	This was a 3 year longitudinal study that analyzed 17 science teachers from two school's participation in a Discovery Model Schools PD plan and its impact on student achievement.	6 through 8	Posttest -	Duration - Structure - Collaboration - Sustained - Whole School - Collaborative -	Yes

20	2016	Blair, D. J.	Yes	Experiential Learning for Teacher Professional Development at Historic Sites	Journal of Experiential Education	Two qualitative studies took place to analyze the methodology used by historic site PD programs. One of these studies emphasized the use of experiential learning. The first was a survey of the web pages used by National Park Service Teacher Workshop partners. The second study entailed asking programming specialists to describe the methods they use during PD.	Classroom Educators	Webpage analysis -	Experiential learning experiences - Prior Experiences - Active whole person learner involvement - Personal learner engagement - Personal Significance - Debriefing Process - Concern/respect for the Learner - Personal engagement - Assessing Adult Learning -	Yes

21	2003	Fishman, B. J., Marx, R. W., Best, S., Tal, R. T.	Yes	Linking teacher and student learning to improve professional development in systemic reform.	Teaching and Teacher Education	This was a study of a model of PD where researchers asked what they wanted students to know, looked at assessment to see what students knew, and then designed a PD program make up the difference. They followed this with teacher interviews and classroom observations. Student performance was assessed at the end to see if student learning was improved due to designed PD.	Middle Grades (6 - 8) Science Teachers	Assess student performance pre and post PD - Interviews - Classroom Observations -	PD based on needs of students - Assessment of Student Learning - Using proximal measures of student learning - Differentiation - Customization - Research on teacher learning-	Yes

22	2010	Grenier, R.S.	Adult Education Quarterly	"Now This Is What I Call Learning!" A Case Study of Museum-Initiated Professional Development for Teachers	Adult Education Quarterly	This was a study where researchers attempted to determine why teachers attend Museum-Initiated Professional development, how it impacted their development as teachers, and their classroom pedagogy. The study looked at two PD institute that took place at a maritime museum in Connecticut.	20 teachers K through 12	Interviews - Observations - Review of documents - Field Notes - Memos - Survey -	Personal motives - Professional motivations - Museum related factors - Personal Interest - Relevance - Self Directed Learning - Collaborative Inquiry - Knowledge Construction - Contextualized Learning - Personal Exploration - Relevant Application - Reflection and Dialogue - Adult Learning - Differentiated Learning - Peer Relationships - Communities of Practice -	Yes

23	2004	Yendol-Silva, D., Dana, N. F.	Yes	Encountering New Spaces: Teachers Developing Voice Within A Professional Development School	Journal of Teacher Education	This research took place in a new K - 2 Professional Development School with six teachers. This research entailed collecting qualitative data over a year and a half to identify how teachers can become engaged as an active member of a Professional Development School.	K through 2	Journal entries - Field notes - E-mail correspondence - Meeting Minutes - Audiotape Recording -, Questionnaires - Interviews -	Teacher Empowerment - Active Participation - New Technologies - Develop relationships - Transforming Prevailing Institutional Tendencies - Power in action - Teacher voice - Protect new teacher roles -	Yes
24	2009	Scott, C., Sutton, R. E.	Yes	Emotions and Change During Professional Development for Teachers: A Mixed Methods Study	Journal of Mixed Methods Research	This study evaluated the emotions of 50 elementary teachers that occurred during 8 professional development sessions that took place focusing on the writing process. This research included questionnaires and interviews.	50 Elementary teachers	Questionnaires - Interviews -	Integrate new knowledge with old knowledge - Context - Consider accountability measures - Consider reforms that affect teacher classrooms - Consider emotions associated with PD - Consider how emotions are associated with changes in the classroom -	Yes

25	2005	Torff, B., Sessions, D., Byrnes, K.	Yes	Assessment of Teachers' Attitudes About Professional Development	Educational and Psychological Measurement	This study reports on three studies that examined teacher attitudes about professional development using the Teachers' Attitudes About Professional Development scale. A questionnaire was used to determine favorable or unfavorable attitudes about PD.	66 Teachers - 176 teachers from 11 schools - 59 Teachers from nine schools -	Teachers' Attitudes About Professional Development scale -	Need for social approval - Need for cognition - Authoritarianism - Teacher self efficacy -	Yes

26	2015	Patton, K., Parker, M., Tannehill, D.	Yes	Helping Teachers Help Themselves: Professional Development That Makes a Difference	NASSP Bulletin	This report integrates the discoveries of a review of literature and identifies key characteristics of effective PD.	"Teacher professional development"	Literature review of PD - Observations of PD -	"Based on teacher needs and interests - Acknowledges that learning is a social practice - Includes collaborative opportunities within learning communities of educators - Is ongoing and sustained - Treats teachers as active learners - Enhances teachers' pedagogical skills and content knowledge - PD is facilitated with care - Focuses on improving learning outcomes for students -"	Yes

27	2003	Porter, A. C., Garet, M. S., Desimone, L. M., Birman, B. F.	No Evidence	Providing Effective Professional Development: Lessons From the Eisenhower Program	Science Educator	This research report analyzed the effectiveness of the federal Eisenhower Professional Development Program. This evaluation used telephone interviews and mail surveys. An attempt was made to identify the characteristics of this program and its impact on the practices of teachers.	363 school districts 1027 teachers who participated in 657 Eisenhower Professional Development Programs. 287 math and science teachers from 30 schools were surveyed	Telephone interview -, Mail surveys -	Content Knowledge - Pedagogy to learn Content Knowledge - Active Learning - Coherence - Greater Duration - Collective Participation - Reform Type PD - Management and Implementation Strategies - Funding -	No
28	2001	Garet, M. S., Porter, A. C., Desimone, L., Birman, B. F., Yoon, K. S.	Yes	What Makes Professional Development Effective? Results from a National Sample of Teachers	American Educational Research Journal	This research used a Teacher Activity Survey to nationally evaluate the Eisenhower Professional Development Program.	363 school districts 1027 teachers	Survey	Sustained and intensive - Focus on academic subject matter/content - Coherence - Active learning - Reform activities - Duration - Collective participation -	Yes

29	2011	Zhang, M., Lundeberg, M., Eberhardt, J.	Yes	Strategic Facilitation of Problem-Based Discussion for Teacher Professional Development	Journal of the Learning Sciences	This research evaluated the activities that presenters used to encourage productive discussion between science teachers while they participated in PD with a problem based learning approach. The research involved video taping,	6 Facilitators 35 Science Teachers 27 Schools K-12	Videotaping of meetings - Meeting Artifacts	Problem Based Learning - Learner Constructed - Leader as facilitator of learning - Connect to teacher practice - Provide for practice - Participant Ideas - Engaged Participants - Importance of discussion -	Yes

30	2009	Klein, E. J., Riordan, M.	Yes	Putting Professional Development into Practice: A Framework for How Teachers in Expeditionary Learning Schools Implement Professional Development	Teacher Education Quarterly	This research studied the PD that took place in Expeditionary Learning Schools Outward Bound schools. Professional Development served as a pillar for this program. It entailed a qualitative case study. The researchers studied 8 teachers from New York who taught in schools that participated in the ELS program. Researchers used artifacts, observations, and interviews to collect data.	8 high school and possibility middle school teachers.	Case Study - Artifact Collection - Classroom Observations - Interviews -	Reflection - Debriefing - Collaboration - Focus on curriculum and instruction - Ongoing support - Engagement - Content Area Beliefs - Content Knowledge - Content area Collaboration - Assessment - Differentiated PD - Teacher Experience - Implementation - Teacher Voice - Adult Learning -	Yes

31	2007	Wee, B., Shepardson, D., Fast, J., Harbor, J.	Yes	Teaching and Learning About Inquiry: Insights and Challenges in Professional Development	Journal of Science Teacher Education	This research entailed a qualitative study to evaluate teachers' response to inquiry-based science professional development. The researchers used lesson profiles, site visits, concept maps, and open response assessments.	4 Science Teachers One 4th grade teacher, One 5th - 12th grade teacher, One teacher who teaches both 5th and 7th grade, and One 9th-10th grade teacher.	Data Collection - Lesson Profiles - Site Visits - Concept Map - Open Response Assessments -	Ongoing - Continuous Help - Assessment - Ongoing support - Intensive follow up - Work collaboratively- Reviewing and providing feedback - Time to process new learning -	Yes
32	2011	Gabriel, R	Yes	A Practice-Based Theory of Professional Education: Teach for America's Professional Development Model	Urban Education	This is a report of Teach for America's Professional Development approach. It is based on Ball and Cohen's 1999 practice-based approach to professional development.			PD planning and development should be situational and differentiated - Based on the specific needs of teachers and students - PD can occur in individual, specific group, and total group sessions -	No

33	2014	Silko, J	Yes	Win-Win professional development: Providing Meaningful Professional Development while meeting the needs of all stakeholders	TechTrends	This article is a report of a case study detailing the efforts made by a local school district to develop a relationship with a local university to meet the professional development needs of teachers as well as enable them to renew their teaching licenses. The developers also had a goal of keeping the PD cost effective as well as fit into the busy schedule of practicing teachers.	Michigan teachers in a local district. Implemented evaluations to PD participants.	Surveyed teachers to determine level of and areas of interested	Duration of PD - Support from PD leader - Expertise of PD leader - Collaboration - Communication between teachers and district - - Money -	Yes

34	2015	National Academies of Sciences, Engineering, and Medicine	No	Science Teachers' Learning: Enhancing Opportunities, Creating Supportive Contexts: Professional Development Programs	The National Academies Press Open book	This resource is a chapter from a book that details the current status of PD for teachers. It follows with describing the characteristics of quality PD.	Science Teachers	Analysis of studies	Content Focus - Active Learning - Coherence - Duration - Collective Participation - Content is compared to pedagogy - Specific and Targeted - Teacher Reflection - Scaffolded PD - Tools to provide support -	No

35	2009	Beavers, A.	Yes	Teachers As Learners: Implications of Adult Education For Professional Development	Journal of College Teaching and Learning	This resource is a report that discusses the important role the teacher plays in the education of students, including all the expectations that come along with that role. It follows by describing PD will be important to help the teacher meet all of those expectations. However this is a concern that the practices of PD leaders is disjointed from the learning styles of teachers. Keeping the components of adult learning in mind could help rectify this problem.	Teachers	A report that includes some mention of other studies	Teacher Input - Teacher Experience - Address practical and applicable issues - Collaborative Action Research - Differentiated	No

36	2015	Koellner, K. Jacobs, J.	Yes	Distinguishing Models of Professional Development: The Case of an Adaptive Model's Impact on Teachers' Knowledge, Instruction, and Student Achievement	Journal of Teacher Education	Koellner and Jacobs compare the spectrum of PD between those that are adaptive and those that are specific. This article focuses on PD for Math teachers. This report also shows some literature findings of adaptive as well as specific PD. A specific study was summarized. Middle School Teacher leaders were taught the Problem Solving Cycle in year one and then taught sessions during year two. Teacher Leaders and their students were observed during year two. Instruments were used to assess changes in	62 Middle School teachers in a large system in the Western U. S.	Post program questionnaires - Classroom observations - Videotaping - Pre and Post PD Assessments - Standardized Test -	Problem Solving Cycle (PSC) - Collaboration - Collectively Reflect - Content - Instructional Practices - Build on ideas of students - Ongoing and Long term -	Yes

37	2016	Kennedy, M.	Yes	How Does Professional Development Improve Teaching?	Review of Educational Research	This is a review of PD studies that took place in the United States since 1975. It assessed PD studies that emphasized "core subjects". The focus of these studies were that they focused on PD only, used studies that addressed student achievement, used experimental characteristics that focused on learner motivation with a duration of one year.	K - 12 teachers	An examination of studies regarding Professional Development	Adult Learning - Theories of teacher motivation and teacher learning - What teachers do - Comparison of volunteer vs non-volunteer in attendance -	

APPENDIX D

META-ANALYSIS ATTRIBUTE CHART

Component of PD	Article #	Attribute
Active Learning	1	Active
Guided Practice	1	Active
Build PD on teachers' beliefs, perceived problems, and classroom practices	1	Adult
Teacher Collaboration	1	Collaboration
Coherence	1	Context
Concrete and practical ideas	1	Context
Day to day practices in the classroom	1	Context
Goal Directedness	1	Goals
Duration	1	Time
Active Learning	2	Active
Collaboration	2	Collaboration
Perceptions of Incoherence	2	Context
Differentiation	2	Differentiation
Conflicting/Changing Goals	2	Goals
Timing Conflict	2	Time
Absence of Measures	2	
Competing Messages	2	
Innovation	2	
Limited resources	2	
Organizational Structures	2	
Risk Taking	2	
Active Learning	3	Active
Collegial Interactions	3	Collaboration
Teacher Collaboration	3	Collaboration
Broader Range of Focused Content	3	Context
Duration	3	Time
Ask for Help	3	
Sharing Instructional Expertise	3	
The Spillover Effect	3	
Student Inquiry	5	
Active Learning	5	Active
Teacher interpretation of PD	5	Adult
Collective Participation	5	Collaboration

Coherence	5	Context
Coherence to teacher and district goals	5	Context
Consistent with goals and other reform initiatives	5	Context
Context	5	Context
Context	5	Context
Reform like	5	Reform
Support	5	Support
Duration	5	Time
Time to plan and implement for teachers	5	Time
Focus on student inquiry	5	
Provide needed resources	5	
PD should change as the needs of individuals change	7	Differentiation
Reformed aligned content	7	Reform
Reformed aligned processes	7	Reform
Impact of population change	7	
Intervention fidelity	7	
Incorporate teachers views of goals of science learning and beliefs of how students learn	8	Adult
Teacher study groups	8	Collaboration
Connect what teachers learn to classroom practices	8	Context
Engage in practices	8	
Focus PD on high level practices	8	
Peer Facilitators	8	
Collaboration	11	Collaboration
Partnerships	11	Collaboration
Focus on culture, diversity, and family	11	Context
Use factors from one's environment	11	Context
Learning Communities	11	PLC
Follow up	11	Support
Time	11	Time
Leadership Teams	11	
Shared Leadership	11	
Teachers serving as instructional leaders	11	
Use of educational research	11	
Utilization of student data	11	

