

COMPARING TEACHERS', ADMINISTRATORS', AND
INSTRUCTIONAL COACHES' PERCEPTIONS OF PERSONALIZED
PROFESSIONAL DEVELOPMENT

A DISSERTATION
SUBMITTED TO THE GRADUATE SCHOOL
IN PARTIAL FULFILLMENT OF THE REQUIREMENTS
FOR THE DEGREE
DOCTOR OF EDUCATION

BY
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BALL STATE UNIVERSITY

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DEDICATION

To my wife, Shannon.

Your never-ending love and support is an inspiration.

To my sons, Kean and Quinn.

Your patience and support mean the world to me.

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ABSTRACT

DISSERTATION: Comparing Teachers', Administrators', and Instructional Coaches'

Perceptions of Personalized Professional Development

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The purpose of teacher professional development is to enhance teacher quality so that students may achieve at high levels. Many times, professional development is too general or not connected to teachers' needs or learning preferences.

The purpose of this study was to investigate and compare the perceptions of teachers, administrators, and instructional coaches on personalized professional development (PPD) practices in the Metropolitan School District (MSD) of Warren Township. MSD of Warren Township is a large, mostly urban school district located in central Indiana. After reviewing the literature, the need for this specific research became evident as there were limited quantitative findings available regarding PPD at the national, state, or district levels. Therefore, this study sought to provide research to inform current practice in the district of the study as well as other districts looking to implement PPD.

Data for this study were collected using the second version of Learning Forward's Standards Assessment Inventory (SAI-2). The SAI-2 is an online, anonymous Likert-scale survey tool that was developed based on the seven Learning Forward Professional Learning

Standards. The standards are: communities, leadership, resources, data, learning designs, implementation, and outcomes.

The results of this study suggested that in most cases, teachers, administrators, and instructional coaches were in agreement regarding the quality of the PPD being delivered in MSD of Warren Township. Although no statistically significant differences in perceptions about PPD were revealed between the groups, the results still provided important information for those in MSD Warren charged with creating high quality, effective, PPD. Implications for practice included recommendations for planning and improving PPD programs at the district and school level.

Keywords: personalized professional development, Learning Forward, SAI-2, teacher quality

CHAPTER ONE: INTRODUCTION

In this current educational landscape of intense accountability, high quality professional development should be the focus for supporting teachers in improving instruction. Most school districts provide professional development opportunities for their teachers in some form or fashion. Professional development consists of activities provided to teachers to improve their professional knowledge, skills, and effectiveness. However, at present, most of this professional development misses its target (Darling-Hammond, 2012; The New Teacher Project, 2015). One-time workshops or isolated professional development sessions are the most prevalent, and unfortunately, not the most successful (Yoon, Duncan, Lee, Scarloss, & Shapley, 2007).

Research has revealed that the number one school-based influence on student learning is the quality of the teaching in the classroom (McCaffrey, Lockwood, Koretz, & Hamilton, 2003; Rivkin, Hanushek, & Kain, 2000; Rowan, Correnti & Miller, 2002; Wright, Horn, & Sanders, 1997). The more years that students work with effective teachers, the higher their measured achievement (Kaplan & Owings, 2004). The aim of a successful teacher professional development program is to improve teacher learning and performance, and in the end to improve student learning and achievement. It is predominately through professional development that districts and schools can improve teacher quality (Jaquith, Mindich, Wei, & Darling-Hammond, 2010). With the complexity and demands of teaching in today's schools, teachers rely on professional development to cultivate new skills and strategies to reach the diverse student needs. Teachers believe that professional development can result in positive changes in teacher practice, make them more effective, and benefit their students (Luft & Hewson, 2014; Whitehurst, 2002). However, not all professional development yields positive results and few opportunities link to student outcomes (Yoon et al, 2007).

Teachers want and require support that is tailored to their specific areas of need, grade level, or subject area. Professional development that is general to all cannot effectively meet the vast variety of needs that exist with today's classroom teachers. In 2014, a study conducted by the Bill and Melinda Gates Foundation along Boston Consulting Group surveyed and interviewed 1300 teachers and other education professionals at the district and state level about professional development. One of the findings in this study was that professional development needed to be relevant to the individual teacher. In other words, teachers want professional development to be personalized. Personalized professional development, or personalized professional learning experiences, focuses on learning in context. The context is targeted to the individual teacher and to the individual setting. Other elements that are related to personalized professional development include choice and interests, learning style, form and format, transparency, and reflection. These elements will be discussed in more detail in Chapter 2.

Statement of Problem

There is no argument between educational researchers and practitioners that professional development is an essential part of improving teacher performance (Biancarosa, Bryk, & Dexter, 2010; Yoon et al, 2007). In a national survey of 890 teachers, 96% of the respondents agreed that improving professional development would be either *very effective* or *somewhat effective* in improving teacher effectiveness (Coggshall & Ott, 2010). Additionally, evidence indicates that meaningful professional development will help recruit and retain teachers in hard-to-staff schools. In a focus-group study, Shapiro and Laine (2005) found that participants overwhelmingly stated that the intentional time for ongoing professional development in combination with focused, supportive school leadership would encourage them to teach in a hard-to-staff school.

There is extensive research on effective professional development practices; however, little research has included personalized professional development. Understanding and connecting the relationships between best practices in professional development and the needs of individual teachers might increase the effectiveness of professional development long term.

It is my supposition that teachers who participate in personalized professional development that is aligned to best practices may increase their content knowledge and improve their implementation of new skills. Additionally, I suggest that these professional development experiences may increase teachers' self-efficacy and potentially increase their job satisfaction.

Purpose of Study

The purpose of this study is to investigate and compare the perceptions of current professional development practices in MSD of Warren Township between teachers, administrators, and instructional coaches. The setting of this research takes place on the Eastside of Indianapolis in the Metropolitan School District of Warren Township. MSD Warren consists of 18 schools, 12,297 students, and over 700 teachers. The Warren Township school district serves a majority minority student population with 51% African American, 14% Hispanic, 8% Multiracial, and 26% White. The free and reduced percentage for MSD of Warren Township is 73% and has increased twenty-one percent over the last ten years.

MSD of Warren Township is a 1:1 district, meaning each student has access to his or her own technology device. This is important because it adds an additional layer of complexity for providing professional development that meets the needs of individual teachers. In addition, approximately 50% of the 700 teachers have five or less years of experience in MSD Warren schools.

In December of 2012, MSD of Warren Township was the only Indiana district, and one of 16 districts in the United States, awarded the highly-competitive federally-funded Race to the Top (RttT) grant for 28.5 million dollars. The key initiatives of this grant were to increase student achievement, provide greater opportunities for personalized learning, and ensure students' readiness for post-secondary college and career. With all the new initiatives taking place in the district, a greater emphasis was placed on professional development (PD) for teachers, principals, and instructional coaches.

Based on the gap in teacher experience level, the new demands of the RttT grant, and the integration of technology, MSD of Warren Township placed an intentional focus providing personalized professional development (PPD) for teachers during the 2016-17 school year. Personalized professional development can be described as the development of a teacher's own professional knowledge and skills based on their strengths, weaknesses, and interests (Schifter, 2016). Just as students can drive their own learning, teachers also have choices when it comes to their professional learning, including where, when, and how they receive their professional development as well as the content of that professional development.

My study compared teachers' perceptions of their PPD experiences in their district to national standards created by Learning Forward on best practices in professional development. Learning Forward is the nation's largest nonprofit membership association focused solely on ensuring success for all students through effective professional learning and school improvement. The Standards for Professional Learning are a set of seven characteristics of professional learning that describes the conditions that lead to effective teaching practices, supportive leadership, and improved student results. The characteristics are as follows: learning communities, leadership, resources, data, learning design, implementation, and outcomes.

In addition, my study examined the perceptions of teachers regarding the adequacy and quality of the personalized professional development they received compared to the perceptions of administrators and instructional coaches who planned and delivered the PPD. For this study, adequacy refers to whether or the PPD met the needs of the teachers and quality refers to the assessment of PPD compared to other PD experiences. The intent was to research the influence of Learning Forward's Standards for Professional Development as perceived by teachers, administrators, and instructional coaches. In addition, my hope was to identify any gaps in perceptions from those who received the PPD to those who delivered the PPD, so that the professional development program could be improved.

The independent variables for this study were the factors that may influence a teacher's perception of his or her professional development. They include: gender, years of experience, years in current position, grade level, and their perceptions of application of new learning. Perception data gathered with the use of the Standard Assessment Inventory (SAI-2), a pre-developed instrument used with permission of Learning Forward, were the dependent variables in this research. The SAI-2 is a 50-item survey instrument that encompasses the seven Standards for Professional Learning.

Significance of Study

This study is significant because it will provide needed research on personalized professional development for teachers, as well as add to the limited research of personalized professional development activities based on Learning Forward's standards. This research will potentially benefit the administrators and instructional coaches from MSD of Warren Township regarding the teachers' perceptions of the professional development currently being delivered. The results of the study also provide an evaluation of the existing professional development

activities for MSD of Warren Township, based on the perception of the respondents. In addition, the results of the study should provide other districts with a methodology to evaluate their current professional development programs and assist in guiding changes.

Research Questions

The research questions addressed in this study are as follows:

1. What are the current professional development practices provided for teachers in MSD of Warren Township?
2. How does MSD of Warren Township currently providing personalized professional development for teachers compare to Arizona's sample using the Standards for Professional Learning?
3. What are the differences in perceptions about the quality of personalized professional development from the perspective of teachers, administrators, and instructional coaches using the Standards for Professional Learning?

Delimitations

The central research questions of this study were delimited to one large urban PK-12 district that is personalizing professional development. The study was limited to teachers, administrators, and instructional coaches from one preschool, nine elementary schools, three intermediate schools, three middle schools, and one high school. Since the research was limited to one district, generalization of results is also limited.

Definitions of Important Terms

- *Adult Learning Theory (Andragogy)* - a set of ideas about how adults learn new skills or information (Knowles, 1980)

- *AdvancED* – a non-profit, non-partisan organization that conducts rigorous, on-site reviews of a variety of educational institutions and systems.
- *Data* - Learning Forward (2011) describes data as multiple sources of information from both quantitative and qualitative sources, such as common formative and summative assessments, performance assessments, observations, work samples, portfolios, and self-reports.
- *Formal Leadership* - For the purposes of this study, this includes district and school level administrators (context of this study).
- *Instructional Coaches* - teacher leaders who are trained to provide coaching and professional development to teachers (context of this study)
- *Instructional Leadership* - This includes department chairs in middle school, high school, and instructional coaches PK-12 settings (context of this study)
- *Implementation* - the process of embedding new learning into practice supported by constructive feedback and reflection to ensure continuous improvement (Learning Forward, 2011)
- *Learning Designs* - the inclusion of theories, research, and models of human learning to achieve its intended outcomes (Learning Forward, 2011)
- *Learning Forward* - A non-profit association whose purpose is the success for all students through staff learning and school improvement. Learning Forward was previously known as the National Staff Development Council (NSDC).
- *Personalized Professional Development (PPD)* - development of teacher's own professional knowledge and skills based on their own strengths and weaknesses (Schifter, 2016)

- *Professional Development (PD)* - a comprehensive, sustained, and intensive approach to improving teachers' and principals' effectiveness in raising student achievement (Learning Forward, 2011)
- *Professional Learning Communities (PLC)* - frequent and regular meetings of school personnel during the workday to engage in collaborative professional learning to strengthen classroom practices and increase student results (Learning Forward, 2011)
- *Standards Assessment Inventory (SAI-2)* - This is the second version of the Standards Assessment Inventory survey tool created by Learning Forward. The assessment is aligned with the seven Standards for Professional Learning and measures teachers' perception to provide important data on the quality of professional learning at the school or system level (Learning Forward, 2011).
- *Teachers* - For the purposes of this, teachers are those who work with students and received professional development sometime throughout the school year (context of this study).

Summary

Chapter one presented the important role of professional development and the need for research surrounding newer “personalized” professional development approaches. This knowledge will allow MSD of Warren Township, and potentially other districts, to reflect and improve upon their current personalized professional development programs. Chapter two will provide a comprehensive literature review surrounding the research questions in this study. Chapter three outlines the research methods utilized for this quantitative study. Chapter four provides the results of the study, including trends that have emerged. Lastly, chapter five will

provide a summation of the study while offering implications and recommendations for practice and further research.

CHAPTER TWO: REVIEW OF THE LITERATURE

This review begins with a short overview of the need for this research and a presentation of the theoretical framework for this study. It also includes the following:

(a) defining professional development and the examination of the most common approaches to delivering professional development and trends in professional development, (b) an introduction and literature review of the research related to the Learning Forward Standards for effective professional learning, and (c) the need for providing high quality personalized professional development. For this study, professional development and professional learning will be used interchangeably.

Many education scholars believe that providing teachers with high quality professional development opportunities can improve teacher performance (Darling-Hammond & McLaughlin, 1995; Garet, Porter, Desimone, Birman, & Yoon, 2001; Sparks & Hirsh, 1997). Vogel (2006) concluded that quality professional development for teachers has a greater impact on student learning in comparison to higher teacher salaries and small class sizes. Despite the acknowledgment of its importance, the professional development currently offered to teachers does not sufficiently meet their needs in the 21st century (Yoon et al, 2007). Unfortunately, too many professional learning activities are disconnected from teachers' actual practice and school improvement goals (Cohen & Hill, 2000; Kennedy, 1998) and are not designed with attention to the needs of adult learners (Croft, Coggshall, Dolan, & Powers, 2010). Furthermore, because many districts lack a coherent infrastructure for professional development, professional development represents a "patchwork of opportunities – formal and informal, mandatory and voluntary, serendipitous and planned" (Wilson &

Berne, 1999, p. 174). Teachers, who participate in coherent professional development experiences as opposed to short-term, unrelated activities, are more likely to learn from those experiences and to implement that new knowledge into their classroom (Newman, Smith, Allensworth, & Bryk, 2001).

There are at least two reasons for the increased quality of these experiences. First, coordination of these experiences strengthens teachers' access to, and use of, technical resources and expertise. Second, connecting the focus of teachers to common purposes, activities, and practices that are pursued over an extended period of allows teachers' work to have more meaning, thereby increasing their motivation and commitment to the common goal. In contrast, when teachers know from previous experiences that ideas and initiatives are often introduced and then quickly abandoned, they have little or no motivation to invest in the professional development (Newman et al, 2001).

Traditional approaches to teacher development have been found to be ineffective, and pre-service training cannot prepare teachers for every challenge they may face during their career (Darling-Hammond & Baratz-Snowden, 2007; Elmore, 2002; Schleicher, 2011). Finding new avenues in professional development is a necessity for the improvement and effectiveness of student learning.

Theoretical Framework

Adult Learning Theory provides the lens on adult learning practices that emphasize the assimilation of new knowledge through a series of learning assumptions for adults. This theory was based on the philosophy of the Greek term *andragogy*, which translates to "man leading." In comparison, *pedagogy*, a Greek term most educators are familiar with, is associated with child learning. Andragogy was

introduced into the American vernacular in the 1920's, but it was Malcolm Knowles (1968) who put andragogy on the modern adult education map. Knowles referred to andragogy as the art and science of helping adults learn based on certain crucial assumptions about the differences between children and adult learners. For the purposes of this study, the term andragogy will be used when referring to adult learning theory. Additionally, andragogy and pedagogy are not viewed as opposite frameworks in this study. Knowles and other learning behaviorists agree that both andragogy and pedagogy are needed in successful adult learning (Merriam & Caffarella, 1991).

Knowles (1987) identified four questions for structuring any learning experience for adults.

1. What content should be covered?
2. How should the content be organized?
3. What sequence should be followed in presenting the content?
4. What is the most effective method for transmitting the content?

These questions play an important role in the planning and implementation of personalized professional development.

As part of his work on the adult learner, Knowles (1973, 1984) made five assumptions about the characteristics of adult learners that are different from the assumptions of child learners, or pedagogy. Knowles believed that adults learn best when self-directed and have some ownership of the pace and content of their own learning. He also suggests that adults tend to learn more effectively when their past experiences are considered and the new information is intentionally linked to those experiences. Similarly, the context of the adult learner is an important part of the

learning process. Adults are inclined to take on new knowledge and skills when the information is important to their many roles in life, including those of educator, parent, community member, and leisure time user. This leads into the final assumption from Knowles in that adults are problem-centered learners, meaning they want to apply new information immediately to their work environment.

Although Knowles' work on andragogy is not directly associated with the Learning Forward Standards for Professional Learning, the standards do embed some of the theoretical concepts that Knowles identifies with adult learning theory. The standards were shaped around the research of human learning and were designed so that educators could take ownership of their own professional learning. Historically, teachers participated in professional development as part of their professional responsibilities. Knowles' influence on professional development and the standards for professional learning shifted the thinking from teacher compliance to teacher agency. In other words, teachers are now more invested and engaged in their own learning not because they had to be, but rather, because they chose to be.

This framework, the assumptions presented by Knowles's work, and the influence of andragogy on professional learning provide the means for me to construct the survey tools to collect the perceptions of the three groups to be studied. Later in this chapter, I will provide more details on how this theory connects with the learning design standard.

Definition of Professional Development

Professional development became an increased focus for schools and districts because of the No Child Left Behind (NCLB) Act of 2001. Professional development was an emphasis in NCLB and was described as activities or experiences that improve

teachers' knowledge in the subjects they teach, allow them to become highly qualified, and advance their understanding of instructional strategies. Although a new awareness for schools and districts, NCLB's guidance on professional development was vague. Since then, researchers and professional learning organizations have each contributed to the vast number of definitions of professional development. In 2008, the American Federation of Teachers (AFT) described professional development as a continuous process of individual and collective examination and improvement of practice. It should empower individual educators and communities of educators to make complex decisions; to identify and solve problems; and to connect theory, practice, and student outcomes. AFT further stated that professional development should enable teachers to offer students the learning opportunities that will prepare them to meet world class standards in given content areas and to successfully assume adult responsibilities for citizenship and work. AFT stated that professional development should (a) increase depth of content knowledge; (b) provide a solid understanding of pedagogy of particular disciplines; (c) provide more general knowledge about the teaching and learning processes; (d) be rooted and reflect the best available research; (e) align with standards and curriculum; (f) contribute to the measurable improvement in student achievement; (g) engage and address the complexity of teaching; (h) provide sufficient time, support and resources to enable teachers to master new content and pedagogy and to integrate this knowledge and skill into their practice; (i) designed in coordination with teachers and experts in the field; (j) delivered in a variety of forms; (k) be job-embedded and site specific.