Goals of teaching are more important that the of representations of teaching used	12	Goals
Examination of Student Thinking	12	
Facilitator	12	
Facilitator knowing when to perform a specific move	12	
Collaboration	13	Collaboration
Frequency of collaboration	13	Collaboration
Joint Enterprise	13	Collaboration
Connection to team	13	Context
Context	13	Context
Community of Practice	13	PLC
Attendance of teachers	13	
Proximity stimulated	13	
Collective framing practices	14	Collaboration
Linked to classroom instruction	14	Context
Community of Practice	14	PLC
Teacher conform level with other teachers, CI Coaches, and University members	14	
Active Learning	15	Active
Collective participation	15	Collaboration
Specific content	15	Content
Build a coherent set of learning experiences	15	Context
Supportive professional communities	15	Support
Sufficient duration	15	Time
Active Learning	16	Active
Active learning	16	Active
Educators have the final say	16	Adult
Learning that engages teachers in new ideas, reflection, and dialogue	16	Adult
Cooperative Learning	16	Collaboration
Group work	16	Collaboration
Relationships	16	Collaboration
Transformative learning	16	Reform
Classmate Support	16	Support
Support and challenge by professor	16	Support
Support and confidence	16	Support

Class activities	16	
Critical questioning	16	
Discussions	16	
Engaged as learners	16	
Journals	16	
Learn and understand the process of learning	16	
Personal Reflection	16	
Professors need to be reflective practitioners themselves	16	
Provide activities that allow educators to experience questioning and critical reflection	16	
Readings	16	
Reflective learning	16	
Remove barriers	16	
Active Learning	17	Active
Collective Participation	17	Collaboration
Content Focus	17	Content
Coherence	17	Context
Reform Type	17	Reform
Duration	17	Time
Measure Student Achievement	18	Assess
Measure Teacher Development	18	Assess
Pedagogical Content	18	Content
Subject Content	18	Content
Relate to Curriculum	18	Context
Follow Up Reinforcement of Learning	18	Support
Support for Teachers	18	Support
Duration	18	Time
Help with Implementation	18	
Mentors	18	
Collaboration	19	Collaboration
Collaborative	19	Collaboration
Duration	19	Time
Sustained	19	Time
Structure	19	
Whole School	19	
Personal learner engagement	20	Active

Active whole person learner involvement	20	Active
Experiential Learning Experiences	20	Active
Personal engagement	20	Active
Assessing Adult Learning	20	Adult
Concern/respect for the learner	20	Adult
Prior experiences	20	Adult
Personal Significance	20	Context
Debriefing Process	20	
Assessment of student learning	21	Assess
PD based on needs of students	21	Context
Customization	21	Differentiation
Differentiation	21	Differentiation
Research on teacher learning	21	
Using proximal measures of student learning	21	
Personal Exploration	22	Active
Adult Learning	22	Adult
Personal interest	22	Adult
Personal motives	22	Adult
Professional motivations	22	Adult
Self Directed learning	22	Adult
Collaborative inquiry	22	Collaboration
Contextualized Learning	22	Context
Relevance	22	Context
Relevant Application	22	Context
Differentiated Learning	22	Differentiation
Communities of Practice	22	PLC
Knowledge Construction	22	
Museum related factors	22	
Peer Relationships	22	
Reflection and Dialogue	22	
Active Participation	23	Active
Power in action	23	Active
Protect new teacher roles	23	Adult
Teacher Empowerment	23	Adult
Teacher Voice	23	Adult
Develop relationships	23	
New Technologies	23	

Transforming prevailing institutional tendencies	23	
Consider emotions associated with PD	24	Adult
Consider how emotions are associated with changes in the classroom	24	Adult
Consider Accountability measures	24	Assess
Context	24	Context
Consider reforms that affect teacher classrooms	24	Reform
Integrate new knowledge with old knowledge	24	
Need for social approval	25	Adult
Teacher self efficacy	25	Adult
Authoritarianism	25	
Need for cognition	25	
Treats teachers as active learners	26	Active
Based on teacher needs and interests	26	Adult
Includes collaborative opportunities within learning communities of educators	26	Collaboration
Is ongoing and sustained	26	Time
Acknowledges that learning is a social practice	26	
enhances teachers' pedagogical skills and content knowledge	26	
Focuses on improving learning outcomes for students	26	
PD is facilitated with care	26	
Active Learning	28	Active
Collective participation	28	Collaboration
Focus on academic subject matter/content	28	Content
Coherence	28	Context
Duration	28	Time
Sustained and intensive	28	Time
Reform Activities	28	
Learner Constructed	29	Adult
Participant ideas	29	Adult
Importance of discussion	29	Collaboration
Connect to teacher practice	29	Context
Engage Participants	29	
Leader as facilitator of learning	29	
Problem Based Learning	29	

Provide for practice	29	
Adult Learning	30	Adult
Teacher Experience	30	Adult
Teacher Voice	30	Adult
Assessment	30	Assess
Collaboration	30	Collaboration
Content area beliefs	30	Content
Content area collaboration	30	Content
Content knowledge	30	Content
Focus on curriculum and instruction	30	Content
Differentiated PD	30	Differentiation
Ongoing support	30	Support
Debriefing	30	
Engagement	30	
Implementation	30	
Reflection	30	
Assessment	31	Assess
Reviewing and providing feedback	31	Assess
Work collaboratively	31	Collaboration
Continuous help	31	Support
Intensive follow up	31	Support
Ongoing	31	Time
Ongoing support	31	Time
Time to process new learning	31	Time
Collaboration	33	Collaboration
Support from PD leader	33	Support
Duration of PD	33	Time
Communication between teachers and district	33	
Expertise of PD Leader	33	
Money	33	
Collaboration	36	Collaboration
Collectively Reflect	36	Collaboration
Build on ideas of students	36	Context
Content	36	Context
Ongoing and Long-term	36	Time
Instructional Practices	36	
Problem Solving Cycle	36	

APPENDIX E

MSNS WORD FREQUENCY CHART

MSNS Word Frequency Chart

Word	Frequency
School	494
Time	311
Teachers	274
Planning	252
Development	213
Professional	211
Math	186
Strategies	172
Students	160
Lot	158
Year	158
Common	154
Training	150
Work	149
Coach	147
Workshop	147
PD	138
Learning	137
Grade	131
Teacher	122
Good	120
Technology	117
Arts	110
Literacy	110
Vertical	110
Reading	109
Kids	107
Language	107
Writing	105
Core	104
Instruction	98
Change	96
Schools	96
Readers	93
Content	92
Science	92
Writers	92
Things	91

APPENDIX F

MSNS PHRASE FREQUENCY CHART

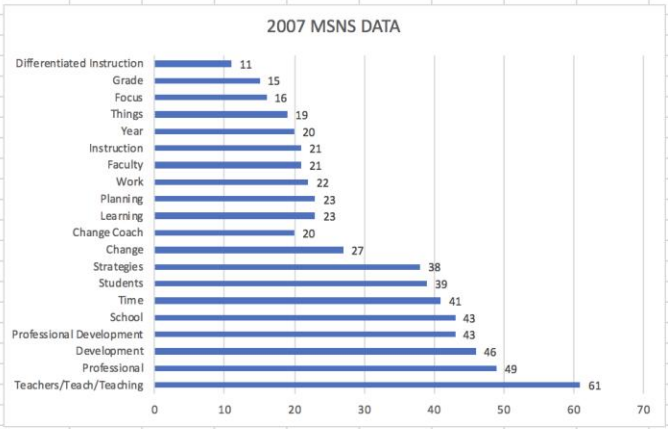
Phrase Frequency	
Phrase	Frequency
Professional Development	174
Common Core	92
Vertical Planning	82
Language Arts	80
Change Coach	63
Readers and Writers	51
Social Studies	43
Middle School	39
Grade Level	34
Readers Workshop	33
Differentiated Instruction	32
Learning Community	28
Quality Circles	26
High School	25
Writers Workshop	25
Special Education	24
County Wide	23
Essential Questions	23
Content Areas	21
Related Arts	21
Reading and Writing	19
Literacy Strategies	18
Academic Coach	17
Content Areas	17
Peer Observations	16
Common Assessment	15
Teaching Strategies	15
Writers Workshop	15
Faculty Meetings	15
Time to Plan	14
Time to Work	14
Professional Learning	13
Development Group	12
Grade Levels	12
Higher Level	12
Sixth Grade	12
Visit Other Schools	12
Common Vocabulary	11
Foreign Language	11

Formative Assessment	11
Graphic Organizer	11
Common Planning	10
Gender Based	10
Horizontal Planning	10
Instructional Strategies	10
Teaching Like a Champion	10

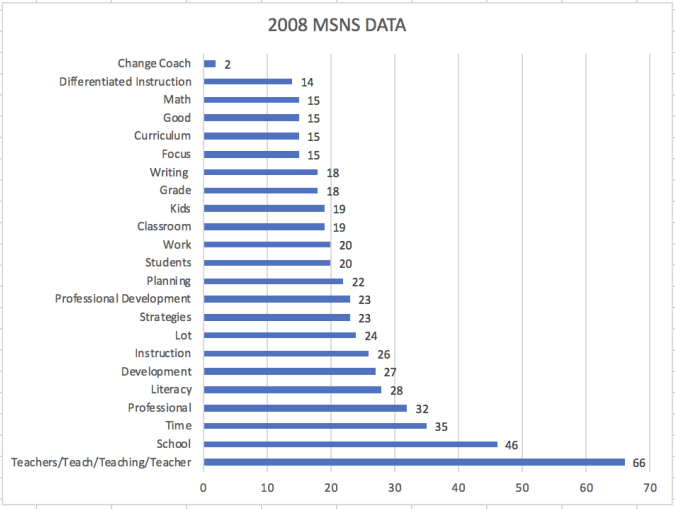
APPENDIX G

MSNS ATTRIBUTE ANALYSIS BY YEAR

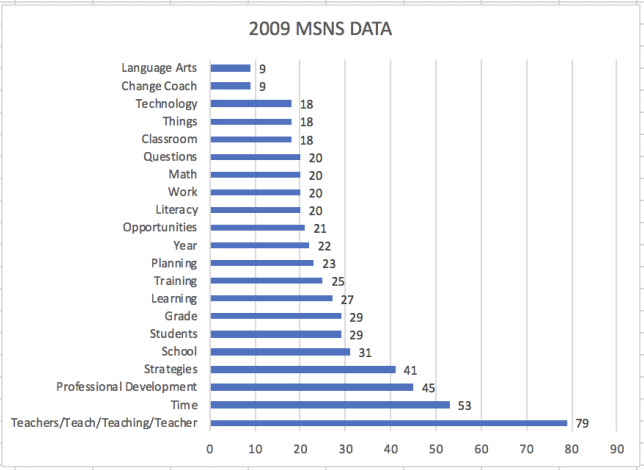
2007	
Teachers/Teach/Teaching	61
Professional	49
Development	46
Professional Development	43
School	43
Time	41
Students	39
Strategies	38
Change	27
Change Coach	20
Learning	23
Planning	23
Work	22
Faculty	21
Instruction	21
Year	20
Things	19
Focus	16
Grade	15
Differentiated Instruction	11



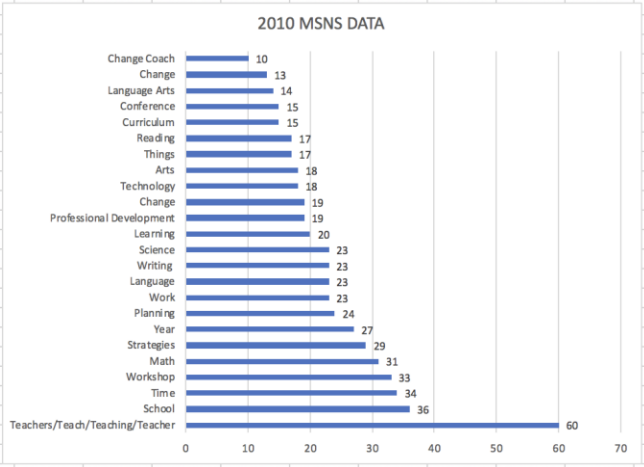
2008	
Teachers/Teach/Teaching/Teacher	66
School	46
Time	35
Professional	32
Literacy	28
Development	27
Instruction	26
Lot	24
Strategies	23
Professional Development	23
Planning	22
Students	20
Work	20
Classroom	19
Kids	19
Grade	18
Writing	18
Focus	15
Curriculum	15
Good	15
Math	15
Differentiated Instruction	14
Change Coach	2



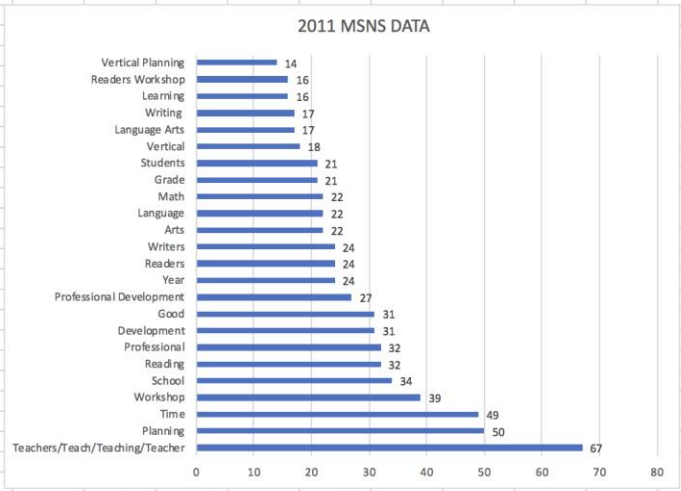
2009	
Teachers/Teach/Teaching/Teacher	79
Time	53
Professional Development	45
Strategies	41
School	31
Students	29
Grade	29
Learning	27
Training	25
Planning	23
Year	22
Opportunities	21
Literacy	20
Work	20
Math	20
Questions	20
Classroom	18
Things	18
Technology	18
Change Coach	9
Language Arts	9



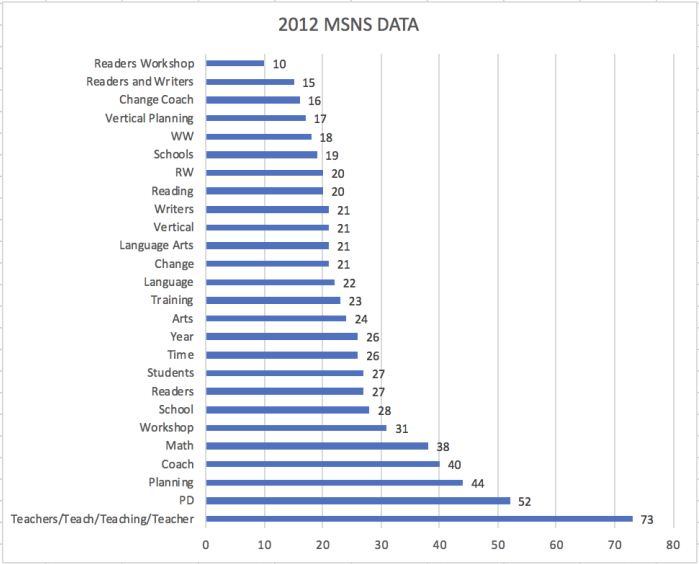
2010	
Teachers/Teach/Teaching/Teacher	60
School	36
Time	34
Workshop	33
Math	31
Strategies	29
Year	27
Planning	24
Work	23
Language	23
Writing	23
Science	23
Learning	20
Professional Development	19
Change	19
Technology	18
Arts	18
Things	17
Reading	17
Curriculum	15
Conference	15
Language Arts	14
Change	13
Change Coach	10



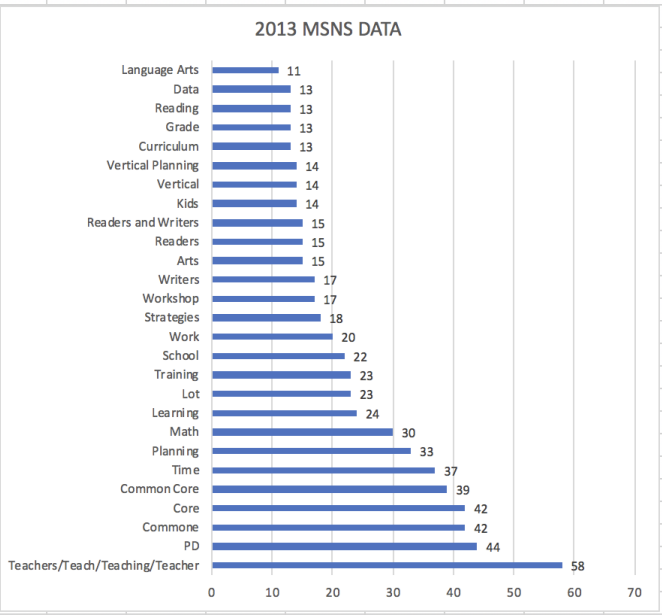
2011	
Teachers/Teach/Teaching/Teacher	67
Planning	50
Time	49
Workshop	39
School	34
Reading	32
Professional	32
Development	31
Good	31
Professional Development	27
Year	24
Readers	24
Writers	24
Arts	22
Language	22
Math	22
Grade	21
Students	21
Vertical	18
Language Arts	17
Writing	17
Learning	16
Readers Workshop	16
Vertical Planning	14



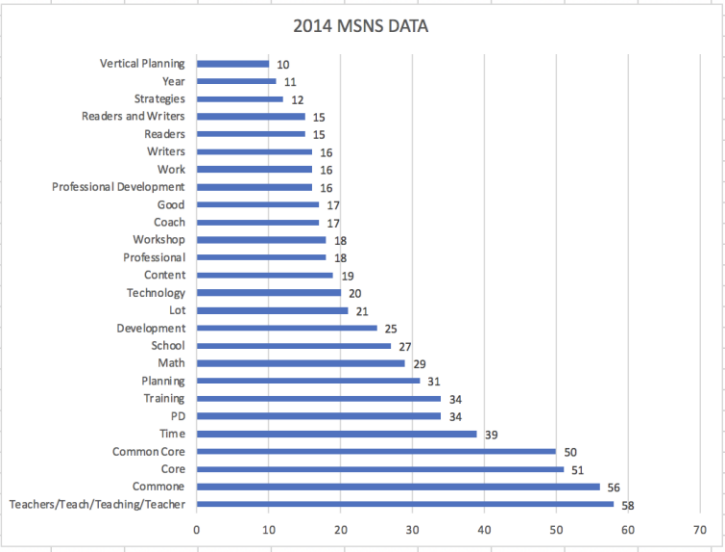
2012	
Teachers/Teach/Teaching/Teacher	73
PD	52
Planning	44
Coach	40
Math	38
Workshop	31
School	28
Readers	27
Students	27
Time	26
Year	26
Arts	24
Training	23
Language	22
Change	21
Language Arts	21
Vertical	21
Writers	21
Reading	20
RW	20
Schools	19
WW	18
Vertical Planning	17
Change Coach	16
Readers and Writers	15
Readers Workshop	10



Teachers/Teach/Teaching/Teacher	58
PD	44
Commone	42
Core	42
Common Core	39
Time	37
Planning	33
Math	30
Learning	24
Lot	23
Training	23
School	22
Work	20
Strategies	18
Workshop	17
Writers	17
Arts	15
Readers	15
Readers and Writers	15
Kids	14
Vertical	14
Vertical Planning	14
Curriculum	13
Grade	13
Reading	13
Data	13
Language Arts	11



2014	
Teachers/Teach/Teaching/Teacher	58
Commone	56
Core	51
Common Core	50
Time	39
PD	34
Training	34
Planning	31
Math	29
School	27
Development	25
Lot	21
Technology	20
Content	19
Professional	18
Workshop	18
Coach	17
Good	17
Professional Development	16
Work	16
Writers	16
Readers	15
Readers and Writers	15
Strategies	12
Year	11
Vertical Planning	10



APPENDIX H

ATTRIBUTES AND RELATED SURVEY QUESTION CHART

Attribute	Survey Question
Context of Learning - Meta Of the 40 articles that were analyzed, 23 (58%) mentioned the importance of context.	3 and 13
Collaboration of Teachers - Meta Of the 40 articles that were analyzed, 22 (55%) mentioned the importance of collaboration.	4 and 14
Time for PD - Meta Of the 40 articles that were analyzed, 16 (40% mentioned the importance of time.	5 and 15
Adult/Teacher Learning - Meta Of the 40 articles that were analyzed, 15 (38%) mentioned the importance of adult/teacher learning.	6 and 16
Active Learning - Meta Of the 40 articles that were analyzed, 13 (33%) mentioned the importance of active learning.	7 and 17
The Teacher - MSNS Word frequency of 472 Teachers have a desire to watch other teachers teach in their own schools as well as other sites.	8 and 18
Time - MSNS Word frequency of 311 There were comments stating that there wasn't enough time to implement all the activities they were being presented.	9 and 19

School - MSNS Word Frequency 268 Teaches made positive comments when discussing school based professional development.	10 and 20
Planning - MSNS Word Frequency of 234 Teachers made comments regarding planning, specifically vertical planning.	11 and 21
Professional Development - MSNS Word Frequency of 172 Teachers indicated what while county wide PD improved in some cases, PD that occurred at the school site was preferred.	12 and 22

APPENDIX I

SURVEY INTRODUCTION EMAIL TO HCDE MIDDLE SCHOOL TEACHERS

Dear Hamilton County Middle School Teacher,

Hello, my name is H. Robert Walter, III, doctoral candidate in Learning and Leadership, in the College of Health, Education, and Professional Studies, at the University of Tennessee at Chattanooga. I am a retired HCDE educator who spent 25 years as a middle school teacher and administrator. I am currently completing my dissertation examining the suitability of professional development for teachers. This research includes a survey of Hamilton County Department of Education middle school teachers. The survey will be used to determine middle school teachers' level of agreement with findings based on a review of literature and an analysis of data obtained through the Middle Schools for a New Society teacher focus group sessions that focused on professional development. The potential benefits of the study include identifying information that school leaders can use to plan effective professional development for teachers.

I am requesting your participation in this study. Your participation in this research is voluntary. This survey should take you less than five minutes to complete.

Whether or not you participate in the study, you are eligible to enter a random drawing for one of four $50 gift certificates from Amazon. You will be provided a link to the drawing as you exit the survey or the introduction/consent letter if you choose not to participate.

Click on the link below to begin.

https://utk.co1.qualtrics.com/jfe/form/SV_3ZOW1P4hocPikYJ

Thank you for your time.

H. Robert Walter, III

APPENDIX J

FIRST SURVEY REMINDER TO HCDE MIDDLE SCHOOL TEACHERS

Dear Hamilton County Middle School Teacher,

I am requesting your participation in this study a second time as a reminder if you haven't already done so.
Thank you for your time.

H. Robert Walter, III

APPENDIX K

SECOND SURVEY REMINDER TO HCDE MIDDLE SCHOOL TEACHERS

Hamilton County Department of Education Middle School Teachers,

I would like to thank you for your input in the Professional Development Attribute survey. If you have already completed the survey, we appreciate your participation. If you have not yet completed the survey, we would greatly value your input. You can click on the link below to access the survey. The survey will close on May 26, 2018 at midnight.

Link to survey.

https://utk.co1.qualtrics.com/jfe/form/SV_3ZOW1P4hocPikYJ

Please remember that whether you participate in the survey or not, you can enter the Hamilton County Department of Education Middle School Teacher Amazon $50 Gift Card Give-a-way. You will be taken to the Give-a-way site after you read the introduction to the survey and agree to participate or choose not to participate.

Thank you for your time.

H. Robert Walter, III

APPENDIX L

SURVEY RESULTS AND SURVEY QUESTIONS BY CATEGORY

SURVEY RESULTS BY CATEGORY

CONTEXT OF LEARNING (META)	Category Weight Total 721		
	Number of responses	**Percentage**	**Weight**
Survey question 3. The professional development I participate in needs to be relevant to my individual instructional practices.			
Likert-type level			
Strongly Agree	106	67.50%	270
Agree	44	28%	84
Disagree	7	4.50%	9
Strongly Disagree	0	0.00%	0
Total	157		363
Survey question 13. Issues that are pertinent to my teaching practices should be addressed by the professional development activities that I participate in.			
Likert-type level			
Strongly Agree	91	59.10%	236.4
Agree	62	40.30%	120.9
Disagree	1	0.70%	0.7
Strongly Disagree	0	0.00%	0
Total	154		358

COLLABORATION OF TEACHERS (META)	Category Weight 720		
	Number of responses	**Percentage**	**Weight**
Survey Question 4. Professional development is more effective when I have the opportunity to collaborate with other teachers during professional development.			
Likert-type level			
Strongly Agree	109	69.90%	279.6
Agree	43	27.60%	82.8
Disagree	3	1.90%	3.8
Strongly Disagree	1	0.60%	0.6
Total	156		366.8
Survey Question 14. The capacity to collaborate with other teachers will result in professional development being more effective to me.			
Likert-type level			
Strongly Agree	91	59.90%	239.6
Agree	51	33.70%	101.1
Disagree	9	5.90%	11.8
Strongly Disagree	1	0.70%	0.7
Total	152		353.2

TIME FOR PD (META)	Category Weight 699.2		
	Number of responses	**Percentage**	**Weight**
Survey Question 5. Professional development activities provided by the district and school need to be thorough and comprehensive so that I can understand the activities well enough to be able to successfully implement them into my classroom practice.			
Likert-type level			
Strongly Agree	104	66.70%	266.8
Agree	52	33.30%	99.9
Disagree	0	0%	0
Strongly Disagree	0	0%	0
Total	156		366.7
Survey Question 15. The time allotted for the professional development I participate in should be extensive and allow enough time for me to learn the material well enough to impact my classroom practices.			
Likert-type level			
Strongly Agree	67	43.50%	174
Agree	70	45.50%	136.5
Disagree	16	11.00%	22
Strongly Agree	0	0%	0
Total	153		332.5

ADULT LEARNING (META)	Category Weight 711.6		
	Number of Responses	**Percentage**	**Weight**
Survey Question 6. It is imperative that my professional learning concerns are recognized and addressed in the professional development that I participate in.			
Likert-type level			
Strongly Agree	89	57.10%	228.4
Agree	60	38.50%	115.5
Disagree	7	4.50%	9
Strongly Disagree	0	0.00%	0
Total	156		352.9
Survey Question 16. It is important that I am afforded the opportunity to have personal input in the planning of the professional development activities that I participate in.			
Likert-type level			
Strongly Agree	64	59.10%	236.4
Agree	72	40.30%	120.9
Disagree	17	0.70%	1.4
Strongly Disagree	1	0.00%	0
Total	154		358.7

ACTIVE LEARNING (META)	Category Weight 693.3		
	Number of responses	**Percentage**	**Weight**
Survey Question 7. Quality professional development needs to be engaging, active, and rarely passive listening.			
Likert-type level			
Strongly Agree	92	60.00%	240
Agree	47	30.10%	90.3
Disagree	15	9.60%	19.2
Strongly Disagree	2	1.30%	1.3
Total	156		350.8
Survey Question 17. Worthwhile professional development should be active and require more than just listening to a speaker.			
Likert-type level			
Strongly Agree	85	55.70%	222.8
Agree	50	32.70%	98.1
Disagree	15	9.80%	19.6
Strongly Disagree	3	2%	2
Total	153		342.5

THE TEACHER (MSNS)	Category Weight 671.3		
	Number of responses	**Percentage**	**Weight**
Survey Question 8. Classroom observations are an effective form of professional development because they provide me an opportunity to gain insight into teaching strategies used in other classrooms.			
Likert-type level			
Strongly Agree	58	37.20%	148.8
Agree	83	53.20%	159.6
Disagree	13	8.30%	16.6
Strongly Disagree	2	1.30%	1.3
Total	156		326.3
Survey Question 18. Opportunities to observe other teachers' classroom practices would be a valuable form of professional development for me.			
Likert-type level			
Strongly Agree	81	52.90%	211.6
Agree	61	39.90%	119.7
Disagree	10	6.50%	13
Strongly Disagree	1	0.70%	0.7
Total	153		345

TIME (MSNS)	Category Weight 688		
	Number of responses	**Percentage**	**Weight**
Survey Question 9. There needs to be sufficient time allotted during the school day/year to implement the variety of activities and practices I learn in professional development activities.			
Likert-type level			
Strongly Agree	97	62.60%	250.4
Agree	57	36.10%	108.3
Disagree	2	1.30%	2.6
Strongly Disagree	0	0%	0
Total	156		361.3
Survey Question 19. Professional development should take place in a scaffolded structure that promotes effective implementation of each initiative in my classroom.			
Likert-type level			
Strongly Agree	51	33.30%	133.2
Agree	93	60.80%	182.4
Disagree	8	5.20%	10.4
Strongly Disagree	1	0.70%	0.7
Total	153		326.7