In 2009, the National Staff Development Council (NSDC), which is currently known as Learning Forward, adopted a new definition of professional development. Their definition stated that professional development was a comprehensive, sustained, and intensive approach to improving teachers' effectiveness in raising student achievement (NSDC, 2009). In addition to their definition, NSDC composed a list of goals that professional development experiences should include: (a) conducted among educators at the school and facilitated by well-prepared principals and/or school-based professional development coaches or teacher leaders; (b) occurs several times per week among established teams of teachers; (c) evaluates student, teachers, and school learning needs through a thorough review of student data; (d) defines a clear set of goals based on an analysis of the data; (e) implements coherent, sustained, and evidenced-based learning strategies; (f) provides job-embedded coaching and other forms of support; (g) assess regularly the effectiveness of the professional development in achieving identified learning goals and improving teaching; (h) informs ongoing improvements in teaching and student learning; (i) supported, if needed, by external assistance (NSDC, 2009).

Although the definitions vary slightly in terms of focus on when professional development should occur, these definitions share several common focus areas. Both definitions share a common emphasis on the importance of teacher growth and student achievement as a necessary outcome of a high quality professional development program. Additionally, these definitions collectively present that effective professional development is job-embedded, developed and implemented in coordination with teachers, and student data is used as a measurement of successful implementation of new content knowledge and skills.

Modes of Professional Development

Teachers need a wide range of ongoing professional development to improve their skills. Professional development is delivered in a variety of formats, sizes, timeframes, and structures. In 2010, Hayes Mizell, along with Learning Forward, published a report on why professional development matters. In this study, several types of typical modes of professional development were identified. Table 1 below provides a brief description of each of those modes.

Table 2.1

Typical Modes of Professional Development

<u>Name of Professional Development Activity</u>	<u>Description</u>
Individual reading/ study/research	Educator identifies a topic or subject and participates in a self-directed experience.
Peer study groups	Educators create groups among peers focused on a shared topic.
Observations	Educators observe other educators teach.
Coaching	An expert or specialist educator coaching one or more colleagues.
Mentoring	A more experienced or more skilled educator working with a less experienced teacher.
Professional learning communities	Educators meet to plan lessons, problem solve, improve performance, discuss data, and/or learn new strategy.
Faculty meetings	Educators participate in whole group professional development experiences. May or may not be specialized to content.
Online courses	Educator participates in learning through an online course. May or may not be for college credit.
College courses	Educator is enrolled in a college and has self-selected coursework.
Workshops	Educator participates in a specialized workshop on a single topic.
Conferences	Educator receives new knowledge from a wide variety of expertise from around the state or country.
Whole-school improvement programs	Educator participates in a blanket style professional learning experience. All participants receive the same training.
Proprietary programs by private vendors	Educator pays to participate in professional development guided by a private vendor.

These types of professional development have both affordances and limitations to them. As mentioned earlier, andragogy and adult learning theory have identified assumptions of learning experiences where adults learn best. Not all of these modes of professional development lend themselves to these assumptions. Additionally, the current practices that are taking place in schools and districts are not in alignment with the aforementioned best practices. According to a 2014 study conducted by the Bill & Melinda Gates Foundation, professional development formats strongly supported by district leadership and principals, such as professional learning communities and coaching, are currently not meeting teacher's needs. Furthermore, large majorities of teachers do not believe professional development is helping them prepare for the changes taking place in their profession, including but not limited to using technology, digital learning tools, analyzing student data to personalize learning, and the implementation of new standards.

Teachers were not satisfied with the majority of professional development formats available to them (Bill & Melinda Gates Foundation, 2014). They strongly supported coursework and conferences over professional learning communities, workshops, and coaching. Self-guided professional development, observations, and intense summer professional development were also not popular choices of teachers. Conversely, in this same study, local education agency leaders who were responsible for delivering professional development were in favor of professional learning communities, coaching, self-guided professional development, and observations.

Professional Development Trends

One recent trend among schools and districts is the movement away from one-time workshops, which have been common in many schools. In one-time workshops,

teachers meet for one to three hours to listen to a lecture on an isolated topic. Research suggests that in the past couple of decades, schools and districts have shifted from these kinds of short workshops towards professional development that attempts to engage teachers for an extended period on specific subject content matter and how students learn that content (Desimone, 2009). For example, analysis of the nationally representative Schools and Staffing Survey shows that fewer than 20% of U.S. teachers had eight hours or less of professional development in the 2011-2012 school year (U.S. Department of Education, 2012). A national study of professional development in the U.S. showed that the percent of teachers participating in professional development related to the content they teach increased from 59% in 2000 to 83% in 2004 and to 87% in 2008 (Wei, Darling-Hammond, & Adamson, 2010). Teachers are spending more of their time on targeted professional development.

A second trend is the increase of providing teacher collaboration time. Collaboration exists in a variety of structures and formats. Formal collaboration can take the form of professional learning communities, grade level colleagues, and teachers who share a common subject area. Informal collaboration can occur in staff meetings, planning periods, staff lounge, and other teacher gathering locations. Several studies suggest that teacher collaboration has positive effects on both teachers and their students. When teachers have opportunities to collaborate professionally, they build upon their distinctive experiences, pedagogies, and content (Goddard & Goddard, 2007; Ronfeldt, Farmer, McQueen, & Grissom, 2015). The result is a positive outcome for both the individual and the collective group.

A third trend is the use of instructional coaches. In most cases, instructional coaches are experienced teachers who display leadership in pedagogy and content. In coaching, teachers work with a master educator before, during, and after a lesson, getting feedback on their implementation of a newly learned teaching skill. Numerous studies have shown coaching to be successful at changing teacher practice and improving student learning (Batt, 2010; Knight 2007; Knight & Cornett, 2009; Showers, 1984; Slinger, 2004; Stephens et al., 2007;). Further, modeling by the coaches has been shown to be very effective at helping teachers grasp a new teaching approach before they attempt implementation (Roy, 2005; Goldberg, 2002; Rice, 2001; Black, 1998; Licklider, 1997).

Professional Learning Standards

Learning Forward has created Standards for Professional Learning to assist classroom, school, and systems leaders in solving their toughest problems of practice. The standards include: (a) learning communities; (b) resources; (c) learning designs; (d) outcomes; (d) leadership; (f) data; (g) implementation. As a collective unit, these standards define the conditions, attributes, and essential content for effective professional learning. The seven Learning Forward standards will be explained further in the following section. Within each subsection, the Learning Forward definition will be defined followed by the research that aligns with each professional development standard.

Professional learning communities

The Professional Learning Communities standard states: “Professional learning that increases educator effectiveness and results for all students occurs within learning communities committed to continuous improvement, collective responsibility, and goal

alignment” (Learning Forward, 2011, p. 43). The term Professional Learning Communities (PLCs) refers to a small team of educators committed to meeting often, working in collaboration on shared goals in order to improve student learning (Brookhart, 2009). PLCs are grounded on three principles:

1. ensuring students can learn
2. a culture of collaboration
3. a focus on results

DuFuor and Eaker (1998) defined professional learning communities as environments created by educators that “foster mutual cooperation, emotional support, and personal growth as they work together to achieve what they cannot accomplish alone” (p. xii). Several researchers attribute gains in student academic growth to the result of teachers collaborating on a common goal (Blankstein, 2004; Fullan & Langworthy, 2014; Guskey & Yoon, 2009; Mouza, 2006). PLCs are, in essence, a reflection of the school culture. When teachers collaborate professionally and are all focused on a shared vision, the culture is affected in a positive manner (Darling-Hammond, 1997). More promising research has proposed that in schools where teachers formed active professional learning communities, student absenteeism and student dropout rates were reduced and student learning increased significantly in the core content areas. (Lee, Smith, and Croninger, 1995).

Resources

The Resources standard states the following: “Professional learning that increases educator effectiveness and results for all students requires prioritizing, monitoring, and coordinating resources for educator learning” (Learning Forward, 2011, p. 43) Resources are defined as time and physical resources.

Time. An analysis of several studies found that professional development ranging from 30 to 100 hours in total spread over a school year showed a positive and significant effect on student learning (Yoon, Duncan, Lee, Scarloss, & Shapley, 2007). The research noted that an average of 49 hours in a year boosted student achievement by 21 percentile points. In addition, professional development of more than 14 hours had a significant impact on student learning. Conversely, professional development that was delivered between five and 14 hours showed no statistically significant effect on student learning.

With increased state and federal accountability, new academic standards, technology integration programs, and other education initiatives, teachers are being pulled in multiple directions and often asked to focus on several changes at once. These actions are in direct contrast with what research states is effective professional learning for teachers.

Physical Resource. Resources for this purpose are those materials, devices, software, and or hardware available to teachers. Research suggests that teachers will be more likely to try new methods of teaching if certain conditions exist. There is a divide in research outcomes in terms of how much impact resources have on teacher's willingness to implement a new strategy or program. Bebell and Kay (2010) identified technology resources and equity issues as an obstacle in successfully transforming teacher and learning practices. Additionally, Bebell and Kay concluded that the rapid pace at which technology resources are changing creates a great challenge for educators to remain current on new knowledge and skills. Conversely, in a study conducted by

Buckenmeyer (2010), teachers did not identify resources as a significant barrier to implementing technology in their instructional practices.

Learning design

The Learning Design standard states, “Professional learning that increases educator effectiveness and results for all students integrates theories, research, and models of human learning to achieve its intended outcomes” (Learning Forward, 2011, 43). In recent years, more and more emphasis has been placed on adult learning theory and research when planning and delivering professional development. Malcolm Knowles (1980) contrasted adult learning with student learning by popularizing the concept of andragogy, the art and science of helping adults learn. In contrast, pedagogy is well known for being the art and science of teaching children. Knowles (1973) posited that adult learners typically favor open-ended learning experiences and to have a voice in determining the direction and pace of their learning. Adults prefer to approach learning with clear goals and tend to make connections with their life experiences to process the new information. Unlike students who tend to be extrinsically motivated, adults are generally self-directed and intrinsically motivated.

Additionally, adult learners value the professional learning when it is relevant and impacts their day-to-day job and personal life. Darling-Hammond, Wei, Andree, Richardson, & Orphanos (2009) concluded that professional development is most effective when it addresses the concrete, everyday challenges related to specific subject matter.

Coaching/Mentoring. Another approach to professional learning that is meeting the needs of adult learners is that of instructional coaches or mentors. Jim

Knight and Jake Cornett (2009) identified three models of coaching that have some empirical evidence to support their effectiveness. They are:

1. peer coaching (Bush, 1984; Maniace-Ireland, 2003; Showers, 1982, 1984)
2. cognitive coaching (Hull, Edwards, Rogers, & Sword, 1998)
3. instructional coaching (Knight, 2004, 2007)

These models of instructional coaching provide support to classroom teachers by first building a trusting relationship with another adult in the school. Because teaching is an isolated profession, teachers value the collegiality and collaboration of another educator. According to Knight (2007), there are seven principles of instructional coaching: (a) choice; (b) voice; (c) dialogue; (d) reflection; (e) praxis; (f) reciprocity. Choice and voice ask that teachers set goals for their own instructional practices. This simple but powerful task also connects to the adult learning theory of self-directing learning and participating in professional learning that is connected to the day-to-day tasks of a teacher. It should be noted that current research suggests that coaches and mentors be excluded from the evaluation process (Hanover Research, 2015, p. 4). Coaching in its purest form is about trust, support, and growth. The coach should be viewed as an equal to teachers, nothing more and nothing less.

Outcomes

The Outcomes standard states: “Professional learning that increases educator effectiveness and results for all students aligns its outcomes with educator performance and student curriculum standards” (Learning Forward, 2011, 43).

Professional Development Outcomes. Although much research has been conducted on what constitutes high quality professional development (duration and frequency of professional development, follow-up and support, engaging in relevant

activities, access to resources, collaboration and community among educators, shared understanding of student learning), understanding how to measure the effectiveness of the PD has been challenge (Desimone, 2009; Lawless & Pellegrino 2007; Penuel, Fishman, Yamaguchi, & Gallagher, 2007; Yoon et al., 2007). Guskey (2000) recommends that evaluation of professional development examine five areas: (a) participants' reactions; (b) participants' learning; (c) organization support and change; (d) participants' use of new knowledge and skills; (e) student learning outcomes. There have been relatively few studies that have attempted to extend the effects of professional development through teacher knowledge and instructional practice to student achievement. Education Northwest (Krasnoff, 2014) published a report on professional development and offered the following questions for evaluation:

1. Did the professional development program meet the participants' needs?
2. Was the professional development program high quality?
3. Are the participants receiving job-embedded, reflective opportunities to assist in the application and utilization of new knowledge in an effort to improve educational practices?
4. Is their application and utilization of new knowledge effective?
5. What are the measurable results for students? (p. 6)

Evaluation methods are fundamental in determining whether these types of outcomes can be linked to professional development.

Student Outcomes. Student achievement is the ultimate outcome measure of any successful professional development program. Learning Forward (2011) addresses learning outcomes as follows:

Student learning outcomes define equitable expectations for all students to achieve at high levels and hold educators responsible for implementing appropriate strategies to support student learning. Learning for educators that focuses on student learning outcomes has a positive effect on changing educator practice and increasing student achievement. Whether the learning outcomes are developed locally or nationally and are defined in content standards, courses of study, curriculum, or curricular programs, these learning outcomes serve as the core content for educator professional learning to support effective implementation and results. With student learning outcomes as the focus, professional learning deepens educators' content knowledge, pedagogical content knowledge, and understanding of how students learn the specific discipline. Using student-learning outcomes as its outcomes, professional learning can model and engage educators in practices they are expected to implement within their classrooms and workplaces. (p. 43)

The amount of reliable and defensible evidence currently available on the relationship between professional development and improvements in student learning is extremely modest. A review of 1,343 research studies that reported gains in student outcomes based on professional development experiences yielded only nine studies that met requirements of What Works Clearinghouse (WWC). Although there is little research that connects student outcomes with teacher professional development, there is optimism in future research.

Leadership

The Leadership standard states, “Professional learning that increases educator effectiveness and results for all students requires skillful leaders who develop capacity, advocate, and create support systems for professional learning” (Learning Forward, 2011, p. 43). Many

researchers identify leadership as a major factor of providing high quality professional development (Darling-Hammond et al., 2009; Fullan & Langworthy, 2014, Lezotte, 1999; Marzano 2003; Waters & Marzano, 2006). Waters and Marzano along with Mid-continent Research for Education and Learning (McREL) conducted a meta-analysis of 27 studies, 2,817 districts, and 3.4 million students to study the influence of school district leaders on student achievement. The results of this study found a statistically significant relationship between district leadership and student achievement. An additional outcome of this study identified a positive correlation between leadership tenure with student achievement. Five leadership themes from effective superintendents surfaced from the work of Waters and Marzano (2006). Collaborative goal-setting, non-negotiable goals for achievement and instruction, board alignment and support of district goals, monitoring goals for achievement and instruction, and the use of resources to support achievement and instructional goals were all responsibilities of effective leaders.

A seminal 2004 study, *How Leadership Influences Student Learning*, asserted that leadership was the second most important school-based factor in student academic achievement, following only teacher quality (Leithwood, Seashore Louis, Anderson & Wahlstrom, 2004). In 2010, these same researchers published a detailed sequel to probe school leadership in depth. They confirmed their previous conclusion that classroom instruction is the only stronger influence on student achievement than school leadership (Wahlstrom, Louis, Leithwood & Anderson, 2010, p. 32)

The research is clear that leadership is a necessary component to teacher and student achievement. Although teacher quality still remained the number one influence on student performance, principal leadership has the second greatest impact on student outcomes. The

principal role has shifted over the years from manager of tasks of the building to leaders of learners.

In 2012, the Wallace Foundation submitted a report on effective characteristics of effective school leadership in today's schools. The five characteristics were based on the foundation's extensive research and field experience over the last 22 years. These characteristics are inclusive of all stakeholders and do not suggest a hierarchy of authority. The leadership characteristics are as follows:

- shaping a vision of academic success for all students, one based on high standards
- creating a climate of hospitable to education in order that safety; a cooperative spirit, and other foundations of fruitful interaction prevail
- cultivating leadership in others so that teachers and other adults assume their part in realizing the school vision
- improving instruction to enable teachers to teach at their best and students to learn at their utmost
- managing people, data, and process to foster school improvement (p. 4)

When all of these characteristics are in implemented together, effective leadership is at work.

Effective leaders hold learning and continuous improvement among their top priorities for students, staff, and themselves. School and district leaders have to be the advocate for professional development and be the link between student achievement and teacher development.

Data

The Data standard states: "Professional learning that increases educator effectiveness and results for all students uses a variety of sources and types of student, educator, and system data to plan, assess, and evaluate professional learning" (Learning Forward, 2011, p. 43). Data collection in schools is not a new concept. For the past quarter century, districts have collected a

wide variety of student and institutional information, including test scores, enrollment data, budget and finance data, and information related to human resources. In 2002, the responsibility of collecting and using data increased with the passage of the NCLB Act. With the passage of NCLB, teacher's access to data dramatically increased from 48 percent in 2005 to 74 percent in 2007 (NETTS, 2007). Although this increase in access is very positive, it still leaves too many teachers without access and it does not describe the practices or actions that took place once teachers accessed the data. The 2006-07 NETTS teacher survey reported that only 39 percent of the teachers reported that the professional development they received about using data to make informed instructional decisions had prepared them to use data to improve student learning. (U.S. Department of Education, 2009). Choppin (2002) agrees that teacher professional development in general has not included the use of data analysis or using data-informed decision-making processes prior to NCLB.

Implementation

The Implementation standard states, "Professional learning that increases educator effectiveness and results for all students applies research on change and sustains support for implementation of professional learning for long-term change" (Learning Forward, 2011, p. 43).

Joyce and Showers (2002) found that on average it takes twenty separate instances of practice for a teacher to master a new skill. In addition, if the skill or new knowledge is exceptionally complex, the number of instances may increase. Many approaches to professional development are about giving new knowledge. Teachers may walk away from a professional development session knowing how to do something, but may not be able to implement that new knowledge into best practice in the classroom. In all forms of learning a new skill, mere knowledge of something is never as difficult as its implementation.

Fullan (2001) identified an “implementation dip” and an area of struggle for most teachers. He recognized that when teachers learned a new skill and attempted to implement that new skill, the performance of the teacher took a dip. The implementation dip is further complicated by the fact that research has shown teachers change their beliefs about how to teach something only after they see success with students (Guskey, 2002).

In a recent study, Ermeling (2009) researched teachers working extensively with other teachers in planning and collaborating and also with outside experts on the theory of inquiry learning. When the teachers attempted to implement this into the classroom, it was unsuccessful and inconsistent. This study also found that when teachers tried this inquiry teaching several times, watched video tapes of their implementation efforts, and were given feedback about their performance, they were able to master the skill.