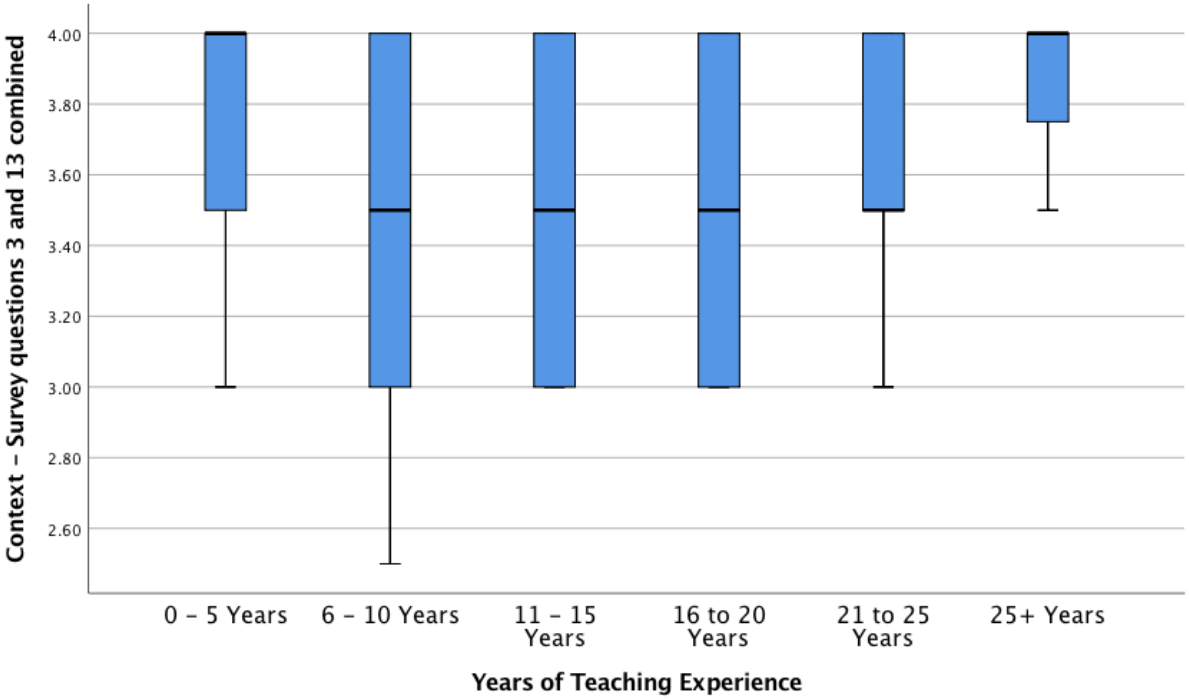
SCHOOL (MSNS)	Category Weight 675.5		
	Number of responses	**Percentage**	**Weight**
Survey Question 10. Professional development should focus on the needs of the individual school.			
Likert-type level			
Strongly Agree	76	49.00%	196
Agree	74	47.70%	143.1
Disagree	5	3.20%	6.4
Strongly Disagree	0	0%	0
Total	155		345.4
Survey Question 20. Professional development is more valuable to me when it addresses the needs of the individual school.			
Likert-type level			
Strongly Agree	77	50.30%	201.2
Agree	65	42.50%	127.5
Disagree	11	0.70%	1.4
Strongly Disagree	0	0%	0
Total	153		330.1

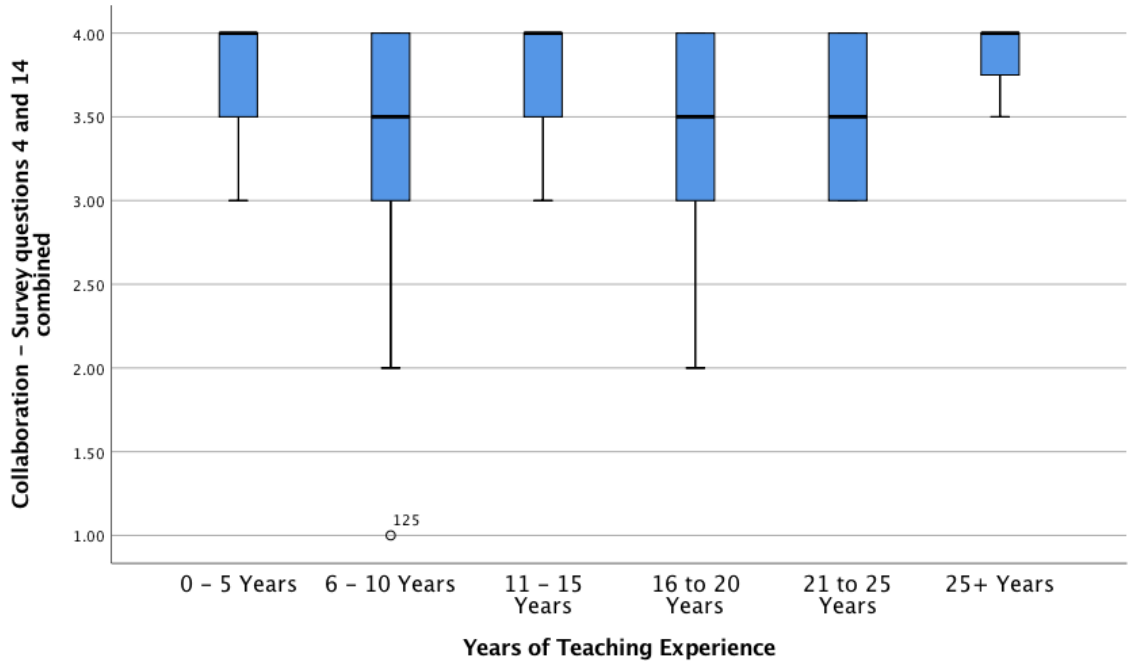
PD FOR PLANNING (MSNS)	Category Weight 620.6		
	Number of responses	**Percentage**	**Weight**
Survey Question 11. Vertical planning among teachers is an effective approach to professional development. (Vertical planning is defined as planning together among teachers who teach the same subject area but in different grade levels.)			
Likert-type level			
Strongly Agree	59	38.10%	152.4
Agree	64	41.30%	123.9
Disagree	27	17.40%	34.8
Strongly Disagree	5	3.20%	3.2
Total	155		314.3
Survey Question 21. Professional development that allows me to vertically plan together is a valuable use of my professional learning time.			
Likert-type level			
Strongly Agree	47	30.90%	123.6
Agree	75	49.30%	147.9
Disagree	23	15.10%	30.2
Strongly Disagree	7	4.60%	4.6
Total	152		306.3

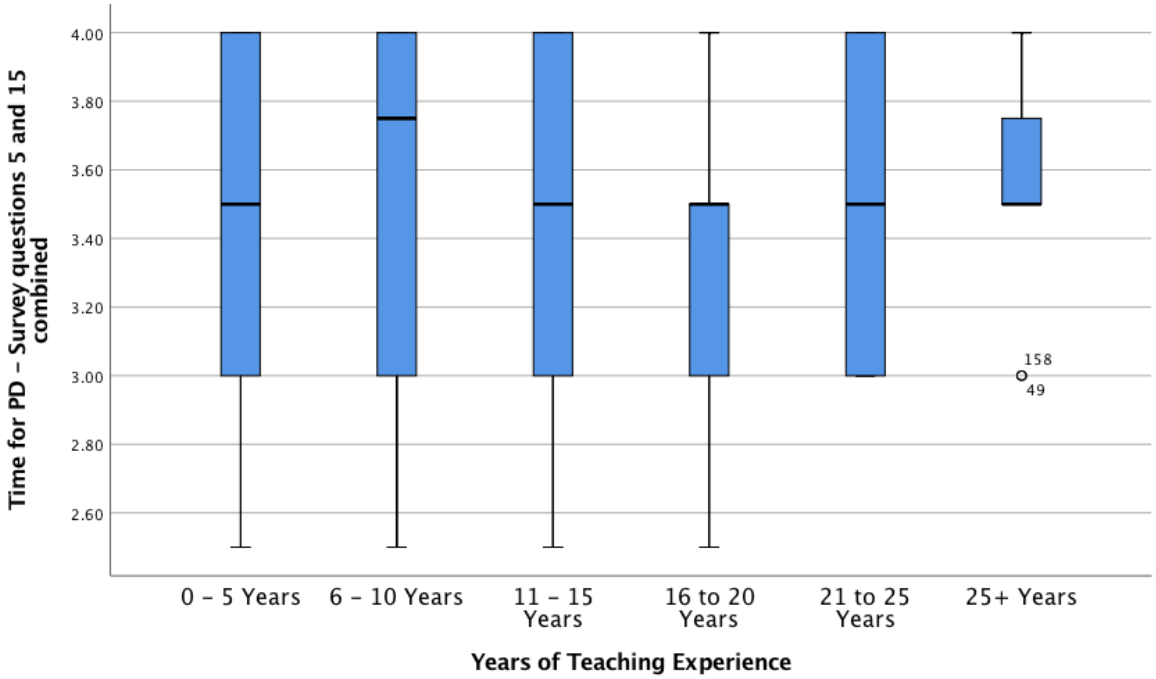
PROFESSIONAL DEVELOPMENT (MSNS)	Category Weight 629.4		
	Number of responses	**Percentage**	**Weight**
Survey Question 12. I prefer school based professional development to professional development that is district based.			
Likert-type level			
Strongly Agree	65	41.90%	167.6
Agree	48	31%	93
Disagree	38	24.50%	49
Strongly Disagree	4	2.60%	2.6
Total	155		312.2
Survey Question 22. School site professional development is more appealing to me than district based professional development.			
Likert-type level			
Strongly Agree	67	44.10%	176.4
Agree	48	31.60%	94.8
Disagree	33	21.70%	43.4
Strongly Disagree	4	2.60%	2.6
Total	152		317.2

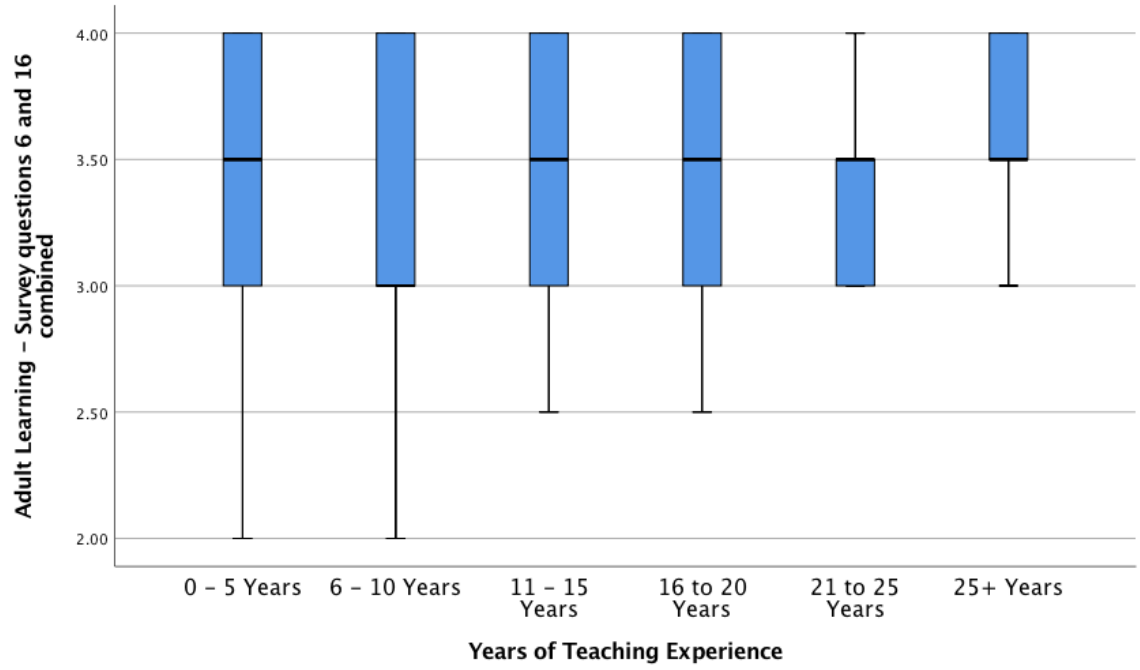
APPENDIX M

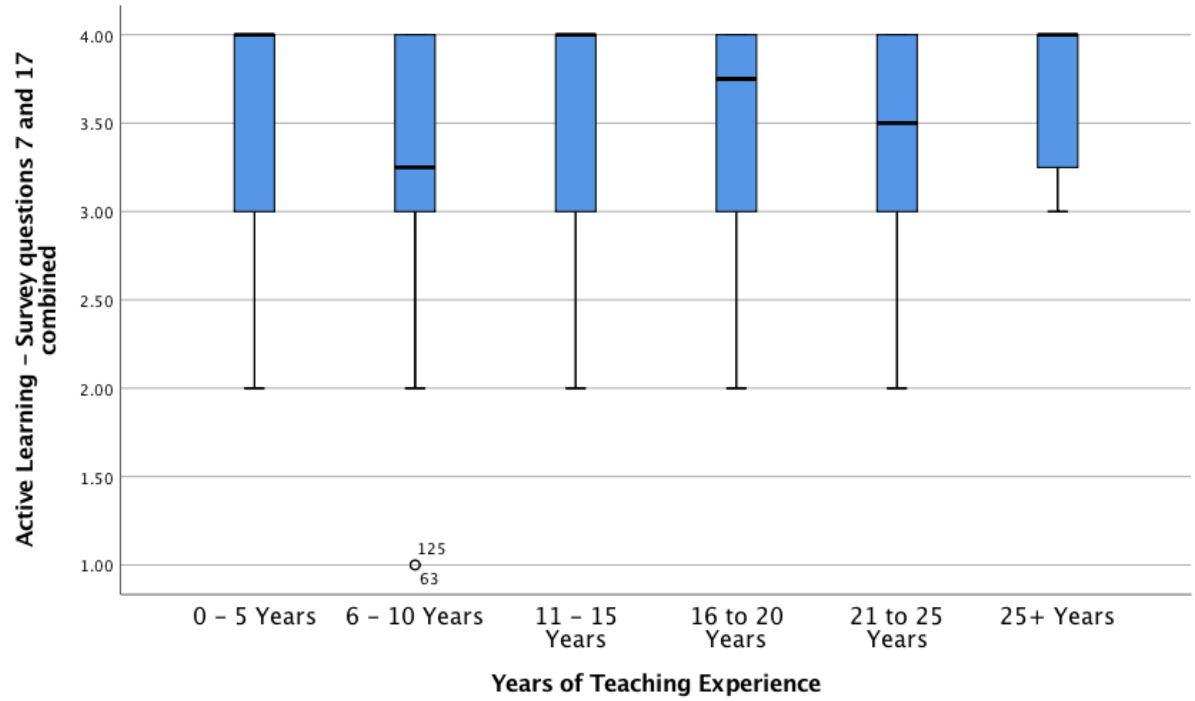
EXPLORE BOXPLOTS FOR OUTLIERS IN INDIVIDUAL ATTRIBUTES COMPARED TO YEARS OF TEACHING EXPERIENCE SUBGROUPS

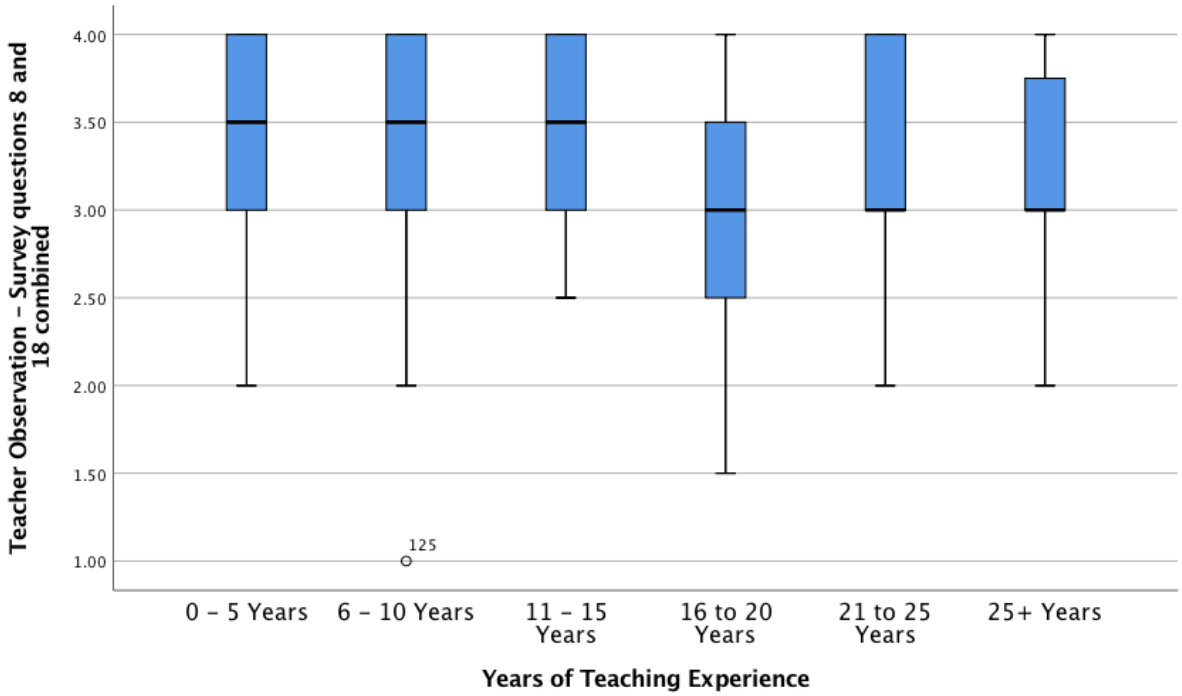

Context – Survey questions 3 and 13 combined
4.00
3.80
3.60
3.40
3.20
3.00
2.80
2.60
0 – 5 Years
6 – 10 Years
11 – 15 Years
16 to 20 Years
21 to 25 Years
25+ Years
Years of Teaching Experience

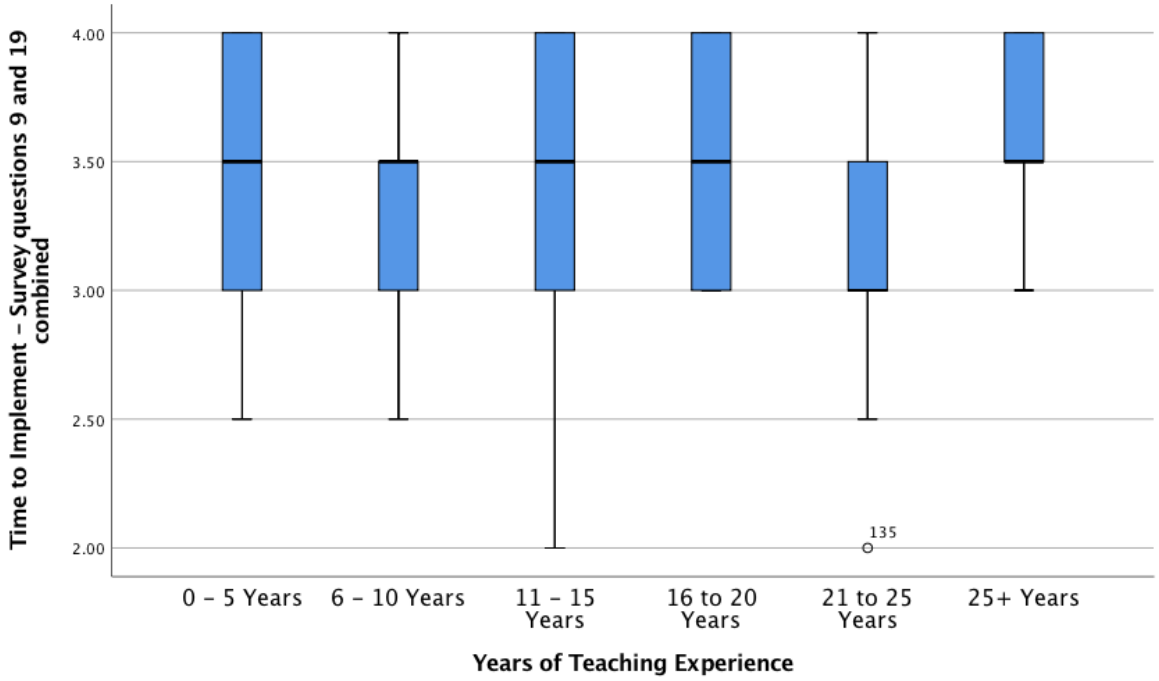

Collaboration – Survey questions 4 and 14 combined
4.00
3.50
3.00
2.50
2.00
1.50
1.00
125
0 – 5 Years
6 – 10 Years
11 – 15 Years
16 to 20 Years
21 to 25 Years
25+ Years
Years of Teaching Experience

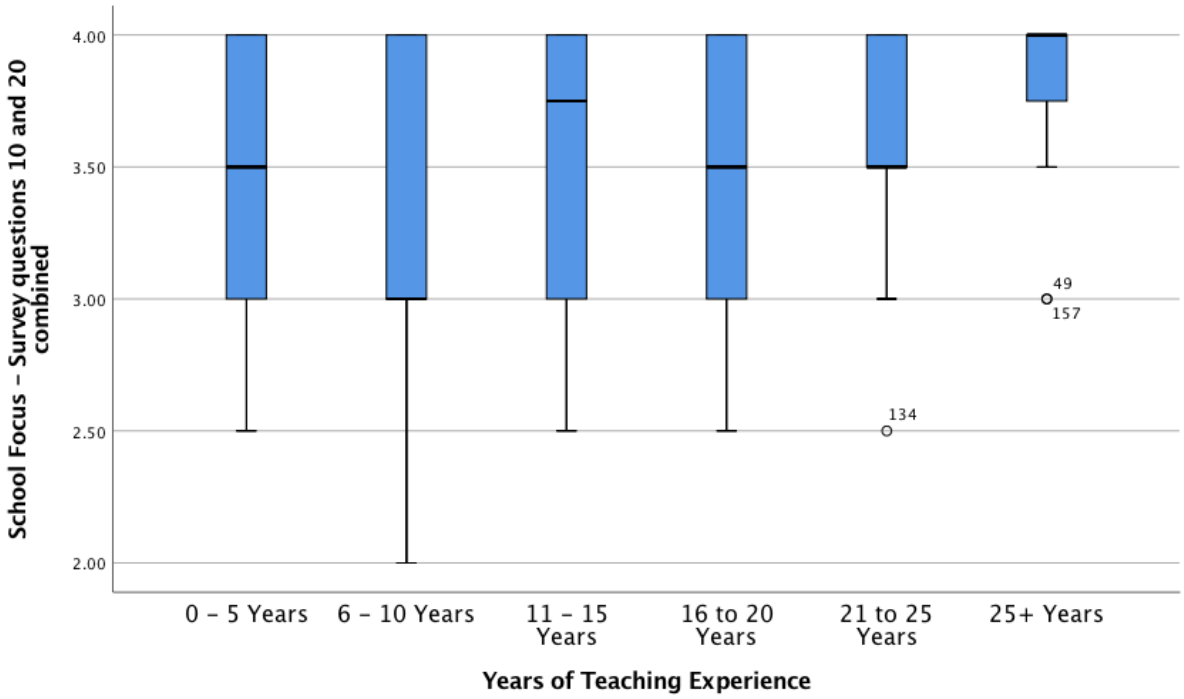

Time for PD – Survey questions 5 and 15 combined
4.00
3.80
3.60
3.40
3.20
3.00
2.80
2.60
158
49
0 – 5 Years
6 – 10 Years
11 – 15 Years
16 to 20 Years
21 to 25 Years
25+ Years
Years of Teaching Experience

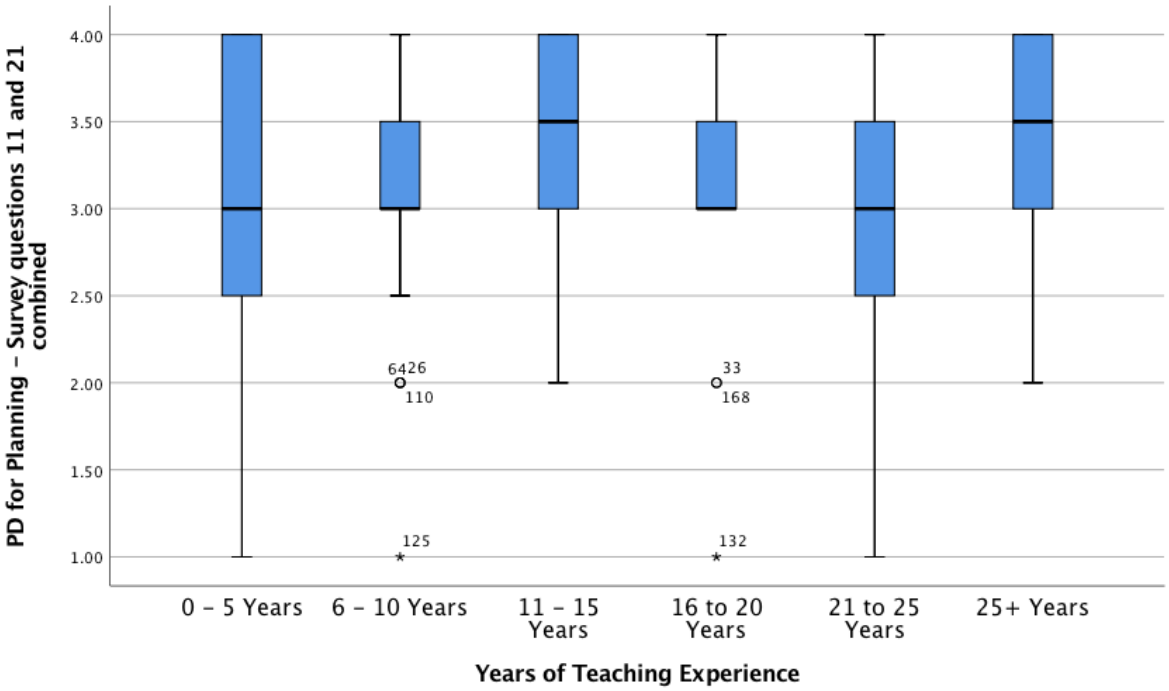

Adult Learning – Survey questions 6 and 16 combined
4.00
3.50
3.00
2.50
2.00
0 – 5 Years
6 – 10 Years
11 – 15 Years
16 to 20 Years
21 to 25 Years
25+ Years
Years of Teaching Experience

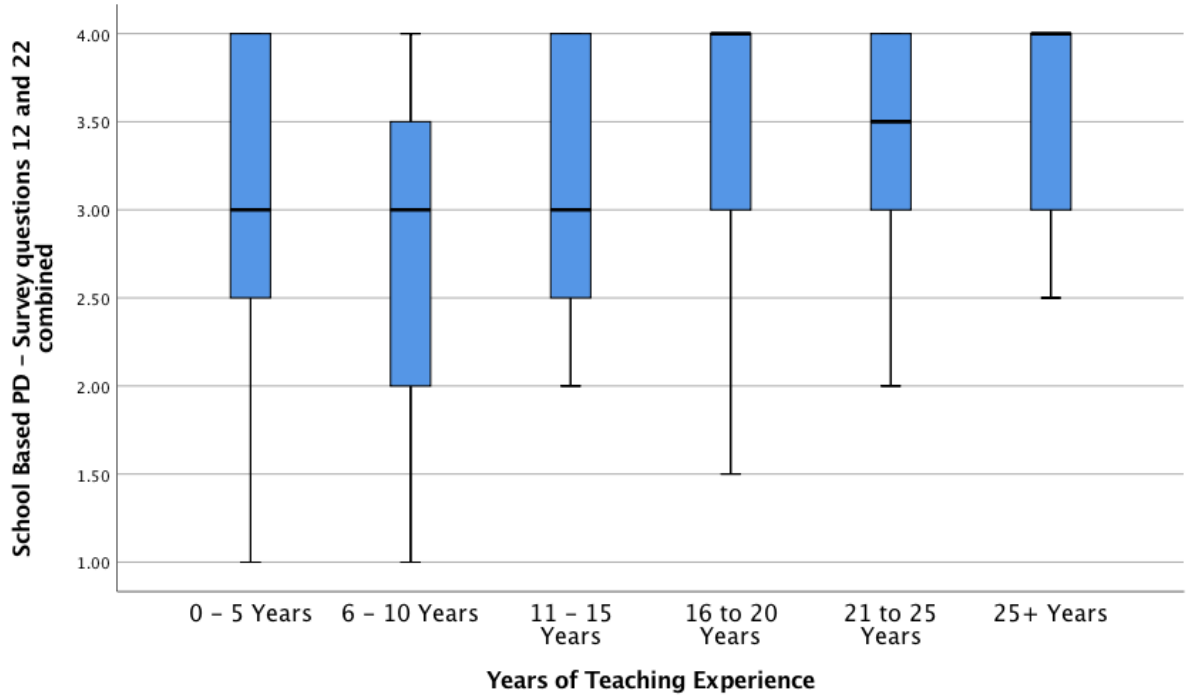

Active Learning – Survey questions 7 and 17 combined
4.00
3.50
3.00
2.50
2.00
1.50
1.00
125
63
0 – 5 Years
6 – 10 Years
11 – 15 Years
16 to 20 Years
21 to 25 Years
25+ Years
Years of Teaching Experience


Teacher Observation – Survey questions 8 and 18 combined
4.00
3.50
3.00
2.50
2.00
1.50
1.00
125
0 – 5 Years
6 – 10 Years
11 – 15 Years
16 to 20 Years
21 to 25 Years
25+ Years
Years of Teaching Experience