This presents an immense challenge for teachers because they typically do not have the luxury of practice time. With the amount of accountability and the amount of content that must be taught, teachers feel an enormous burden of covering the curriculum and doing it the best possible way to be rated effectively on their evaluation (National Education Association, 2011).

Summary of Learning Forward Standards for Professional Learning

The above section provided an overview of the seven standards for professional learning created by Learning Forward. The standards include: (a) learning communities; (b) resources; (c) learning designs; (d) outcomes; (e) leadership; (f) data; (g) implementation. These standards are important as they serve as the foundation of this study and the survey tool being utilized to collect teacher, coach, and administrator information.

The Demand for Personalized Professional Learning

In the last three to four years, schools and districts have been faced with a list of compelling reforms: teacher evaluations that are now inclusive of student test scores, widespread adoption of higher college and career academic standards, and the development of high stakes standardized tests aligned with these new standards (Croft, Roberts & Stenhouse, 2016). Each of these reforms confronts the status quo of teaching and learning, demanding that schools systematically and continuously improve student learning, marking and measuring their improvement each and every step along the way. The new expectations placed on schools and districts will require significant changes in the classroom from both students and teachers. To meet these new standards, teachers will have to learn new teaching practices.

Participating in professional development activities is not enough. The quality and the adequacy of the professional development need to meet the demands presented to teachers. In a recent study, researchers found that while 90 percent of teachers reported participating in professional development, most of those teachers also reported that it was totally useless (Darling-Hammond et al., 2009). This study, as well as others, suggests that the real issue is not that teachers are not provided professional development opportunities, but that the traditional offerings are ineffective at improving teachers' practice or student learning (The New Teacher Project, 2015).

Another recent development that communicates a need for high quality personalized professional development is the number of new teachers to the profession. In a recent analysis of data from the office for civil rights, most states were reporting more than 10 percent of the teacher force is comprised of new educators (U.S. Department of Education Office of Civil Rights, 2016). Eight states are as high as 18% new teachers, with Florida leading the way at

29%. Additionally, in a comprehensive analysis of state policies on teacher induction in 2012, data from the New Teacher Center suggested that new teachers to the profession were more common in classrooms today than at any time in the prior 20 years (NTC, 2016). To complicate the matters, new teachers to the profession are disproportionately found in classrooms from high-poverty communities (Adamson & Darling-Hammond, 2011). Thus, the demand for consistent and high quality professional development is needed more than ever.

Summary

In today's high-stakes' landscape of higher standards and teacher evaluations based in part on student achievement, professional development has to have a targeted focus on one thing: student learning. However, at present, most school and district professional development appears to miss this mark. One-time workshops are the most prevalent model for delivering professional development. Yet, workshops have an abysmal record for improving teacher practice and student learning (Yoon et al., 2007).

Schools and districts cannot just do more of the same. They have to develop new approaches to teacher learning, approaches that create improved and sustained changes in teacher practice and improve student achievement. Thus, the real challenge schools and districts face is how to create opportunities for teachers to grow and develop in their practice so that they, in turn, can help students learn and develop their knowledge and ability to think critically and contribute beyond schooling. Also, the development of professional learning activities needs to take into consideration the assumptions of adult learning presented by Knowles (1984).

While the current research examines best practices on the development and implementation of professional development for teachers, it does not address personalized professional development. I found no studies that examined personalized professional

development through the lens of a teachers, instructional coach, and administrator. The purpose of this study is to fill this gap in the literature. Chapter 3 will outline the research methods to accomplish this research.

CHAPTER THREE: RESEARCH METHODS

This chapter describes the research methods utilized to investigate my research questions. The beginning of the chapter provides the purpose of my study, a detailed rationale for and description of the quantitative research design. The research questions are presented along with a description of the setting and participants. The instrumentation is explained in addition to the data collection procedures and a description of the data analysis. Finally, the chapter will conclude with an explanation of limitations of the study.

Purpose of the Study

The purpose of this study is to investigate and describe the current professional development practices in MSD of Warren Township, compare teachers' perceptions of personalized professional development in their district to national standards on best practices in professional development, and examine the perceptions of teachers regarding the adequacy and effectiveness of the personalized professional development received compared to the perception of administrators and instructional coaches who planned and delivered the professional development. The intent of this research is to examine the influence of Learning Forward's Standards for Professional Development as perceived by teachers, administrators, and coaches. In addition, the objective is to identify any gaps in perceptions between those receiving the personalized professional development and those who are delivering the professional development. If gaps or concerns are revealed, this information can then be used to improve the professional development program.

Research Questions

The following questions guided this research study:

1. What are the current professional development practices provided for teachers in MSD of Warren Township?
2. How does MSD of Warren Township in Indiana currently providing personalized professional development for teachers compare to Arizona's sample using the Standards for Professional Learning?
3. What are the differences in perceptions about the quality of personalized professional development from the perspective of teachers, administrators, and instructional coaches using the Standards for Professional Learning?

Research Design

This study employs a survey-based quantitative research design, which begins with an analysis of the descriptive statistics of respondents' demographic characteristics and their current professional development practices. Then, I will conduct an inferential statistical comparison of the MSD of Warren Township's data with Arizona's data set, as well as a comparison of teachers', administrators', and coaches' perceptions of personalized professional development within the district. Table 3.1 displays the research questions aligned with the data sources and the analytic techniques for the study.

Table 3.1

Research Questions with Corresponding Survey Questions and Data Analysis Technique

<u>Research Question</u>	<u>Items</u>	<u>Analytic Technique</u>
What are the current professional development practices provided for teachers in MSD of Warren Township?	Survey Item 8	Descriptive Statistics
How does MSD of Warren Township in Indiana currently providing personalized professional development for teachers compare to Arizona's sample using the Standards for Professional Learning?	Survey Items 9 - 58	Descriptive Statistics
What are the differences in perceptions about the quality of personalized professional development from the perspective of teachers, administrators, and instructional coaches using the Standards for Professional Learning?	Survey Items 9 - 58	Quantitative Analysis

Research Design Rationale

Quantitative research is characterized by a deductive approach that relies on numerical data and statistical methods of analysis to measure the incidence of some phenomenon, and determine how factors relate to one another (Creswell, 2012; Gay, Mills, & Airasian, 2006). An inferential quantitative research design attempts to establish an association among variables. These variables can typically be measured using an instrument so that numbered data can be analyzed through statistical procedures (Creswell, 2009). This study was survey-based and collected numerical and categorical data; therefore, a quantitative analytical approach was deemed most appropriate. The advantages of survey methodology are its ability to retrieve information from large populations electronically, the standardization of questions for improved precision, and the elimination of observer subjectivity (Fowler, 2002).

This study utilized the Standards Assessment Inventory (SAI-2) survey to capture the data (Learning Forward, 2011). Permission was secured to use this pre-developed instrument. The SAI-2 survey was administered to all PK-12 teachers in MSD of Warren Township as well as PK-12 administrators and coaches. The survey was anonymous and there was no method of linking the respondents' identities to the data collected or reported.

Selection of Participants

Sample

The sample selected for this study consisted of teachers, administrators, and instructional coaches from MSD of Warren Township in Indiana that is implementing personalized professional development. For the purposes of this study, the sample included teachers that participated in personalized professional development in the 2016-17 school year. The sample also consisted of administrators and instructional coaches at 18 different schools in grades preschool through twelfth grade. The survey was distributed to 500 classroom teachers as well as 72 administrators and 24 instructional coaches. Participants were asked to complete the survey at the conclusion of the 2016-17 school year so that their responses were reflective of the current 2016-17 school year. This sample was selected because MSD of Warren Township has recently gone to personalized professional development and has experimented with a variety of professional development approaches. Every teacher, administrator, and instructional coach surveyed has had experience with personalized professional development. Therefore, the sample group included all teachers, administrators, and instructional coaches who participated in the personalized professional development. This is a single-stage sampling procedure because I have access to the names and email addresses in the population and can sample the participants directly. Table 3.2 displays the demographics and biographical information that will be collected

from the teacher respondents while table 3.3 displays the information that will be collected for the administrators and instructional coaches who responded to the survey.

Table 3.2

Demographic and Biographical Characteristics of the Teacher Respondents

Teachers	Population		Sample	
	<i>n</i>	%	<i>n</i>	%
Gender - Male, Female, Other				
School Level - Elementary, Secondary				
Years of Experience				
Less than 1 year				
1-5 years				
6-10 years				
11-15 years				
15 or more years				
Years at Current School				
Less than 1 year				
1-5 years				
6-10 years				
11-15 years				
15 or more years				
Participated in Number of PPD Sessions				
1-5 sessions				
6-10 sessions				
10+ sessions				
Participated in Number of PD Sessions				
1-5 sessions				
6-10 sessions				
10+ sessions				

Table 3.3

Demographic and Biographical Characteristics of the Administration and Instructional Coach Respondents

Administrators and Instructional Coaches	Population		Sample	
	<i>n</i>	%	<i>n</i>	%
Role				
Gender - Male, Female, Other				
School Level - Elementary, Secondary				
Years of Experience				
Less than 1 year				
1-5 years				
6-10 years				
11-15 years				
15 or more years				
Years at Current School				
Less than 1 year				
1-5 years				
6-10 years				
11-15 years				
15 or more years				
Number of PPD Sessions Offered				
1-5 sessions				
6-10 sessions				
10+ sessions				
Number of PD Sessions Offered				
1-5 sessions				
6-10 sessions				
10+ sessions				

Instrumentation

Creswell (2012) advocated the collection of data in quantitative research using the most current version of available, pre-established instruments that have been used extensively in other studies. For this reason, the Standards Assessment Inventory 2 (SAI-2) (see Appendix A) was administered to gather the data associated with the current professional development practices. Learning Forward and the Southwest Educational Development Laboratory (SEDL) created this survey. Permission to use the SAI-2 was secured prior to using it for data collection in this study. The SAI-2 is a fifty-item web enabled survey instrument assesses how well a district's

professional learning program adheres to Learning Forwards' Standards for Professional Learning: (a) Learning Communities; (b) Leadership; (c) Resources; (d) Data; (e) Learning Design; (f) Implementation; (g) Outcomes. The survey was divided into two main segments: demographics and the survey proper. The first section required participants to provide their demographic and biographical information based on their position in the district, years of experience, years at current school, and school setting.

The second section of the survey instrument was structured using a five-point Likert scale format. Its purpose was to measure respondents' agreement or disagreement with question responses, (1 = Never, 2 = Seldom, 3 = Sometimes, 4 = Frequently, 5 = Always, 6 = Don't Know). The survey instrument was administered through the secure online survey tool Qualtrics, housed by Ball State University. The survey is included in Appendix A.

Instrument Reliability Analysis

The Standards Assessment Inventory (SAI-2) survey instrument was chosen because of its strong validity and reliability. Although the survey has been modified from its original version (SAI), the SAI-2 was recently scrutinized for its validity and reliability in 2012. Over 2,300 educators from 121 geographically diverse schools within AdvancED and Learning Forward's school networks participated in the psychometric study to evaluate the reliability and factorial validity of the SAI-2. The results of the study provided strong support of the construct validity and reliability of the SAI-2. As with any new instrument, additional testing of the tool has been recommended by AdvancED and Learning Forward. The technical report published by AdvancED can be found in Appendix B.

Procedure for Collecting Data

The first step in gathering the data on current professional development practices and perceptions related to the adequacy and quality of the professional development was to assess the

current state of professional development activities. I met with the MSD of Warren Township superintendent to review the SAI-2 instrument and to receive permission to complete the study within the district. Participation in the study was strictly voluntary and was open to all PK-12 teachers, administrators, and instructional coaches.

I utilized the Standards Assessment Inventory (SAI-2) as the framework for the survey and questionnaire process. The SAI-2 survey instrument was sent electronically via Ball State University's Qualtrics secure online survey to all classroom teachers who participated in professional development training during the 2016-2017 school year. In a separate administration of the survey process, the SAI-2 survey instrument was administered in the same format to district administrators and instructional coaches who were responsible for planning and delivering personalized professional development. The Qualtrics option for anonymous reporting was selected for all administrations of the survey.

I contacted prospective participants via email that included a cover letter explaining the study and inviting them to participate in the SAI-2 survey. Contact with all prospective participants was made a minimum of four times via email. Email reminders were sent in one-week intervals requesting replies to the SAI-2 survey.

Data Analysis

Descriptive statistical analyses were used to describe the data collected on the first seven questions of the SAI-2 survey, the demographic and biographical data, and the current personalized professional development activities reported. According to Creswell (1994), the descriptive method of research involves gathering information on present existing condition. Descriptive statistics provide clear summaries about the sample and the measures. For this study, I wanted to investigate the alignment of professional development

activities with the Learning Forward's standards of professional development. Descriptive statistics were used to study the aggregate mean data for research question two. For question eight of the survey, I ran frequencies on the type of personalized professional development activities implemented in the district. Summary reports from the Standards Inventory (SAI-2) survey, questions 9 through 58 were analyzed using a *t*-test analysis to compare the means. The *t*-test analyses were selected due to their ability to test for statistically significant differences between the means of the independent groups. If a difference is identified, a post-hoc analysis will be conducted to further describe the results.

Limitations of the Study

Two significant limitations are presented in this research study. The first was that the study only included participants from one school district in the sample. Although the results of this study will assist MSD of Warren Township, it did limit the scope of this study. An additional limitation of this study is that I am one of the assistant superintendents in MSD of Warren Township. This could have an impact on how participants respond to the SAI-2 instrument. The anonymity of the respondents will be protected since no names, grade levels, or subject matter specialists will be identified.

Summary

This chapter restated the purpose and research questions as well as presented details regarding the research methodology, population, instrumentation, data collection, and data analysis. The data collected from the SAI-2 survey described the perceptions of teachers, administrators, and instructional coaches regarding the personalized professional development practices and how well they align with the Learning Forward Standards for Professional Learning. Chapter 4, the results section, will address the research questions and describe the data

collection. Chapter 5, the final chapter, will provide the conclusion of this study and offer recommendations for further research.

CHAPTER FOUR: RESULTS

This chapter provides a detailed analysis of my research study on perceptions of personalized professional development. A brief review of the study's purpose will be presented along with the guiding research questions. Next, an overview of the demographic characteristics of the study's participants will be shared followed by the data collected from the 58 item Likert-scale survey will be presented and explained using both descriptive and inferential statistics. Finally, a brief summary of the chapter results will be provided.

Purpose of the Study

The purpose of this study was to (a) investigate and describe the current professional development practices in MSD of Warren Township, (b) compare teachers' perceptions of personalized professional development in their district to national standards on best practices in professional development, and (c) examine the perceptions of teachers regarding the quality of the personalized professional development received compared to the perception of administrators and instructional coaches who planned and delivered the personalized professional development. The intent of this research was to examine the professional development as perceived by teachers, administrators, and coaches using the framework of Learning Forward's Standards for Professional Development (Learning Forward, 2011). In addition, the intent was to identify any gaps in perceptions between those receiving the personalized professional development and those delivering the professional development. If gaps or concerns were revealed, this information could then be used to improve the professional development program.

Research Questions

The following questions guided this research study:

1. What are the current professional development practices provided for teachers in MSD of Warren Township?
2. How does a large urban district in Indiana currently providing personalized professional development for teachers compare to Arizona's sample using the Standards for Professional Learning?
3. What are the differences in perceptions about the quality of personalized professional development from the perspective of teachers, administrators, and instructional coaches using the Standards for Professional Learning?

Participant Demographics

The survey instrument was initially distributed to all 740 teachers, administrators, and instructional coaches in MSD of Warren Township. The participants in this study were public school teachers ($n = 375$), instructional coaches ($n = 25$), and administrators/department chairs ($n = 51$) from all 18 school buildings in MSD of Warren Township. In all, 451 participants responded to the survey. An overview of all participants and their demographic information is presented in Table 4.1. In addition, further analysis of teacher, administrator, and instructional coach participants is provided in Table 4.2.

Table 4.1

Overall Participant Demographics and Biographical Information

	<u><i>n</i></u>	<u><i>%</i></u>
Gender		
Male	83	18.4
Female	367	81.4
Other	1	0.2
Total	451	100
School Level		
PK – 4 th Grade	231	51.3
5 th Grade – 8 th Grade	134	29.8
High School	85	18.9
Total	450	100
Years of Experience		
Less than 1 Year	33	7.3
1 – 5 Years	138	30.7
6 – 10 Years	98	21.8
11 – 15 Years	61	13.6
16 or more Years	120	26.7
Total	450	100
Years at Current School		
Less than 1 Year	64	14.2
1 – 5 Years	179	39.8
6 – 10 Years	84	18.7
11 – 15 Years	44	9.8
16 or more Years	79	17.6
Total	450	100
Number of PPD Sessions Attended		
0 Sessions	16	4.4
1 – 5 Sessions	170	47.0
6 – 10 Sessions	113	31.2
11 or more Sessions	63	17.4
Total	362	100
Number of PD Sessions Attended		
0 Sessions	2	0.6
1 – 5 Sessions	49	13.5
6 – 10 Sessions	124	34.1
11 or more Sessions	189	51.9
Total	364	100

Table 4.2

Specific Participant Demographics and Biographical Information

	<u><i>n</i></u>	<u><i>%</i></u>
Teacher		
Gender		
Male	55	14.7
Female	319	85.1
Other	1	0.3
Total	375	100
School Level		
PK – 4 th Grade	193	51.6
5 th Grade – 8 th Grade	112	30.0
High School	69	18.4
Total	374	100
Years of Experience		
Less than 1 Year	18	4.8
1 – 5 Years	109	29.1
6 – 10 Years	83	22.2
11 – 15 Years	54	14.4
16 or more Years	110	29.4
Total	374	100
Administrator/Instructional Coach		
Gender		
Male	28	36.8
Female	48	63.2
Other	0	0.0
Total	76	100
School Level		
PK – 4 th Grade	38	50.0
5 th Grade – 8 th Grade	22	28.9
High School	16	21.1
Total	76	100
Years of Experience		
Less than 1 Year	15	19.7
1 – 5 Years	29	38.2
6 – 10 Years	15	19.7
11 – 15 Years	7	9.2
16 or more Years	10	13.2
Total	76	100

Teacher participants were predominately female (85.1%, $n = 319$) and were mostly from the PK-4 school level (51.6%, $n = 193$). High school teachers represented the smallest number of participants at 18.4% ($n = 69$) followed by 5th – 8th grade teachers at 30% ($n = 112$). The majority of the teacher participants (56.1%, $n = 210$) had 10 or less years of teaching experience. Besides new teachers, the smallest group of teacher respondents had 11–15 years of experience (14.4%, $n = 54$).