Time to Implement – Survey questions 9 and 19 combined
4.00
3.50
3.00
2.50
2.00
135
0 – 5 Years
6 – 10 Years
11 – 15 Years
16 to 20 Years
21 to 25 Years
25+ Years
Years of Teaching Experience


School Focus – Survey questions 10 and 20 combined
4.00
3.50
3.00
2.50
2.00
49
157
134
0 – 5 Years
6 – 10 Years
11 – 15 Years
16 to 20 Years
21 to 25 Years
25+ Years
Years of Teaching Experience


PD for Planning – Survey questions 11 and 21 combined
4.00
3.50
3.00
2.50
2.00
1.50
1.00
6426
110
125
33
168
132
0 – 5 Years
6 – 10 Years
11 – 15 Years
16 to 20 Years
21 to 25 Years
25+ Years
Years of Teaching Experience


School Based PD – Survey questions 12 and 22 combined
4.00
3.50
3.00
2.50
2.00
1.50
1.00
0 – 5 Years
6 – 10 Years
11 – 15 Years
16 to 20 Years
21 to 25 Years
25+ Years
Years of Teaching Experience

APPENDIX N

SHAPIRO – WILK TEST OF NORMALITY FOR YEARS OF TEACHING EXPERIENCE COMPARED TO EACH INDIVIDUAL ATTRIBUTE

Tests of Normality

	Years of Teaching Experience	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	Df	Sig.
Context - Survey questions 3 and 13 combined	0 - 5 Years	.329	57	.000	.737	57	.000
	6 - 10 Years	.222	34	.000	.844	34	.000
	11 - 15 Years	.268	26	.000	.782	26	.000
	16 to 20 Years	.249	18	.004	.783	18	.001
	21 to 25 Years	.272	9	.054	.805	9	.024
	25+ Years	.448	11	.000	.572	11	.000
Collaboration - Survey questions 4 and 14 combined	0 - 5 Years	.339	57	.000	.730	57	.000
	6 - 10 Years	.229	34	.000	.779	34	.000
	11 - 15 Years	.355	26	.000	.715	26	.000
	16 to 20 Years	.261	18	.002	.834	18	.005
	21 to 25 Years	.286	9	.033	.727	9	.003
	25+ Years	.448	11	.000	.572	11	.000
Time for PD - Survey questions 5 and 15 combined	0 - 5 Years	.277	57	.000	.805	57	.000
	6 - 10 Years	.312	34	.000	.776	34	.000
	11 - 15 Years	.264	26	.000	.815	26	.000
	16 to 20 Years	.321	18	.000	.842	18	.006
	21 to 25 Years	.209	9	.200*	.823	9	.037
	25+ Years	.279	11	.017	.822	11	.018
Adult Learning - Survey questions 6 and 16 combined	0 - 5 Years	.203	57	.000	.856	57	.000
	6 - 10 Years	.195	34	.002	.868	34	.001
	11 - 15 Years	.235	26	.001	.841	26	.001
	16 to 20 Years	.278	18	.001	.794	18	.001
	21 to 25 Years	.272	9	.054	.805	9	.024
	25+ Years	.282	11	.015	.786	11	.006
Active Learning - Survey questions 7 and 17 combined	0 - 5 Years	.296	57	.000	.774	57	.000
	6 - 10 Years	.209	34	.001	.839	34	.000
	11 - 15 Years	.366	26	.000	.707	26	.000
	16 to 20 Years	.294	18	.000	.789	18	.001
	21 to 25 Years	.257	9	.087	.851	9	.077
	25+ Years	.391	11	.000	.662	11	.000
Teacher Observation - Survey questions 8 and 18 combined	0 - 5 Years	.230	57	.000	.823	57	.000
	6 - 10 Years	.231	34	.000	.813	34	.000
	11 - 15 Years	.235	26	.001	.841	26	.001
	16 to 20 Years	.192	18	.078	.908	18	.079
	21 to 25 Years	.260	9	.081	.867	9	.113
	25+ Years	.183	11	.200*	.909	11	.238

Time to Implement - Survey questions 9 and 19 combined	0 - 5 Years	.243	57	.000	.802	57	.000
	6 - 10 Years	.221	34	.000	.852	34	.000
	11 - 15 Years	.289	26	.000	.845	26	.001
	16 to 20 Years	.214	18	.029	.812	18	.002
	21 to 25 Years	.234	9	.166	.917	9	.368
	25+ Years	.232	11	.100	.822	11	.018
School Focus - Survey questions 10 and 20 combined	0 - 5 Years	.247	57	.000	.822	57	.000
	6 - 10 Years	.237	34	.000	.847	34	.000
	11 - 15 Years	.318	26	.000	.758	26	.000
	16 to 20 Years	.252	18	.004	.815	18	.002
	21 to 25 Years	.245	9	.127	.825	9	.039
	25+ Years	.438	11	.000	.600	11	.000
PD for Planning - Survey questions 11 and 21 combined	0 - 5 Years	.176	57	.000	.894	57	.000
	6 - 10 Years	.300	34	.000	.825	34	.000
	11 - 15 Years	.214	26	.003	.816	26	.000
	16 to 20 Years	.319	18	.000	.844	18	.007
	21 to 25 Years	.143	9	.200*	.944	9	.620
	25+ Years	.194	11	.200*	.848	11	.040
School Based PD - Survey questions 12 and 22 combined	0 - 5 Years	.230	57	.000	.846	57	.000
	6 - 10 Years	.163	34	.023	.918	34	.014
	11 - 15 Years	.211	26	.004	.837	26	.001
	16 to 20 Years	.320	18	.000	.732	18	.000
	21 to 25 Years	.260	9	.081	.867	9	.113
	25+ Years	.346	11	.001	.741	11	.002

APPENDIX O

LEVENE'S TEST OF HOMOGENEITY OF VARIANCES FOR TEACHING YEARS OF EXPERIENCE SUBGROUPS COMPARED TO INDIVIDUAL ATTRIBUTES

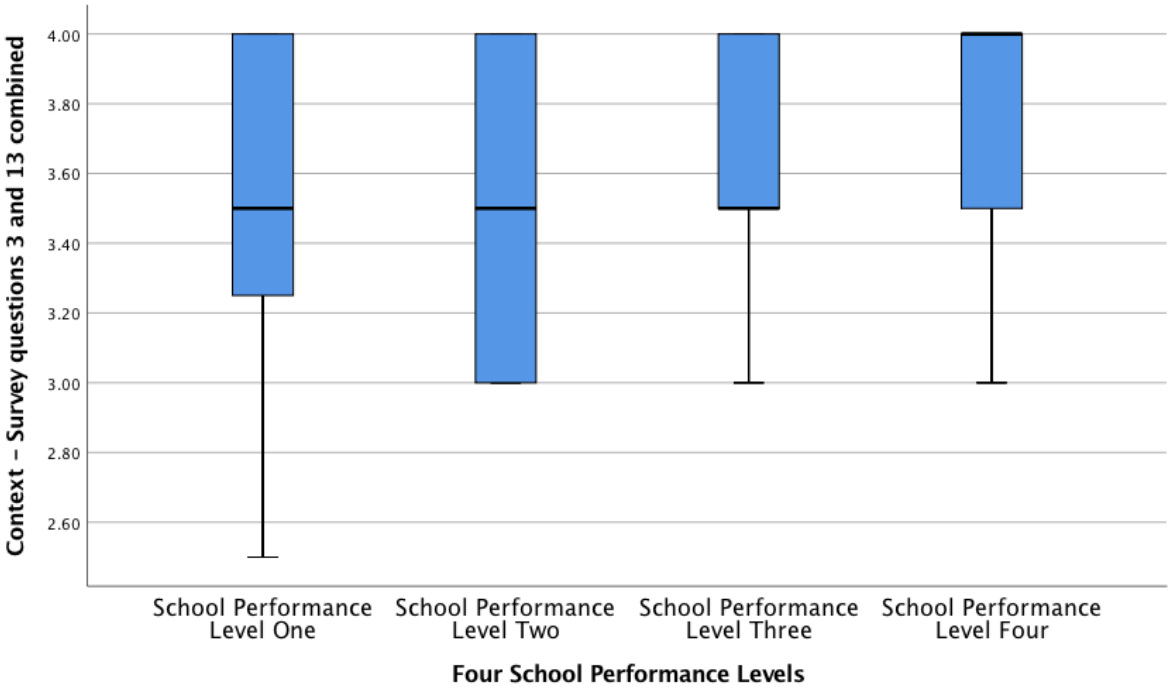
Test of Homogeneity of Variances

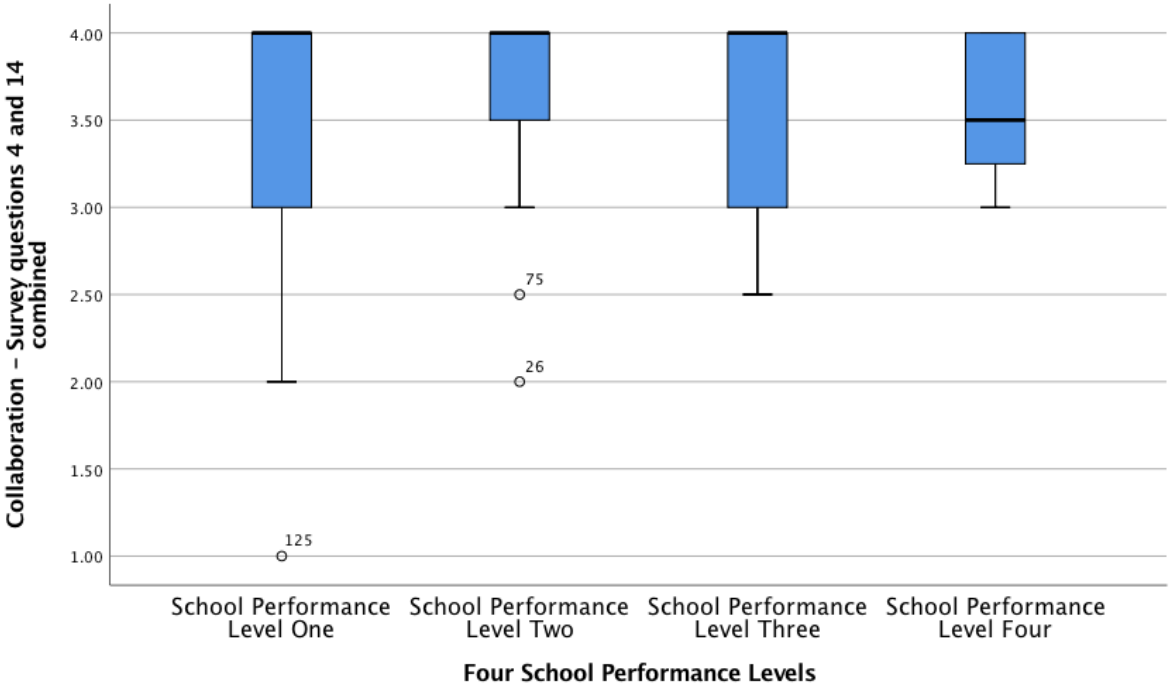
		Levene Statistic	df1	df2	Sig.
Context - Survey questions 3 and 13 combined	Based on Mean	1.355	5	152	.245
	Based on Median	.892	5	152	.488
	Based on Median and with adjusted df	.892	5	123.769	.489
	Based on trimmed mean	1.450	5	152	.210
Collaboration - Survey questions 4 and 14 combined	Based on Mean	4.068	5	151	.002
	Based on Median	2.470	5	151	.035
	Based on Median and with adjusted df	2.470	5	134.343	.036
	Based on trimmed mean	3.291	5	151	.008
Time for PD - Survey questions 5 and 15 combined	Based on Mean	3.332	5	151	.007
	Based on Median	1.750	5	151	.127
	Based on Median and with adjusted df	1.750	5	96.289	.131
	Based on trimmed mean	3.215	5	151	.009
Adult Learning - Survey questions 6 and 16 combined	Based on Mean	2.386	5	151	.041
	Based on Median	1.693	5	151	.140
	Based on Median and with adjusted df	1.693	5	132.247	.141
	Based on trimmed mean	2.264	5	151	.051
Active Learning - Survey questions 7 and 17 combined	Based on Mean	1.393	5	151	.230
	Based on Median	.925	5	151	.466
	Based on Median and with adjusted df	.925	5	144.389	.467
	Based on trimmed mean	1.315	5	151	.260
Teacher Observation - Survey questions 8 and 18 combined	Based on Mean	1.060	5	151	.385
	Based on Median	.563	5	151	.728
	Based on Median and with adjusted df	.563	5	115.469	.728
	Based on trimmed mean	.922	5	151	.469
Time to Implement - Survey questions 9 and 19 combined	Based on Mean	.792	5	149	.557
	Based on Median	.649	5	149	.662
	Based on Median and with adjusted df	.649	5	114.688	.663
	Based on trimmed mean	.744	5	149	.591

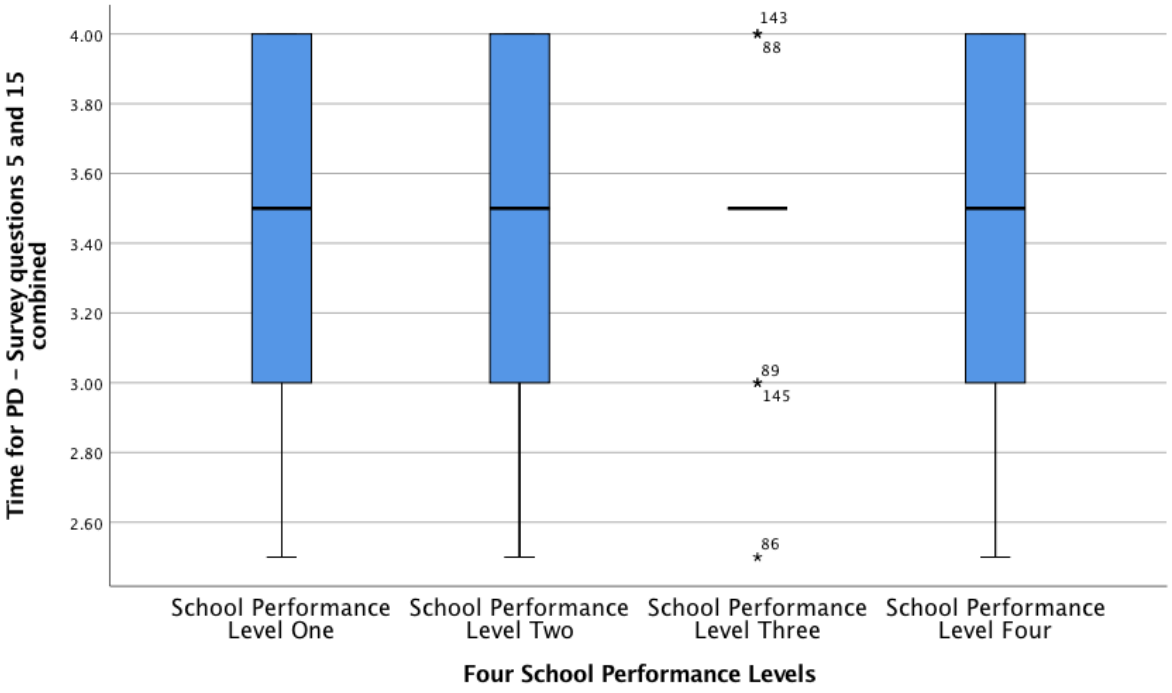
School Focus - Survey questions 10 and 20 combined	Based on Mean	.880	5	149	.496
	Based on Median	.948	5	149	.452
	Based on Median and with adjusted df	.948	5	111.408	.453
	Based on trimmed mean	1.040	5	149	.396
PD for Planning - Survey questions 11 and 21 combined	Based on Mean	1.278	5	149	.276
	Based on Median	1.348	5	149	.247
	Based on Median and with adjusted df	1.348	5	143.813	.247
	Based on trimmed mean	1.258	5	149	.285
School Based PD - Survey questions 12 and 22 combined	Based on Mean	.739	5	149	.595
	Based on Median	.590	5	149	.707
	Based on Median and with adjusted df	.590	5	107.983	.707
	Based on trimmed mean	.770	5	149	.573

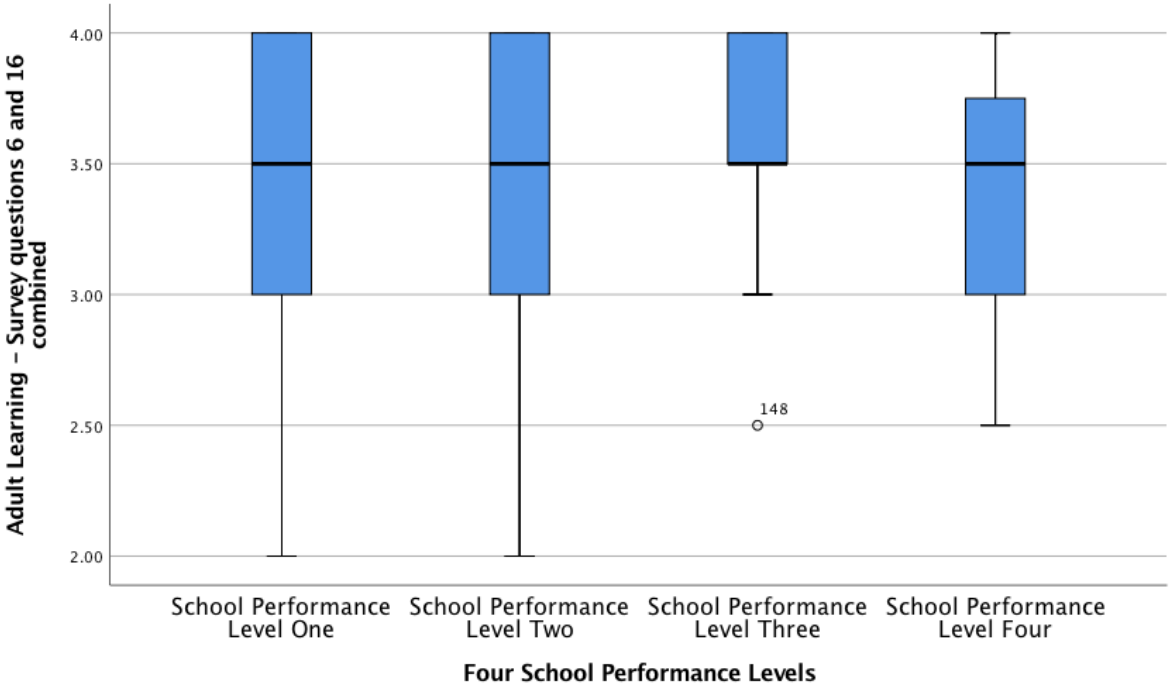
APPENDIX P

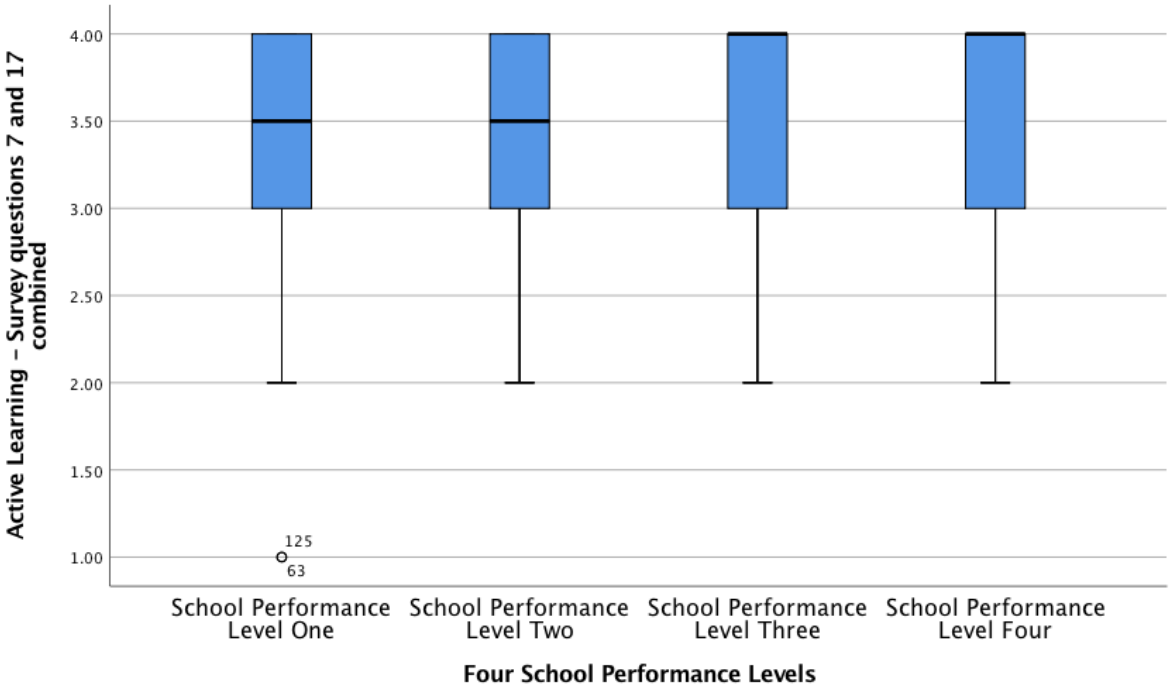
EXPLORE BOXPLOTS FOR INDIVIDUAL ATTRIBUTES COMPARED TO SCHOOL PERFORMANCE LEVEL SUBGROUPS

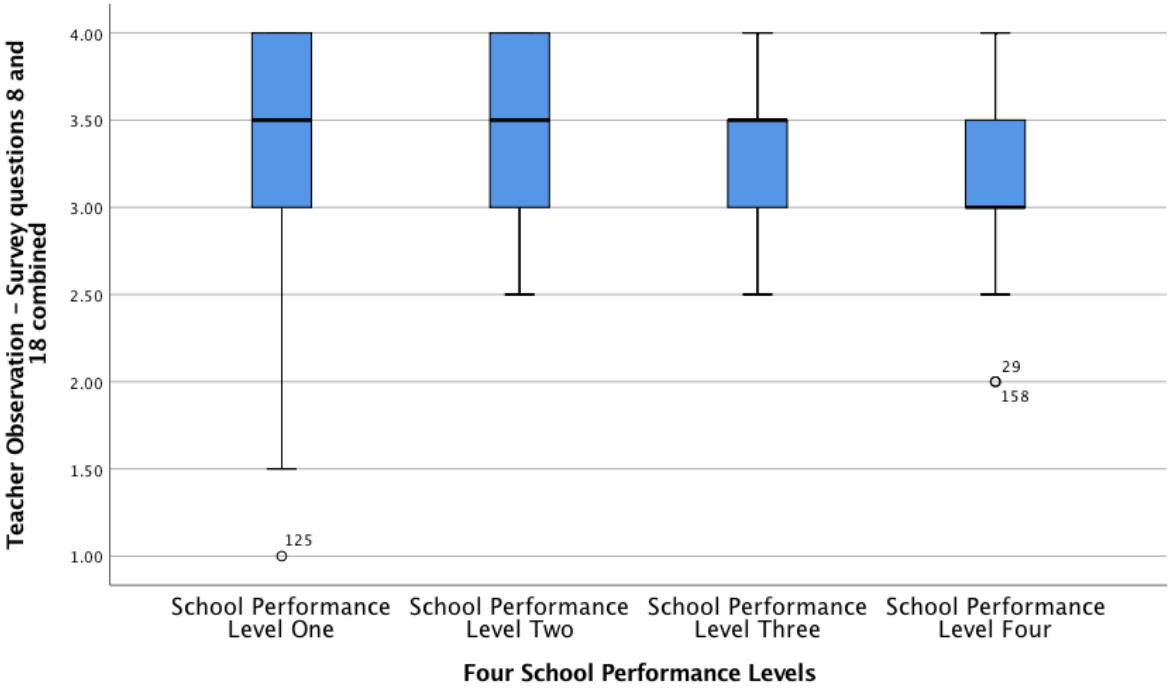

Context – Survey questions 3 and 13 combined
4.00
3.80
3.60
3.40
3.20
3.00
2.80
2.60
School Performance Level One
School Performance Level Two
School Performance Level Three
School Performance Level Four
Four School Performance Levels

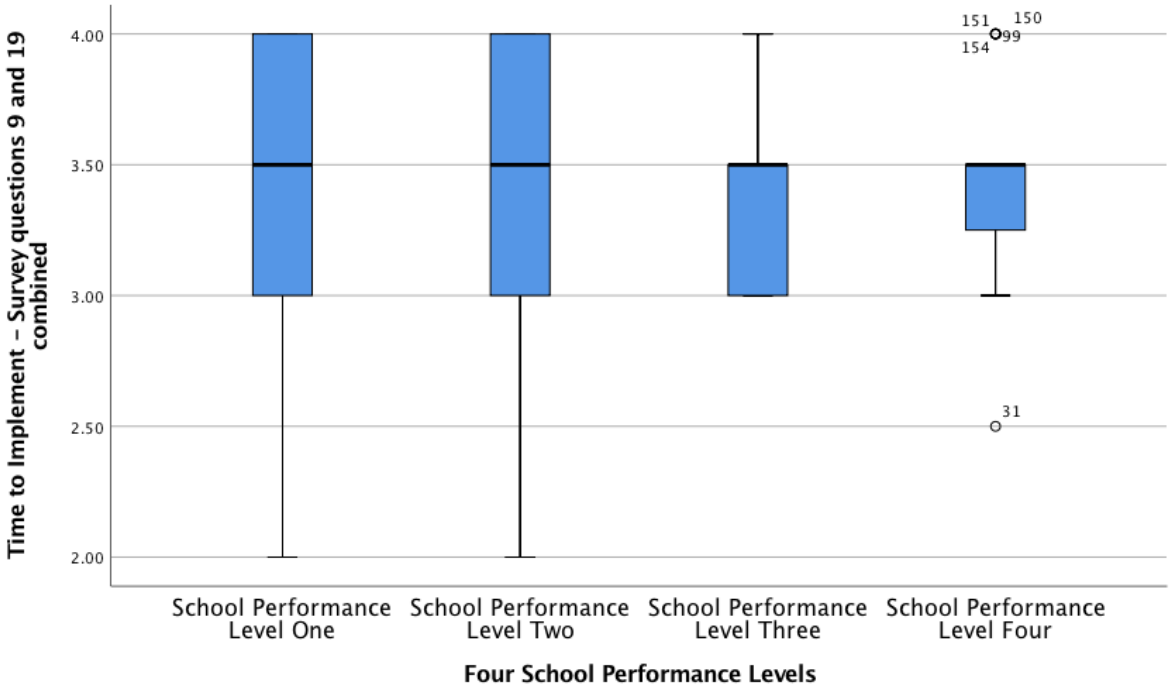

Collaboration – Survey questions 4 and 14 combined
4.00
3.50
3.00
2.50
2.00
1.50
1.00
75
26
125
School Performance Level One
School Performance Level Two
School Performance Level Three
School Performance Level Four
Four School Performance Levels

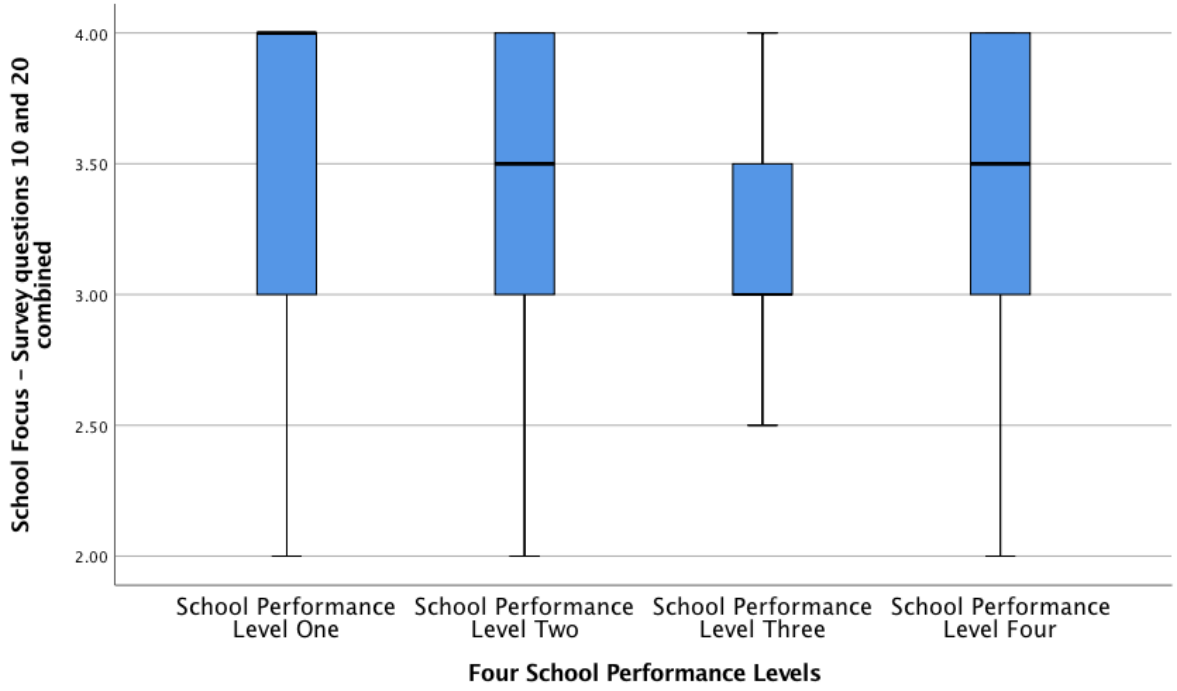

Time for PD – Survey questions 5 and 15 combined
4.00
3.80
3.60
3.40
3.20
3.00
2.80
2.60
143
88
89
145
86
School Performance Level One
School Performance Level Two
School Performance Level Three
School Performance Level Four
Four School Performance Levels