Similarly, the administrator/instructional coach participants were primarily female (63.2%, $n = 48$). Administrators'/instructional coaches' years of experience were comparatively higher than the teacher participants. Of these participants, 77.6% ($n = 59$) had 10 years or less experience. Administrators/instructional coaches with 11–15 years of experience represented the smallest percentage of respondents at 9.2% ($n = 7$).

The demographic data suggested that the teachers, administrators, and instructional coaches from MSD of Warren Township who responded to the survey were relatively new to the profession, the district or their current role.

Data Analysis

My study collected data regarding teacher, administrator, and instructional coach perceptions of professional development activities for the 2016-17 school year. Analyses of these quantitative data included statistical descriptive and inferential techniques employing SPSS. In the following paragraphs, the results of these analyses will be presented by the corresponding research question.

Research Question 1

The first research question of my study analyzed the current professional development activities occurring in MSD of Warren Township. Data for this question was collected and

analyzed by participants' selection from a pre-populated list of professional development activities widely used in schools. Participants were given the option to select as many of the activities from the list that pertained to them. Analyses of the most frequent and least frequent will be provided in the next section followed by Table 4.3 that provides the numerical analysis of the results.

Whole school staff professional development (91.4%, $n = 329$) was the most frequently selected PD activity. This is somewhat to be expected, as schools are required by the school district to have regularly scheduled times where teachers attend weekly or monthly meetings to participate in professional learning. Typically, an administrator, instructional coach, or other teachers facilitate whole school staff meetings in the district. It should be noted that although teachers are gathered in one location for whole school staff professional development, that does not necessarily suggest that they are all participating in the same activity. As part of the personalized learning approach, teachers are often given choice in their PD topics within the framework of whole school staff PD.

The second most frequent PD activity was in-district workshops, in which 88.9%, ($n = 320$) of teachers shared they participated in workshops held in-district. Similar to whole staff PD, in-district workshops are scheduled often throughout the school year. These workshops are usually not required, but rather something that teachers can select to participate in or not. The topic is predetermined; however, if the topic is not of interest to the teacher, they do not have to attend. Either a district personnel, or occasionally an outside vendor, facilitates these workshops. Conversely, out-of-district workshops (16.1%, $n = 58$) and conferences (21.7%, $n = 78$) were two of the lower frequency PD activities selected in the survey. Costs, providing guest teachers, and appropriate topics might be some prohibitive reasons for this.

Grade level/department meetings were the third most frequently selected category of PD activities, with 83.6% ($n = 301$) of respondents indicating participation in grade level/department meetings during the 2016-17 school year. Similar to whole staff PD and in-district workshops, these meetings are regularly scheduled during the school day throughout the year and are normally required meetings for teachers. Although required for most teachers, some specialty area teachers do not have these types of meetings. Topics for these meetings can be teacher driven or decided by an administrator.

College courses (6.7%, $n = 24$) was the type of PD selected least by participants. College courses are learning opportunities that either occur in person or online. These are completely self-selected by the district employee and typically require the employee to pay to participate. The district does not have any affiliation to these PD activities other than providing an additional stipend for teachers who earn a post bachelor degree or an additional certification in their area of expertise.

Peer study groups were the second least common type of PD selected by participants, with 10.6% ($n = 38$) indicating that they have engaged formally with other peers during the school year. Comparable to the college course PD, teachers would guide themselves to participate in a peer study group. The group would identify topics, and they would meet as often or as little as they chose. Administrators and instructional coaches do not participate in these types of PD activities.

The third lowest category of PD participation was mentoring, with 13.4% ($n = 50$) of respondents indicating that they were part of a mentoring process. Mentoring can be described as an interaction with another educator, not necessarily an employee in a comparable position. A person who has more experience and expertise in education provides non-evaluative feedback

and guidance during this interaction. Occasionally, the district will assign mentors to new teachers or individual teachers who are not meeting performance expectations. Outside of this, a teacher can identify his or her own mentor.

Coaching sessions (57.5% $n = 207$) was a PD activity that more than half of the survey participants selected. It should be noted that coaching sessions are only available to teachers who teach Preschool to 8th grade. High school level teachers do not have access to instructional coaches. PK-8 teachers meet with their building coaches on a routine basis to discuss items that the teacher has either identified as a need or an area to explore further. These interactions are non-evaluative and are typically not shared with administration.

There were selected PD activities that less than half of the participants identified as a PD opportunity during the 2016-17 school year. Professional learning communities (28.3%, $n = 102$), observing other educators (32.2%, $n = 116$), and individual reading / study / research (45.6%, $n = 164$) are activities available to teachers, but not required in all schools across the district. Professional learning communities (PLC) are formal opportunities for employees to meet to discuss student learning, data, and curriculum. Someone other than the teachers participating in the discussion typically facilitates PLC meetings. Some schools have adopted this in their building while other schools have not.

Currently, observing other educators is used sporadically in the district to provide targeted support to teachers. A master teacher is identified as the host classroom and other teachers are asked to observe him or her for a specific reason. This could include classroom management, lesson delivery, or building relationships. In most situations, teachers are invited to this classroom to observe a successful implementation of a new strategy, program, or process.

In some cases, this activity is used to significantly improve a teacher's performance in a short period of time.

Individual reading/study/research is a broad category that describes a teacher's independent work on a self-selected subject. The teacher chooses the pace, the depth, and the format their own learning. Although the district encourages this type of professional learning, there is no formal expectation that a teacher is required to participate in his or her own reading, study, or research. Table 4.3 presents the numerical analysis of the professional development types selected by teachers.

Table 4.3

Types of professional development activities participated in during the 2016-17 school year

	<i>n</i>	%
Other	23	6.4
College Courses	24	6.7
Peer Study Groups	38	10.6
Mentoring	50	13.9
Online Courses	58	16.1
Out of District Workshops	78	21.7
Conferences	101	28.1
Professional Learning Communities	102	28.3
Observing other Educators	116	32.2
Individual Reading / Study / Research	164	45.6
Coaching Sessions	207	57.5
Grade Level / Department Meetings	301	83.6
In District Workshops	320	88.9
Whole School Staff Professional Development	329	91.4
Total	360	100

In responding to the survey question on the types of PD activities, the option of "other" was given to participants. This was included in order to encompass as many of the professional development activities as possible. Participants provided the following activities under the category Other: digital ($n = 1$), twitter chats ($n = 4$), book studies ($n = 1$), webinars ($n = 2$), and content specific PD ($n = 3$).

In sum, for research question one, results from approximately 360 teacher participants provided an overall picture of the PD activities currently taking place in MSD of Warren Township. These results indicated that teachers were engaged in many different types of PD activities; however, the most frequently selected PD opportunities were activities that could be considered traditional and one-size-fits-all. Traditional offerings are ineffective at improving teachers' practice or student learning (New Teacher Project, 2015). Although the less frequently selected activities related more to personalized professional development, the data suggest that there is momentum being created around providing opportunities for participants' individual needs and interests.

Research Question 2

The second research question asked, "How does MSD of Warren Township in Indiana currently providing personalized professional development for teachers compare to a sample from the state of Arizona using the Standards for Professional Learning?" Data for this question was collected through my use of the SAI-2 survey instrument along with permission from the Arizona Department of Education and Learning Forward to use their SAI-2 survey results. Learning Forward provides the following guidance on the average score for each professional learning standard included in the SAI-2. An average score of 4.0 – 5.0 on an indicator means that professional learning related to that standard is "skillful." An average of 3.0 – 3.9 suggests that professional learning related to that standard is "progressing." And an average of 1.0 – 2.9 suggests that professional learning related to that standard "needs attention" (2017, p.9).

In 2014-15, the Arizona Department of Education provided access to the SAI-2 survey instrument to all of the school districts in Arizona. In all, 545 schools administered the SAI-2 survey with their teachers. Due to large discrepancy between the number of participants and

because several necessary data pieces were unattainable (e.g. standard deviations), statistical comparisons were not possible. However, a basic visual comparison of the means of the two groups will be presented by each professional learning standard construct. Table 4.4 below displays the means for each of the seven-professional learning standard constructs from the 545 schools in Arizona and from the 18 schools in my study.

Table 4.4

District Comparison of SAI-2 Results to the Arizona Sample

	District Mean	Arizona Sample Mean
Professional Learning Standards		
Learning Communities	4.0	3.9
Leadership	3.7	4.1
Resources	3.8	3.6
Data	4.1	3.7
Learning Design	3.6	3.3
Implementation	4.1	3.9
Outcomes	4.0	3.9

Learning communities are best described as a small team of educators committed to meeting often and working in collaboration on shared goals to improve student learning. Responses from the MSD of Warren Township revealed that for learning communities ($M = 4.0$) was slightly higher than the national sample ($M = 3.9$). Based on the scoring guidance from Learning Forward, both MSD of Warren Township and Arizona's data suggest learning communities are at the high end of progressing.

The second standard refers to leadership. Leadership is demonstrated by those who develop capacity, advocate, and create support systems for professional learning. The mean score for MSD of Warren Township ($M = 3.7$) was 0.4 lower than the Arizona's sample ($M = 4.1$). This could be in part due to the years of experience in their current role, as 77.6% ($n = 59$) of

these participants had 10 years or less experience. The difference of these means was the highest of all the professional learning standard constructs.

MSD of Warren Township ($M = 3.8$) scored two-tenths higher than the Arizona's sample ($M = 3.6$) on the resources standard construct. The resources standard addresses the prioritizing, monitoring, and coordinating of time and physical resources. MSD of Warren Township was a recipient of the federal Race to the Top Grant and was able to provide many physical resources during the past four years. In addition, stipends were provided to teachers for many of the professional development activities outside the school day. These additional resources could potentially be a factor impacting the higher mean score of the district as compared to the Arizona sample.

Data is the fourth professional learning standard construct. Data is described as the use of a variety of sources, types of student, educator, and system data to plan, assess and evaluate professional learning. The Arizona sample mean score for this standard was 3.7 while the MSD of Warren Township mean score was 4.1. The difference of four tenths matches the largest difference between the two data sets.

The lowest mean score for both the district and Arizona sample was from the learning design standard construct. The district score ($M = 3.6$) and the national sample score ($M = 3.3$) were both in the progressing stage. This data would suggest that the professional development being delivered might not be integrating theories, research, and models of human learning. I will discuss the data in more detail in Chapter 5.

Implementation and outcomes were the last two professional learning standard constructs. Implementation refers to the time it takes for teachers to apply their new knowledge and outcomes to be linked to student learning results. The district's mean scores of 4.1 and 4.0

respectively were both in the lower range of skillful, while Arizona's sample mean scores of 3.9 for each standard were in the higher end of the progressing range.

Although a more thorough comparative analysis was not possible for these data, the visual inspection of means does provide some context for how teachers in MSD of Warren Township in Indiana compare to another state's sample. For the most part, the scores were close enough to suggest that the concerns teachers have in Indiana are similar to those elsewhere.

Research Question 3

The third and central research question of this study asked, "What are the differences in perception about the quality of personalized professional development from the perspective of teachers, administrators, and instructional coaches using the Standards for Professional Learning?" In order to answer this central research question, all Likert-type scale questions within each professional learning standard construct were averaged to yield an overall average score for each standard. Teachers, administrators, and instructional coaches provided their perceptions to the survey questions within each construct. Teacher results represented one group, while administrators and instructional coaches represented the second group. The following sections will present both descriptive and inferential statistical analyses of these results by survey question and by standard construct.

Learning Communities

Survey Questions 9–15 were linked to learning communities and asked respondents to employ a Likert-type scale to provide their perception on seven questions that represented their levels of agreement with each item on a scale of 1 = Never, 2 = Seldom, 3 = Sometimes, 4 = Frequently, 5 = Always, and 0 = Don't Know. Table 4.5 presents the overview for each survey question within the learning community standard construct.

Survey item 12, which asked if all members of the learning community held each other accountable, had the highest difference between the two groups. Teachers' mean perception ($M = 3.9, SD = 2.4$) was 0.5 higher than that of administrators and coaches ($M = 3.4, SD = 2.2$). In contrast, administrators and coaches ($M = 4.5, SD = 2.5$) perception on survey item 18 was 0.4 higher than teachers ($M = 4.1, SD = 2.4$). In comparing the overall means between teachers ($M = 4.0, SD = 1.3$) and administrators / instructional coaches ($M = 3.9, SD = 1.3$) perception on learning communities, the results revealed a 0.1 higher mean score for teachers.

To further examine these results for the two groups, a t test analysis was used to compare the mean perceptions of the learning communities' construct. However, no statistically significant differences were found at the $p < .05$ level. Although no statically differences were revealed, these results were important because they suggested that teachers might perceive learning communities to be marginally more effective than administrators and coaches.

Table 4.5

Learning Community Survey Item Results for Teachers and Administrators/Coaches

Survey Items	Teachers		Administrators/Coaches			
	N	M	SD	N	M	SD
Survey Question 9: My school's learning communities are structured for teachers to engage in the continuous improvement cycle.	329	4.3	2.7	68	4.1	2.7
Survey Question 10: Learning community members in my school believe the responsibility to improve student learning is shared by all stakeholders, such as all staff members, district personnel, families, and community members.	329	4.0	2.7	69	4.0	2.7
Survey Question 11: My school system has policies and procedures that support the vision for learning communities in schools.	329	4.1	2.7	68	3.8	2.7
Survey Question 12: All members of the learning communities in my school hold each other accountable to achieve the school's goals.	327	3.9	2.4	68	3.4	2.2
Survey Question 13: Learning communities in my school meet several times per week to collaborate on how to improve student learning.	326	3.8	2.1	67	3.6	1.9
Survey Question 14: In my school, some of the learning community members include non-staff members, such as students, parents, or community members.	326	3.7	1.7	68	3.6	1.7
Survey Question 15: In my school, learning community members demonstrate effective communication and relationship skills so that a high level of trust exists among the group.	329	4.1	2.4	67	4.5	2.5
Overall Learning Community Standard Construct	329	4.0	1.3	69	3.9	1.1

Leadership

Survey Questions 16–22 were linked to leadership and asked respondents to employ a Likert-type scale to provide their perception on seven questions that represented their levels of agreement with each item on a scale of 1 = Never, 2 = Seldom, 3 = Sometimes, 4 = Frequently, 5

= Always, and 0 = Don't Know. Table 4.6 presents the individual comparisons of the leadership construct.

A visual inspection of the means from the leadership standard construct revealed administrators' / instructional coaches' ($M = 3.7, SD = 1.8$) perception on leadership 0.4 higher than the mean score for teachers ($M = 3.3, SD = 1.5$). Interestingly, teachers perceived leadership to be better than did administrators and coaches. Survey item 18 had the largest discrepancy of all survey items. Teachers ($M = 3.8, SD = 2.7$) had a much higher perception of the leader's ability to cultivate a positive culture that embraces collaboration, high expectations, respect, trust, and constructive feedback. Administrators and coaches ($M = 2.5, SD = 2.3$) did not perceive this to be nearly as high. When applying Learning Forward's guidance on the results, this would be an area that "needs attention."

Similar to the learning community results, a t test analysis was used to compare the mean perceptions of the leadership construct. Again, no statistically significant differences were found at the $p < .05$ level. While no statically differences were revealed, these results were important because they suggested that administrators and coaches might perceive leadership to be an area that needs support.

Table 4.6

Leadership Survey Item Results for Teachers and Administrators/Coaches

Survey Items	Teachers			Administrators / Coaches		
	<i>N</i>	<i>M</i>	<i>SD</i>	<i>N</i>	<i>M</i>	<i>SD</i>
Survey Question 16: My school's leaders consider all staff members to be capable of being professional learning leaders.	322	3.5	2.7	68	3.6	2.8
Survey Question 17: My school's leaders regard professional learning as a top priority for all staff.	321	3.8	2.8	68	3.4	2.8
Survey Question 18: My school's leaders cultivate a positive culture that embraces characteristics such as collaboration, high expectations, respect, trust, and constructive feedback.	321	3.8	2.7	68	2.5	2.3
Survey Question 19: My school's leaders are active participants with other staff members in the school's professional learning.	321	3.6	2.7	68	3.4	2.7
Survey Question 20: My school's leaders advocate for resources to fully support professional learning.	318	3.8	2.7	67	3.2	2.7
Survey Question 21: My school's leaders provide teachers with equitable resources to support our individual and collaborative goals for professional learning.	321	3.6	2.6	68	3.7	2.8
Survey Question 22: My school's leaders speak about the important relationship between improved student achievement and professional learning.	321	3.6	2.7	68	3.4	2.7
Overall Leadership Standard Construct	322	3.7	1.8	68	3.3	1.5

Resources

Survey Questions 23–29 were linked to resources and asked respondents to employ a Likert-type scale to provide their perception on seven questions that represented their levels of agreement with each item on a scale of 1 = Never, 2 = Seldom, 3 = Sometimes, 4 = Frequently, 5 = Always, and 0 = Don't Know. The results of the resources standard construct are displayed in Table 4.7.

Teachers ($M = 3.3$, $SD = 1.8$) and administrators and coaches ($M = 3.9$, $SD = 2.5$) were not in agreement on survey item 23 that asked about the amount time that is available for teachers during the school day for professional development. The two groups also showed some disagreement on survey item 24. Teachers ($M = 4.4$, $SD = 2.6$) felt they had a variety of times for professional development. Administrators and coaches ($M = 3.9$, $SD = 2.8$) perceived this to be in the high “progressing” stage. In comparing the overall means from the two groups, the teachers’ ($M = 3.8$, $SD = 1.1$) also believed that resources were more available than administrator / coaches ($M = 3.7$, $SD = 1.3$).

To further examine these results for the two groups, a t test analysis was used to compare the mean perceptions of the learning resources’ construct. However, no statistically significant differences were found at the $p < .05$ level. Although no statistical differences were revealed, these results were important because they suggested that teachers and administrators and coaches held fairly compatible perceptions regarding resources.

Table 4.7

Resources Survey Items Results for Teachers and Administrators / Coaches

	Teachers			Administrators/ Coaches		
	<i>N</i>	<i>M</i>	<i>SD</i>	<i>N</i>	<i>M</i>	<i>SD</i>
Survey Question 23: In my school, time is available for teachers during the school day for professional learning.	320	3.3	1.8	67	3.9	2.5
Survey Question 24: Professional learning is available to me at various times, such as job-embedded experiences, before- or after- school hours, and summer experiences.	320	4.4	2.6	67	3.9	2.8
Survey Question 25: Practicing and applying new skills with students in my classroom are regarded as important learning experiences in my school.	320	4.3	2.8	66	3.9	2.9
Survey Question 26: Teachers in my school have access to various technology resources for professional learning.	319	3.7	2.8	67	3.4	2.8
Survey Question 27: Professional learning expenses, such as registration and consultant fees, staff, and materials, are openly discussed in my school.	320	3.7	1.8	67	3.9	2.2
Survey Question 28: Teachers in my school are involved with monitoring the effectiveness of the professional learning resources.	320	3.7	2.2	67	3.7	2.4
Survey Question 29: Teachers in my school are involved with the decision making about how professional learning resources are allocated.	320	3.5	1.8	67	3.7	2.2
Overall Resources Standard Construct	320	3.8	1.1	67	3.7	1.3

Data

Survey Questions 30–37 were survey items related to the school’s use of data and asked respondents to employ a Likert-type scale to provide their perception on eight questions that represented their levels of agreement with each item on a scale of 1 = Never, 2 = Seldom, 3 = Sometimes, 4 = Frequently, 5 = Always, and 0 = Don’t Know. Table 4.8 presents the responses on the data standard for teachers, administrators, and coaches.

Data was the only professional learning standard category in which both the teachers' mean score ($M = 4.1$, $SD = 1.5$) and the administrators' / coaches' mean score ($M = 4.1$, $SD = 1.5$) were identical. In comparing the individual results, both groups responded similarly except for the item that asked if a variety of data was used to assess the effectiveness of the school's professional learning. Teachers' mean ($M = 4.0$, $SD = 2.3$) regarding data use was 0.4 higher than that of administrators and coaches ($M = 3.6$, $SD = 2.4$).

To further examine these results for the two groups, a t test analysis was used to compare the mean perceptions of the data standard construct. However, no statistically significant differences were found at the $p < .05$ level. Although no statically differences were revealed, these results were important because they suggested that teachers and administrators and coaches held the same perceptions regarding data.

Table 4.8

Data Survey Item Results for Teachers and Administrators/Coaches

Survey Item	Teachers			Administrators / Coaches		
	<i>N</i>	<i>M</i>	<i>SD</i>	<i>N</i>	<i>M</i>	<i>SD</i>
Survey Question 30: My school uses a variety of student achievement data to plan professional learning that focuses on school improvement.	312	4.1	2.6	64	4.1	2.8
Survey Question 31: My school uses a variety of data to monitor the effectiveness of professional learning.	312	3.9	2.5	64	4.1	2.6
Survey Question 32: In my school, teachers have an opportunity to evaluate each professional learning experience to determine its value and impact on student learning.	311	3.8	2.4	64	3.9	2.6
Survey Question 33: A variety of data are used to assess the effectiveness of my school's professional learning.	309	4.0	2.3	64	3.6	2.4
Survey Question 34: In my school, various data, such as teacher performance data, individual professional learning goals, and teacher perception data, are used to plan professional learning.	310	4.2	2.3	64	3.9	2.6
Survey Question 35: In my school, teachers use what is learned from professional learning to adjust and inform teaching practices.	310	4.5	2.6	64	4.4	2.7
Survey Question 36: Some professional learning programs in my school, such as mentoring or coaching, are continuously evaluated to ensure quality results.	311	4.0	2.3	64	4.1	2.6
Survey Question 37: In my school, how to assess the effectiveness of the professional learning experience is determined before the professional learning plan is implemented.	310	4.1	2.2	64	4.3	2.4
Overall Data Standard Construct	312	4.1	1.5	64	4.1	1.5

Learning Design

Survey Questions 38–44 were linked to learning design and asked respondents to employ a Likert-type scale to provide their perception on seven questions that represented their levels of agreement with each item on a scale of 1 = Never, 2 = Seldom, 3 = Sometimes, 4 = Frequently, 5

= Always, and 0 = Don't Know. Table 4.9 offers the remaining results from the learning design construct.

Learning design was the only professional learning construct where administrators' and coaches' ($M = 3.9$, $SD = 1.7$) perceptions were higher than the teachers' perception ($M = 3.6$, $SD = 1.2$). Two survey items were identified as having a larger discrepancy between the mean scores for each group. Survey item 40 asked participants to evaluate the various supports that teachers receive on new practices. Teachers ($M = 3.7$, $SD = 2.5$) responded much lower than administrators and coaches ($M = 4.3$, $SD = 2.7$). The other large difference between the two groups was survey item 43, which asked if teachers' input was taken into consideration when planning school wide professional learning. Administrators and coaches ($M = 3.9$, $SD = 2.6$) perceived this to be much higher than teachers ($M = 3.4$, $SD = 2.1$).

To further examine these data between the two groups, a t test analysis was used to compare the mean perceptions of the learning design standard construct. However, no statistically significant differences were found at the $p < .05$ level. Although no statically differences were revealed, these results were important because they implied that teachers were not in agreement with design and format of the professional development. The implications these results might have on providing high quality personalized professional development will be explored further in Chapter 5.

TABLE 4.9

Learning Design Survey Items Results for Teachers and Administrators / Coaches

Survey Item	Teachers			Administrators / Coaches		
	<i>N</i>	<i>M</i>	<i>SD</i>	<i>N</i>	<i>M</i>	<i>SD</i>
Survey Question 38: In my school, teachers have opportunities to observe each other as one type of job-embedded professional learning.	306	3.3	1.9	64	3.6	2.2
Survey Question 39: Teachers in my school are responsible for selecting professional learning to enhance skills that improve student learning.	304	3.8	2.4	64	4.1	2.6
Survey Question 40: Professional learning in my school includes various forms of support to apply new practices.	306	3.7	2.5	64	4.3	2.7
Survey Question 41: The use of technology is evident in my school's professional learning.	306	3.7	2.9	64	3.7	2.9
Survey Question 42: In my school, teachers' backgrounds, experience levels, and learning needs are considered when professional learning is planned and designed.	306	3.8	2.2	64	4.1	2.7
Survey Question 43: Teachers' input is taken into consideration when planning school wide professional learning.	304	3.4	2.1	64	3.9	2.6
Survey Question 44: In my school, participation in online professional learning opportunities is considered as a way to connect with colleagues and to learn from experts in education.	305	3.6	2.2	64	3.9	2.6
Overall Learning Design Standard Construct	306	3.6	1.2	64	3.9	1.7

Implementation

Survey Questions 45–51 were linked to implementation and asked respondents to employ a Likert-type scale to provide their perception on seven questions that represented their levels of agreement with each item on a scale of 1 = Never, 2 = Seldom, 3 = Sometimes, 4 = Frequently, 5 = Always, and 0 = Don't Know. Table 4.10 presents the implement survey item results.

Similar to the leadership construct, teachers ($M = 4.1$, $SD = 1.4$) perceived the implementation construct 0.4 higher than the administrators and coaches ($M = 3.7$, $SD = 1.4$). In particular, teachers ($M = 4.0$, $SD = 2.9$) rated survey item 45 considerable higher than

administrators and coaches ($M = 3.1, SD = 2.9$). This item asked the participants if they saw the primary goal of professional learning as enhancing teaching practices to improve student performance. This could potentially indicate an important difference in the views of teachers and administrators and coaches regarding the ultimate goal of PD.

Another survey item where teachers and administrators/coaches showed a higher level of disagreement was item 48. Administrators and coaches ($M = 3.5, SD = 2.8$) perceived support for teachers lower than teachers ($M = 4.0, SD = 2.7$) perceived their support, indicating a potential difference in perspectives concerning support systems provided to teachers.

To further examine these results for the two groups, a *t* test analysis was used to compare the mean perceptions of the implementation standard construct. However, no statistically significant differences were found at the $p < .05$ level. Although no statically differences were revealed, these results were important because they suggested that administrators and coaches may not feel like they are providing as much support as their teachers need. These results might be related to the inexperience of the participants in the study.

TABLE 4.10

Implementation Survey Items Results for Teachers and Administrators / Coaches

Survey Item	Teachers			Administrators / Coaches		
	<i>N</i>	<i>M</i>	<i>SD</i>	<i>N</i>	<i>M</i>	<i>SD</i>
Survey Question 45: A primary goal for professional learning in my school is to enhance teaching practices to improve student performance.	302	4.0	2.9	64	3.1	2.9
Survey Question 46: Professional learning experiences planned at my school are based on research about effective school change.	301	4.3	2.5	64	4.5	2.7
Survey Question 47: My school has a consistent professional learning plan in place for three to five years.	302	4.3	2.1	64	4.2	2.2
Survey Question 48: Teachers in my school receive ongoing support in various ways to improve teaching.	302	4.0	2.7	63	3.5	2.8
Survey Question 49: In my school, teachers give frequent feedback to colleagues to refine the implementation of instructional strategies.	301	3.5	2.1	64	3.1	2.0
Survey Question 50: My school's professional learning plan is aligned to school goals.	302	4.1	2.5	64	3.7	2.8
Survey Question 51: In my school, teachers individually reflect about teaching practices and strategies.	301	4.2	2.6	64	3.9	2.7
Overall Implementation Standard Construct	302	4.1	1.4	64	3.7	1.4

Outcomes

Survey Questions 52–58 were linked to PD outcomes and asked respondents to employ a Likert-type scale to provide their perception on seven questions that represented their levels of agreement with each item on a scale of 1 = Never, 2 = Seldom, 3 = Sometimes, 4 = Frequently, 5 = Always, and 0 = Don't Know. Table 4.11 displays the survey item results from the outcomes standard.

Like all of the other professional learning standard constructs except learning design, teachers ($M = 4.0$, $SD = 1.7$) reported a higher perception of outcomes than administrators and coaches ($M = 3.8$, $SD = 1.7$). Survey item 52 asked teachers if their professional learning

experiences connected with teacher performance standards. Teachers' ($M = 4.2, SD = 2.4$) responses revealed perceptions that their experiences do connect with their standards. However, administrators' and coaches' ($M = 3.7, SD = 2.6$) mean response was much lower on this item, indicating a difference in perceptions between teachers and administrator/coaches regarding PD outcomes.

To further examine these results for the two groups, a t test analysis was used to compare the mean perceptions of the outcomes standard construct. However, no statistically significant differences were found at the $p < .05$ level. Although no statically differences were revealed, these results were important because they suggested that teachers and administrators and coaches held fairly compatible perceptions regarding resources.

TABLE 4.11

Outcomes Survey Items Results for Teachers and Administrators / Coaches

Survey Item	Teachers			Administrators / Coaches		
	<i>N</i>	<i>M</i>	<i>SD</i>	<i>N</i>	<i>M</i>	<i>SD</i>
Survey Question 52: Professional learning experiences in my school connect with teacher performance standards (e.g. teacher preparation standards, licensing standards, etc.).	300	4.2	2.4	64	3.7	2.6
Survey Question 53: Student learning outcomes are used to determine my school's professional learning plan.	300	4.1	2.5	64	4.4	2.7
Survey Question 54: My professional learning this school year is connected to previous professional learning.	300	4.0	2.5	64	3.8	2.6
Survey Question 55: All professional staff members in my school are held to high standards to increase student learning.	300	3.6	2.8	64	3.2	2.6
Survey Question 56: Professional learning at my school focuses on the curriculum and how students learn.	299	4.1	2.6	64	4.2	2.8
Survey Question 57: Professional learning in my school contributes to increased student achievement.	300	4.0	2.6	64	3.6	2.7
Survey Question 58: In my school, professional learning supports teachers to develop new learning and then to expand and deepen that learning over time.	300	3.8	2.6	64	3.9	2.7
Overall Outcomes Standard Construct	300	4.0	1.7	64	3.8	1.7

Survey Summary

Table 4.12 provides a summary of the overall mean scores for each professional learning standard construct. As mentioned earlier, teachers' perceptions on the standards were higher in six of the seven standards. Learning design was the only standard where administrators' and coaches' mean response was higher. Because learning design underscores the importance personalized professional development, this will be discussed further in Chapter 5.

Table 4.12

Professional Learning Standards Survey Items Results for Teachers and Administrators/Coaches

	<i>Teachers</i>			<i>Administrators / Instructional Coaches</i>			<i>df</i>	<i>Sig. (2- tailed)</i>
	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>		
Learning Communities	329	4.0	1.3	69	3.9	1.1	396	.651
Leadership	322	3.7	1.8	68	3.3	1.5	388	.110
Resources	320	3.8	1.1	67	3.7	1.3	385	.664
Data	312	4.1	1.5	64	4.1	1.5	374	.957
Learning Design	306	3.6	1.2	64	3.9	1.7	368	.086
Implementation	302	4.1	1.4	64	3.7	1.4	364	.065
Outcomes	300	4.0	1.7	64	3.8	1.7	362	.499

Additional Data Analysis

The initial statistical analysis of teachers' perceptions and administrators' and coaches' perceptions did not reveal a statistical significance difference in their mean scores. To further analyze these results, a random sample was created for both elementary and secondary teachers, administrators, and instructional coaches. The random sample was created to provide a balance between the two groups in terms of numbers, which was necessary in order to determine if a statistical significance existed. A *t* test was used to compare the mean values from each sample group. These new results did not reveal a statistical significant difference; however, these results were important because they provided more specific data for both the elementary and secondary groups. Analysis of these data are below and these results are shared in Appendix C.

Elementary teachers' perceptions were higher or the same on all but one of the professional learning constructs, learning design. Teachers' mean ($M = 3.8$) was 0.3 lower than administrators' and coaches' mean score ($M = 4.1$). Leadership received the lowest perception mean score by teachers ($M = 3.5$) and administrators and coaches ($M = 3.2$). Elementary administrators and coaches perceived five of the seven professional learning constructs in the progressing stage. Data and learning design were perceived to be in the skillful stage.

Secondary teachers' perceptions were higher or the same on all but one of the professional learning constructs, which was outcomes. Teachers' mean ($M = 3.3$) was 0.4 lower than administrators' and coaches' mean score ($M = 3.7$). Outcomes received the lowest perception mean score by teachers ($M = 3.3$). Learning design received the lowest perception mean score by administrators and coaches ($M = 3.3$). Secondary administrators and coaches perceived seven of the seven professional learning constructs in the progressing stage.

These results might suggest to MSD of Warren Township leadership that elementary teachers have different professional development needs than those teachers who teach at the secondary level.

Summary

This chapter presented the results of a quantitative study based on the perceptions of teachers, administrators, and instructional coaches regarding the quantity and quality of personalized professional development presented during the 2016-2017 school year in MSD of Warren Township in Indiana. Descriptive statistics were presented for a comprehensive overview of the study participants' responses on survey items. A series of t-tests were employed to compare the differences in perceptions on each of the SAI-2 survey items within the seven Learning Forward professional learning standard constructs. The findings of this study can be used to inform school and district leadership. Conclusions, implications, and recommendations for research and practice will be discussed in Chapter 5.

CHAPTER FIVE: CONCLUSIONS

Chapter 5 presents: (a) a summary of the study, (b) major findings of the study organized by research questions, (c) findings related to the literature, (d) implications for educational practitioners, and (e) recommendations for further research.

Purpose of the Study

The purpose of the study was to (a) investigate and describe the current professional development practices in MSD of Warren Township, (b) compare teachers' perceptions of personalized professional development in their district to national standards on best practices in professional development, and (c) examine the perceptions of teachers regarding the quality of the personalized professional development received compared to the perception of administrators and instructional coaches who planned and delivered the personalized professional development. The intent of this research was to examine the professional development as perceived by teachers, administrators, and coaches using the framework of Learning Forward's Standards for Professional Development. In addition, the intent was to identify any gaps in perceptions between those receiving the personalized professional development and those delivering the professional development. If gaps or concerns were revealed, this information could then be used to improve the professional development program of the district and other school districts trying to implement personalized professional development.

Research Questions

Quantitative data were collected in order to respond to the following research questions in the study:

1. What are the current professional development practices provided for teachers in MSD of Warren Township?

2. How does MSD of Warren Township in Indiana currently providing personalized professional development for teachers compare to Arizona's sample data using the Standards for Professional Learning?
3. What are the differences in perceptions about the quality of personalized professional development from the perspective of teachers, administrators, and instructional coaches using the Standards for Professional Learning?

Review of Research Methods

This study employed a survey-based quantitative research design, which began with an analysis of the descriptive statistics of respondents' demographic characteristics and their current professional development practices for the 2016–2017 school year. Respondents were then asked to complete the 50-item survey instrument, SAI-2, which was developed by Learning Forward (2011). This Likert-item survey was developed based on the seven Learning Forward professional learning standards. The survey was presented by each standard construct and was distributed to all classroom teachers, administrators, and instructional coaches and was administered through Qualtrics.

Further analysis was conducted by using inferential statistical comparison of MSD of Warren Township's data with Arizona's data sample set, as well as a comparison of teachers', administrators', and instructional coaches' perceptions of personalized professional development within MSD of Warren Township.

Major Findings Specific to the Literature

Research Question 1

The analysis of the data from research question one indicates that the most frequent type of PD activities that teachers participated in during the 2016–2017 school year were ones where

teachers were assembled in large groups. The types most selected were district workshops, grade level/department meetings, and whole school staff PD. These results were not expected due to the fact these types of PD are more traditional and designed for mass sharing of content. The data from this research question also identified that less than half of the teacher respondents participated in conferences or individual reading/research. These types of PD tend to be more personalized by the teacher.

Although the quality of the PD was not asked about in this question, these findings raise concerns because research indicates traditional whole group approaches to teacher development have been found to be ineffective in preparing teachers for being successful in the classroom. (Darling-Hammond & Baratz-Snowden, 2007; Elmore, 2002; Schleicher, 2011). These results contradict current professional development trends in which teachers are spending more time in PD activities specific to their content (Wei, Darling-Hammond, & Adamson, 2010). Furthermore, these results do not support the research that suggests increased opportunities for teacher collaboration are showing positive results in building upon teacher experiences, pedagogies, and content (Goddard & Goddard, 2007; Ronfeldt, Farmer, McQueen & Grissom, 2015).

In sum, the results from research question one would suggest that many teachers are participating in similar PD activities that research has identified as ineffective and unpopular with teachers. This is critical information for the MSD of Warren Township leadership team to know and understand when planning for future professional development. This will be discussed further in implications for action and recommendations for further research.

Research Question 2

The analysis of the data from research question two was collected through the SAI-2 survey results from Arizona Department of Education and from the participants from MSD of Warren Township. There were two professional learning standard constructs where the results from Arizona sample and the findings from the district participants had a larger difference in their mean score. These standard constructs were Leadership and Learning Design.

Leadership was the only construct in which the mean score from MSD of Warren Township was lower than the mean score from the Arizona results. The leadership standard is focused on skillful leaders who develop capacity, advocate, and create systems for professional development (Learning Forward, 2011, p.43). As mentioned in Chapter 4, the results from the demographic survey showed that the experience level of the leaders and coaches from MSD of Warren Township was minimal. More than three-fourths of this leadership group from MSD of Warren Township had less than 10 years of experience in their current role. This data was not available for the leadership group from the Arizona results.