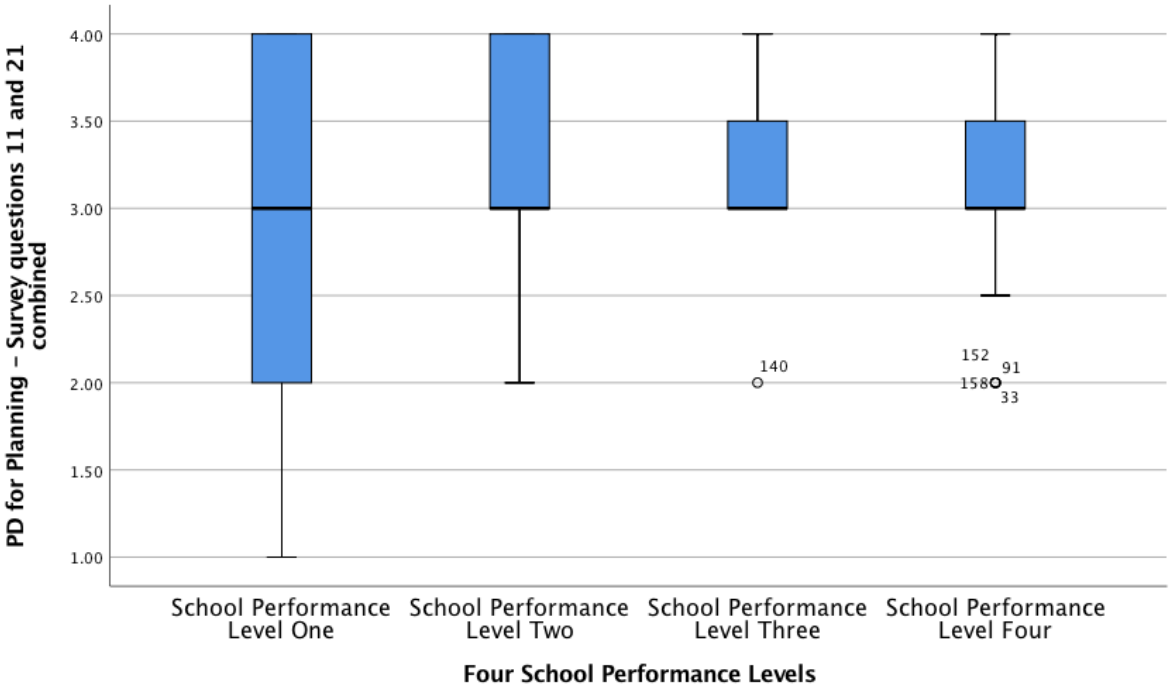

Adult Learning – Survey questions 6 and 16 combined
4.00
3.50
3.00
2.50
2.00
148
School Performance Level One
School Performance Level Two
School Performance Level Three
School Performance Level Four
Four School Performance Levels

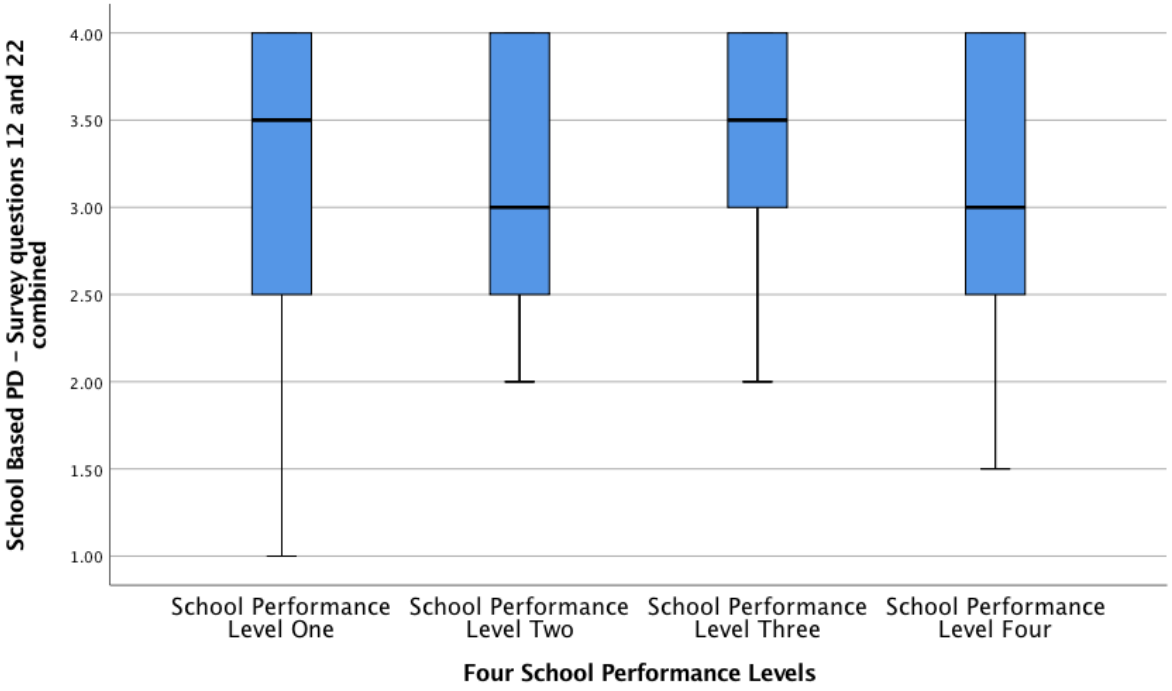

Active Learning – Survey questions 7 and 17 combined
4.00
3.50
3.00
2.50
2.00
1.50
1.00
125
63
School Performance Level One
School Performance Level Two
School Performance Level Three
School Performance Level Four
Four School Performance Levels


Teacher Observation – Survey questions 8 and 18 combined
4.00
3.50
3.00
2.50
2.00
1.50
1.00
29
158
125
School Performance Level One
School Performance Level Two
School Performance Level Three
School Performance Level Four
Four School Performance Levels


Time to Implement – Survey questions 9 and 19 combined
4.00
3.50
3.00
2.50
2.00
151
150
154
99
31
School Performance Level One
School Performance Level Two
School Performance Level Three
School Performance Level Four
Four School Performance Levels


School Focus – Survey questions 10 and 20 combined
4.00
3.50
3.00
2.50
2.00
School Performance Level One
School Performance Level Two
School Performance Level Three
School Performance Level Four
Four School Performance Levels


PD for Planning – Survey questions 11 and 21 combined
4.00
3.50
3.00
2.50
2.00
1.50
1.00
140
152
91
158
33
School Performance Level One
School Performance Level Two
School Performance Level Three
School Performance Level Four
Four School Performance Levels


School Based PD – Survey questions 12 and 22 combined
4.00
3.50
3.00
2.50
2.00
1.50
1.00
School Performance Level One
School Performance Level Two
School Performance Level Three
School Performance Level Four
Four School Performance Levels

APPENDIX Q

SHAPIRO – WILK TEST OF NORMALITY FOR SCHOOL PERFORMANCE LEVEL SUBGROUPS COMPARED TO EACH INDIVIDUAL ATTRIBUTE

Tests of Normality

	Four School Performance Levels	Kolmogorov-Smirnov[a] Statistic	df	Sig.	Shapiro-Wilk Statistic	df	Sig.
Context - Survey questions 3 and 13 combined	School Performance Level One	.302	59	.000	.785	59	.000
	School Performance Level Two	.250	49	.000	.789	49	.000
	School Performance Level Three	.265	14	.009	.798	14	.005
	School Performance Level Four	.320	31	.000	.752	31	.000
Collaboration - Survey questions 4 and 14 combined	School Performance Level One	.291	59	.000	.731	59	.000
	School Performance Level Two	.313	49	.000	.761	49	.000
	School Performance Level Three	.344	14	.000	.753	14	.001
	School Performance Level Four	.285	31	.000	.771	31	.000
Time for PD - Survey questions 5 and 15 combined	School Performance Level One	.294	59	.000	.794	59	.000
	School Performance Level Two	.229	49	.000	.830	49	.000
	School Performance Level Three	.359	14	.000	.800	14	.005
	School Performance Level Four	.230	31	.000	.836	31	.000
Adult Learning - Survey questions 6 and 16 combined	School Performance Level One	.221	59	.000	.857	59	.000
	School Performance Level Two	.226	49	.000	.837	49	.000
	School Performance Level Three	.323	14	.000	.795	14	.004
	School Performance Level Four	.206	31	.002	.874	31	.002
Active Learning - Survey questions 7 and 17 combined	School Performance Level One	.238	59	.000	.825	59	.000
	School Performance Level Two	.295	49	.000	.800	49	.000
	School Performance Level Three	.328	14	.000	.737	14	.001
	School Performance Level Four	.369	31	.000	.713	31	.000
Teacher Observation - Survey questions 8 and 18 combined	School Performance Level One	.196	59	.000	.819	59	.000
	School Performance Level Two	.189	49	.000	.862	49	.000
	School Performance Level Three	.211	14	.090	.889	14	.079
	School Performance Level Four	.231	31	.000	.881	31	.003
Time to Implement - Survey questions 9 and 19 combined	School Performance Level One	.237	59	.000	.833	59	.000
	School Performance Level Two	.193	49	.000	.855	49	.000
	School Performance Level Three	.253	14	.015	.821	14	.009
	School Performance Level Four	.294	31	.000	.840	31	.000
School Focus - Survey questions 10 and 20 combined	School Performance Level One	.324	59	.000	.765	59	.000
	School Performance Level Two	.225	49	.000	.853	49	.000
	School Performance Level Three	.345	14	.000	.801	14	.005
	School Performance Level Four	.234	31	.000	.830	31	.000
PD for Planning - Survey questions 11 and 21 combined	School Performance Level One	.179	59	.000	.871	59	.000
	School Performance Level Two	.213	49	.000	.873	49	.000
	School Performance Level Three	.344	14	.000	.776	14	.003

	School Performance Level Four	.224	31	.000	.884	31	.003
School Based PD - Survey questions 12 and 22 combined	School Performance Level One	.258	59	.000	.801	59	.000
	School Performance Level Two	.170	49	.001	.866	49	.000
	School Performance Level Three	.246	14	.021	.828	14	.011
	School Performance Level Four	.210	31	.001	.861	31	.001

a. Lilliefors Significance Correction

APPENDIX R

LEVENE STATISTIC FOR SCHOOL PERFORMANCE LEVEL SUBGROUPS COMPARED TO INDIVIDUAL ATTRIBUTES

Test of Homogeneity of Variances

		Levene Statistic	df1	df2	Sig.
Context - Survey questions 3 and 13 combined	Based on Mean	1.029	3	152	.381
	Based on Median	.888	3	152	.449
	Based on Median and with adjusted df	.888	3	132.808	.449
	Based on trimmed mean	1.063	3	152	.367
Collaboration - Survey questions 4 and 14 combined	Based on Mean	.944	3	151	.421
	Based on Median	.360	3	151	.782
	Based on Median and with adjusted df	.360	3	123.770	.782
	Based on trimmed mean	.815	3	151	.487
Time for PD - Survey questions 5 and 15 combined	Based on Mean	1.790	3	151	.152
	Based on Median	2.175	3	151	.093
	Based on Median and with adjusted df	2.175	3	145.822	.093
	Based on trimmed mean	1.961	3	151	.122
Adult Learning - Survey questions 6 and 16 combined	Based on Mean	3.270	3	151	.023
	Based on Median	2.980	3	151	.033
	Based on Median and with adjusted df	2.980	3	150.344	.033
	Based on trimmed mean	2.972	3	151	.034
Active Learning - Survey questions 7 and 17 combined	Based on Mean	3.118	3	151	.028
	Based on Median	2.652	3	151	.051
	Based on Median and with adjusted df	2.652	3	130.634	.051
	Based on trimmed mean	2.941	3	151	.035
Teacher Observation - Survey questions 8 and 18 combined	Based on Mean	1.018	3	151	.387
	Based on Median	.591	3	151	.622
	Based on Median and with adjusted df	.591	3	130.819	.622
	Based on trimmed mean	.728	3	151	.537
Time to Implement - Survey questions 9 and 19 combined	Based on Mean	4.798	3	149	.003
	Based on Median	4.374	3	149	.006
	Based on Median and with adjusted df	4.374	3	147.174	.006
	Based on trimmed mean	4.533	3	149	.005
	Based on Mean	1.070	3	149	.364

School Focus - Survey questions 10 and 20 combined	Based on Median	.679	3	149	.566
	Based on Median and with adjusted df	.679	3	122.142	.566
	Based on trimmed mean	.965	3	149	.411
PD for Planning - Survey questions 11 and 21 combined	Based on Mean	5.460	3	149	.001
	Based on Median	5.544	3	149	.001
	Based on Median and with adjusted df	5.544	3	140.357	.001
	Based on trimmed mean	5.117	3	149	.002
School Based PD - Survey questions 12 and 22 combined	Based on Mean	1.314	3	149	.272
	Based on Median	.535	3	149	.659
	Based on Median and with adjusted df	.535	3	136.268	.659
	Based on trimmed mean	.979	3	149	.404

VITA

Harry Robert Walter, III was born in Phoenix, AZ, to the parents of Harry and Della Walter. He is the fourth of four children, an older brother and two older sisters. He attended elementary school in Phoenix, AZ and Rittman, OH. He also attended Rittman Junior High School and graduated from Rittman High School in 1975. After graduation, he attended Bluffton University in Bluffton, Ohio, and graduated in 1980 with a degree in Health, Physical Education, and Recreation. After working for the Houston Independent School District's outdoor education program for one and a half years during 1981 and 1982, Harry began teaching for the Hamilton County (TN) Department of Education in 1982. He graduated with a master's degree in Education from Trevecca Nazarene University 1991. After retiring from the Hamilton County Department of Education in 2012, after a 30-year career as a teacher and administrator, Harry spent two years serving the Ivy School Chattanooga as a teacher and administrator. He is currently in his sixth year as an educator for Silverdale Baptist Academy.