Many researchers identify that leadership as a major factor of providing high quality professional development for teachers (Darling-Hammond et al, 2009; Fullan and Langworthy, 2014; Lezotte, 1999; Marzano, 2003; Walters & Marzano, 2006). The results from the survey administered to MSD of Warren Township implied that leadership is an area that is progressing and not “skillful.” Contrary, the findings from the Arizona survey suggested that the leadership is in the “skillful” range as described by the Learning Forward standards (Learning Forward, 2011). This is an important factor for MSD of Warren Township because prior research has shown that school leadership is second only to teacher quality in improving student achievement (Louis, Leithwood, Wahlstrom, & Anderson, 2010).

Learning design was the second standard construct that had a higher difference in the mean scores between the two data sets. The learning design standard is based on theories, practices, and research, and models of human learning (Learning Forward, 2011, p. 43). For both the Arizona results and the MSD of Warren Township results, learning design was in the “progressing” stage. These results align with the literature on providing effective personalized professional development that state teachers are not getting their needs met through traditional PD structures (Yoon et al, 2007).

As recent as 2015, The New Teacher Project reported that teachers are not unsatisfied with the amount of professional development being offered, but rather the quality of the PD being provided. Teachers also indicated in the 2014 Bill and Melinda Gates Foundation study that they are not content with the format of PD available to them. The data from research question one and research question two might suggest that the teachers from MSD of Warren Township are not satisfied with the format of professional development activities being provided. This is a strong consideration for the leadership team of MSD of Warren Township to be thinking about when planning future personalized professional development.

Research Question 3

The analyses of data from research question three were collected through the SAI-2 survey items nine through fifty-eight. The following paragraphs will provide an analysis of each Learning Forward standard along with a synthesis of the research literature around these constructs. The findings are a comparison from both teachers and administrators/coaches.

Learning Communities

Learning Forward (2011) describes professional learning communities as the process that increases educator effectiveness and student outcomes through a collective and collaborative

commitment to continuous improvement, accountability, and goal alignment. Teachers' perceptions of learning communities' construct were slightly higher than that of administrators and instructional coaches. The highest difference in mean scores between the two groups came from survey item 12 in which participants were asked if all members of the professional learning community held each other accountable to achieve the school's goals. Although both mean values were in the "progressing" stage, teachers perceived this to be a half point higher than did the administrators and coaches. This was an essential finding for MSD of Warren Township and other school districts, as it suggested that administrators and coaches did not agree that those participating in professional learning communities held one another accountable to the degree that teachers did.

As discussed in the Chapter 2 literature review, when teachers work in collaboration and are jointly focused on a shared vision, the culture is affected in a positive manner (Darling-Hammond, 1997). More so, when teachers formed their own active professional learning communities, student absenteeism and student dropout rates were reduced and student achievement improved significantly in the core content area (Lee, Smith, and Croninger, 1995). This research along with the results of the learning communities' construct might be a focus in preparing for future learning community opportunities.

Knowles (1987) adult learning theory and recent research on best practices on professional development suggests that professional learning communities that relate to a specific content (Desimone, 2009) would provide teachers with a structure to learn and apply new content that favors their learning preferences. More so, if teachers were allowed to self-direct their own content or focus, Knowles (1973,1984) believed that teachers would take more ownership in their own learning.

Leadership

According to Learning Forward (2011), professional learning that increases educator effectiveness and results for all students requires skillful leaders who develop capacity, advocate, and create support systems for professional learning. Based on the survey results, both the teacher group and the administrator and coach group perceived leadership to be in the mid to lower range of “progressing.” The leadership construct was second lowest perceived construct for the teacher group and the first lowest perceived construct for the administrator and coach group. This data suggested that both groups feel leadership was an area for growth.

Survey item 18 asked participants whether their school leader cultivated a positive culture that embraced characteristics such as collaboration, high expectations, respect, trust, and constructive feedback. Surprisingly, the teachers perceived this to be more than one scale point higher than did the administrator and coach group. The administrator and coach group perceived this item to be in the “needs attention” stage. This might imply that the administrator and coach group did not feel they had successfully reached this level of school culture. Moving forward, this result is probably the most meaningful for district leadership personnel as they make efforts to provide professional development and support to newer principals and instructional coaches.

The leadership standard refers to setting the right conditions for teachers and students to be successful in the classroom. The influence of adult learning theory on this professional learning standard and the results of the study are applicable to both the MSD of Warren Township district and building leadership teams. As professional development is planned and implemented, leaders need to be mindful of the adult learning practices that engage adults in the development of their own activities, encourages dialogue and sharing of experiences, supports and teaches reflective practices, and provides opportunities for adults to more immediately use

learning to respond with life or work issues (Drago-Severson, 2009; Knowles, 1984; Merriam, Caffarella, & Baumgartner, 2007).

Resources

Learning Forward (2011) describes resources as the prioritizing, monitoring, and coordinating resources for educator learning. Resources for this study were defined as time and physical resources. This professional learning construct had three survey items where there seemed to be disagreement between teachers and administrators and coaches. Survey item 23 asked participants if there was time available for teachers during the school day for professional learning. Administrators and coaches reported a mean Likert score of more than one half point higher than did the teachers. In contrast, teacher's perceptions on survey item 24 were exactly one half point higher than administrators' and coaches'. This item asked participants if professional learning was available at various times, such as job-embedded, before- or after-school hours, and summer experiences. Time, as noted in Chapter 2, is an essential part of the professional development process. Several studies have identified that effective professional development requires 30 to 100 hours spread over a school year (Yoon, et al., 2007).

Providing sufficient time for PD has strong implications when considering Knowles work and research on adult learning. Guskey and Sparks (2002) identified three characteristics of professional development that have direct influence on teacher learning. The three characteristics were: (a) the *context* in which learning occurs; (b) the *content* of the learning, and; (c) the *process* used to convey the content. The context of the PD activities might be an area that leaders and coaches look at closer to determine the difference in thinking between the two questions.

Data

Learning Forward (2011) defines the data standard as the use of a variety of sources and types of student, educator, and system data to plan, assess, and evaluate professional learning. Data was the only professional learning construct where teachers and administrators and coaches held the same perceptions. Both groups felt that the data standard was in the low end of the “skillful” stage. There was only one survey item where teachers and administrators and coaches seemed to disagree. Survey item 33 asked if there were a variety of data that were used to assess the effectiveness of the school’s professional learning. Administrators and coaches perceived this item to be almost a half point lower than teachers.

The collection and analysis of school and student data is an effective way of examining the context of the school. Understanding school context is important because it allows school leaders to determine student learning needs and how to improve teacher capacity to meet these needs (Guskey, 2002; Learning Forward, 2011). Once leaders have this data, they can then be thinking about the most effective process for adult learners in which to deliver the content.

Even though data collection and analysis was introduced and required by NCLB in 2002 to evaluate professional development programs, there were limited research studies that identified data being used to evaluate the effectiveness of a school’s professional learning program. This need will be discussed in recommendations for future research.

Learning Design

Learning Forward (2011) defines learning design as professional learning that integrates theories, research, and models of human learning. Learning design was the only construct where teachers’ reported perceptions were lower than that of the administrator and coach group. Of the seven survey items within this standard, administrators and coaches rated six items higher and

one item the same as teachers. There were two survey items in which the mean score between the two groups was one half point or higher. Survey item 40 had the highest difference between teachers and administrators and coaches. This question asked if professional learning included various forms of support to apply new practices. Survey item 43 asked if teachers' input was taken into consideration when planning school wide professional development. Administrators' and coaches' mean score for this item was one-half point higher than that of teachers. These findings seem to be in contrary with the work of Malcolm Knowles (1973, 1984). In his research on adult learning, Knowles suggested that adults learn best when they have input on the pace and content of their own learning. The results of the learning design standard construct will provide some important guidance for school and district leaders as they plan and implement a personalized professional development program.

Implementation

Learning Forward (2011) refers to the implementation standard as the application of research on change to sustain support for implementation of professional learning for long-term change. Teachers perceived the implementation of their professional learning to be "skillful" on six of the seven survey items within the implementation construct. On the contrary, administrators' and coaches' perceptions on these seven items yielded only two survey questions to be in the "skillful" stage. Survey item 45 presented the highest difference, almost one full point, in mean scores between teachers and administrators/coaches. Teachers felt more strongly that the primary goal for professional learning was to enhance teaching practices to improve student performance than did administrators and coaches.

Even though the teachers' mean values for the implementation standard construct were the highest among all of the standard constructs, research on the implementation of new

knowledge or skills has suggested that it takes twenty or more separate instances for a teacher to master a new skill (Joyce and Showers, 2002). These results should be accepted with caution, as more time is needed to determine whether the new knowledge is being implemented consistently. Knowles (1973, 1984) believed that adults were problem-centered learners, meaning that they want to apply new information immediately to their work environment. This might be an important consideration for administrator and instructional coaches when planning professional development.

Outcomes

Learning Forward (2011) describes the outcomes standard as the alignment of educator performance and student curriculum standards. Teachers perceived the outcomes standard construct higher than did the administrators and coaches. Survey item 55 was the lowest rated question for both groups within this construct. This question asked whether all professional staff members were held to high standards in order to increase student learning. Although teachers perceived this to be almost one-half point higher than administrators and coaches, both groups felt that this was in the “progressing stage.” The highest rated item for both groups was survey item 53 which asked if student-learning outcomes were used to determine the school’s professional learning plan. Teachers and administrators and coaches rated this item in the “skillful” stage.

This was a promising result from my study. Although using student learning outcomes to plan and evaluate professional development is recommended by Learning Forward and research, there is very limited evidence that outcomes are linked to professional development programs. In a review of over 1,300 research studies that reported gains in student outcomes based on professional development experiences, only nine of these studies met the requirements of the

“What Works Clearinghouse,” which is a source of high-quality research results. This will be a consideration for MSD of Warren Township as well as other districts seeking to develop successful PD programs.

Limitations of the Study

Imbalance of Participants

A major limitation of this study was the imbalance of teacher participants compared to the number of administrators and coaches who participated. With MSD of Warren Township having one pre-school, nine elementary schools, three intermediate academy schools, three middle schools, and one high school, there were almost nine times more teachers than administrators and coaches. The very large difference in group participation numbers limited the validity of statistical comparison of the results between the two groups. In an attempt to solve this problem, a random sample of teachers and administrators and coaches was pulled and used for inferential analyses, however, no statistically significant results were obtained.

Survey Length

The survey utilized in my study consisted of 60 questions and all but two questions were required. Although I did share in the study’s informed consent the length of the survey as well as the approximate completion time, a survey of 15-20 minutes is slightly longer than the recommended amount of time. According to Qualtrics, 95 out of 459 participants who started the survey did not complete it. Therefore, the length of the survey may have limited my study’s overall response rate.

Researcher’s Role

An additional limitation of the study’s results was the role of the researcher. The researcher in this study is a district level administrator from MSD of Warren Township. While

the anonymity of the participants was promised, my role as a researcher could have been a factor in the way some of the participants responded to the survey results. Not all teachers, administrators, and coaches completed the survey.

Implications for Action

Recommendations for Educational Practitioners

MSD of Warren Township Recommendations. This study provided some important insight on the current professional development practices in my school district, which was the district of this study. First, based on the perceptions from our school and district leaders, we must recognize the need for professional development and training for administrators and coaches. With so many recent changes to the educational landscape, many administrators and coaches have not worked in a classroom setting under the current expectations. They will need to be trained on the latest academic standards, use of innovative technology, and brought up to speed on new pedagogical strategies. The quality of the professional development being delivered can only be as good as those who are planning and administering the PD. As a district, we need to invest in our principals and coaches in order to build their capacity to plan and deliver high quality PD experiences.

Perhaps just as important as leadership development is the use of student, educator, and system data to plan, assess, and evaluate professional learning. Although the results of the study suggested that this area is in the “progressing” stage, data collection for evaluation of our professional development program is needed. Our teachers, administrators, and coaches need to identify data sources, and collect and analyze these data to evaluate the effectiveness of the professional development being delivered. Additionally, to be most effective and transparent, we need to collect teacher input and feedback before, during, and after the process.

Furthermore, based on the results of this study, it appears that the large majority of teachers are participating in traditional models and practices that according to research are not effective ways to improve teacher performances. However, there were some promising results from the study that suggested teachers have access to job-embedded professional development through instructional coaching, collaboration time with other teachers, and opportunities for independent study. This information will be important for our district's professional development leadership team to consider when planning future PD activities that meet the needs of teachers. We need to decrease the ineffective PD practices and increase the opportunities that have a positive impact on teacher performance.

Recommendations for other Schools and Districts. Achieving positive student outcomes is the end goal for all schools and districts. To accomplish this, students must have highly trained teachers in their classrooms. The research is clear and has been consistent that the quality of the instruction is one of the strongest influences on the influence of student achievement (Louis, Leithwood, Wahlstrom, Anderson, 2010; Hattie, 2009; Marzano, 2007). Knowing this research and based on the results of this study, I have identified two additional recommendations for educational practitioners.

School and district leaders face the challenge of providing high quality and effective professional development experiences for their teachers. For many years, this task was done in isolation of teacher contribution or feedback. Teachers want and need to be decision makers in their professional growth. School and district leaders should consider providing teachers an opportunity to provide feedback on their professional development experiences. I believe teachers would benefit from participating in a process that collects and analyzes their perceptions on their professional development. These data could provide helpful insight to the district

leaders on their PD program strengths and areas of need, thus driving PD improvement initiatives.

Those making professional development decisions should also become more familiar with the research surrounding adult learning and use this guidance to plan professional development activities that align to adult learning needs. These activities should be personalized to teacher needs, format preferences, and learning styles. Teachers want and need professional development that is timely, job-embedded, and specific to their content.

Recommendations for Future Research

At the time of this study, there was a lack of extensive research on providing quality personalized professional development for teachers. This study adds an important piece to the literature base on this topic. However, more research is needed in this area for teachers to receive the most effective personalized professional development experiences. Furthermore, the effectiveness of personalized professional development needs to be researched and analyzed utilizing data-based approaches employing students', educators', and systems' data.

This study was conducted in a large primarily urban school district in Indiana that currently serves an 80% free and reduced meal student population. Because urban schools are perceived to have more challenges, it would be beneficial to compare these results with those from suburban and rural districts to see if their professional development programs are meeting teachers' needs. This comparison would provide a more comprehensive overview of personalized professional development for teachers across areas and demographics.

Further research is also needed to identify a survey instrument or process that better addresses the perceptions of school and district leaders on their professional development programs. Learning Forward designed the SAI-2 tool primarily for teachers to reflect on their

school's professional development program. However, this study attempted to use the SAI-2 to capture the perceptions of administrators and coaches as well.

Summary

The central focus of this study was to investigate the perceptions between teachers and administrators and instructional coaches on their professional development experiences during the 2016–2017 academic year in my school district. This topic is important because we know from research that the number one influence on student achievement is the quality of teacher instruction. In order to improve teacher instruction, teachers need to be provided with the highest quality PD that meets their individual needs. From the results of my study and the review of current literature, I make the case for providing teachers with personalized professional development experiences.

Personalized professional development is a method of providing essential content knowledge, pedagogical skills and other supports to educators in ways that take into consideration their personal learning preferences. One size fits all professional development can no longer meet the diverse needs of today's teachers. Teachers must be provided a voice when school and district leaders are making professional development decisions.

Teachers have an enormous amount of pressure placed on them by themselves, parents, the general public, and politicians. I subscribe to the belief that teachers perform their responsibilities the best they can with the knowledge they have. If we want to improve teacher's performance, then we need to provide them with new knowledge and training in a way that meets their needs, aligns with their learning preferences and takes into account their input and feedback. Our students deserve the best teachers. Our teachers deserve the best professional development.

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APPENDIX A: SAI-2 SURVEY

Demographic and Biographical Information - Questions 1-7

1. Role
2. Gender
3. School Level
4. Years of Classroom Teaching/Administration Experience
5. Years at Current School
6. Number of Personalized Professional Development Sessions Attended/Participated in during 16-17 SY
7. Number of Professional Development Sessions Attended/Participated in during 16-17 SY

Types of PD Sessions Attended / Participated – Question 8

8. What types of professional development activities have you participated in during the 2016-17 school year? (Select all that apply)

In District Workshops, Out of District Workshops, Conferences, Grade Level/Department Meetings, College Courses, Online Courses, Mentoring, Coaching Sessions, Professional Learning Communities, Peer Study Groups, Observing other Educators, Individual Reading/Study/Research, Whole-School Staff Professional Development, Other (Please describe)

Standards for Professional Learning Survey Items**Learning Communities – Questions 9 - 15**

Standard: Professional learning that increases educator effectiveness and results for all students occurs within learning communities committed to continuous improvement, collective responsibility, and goal alignment.

Please rate the following items: 5 - Always, 4 - Frequently, 3 - Sometimes, 2 - Seldom, 1 - Never, 0 - Don't Know

9. My school's learning communities are structured for teachers to engage in the continuous improvement cycle (i.e. data analysis, planning, implementation, reflection, and evaluation).
10. Learning community members in my school believe the responsibility to improve student learning is shared by all stakeholders, such as all staff members, district personnel, families, and community members.
11. My school system has policies and procedures that support the vision for learning communities in schools.
12. All members of the learning communities in my school hold each other accountable to achieve the school's goals.
13. Learning communities in my school meet several times per week to collaborate on how to improve student learning.

14. In my school, some of the learning community members include non-staff members, such as students, parents, or community members.
15. In my school, learning community members demonstrate effective communication and relationship skills so that a high level of trust exists among the group.

Leadership – Questions 16 - 22

Standard: Professional learning that increases educator effectiveness and results for all students requires skillful leaders who develop capacity, advocate, and create support systems for professional learning.

Please rate the following items: 5 - Always, 4 - Frequently, 3 - Sometimes, 2 - Seldom, 1 - Never, 0 - Don't Know

16. My school's leaders consider all staff members to be capable of being professional learning leaders.
17. My school's leaders regard professional learning as a top priority for all staff.
18. My school's leaders cultivate a positive culture that embraces characteristics such as collaboration, high expectations, respect, trust, and constructive feedback.
19. My school's leaders are active participants with other staff members in the school's professional learning.
20. My school's leaders advocate for resources to fully support professional learning.
21. My school's leaders provide teachers with equitable resources to support our individual and collaborative goals for professional learning.
22. My school's leaders speak about the important relationship between improved student achievement and professional learning.

Resources – Questions 23 - 29

Standard: Professional learning that increases educator effectiveness and results for all students requires prioritizing, monitoring, and coordinating resources for educator learning.

Please rate the following items: 5 - Always, 4 - Frequently, 3 - Sometimes, 2 - Seldom, 1 - Never, 0 - Don't Know

23. In my school, time is available for teachers during the school day for professional learning.
24. Professional learning is available to me at various times, such as job-embedded experiences, before- or after- school hours, and summer experiences.
25. Practicing and applying new skills with students in my classroom are regarded as important learning experiences in my school.
26. Teachers in my school have access to various technology resources for professional learning.
27. Professional learning expenses, such as registration and consultant fees, staff, and materials, are openly discussed in my school.
28. Teachers in my school are involved with monitoring the effectiveness of the professional learning resources.

29. Teachers in my school are involved with the decision making about how professional learning resources are allocated.

Data – Questions 30 - 37

Standard: Professional learning that increases educator effectiveness and results for all students uses a variety of sources and types of student, educator, and system data to plan, assess, and evaluate professional learning.

Please rate the following items: 5 - Always, 4 - Frequently, 3 - Sometimes, 2 - Seldom, 1 - Never, 0 - Don't Know

- 30. My school uses a variety of student achievement data to plan professional learning that focuses on school improvement.
- 31. My school uses a variety of data to monitor the effectiveness of professional learning.
- 32. In my school, teachers have an opportunity to evaluate each professional learning experience to determine its value and impact on student learning.
- 33. A variety of data are used to assess the effectiveness of my school's professional learning.
- 34. In my school, various data, such as teacher performance data, individual professional learning goals, and teacher perception data, are used to plan professional learning.
- 35. In my school, teachers use what is learned from professional learning to adjust and inform teaching practices.
- 36. Some professional learning programs in my school, such as mentoring or coaching, are continuously evaluated to ensure quality results.
- 37. In my school, how to assess the effectiveness of the professional learning experience is determined before the professional learning plan is implemented.

Learning Designs – Questions 38 - 44

Standard: Professional learning that increases educator effectiveness and results for all students integrates theories, research, and models of human learning to achieve its intended outcomes.

Please rate the following items: 5 - Always, 4 - Frequently, 3 - Sometimes, 2 - Seldom, 1 - Never, 0 - Don't Know

- 38. In my school, teachers have opportunities to observe each other as one type of job-embedded professional learning.
- 39. Teachers in my school are responsible for selecting professional learning to enhance skills that improve student learning.
- 40. Professional learning in my school includes various forms of support to apply new practices.
- 41. The use of technology is evident in my school's professional learning.
- 42. In my school, teachers' backgrounds, experience levels, and learning needs are considered when professional learning is planned and designed.
- 43. Teachers' input is taken into consideration when planning school wide professional learning.

44. In my school, participation in online professional learning opportunities is considered as a way to connect with colleagues and to learn from experts in education.

Implementation – Questions 45 - 51

Standard: Professional learning that increases educator effectiveness and results for all students applies research on change and sustains support for implementation of professional learning for long-term change.

Please rate the following items: 5 - Always, 4 - Frequently, 3 - Sometimes, 2 - Seldom, 1 - Never, 0 - Don't Know

45. A primary goal for professional learning in my school is to enhance teaching practices to improve student performance.
46. Professional learning experiences planned at my school are based on research about effective school change.
47. My school has a consistent professional learning plan in place for three to five years.
48. Teachers in my school receive ongoing support in various ways to improve teaching.
49. In my school, teachers give frequent feedback to colleagues to refine the implementation of instructional strategies.
50. My school's professional learning plan is aligned to school goals.
51. In my school, teachers individually reflect about teaching practices and strategies.

Outcomes – Questions 52 - 58

Standard: Professional learning that increases educator effectiveness and results for all students aligns its outcomes with educator performance and student curriculum standards.

Please rate the following items: 5 - Always, 4 - Frequently, 3 - Sometimes, 2 - Seldom, 1 - Never, 0 - Don't Know

52. Professional learning experiences in my school connect with teacher performance standards (e.g. teacher preparation standards, licensing standards, etc.).
53. Student learning outcomes are used to determine my school's professional learning plan.
54. My professional learning this school year is connected to previous professional learning.
55. All professional staff members in my school are held to high standards to increase student learning.
56. Professional learning at my school focuses on the curriculum and how students learn.
57. Professional learning in my school contributes to increased student achievement.
58. In my school, professional learning supports teachers to develop new learning and then to expand and deepen that learning over time.

APPENDIX B: SURVEY RELIABILITY AND VALIDITY REPORT



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Technical Report:

Redesign and Psychometric Evaluation of the Standards Assessment Inventory!

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!

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!

June 8, 2012

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analyses sought to elucidate the number and pattern of factors being measured by the ISAI2, including the congruence of this structure to the seven Standards for Professional Learning, the validity and reliability of each item, and the reliability and distribution of subscale scores. For instance, these analyses addressed the following questions, among others: Do seven distinct factors correspond to each of the seven Standards for Professional Learning? Do the items reliably measure their intended factor/standard? Do any items seem to measure factors other than their intended factor/standard and thus possibly need to be revised or discarded?!

Based on the results of these analyses, the ISAI2 appears to measure a single construct or factor reflecting the overall quality of professional development learning programs in schools. All items were supported as valid and reliable indicators of a general professional learning quality, and reliability estimates of a composite score of school professional learning quality computed by averaging over respondents and items within the same school indicated exceptionally high reliability (i.e. very minimal measurement error). In fact, the attained degree of reliability affords some opportunity to shorten the scale by trimming items to ease respondent burden while maintaining acceptable or excellent reliability. Contrary to initial expectation, the factor analyses do not support a potentially desired intent of the ISAI2: that it is able to distinguish amongst the different factors relating to each of the corresponding seven standards. This finding has one or more explanations, each with important implications for the interpretation and use of the ISAI2. It may be that the item content or wording is not sufficiently precise to discriminate amongst the Standards for Professional Learning. If this were the valid explanation, then further refinement of the items or perhaps the methods of measurement could generate an instrument that is better able to discriminate amongst the theorized standards. However, a previous psychometric examination of the original ISAI with respect to the previous iteration of the standards also did not obtain multiple factors that paralleled the standards. Another explanation is, perhaps, more plausible. Although psychometric concepts such as validity and reliability are often ascribed to instruments, they are more accurately considered properties of the intended inferences or interpretations made from test scores, which include not only the instrument as stimulus but also the characteristics of the respondent population, conditions during measurement, and inferences made on the basis of the scores. It may be that regardless of item construction, the educators in this sample may not cognitively distinguish amongst the standards. That is, although the current Standards for Professional Learning were developed based on a considerable body of theoretical and empirical literature, this knowledge may not be yet sufficiently developed within the majority of teachers for them to differentiate amongst the standards in their individual or collective responses to the ISAI2. Without knowledge of the theory and data behind the current Standards for Professional Learning, discernment amongst the standards by teachers may be unrealistic, and no teacher-based measure of professional learning would be able to provide discriminating scores on each of the standards. One implication of this hypothesis is that efforts should be made not only to involve educating school administrators and leaders in best practices for professional learning but also to expose educators to the theory and scholarship of professional learning. Even in the absence of such exposure, all of this is not to suggest that schools should not consider computing and interpreting subscale scores. Examination of subscale scores might be useful, for instance, if a school is evaluating a concerted effort to improve its performance with respect to a

particular standard. It might be that such a concerted effort targeting improvements pertaining to a single standard could generate movement unique to subscale measuring the targeted standard. However, in general, the subscale scores corresponding to each of the standards would be highly correlated with one another and thus convey little unique information regarding where schools stand on their professional learning programs and environment. In such cases, focusing on the total composite score would provide a more reliable, albeit general, measure of professional learning quality.

In addition to the factor and reliability analyses, a preliminary examination of the ISAI2's predictive relationship with student achievement outcomes was conducted. Owing to the geographic span of schools across multiple states, each with their own unique student achievement tests, a proxy variable for student related outcome available, Adequate Yearly Progress (AYP), was examined in a series of logistic regression analyses. Though previous research using the ISAI found evidence of predictive associations with student learning outcomes, the ISAI2 was not statistically associated with a summary AYP variable. However, these results should not be overinterpreted or generalized to other indicators of student learning outcomes. The imperfections and limitations of AYP as a criterion variable are widely recognized, and it may be poorly suited for the present purpose of demonstrating evidence of predictive validity of the ISAI2. Future research involving sufficient sample sizes of schools within a select few states for separate within-state analyses of predictive relationships between the ISAI2 and more direct indicators of student learning outcomes that are of interest is recommended.

In summary, the results of this study provide strong, albeit preliminary, support of the construct validity and reliability of the ISAI2. The focus of these analyses was on the internal structure (factorial validity) of the scales; additional research examining the association of the ISAI2 with other measures of professional learning quality and student learning outcomes is encouraged. In addition, longitudinal studies of the ISAI2 will be needed to ascertain how sensitive the ISAI2 is to detecting change over time and whether its measurement properties change over time, through repeated administrations, or in response to system intervention/change. The detailed technical report that follows elaborates on aspects pertaining to the development of the ISAI2, sampling and statistical methods, and psychometric analyses of the ISAI2.

Standards Assessment Inventory (SAI)

In 2003, a multistage scale development process was employed by the Southwest Education Development Laboratory (SEDL) to develop the Standards Assessment Inventory (SAI) for measuring alignment between a school's professional development program and the National Staff Development Council's (NSDC) 2001 Standards for Staff Development.³ This process resulted in a 60-item SAI measuring all 12 of the 2001 standards on a 5-point frequency scale ranging from *Never* to *Always*. Psychometric analysis reflected acceptable to strong reliability for the overall instrument and subscales and strong criterion validity with regards to expert ratings of professional development. Initially, construct validity was examined by SEDL using principal components analysis with varimax rotation performed on teacher-level data. These analyses found five components with eigenvalues greater than 1, rather than the theoretically expected 12 components. In 2008, a follow-up study on the validity and reliability of the SAI was conducted by SEDL for NSDC.⁴ In contrast to the previous study, an exploratory *factor* analysis was conducted on *school*-level SAI data from 429 elementary schools in Georgia. These analyses suggested a three-factor solution, with subscales corresponding to each factor having high reliability. This study also found a predictive relationship between overall SAI and the three factors and student achievement outcomes, as measured by the English language arts section on the Georgia Criterion-Referenced Competency Test. Less consistent results were obtained for the SAI subscale scores corresponding to the 12 standards.

Overview of Standards Assessment Inventory Redesign

The focus of this report is on the redesign process for the SAI to align it with the recently developed Standards for Professional Learning. This process and subsequent sections of this report were broken into two phases. In phase I, draft items for SAI2 were generated based on the Standards for Professional Learning and guided by preliminary content and factor analysis of the original SAI items. In phase II, the SAI2 items were administered to approximately 2,000 teachers representing 121 diverse schools. The data collected from this study were then subjected to psychometric analyses to examine the construct validity, predictive validity, and reliability of the SAI2.

³ Southwest Education Development Laboratory. (2003). *National Staff Development Council Standards Assessment Inventory: Summary report of the development process and psychometric properties*. Austin, Texas: Author.

⁴ Vaden-Kiernan, M., Jones, D. H., & McCann, E. (2009). *Latest evidence on the National Staff Development Council's Standards Assessment Inventory: Research brief*. SEDL and NSDC. Available at www.learningforward.org/standards/sai_sedlbrieffinal.pdf.

I will know your responses but will not share them with anyone as the intent of your participation is to test the construction of the items and not to evaluate professional learning at your school. Please be willing to share with me your thoughts about how to improve it through an e-mail once you've completed the assessment inventory. The survey will only be open until January 6, 2012, so please [take the survey now!](#)

A total of 82 practitioners completed the draft SAI2 between December 14, 2011, and January 6, 2012. A total of 59 participants responded to the online survey, and 32 provided written comments regarding the usability and the clarity of the language, the items, and the concepts. The individual comments provided at the end of each survey were transposed into a spreadsheet and categorized by item number in order to ascertain any within-item patterns across participants. Additionally, the interviewer conducted a telephone interview with three professional learning experts to ask questions pertaining to the wording of each item, the format of the survey, and other revisions that would make the administration more user-friendly. These individuals were considered "experts" because they function as professional learning directors in their respective school districts or organizations. Their comments, combined with the written comments noted above, were analyzed to inform the interviewer of changes needed to improve the content validity and usability of the SAI2.

Several participants commented on their misunderstanding of the term "learning communities." To remedy this issue, each standard statement was inserted to provide a context for the subsequent survey items. In the telephone interviews, the interviewees agreed that having the context of the standard helped with the interpretation of the survey items that related to learning communities. Several participants noted that items 36 and 43 contained "awkward wording," which resulted in the survey statements undergoing revisions to replace the word "principal" with "school leaders" and to replace the terminology "professional learning experiences" with "professional learning." After these revisions were completed, two additional professional learning experts in the field reviewed the survey for readability, appropriate wording, and usability. Minor changes to a few items were suggested and implemented in the version that was subjected to the psychometric study described in the next section.

Psychometric Evaluation!

Overview

This phase of the redesign of the Standards Assessment Inventory involved a large-scale administration of the SAI2 items to a large sample of educators (hereinafter referred to as “teachers” or “respondents”) representing more than 100 diverse schools. Respondent data were then gathered and subjected to psychometric analysis to ascertain the factor structure, factor validity, and reliability of the SAI2. These analyses included an examination of item statistics to determine whether an item should be revised or dropped from the scale. Finally, exploratory analyses of the SAI2’s predictive validity with respect to Adequate Yearly Progress (AYP) ratings were conducted.

Sample

A total of 2,325 respondents from 121 schools (an average of 18 respondents per school) completed the SAI2 for the pilot study. Of the 2,325 respondents, 1,614 (69.4%) were content area teachers, 449 (19.3%) were elective or special area teachers, and 262 (11.3%) were support teachers. Experience levels of teachers were varied, with a modal 5 to 10 years of experience (597; 25.7%); 100 (4.3%) reported less than 1 year of experience, 251 (10.8%) reported 1 to 4 years of experience, 494 (21.2%) reported 11 to 16 years of experience, 472 (20.3%) reported 17 to 25 years of experience, and 411 (17.7%) reported more than 25 years of experience. A modal group of teachers (729, 31.4%) reported they had been at their current school for 5 to 9 years. But, similarly to experience levels, considerable variability was observed: 302 (13%) reported 10 to 1 year, 492 (21.2%) reported 2 to 4 years, 615 (26.5%) reported 10 to 20 years, and 187 (8%) reported 21 or more years. Whereas most respondents were teaching in an elementary school environment (1,317; 56.6%), teachers from other environments were also well represented: high school (452; 19.4%), middle school (426; 18.3%), early childhood (66; 2.8%), career/technical (40; 1.7%), college preparatory (21; 0.9%), and early learning center (3; 0.1%). The vast majority of responding teachers were employed in a public school setting (1,924, 82.8%), whereas the remaining teachers were distributed across faith-based (242, 10.4%); corporate (43, 1.8%); public charter (30, 1.3%); private, non-faith-based (75 (3.2%); or private charter (11, 0.5%) school settings. Teachers and schools were also geographically diverse, with locations from a number of states, including Missouri, Georgia, Florida, Indiana, Michigan, Tennessee, New Jersey, Arizona, Iowa, North Dakota, Illinois, Minnesota, Kentucky, Louisiana, North Carolina, and Colorado. In summary, the survey respondents hailed from a variety of school settings and experience levels.¹⁰

¹⁰ It is important to note that despite initial attempts to obtain a random sample of 300 schools, a high frequency of nonresponses or refusals from schools was observed. As a result, the sample of schools and teachers within schools should be viewed as a convenience sample obtained from both AdvancED’s and Learning Forward’s networks. The data available do not permit comparing respondent and nonrespondent groups for differences. As such, the results reported here may not fully generalize to the entire population of teachers to the degree that the convenience sample is not representative of the population of interest.

Methodology

Participating schools encouraged their teachers to complete the survey, which was administered via Survey Monkey. The survey included 50 items developed and refined in the previous phase and grouped according to the Standards for Professional Learning. Teachers were asked to respond to each item according to a 5-point frequency response scale: *Never, Seldom, Sometimes, Frequently, & Always*. Alternatively, they could select an option for *Don't know*. (See [Appendix A: SAI2 Pilot Study Survey](#) for the pilot survey, including SAI2 items and instructions.) Participation was anonymous, with only deidentified, group-level feedback provided to participating schools.

Analyses began with a simple examination of item statistics at the respondent (educator) and school level.¹¹ These analyses were focused on describing the distribution of responses for each item, with an eye toward the variability in responses across schools and across items. Interschool variability is desired because it is believed that schools do in fact vary in their professional learning practices and environments. Items that minimally vary across schools either measure non-varying aspects of the factor or poorly discriminate amongst schools in terms of their professional learning environment. Inter-item variability is desirable for reliable measurement of professional learning across the range of scores on the professional learning factors. If most or all items are endorsed with high frequency responses, the items collectively might discriminate reliably amongst schools that are strong in professional learning, but not very reliably for schools that are intermediate or relatively weak in professional learning.

To evaluate the SAI2's construct validity, factor analytic techniques were employed to evaluate the factorial validity and reliability of the SAI2. Factor analysis seeks to ascertain the underlying (i.e. latent, unobserved) structure of the measurement instrument (e.g. survey) and is an important prerequisite before other components of construct validity or reliability estimation are conducted. Examples of the questions that factor analysis can address include the following:

- How well does the underlying factor dimensionality and structure align with the theory that guided the development of the SAI2?
 - ✎ Are there seven dimensions corresponding to the seven Standards for Professional Learning? If not, how many dimensions are measured by the survey?
 - ✎ Which items reliably measure which dimension(s)?
- Are the identified factors reliably measured by the indicators (i.e. items)? Are items all valid indicators of the underlying construct(s)?
 - ✎ Which items, if any, need to be discarded or revised due to poor validity or reliability or due to measuring more than one dimension (item complexity)?
 - ✎ Do some items convey redundant information about the underlying construct and thus can be discarded without loss of information (reliability) to ease response burden?
- How should scale scores from the survey items be computed?

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¹¹Of the 2,325 teacher respondents, 142 (6.1%) were missing data on all items and therefore are excluded from these and subsequent analyses.

- How do the factors relate with external data (e.g. student achievement data)?

Teacher responses to the SA12 were subjected to a multilevel, confirmatory factor analysis (CFA) to ascertain the degree of statistical fit between the data and a model with seven factors corresponding to the Standards for Professional Learning and specified in accord with the theoretical intent of the survey's design. Also examined was a one-factor model whereby all items were modeled as measures of a single general professional learning factor. Because it was possible that neither the seven-factor model nor the one-factor model would accurately depict the factor structure of the SA12, an exploratory factor analysis (EFA) was also performed. EFA allows the scale developer to ascertain the degree of statistical fit between the observed data and a model with k factors, where the range of k examined depends on the eigenvalues from the reduced correlation matrix. Interpretability of the solution and statistical tests and indices of model fit were used to settle on a particular k factor solution. Exploratory factor analytical methods impose minimal a priori constraints (hypotheses/predictions on the model) beyond those required to statistically identify the estimated parameters of the model, and are aimed at building a model of the underlying factor structure in the absence of information about the structure. This analysis employed the Geomin rotation, which allows factors to correlate in models where $k > 1$. All factor analyses were conducted using the Mplus statistical software program (v. 6.12)¹² and employed a mean and variance adjusted weighted least squares estimator with numerical integration.

Model fit tests and indices used consist of the chi-square test of exact fit, the Comparative Fit Index (CFI), the root mean square error of approximation (RMSEA), and standardized root mean residual (SRMR—school level model). Although statisticians continue to debate the appropriate focus and thresholds on these tests and fit indices, most consider a statistically nonsignificant chi-square test of exact fit (reflected by probability values greater than .05), RMSEA values less than .06, CFI values greater than .96, and SRMR values below .06 to reflect good or adequate model fit to the data. In other words, a model with k factors that meet these criteria is said to be consistent with the data and therefore accepted for further consideration. Conversely, a model that fails all criteria is said to be rejected by the data. In practice, models often meet only some of the criteria, while being near but just outside the thresholds for the acceptable range on other criteria. In these cases, the theoretical interpretability of the results dominates. When two or more models exhibit similar fit, the model that is the most interpretable and parsimonious is usually retained. For models that fit the data well, item level statistics are examined to evaluate the validity and reliability of individual items.

These analyses account for two important characteristics of the data: (1) response data are collected using a Likert-type frequency scale and thus likely do not possess interval scale properties, and (2) responses to the SA12 are nested within schools and thus are not independently distributed (i.e. because respondents affiliated to the same school are reporting on the same school, they are more correlated than with responses from respondents in different schools), an assumption of standard factor analytic methods. With respect to (1), common analytical methods (Pearson product moment correlation analysis, linear factor analysis) often employed with survey data assume that the scale of measurement for the data is interval level (differences in adjacent response options reflect equal discriminations on the underlying agreement scale used by the respondent). As such, inappropriate use of these linear methods with binary or ordinal data can lead to statistical artifacts and biased results, particularly when the number of response options is

¹²Muthén, L. & Muthén, B. (2011). Available at www.statmodel.com.

fewer than seven and/or the response distribution is highly skewed (e.g. when there are strong floor or ceiling effects). To address this limitation of conventional, linear factor analytic approaches, categorical confirmatory factor analysis methods¹³ were employed. Instead of modeling the *variances* and *covariances* (and *means*) of the response data as a linear function of the latent constructs given the model parameters, $\Sigma(\theta) = \Lambda\Psi\Lambda' + \Theta_e$, one parameterization for ordinal factor analysis using a probit link function models the item-response *probability* distribution as a *nonlinear* function of the latent constructs (given the model parameters) via a latent response distribution. In this model, latent response variates, y^* , are conceptualized to reflect a latent, interval-scaled variable underlying each item, y , such that $y = c$; if $v_c < y^* \leq v_{c+1}$, where c represents the categories (e.g. *never*, *seldom*, etc.) of y and v are the estimated threshold parameters for the probit function linking y^* with y . Based on the assumption of bivariate normality of y^* (and other regularity assumptions), the estimated variance-covariance matrix of y^* is modeled as a function of the underlying latent factors given the estimated and constrained model parameters: $\Sigma^*(\theta) = \Lambda^*\Psi^*\Lambda^{*'} + \Theta_e^*$. With regards to (2), the ordinal factor analytic models described above were extended to account for the nested (multilevel or hierarchical) structure of the data (i.e. teacher responses are nested within schools) in line with the approaches described by Grilli and Rampichini¹⁴ and Asparouhov and Muthén.¹⁵ Although results of the multilevel, ordinal factor analysis at the *respondent* level might be informative for the purpose of identifying poorly understood items, the presentation of the results focuses on the *school*-level factor model results, given that the purpose of these surveys was to measure the collective perceptions of *schools* and their activities with respect to the guiding standards by all surveyed stakeholders.

Once an acceptable factor model was established, an estimate of the reliability (internal consistency) for the SAI2 was calculated using an approach described by Raykov.¹⁶ Raykov's internal consistency reliability coefficient captures the precision of a scale score (e.g. computed by summing or averaging all items within the scale) and is similar to the more widely known Cronbach's alpha coefficient. Both coefficients typically range between 0 and 1 (with coefficients approaching 1 being indicative of more precise measurement and values greater than 0.8 being preferred). Values are interpreted as the proportion of scale variance that is "true score" variance deriving from the underlying common factor and which is not due to random measurement error or item specific variance. However, Cronbach's alpha coefficient is unbiased only under a fairly stringent assumption about the relationship between the underlying factor and the observed item responses (viz. essential tau equivalence). When this assumption is not met, as is often the case, Cronbach's alpha is a lower-bound estimate of reliability, though another issue can lead to upward bias.

¹³ Flora, D. B. & Curran, P. J. (2004). An empirical evaluation of alternative methods of estimation for confirmatory factor analysis with ordinal data. *Psychological Methods*, 9, 466-491. doi:10.1037/1082-989X.9.4.466

Wirth, R. J. & Edwards, M. C. (2007). Item factor analysis: Current approaches and future directions. *Psychological Methods*, 12, 58-79. doi:10.1037/1082-989X.12.1.58

¹⁴ Grilli, L. & Rampichini, C. (2007). Multilevel factor models for ordinal variables. *Structural Equation Modeling*, 14(1), 1-25. doi:10.1207/s15328007sem1401_1

¹⁵ Asparouhov, T. & Muthén, B. (2007). Computationally efficient estimation of multilevel high-dimensional latent variable models. *Proceedings of the 2007 Joint Statistical Meetings, Section on Statistics in Epidemiology* (pp. 2531-2535). Alexandria, VA: American Statistical Association.

¹⁶ Raykov, T. (1997). Scale reliability, Cronbach's Coefficient Alpha, and violations of essential tau-equivalence with fixed congeneric components. *Multivariate Behavioral Research*, 32(4), 329-353. doi:10.1207/s15327906mbr3204_2

Appendix B. On half (25) of the items, at least 75% of teachers endorsed the *Frequently & Always* response options, though only one item exceeded 90% endorsement for these response options. Comparatively, only five items were endorsed as *Frequently & Always* less than 50% of the time (viz. LC6, IR1, IR5, IR7, and LD1). Though response frequencies are clustered towards the endorsement of options indicating greater frequency, there was a “healthy” degree of variability of frequency patterns across items and no items exhibited strong floor or ceiling effects (i.e. there were no items where all or nearly all respondents endorsed the lowest/highest frequency category). Item percentages for skipped or *Don’t & Now* responses ranged between 6.6% and 36.4% (mean = 14.7%). Eight items were skipped or had a *Don’t & Now* response from more than 25% of respondents. The most extreme instance was item 3 (Implementation: *My school has a consistent professional learning plan in place for three to five years*). The magnitude of this statistic might be explained by considering the time reference (*three to five years*) in conjunction with the approximately 34% of teachers who reported being at their school for four or fewer years. However, explained, this item should be considered for deletion from the scale, along with other items exhibiting the highest skip or *Don’t & Now* rates, given the problems missing data present for the estimation of subscale and scale scores.

ICCs quantify the proportion of variability in responses that is attributable to variability between scores. In other terms, an ICC reflects the degree of non-independence amongst responses from staff within the same school, with 0 = independence (i.e. no systematic variation across schools) and 1 = complete dependence (i.e. all variation in teacher responses is due to differences across schools). Because the ISA2 is intended to measure school-level professional learning, ICCs greater than zero are to be expected and desired. Additionally, ICCs greater than .01 support the need for statistical methods that account for the observed non-independence. The ICCs for all items were substantial, reflecting similarity in teacher responses from the same school and justifying the need for statistical methods that can account for non-independence amongst the observations. ICCs across all items ranged from .11 to .32, indicating that between 11% and 32% of variation in item responses was attributable to respondents being affiliated with different schools.

Through teacher reports, the ISA2 is intended to provide data on the effectiveness and quality of professional development programs offered by schools and school districts. Given this intent, the focus of these analyses is on school-level aggregations of the teacher-level responses. **Table B.2 in Appendix B: Tables From the Item-Level Analyses of the ISA2** provides statistics to describe the distributions of these school-level aggregates, where teacher responses for each item are averaged with those of other teachers from their school.¹⁹ The theoretical range for these aggregated item averages is 1 (*Never*) to 5 (*Always*), with higher scores indicating higher within-school average frequencies for the particular item. On average, schools were rated highly on all of the items (mean average rating = 3.92); schools varied moderately in their item averages, and some schools rated at or near the minimum value of 1. Along with average, minimum, and maximum ratings, standard deviations and quartiles are also provided. The median (also known as the 50th percentile or second quartile) reflects the item score at which 50% of schools fall at or below. For all items, 50% or more of the schools averaged at least a 2.95. Similarly to the teacher-level item

¹⁹ The model-estimated, average inter-item (school-level) was .77 (range: .27X99) for all items; .82 (.63X99) for Learning Community items; .89 (.75X97) for Leadership items; .68 (.43X90) for Resources items; .89 (.74X99) for Data items; .69 (.27X92) for Learning Design items; .91 (.83X99) for Implementation items; and .93 (.80X98) for Outcomes items. The model-estimated inter-item correlation matrix for these school-level aggregates is available upon request.

statistics, scores were clustered toward the upper end of the response distribution, but a healthy degree of variability was observed.

Factorial Validity and Reliability

Multilevel, ordinal confirmatory factor analyses (CFA) began with the separate examination of SAI2 subscales corresponding to each of the seven Standards for Professional Learning. These CFA models, consisting of one factor with seven to eight item indicators each, were fit to the data. Then, these models were combined into a single, seven-factor CFA model of the SAI2. CFA concluded with the estimation of a model where all items were specified as measures of a single factor (a one-factor CFA model).²⁰ The model fit tests and indices for these analyses are reported in **Table 1**. These tests evaluate how well each model fits the data. The aim is to identify a model that fits the data well (within sampling error) or approximately well and is parsimonious. If a model fits the data poorly, it would be rejected from further consideration.

Table 1. Model Fit Tests and Indices for Full-Scale and Subscale CFA Models of the SAI2

	Chi-Square	df	p-value	RMSEA	CFI	SRMR
Learning Communities	30.69	15	0.01	0.022	0.999	0.039
Leadership	84.36	14	0.00	0.048	0.998	0.040
Resources	21.89	14	0.08	0.016	0.999	0.051
Data	58.81	20	0.00	0.030	0.999	0.038
Learning Designs	40.84	14	0.00	0.030	0.999	0.052
Implementation	17.75	14	0.22	0.011	1.000	0.024
Outcomes	18.45	14	0.18	0.013	1.000	0.020
1-Factor Model	1666	1175	0.00	0.014	0.995	0.067
7-Factor Model ^a	--	--	--	--	--	--

Note: df = degrees of freedom; RMSEA = Root Mean Square Error of Approximation; CFI = Comparative Fit Index; SRMR = Standardized Root Mean Residual.

^a The seven-factor multilevel CFA model experienced convergence problems, and multiple attempts to rectify this issue were unsuccessful, signifying a possible problem due to factor collinearity.

According to the conventional guidelines described earlier in the Methodology subsection, nearly all subscale models exhibited some degree of misfit (exceptions were models for Resources, Implementation, and Outcomes), but each fit the data approximately well. Due to the large sample size and a relatively large

²⁰ In these analyses, model parameters are being simultaneously estimated at two levels, the respondent level and the school level, with an unstructured model specified for the within-level (i.e. no over-identifying constraints included). However, the focus of these analyses is on discovering the factors that pertain to schools. Thus, the focus of this report is exclusively on results pertaining to the school-level model.

pool of items with strong correlations, the statistical test of model fit would likely be highly sensitive to what might be trivial levels of misfit. In these cases, many scholars put more weight on the approximate fit indices (RMSEA, CFI, and SRMR). When attempting to estimate the seven-factor CFA model, statistical convergence problems were experienced (i.e. the iterative process did not end with convergence criteria being met within a pre-specified number of iterations). There was some indication that convergence may have been hindered by a high degree of collinearity between the factors. In fact, correlations amongst subscale scores computed at the school level were all in excess of .7, with several correlations exceeding .9. Therefore, a one-factor CFA model of the SA1 was examined. As reflected by the model fit indices, the one-factor model fit the data approximately well. Still, it is essential that the one-factor model solution be considered meaningful and interpretable where the meaningfulness or interpretability of a solution is determined by considering the strength and pattern of relationships between the items and underlying (latent) SA1 factor. The relationships between factors and indicators are typically depicted in a factor loading matrix. Standardized factor loadings and associated standard errors for the one-factor CFA model and for each one-factor subscale model are provided in [Table in Appendix B: Tables From the Item Level Analyses of the SA12](#). The standardized factor loadings were uniformly very high, with the vast majority greater than 0.8 and none below 0.5. These numbers indicate that each item is a salient and highly reliable measure of the factor. Moreover, the standardized factor loadings are estimated with a high degree of precision, as reflected by small standard errors.

Though the CFA analyses and higher inter-subscale correlations suggest a one-factor model, it is possible that another *k*-factor model not examined generated the data. Therefore, an exploratory factor analysis was performed prior to settling on the one-factor model of the SA12. An important and initial task in conducting exploratory factor analysis is to determine the number of factors or dimensions that are being measured by the survey instrument. This determination is guided by statistical tests and indices, evaluation of eigenvalues, and meaningfulness and interpretability of the solution. As with the confirmatory factor analyses, there are two levels under consideration, the respondent level and the school level, and the number of factors would typically be determined at each level. However, the focus of this report is on the school as the unit of analysis.

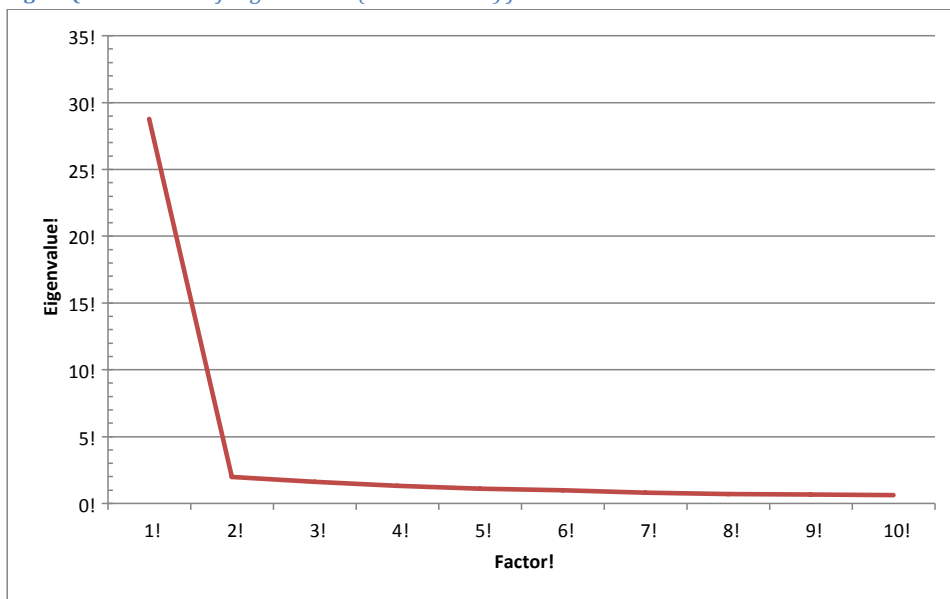
Eigenvalues quantify the variance in the item responses that is explained by the factors. Factors that account for more variation are considered potentially more important or meaningful than factors that account for less variation. Eigenvalues from the school level factor analysis of the staff survey data are reported in [Table 2](#). An often cited rule of thumb is the Kaiser rule, which states that factors with eigenvalues greater than 1.0 should be extracted. According to the Kaiser rule, a model with five factors should be examined. This rule, however, has been criticized as leading to the extraction of too many factors and thus typically should be considered an upper bound estimate of the number of factors.

[Table 2. Eigenvalues for the Exploratory Factor Analysis of the SA12](#)

Factor	1	2	3	4	5	6	7	8	9	10	...
Eigenvalues	28.79	1.99	1.61	1.32	1.10	0.99	0.79	0.70	0.67	0.62	!

Another factor enumeration approach used is examination of the scree plot, depicted in **Figure 1**. With this approach, one typically seeks the point where there is a pronounced bend (elbow) in the curve. Factors before the bend are given further consideration. According to the scree plot, a one-factor or perhaps a two-factor model should be considered for extraction. Although more sophisticated methods for factor enumeration exist (e.g., parallel analysis), these were computationally infeasible or inaccessible for the present analysis, which involves a multilevel structure and ordinal item response distributions that make it difficult to employ the more advanced methods. Thus, the one-factor and two-factor models were given closer consideration.

Figure 1. Scree Plot of Eigenvalues (School Level) for the SA12



In conjunction with examination of the eigenvalues and scree plot, statistical tests and indices of model fit are often consulted. Models with one to three factors exhibited some degree of misfit but fit the data approximately well (see

Table 3). As with the CFA models, greater weight was placed on the approximate fit indices (RMSEA, CFI, and SRMR). With these indices being within desired ranges for all models under consideration, the philosophical principle known as Occam's razor dictates that one would choose the most parsimonious model, or the model with the fewest factors. Consistent with the CFA model fit indices, in conjunction with the eigenvalues and scree plot, suggested a model that posits a single factor for explaining and summarizing the SA12 item responses, once aggregated to the school level. This conclusion was corroborated by the less interpretable solutions for the EFA models with two or more factors.

Table 3. Model Fit Tests and Indices for EFA Models of the SAI2

	1-Factor Model	2-Factor Model	3-Factor Model	4-Factor Model	5-Factor Model
<i>Chi-Square</i>	1667	1470	1279	1094	1001
<i>df</i>	1175	1126	1078	1031	985
<i>p-value</i>	0.00	0.00	0.00	0.08	0.35
<i>RMSEA</i>	0.014	0.012	0.009	0.005	0.003
<i>CFI</i>	0.995	0.996	0.998	0.999	1.00
<i>SRMR</i>	0.067	0.052	0.041	0.032	0.027

Summary statistics for the distribution of composite scores formed by taking the average of school-level item averages for the entire SAI and each SAI subscale can be found in [Table 4](#). The theoretical range for the composite and subscale scores is 1 to 5, with 5 reflecting greater adherence to the Standards for Professional Learning as reported by teachers. On average, schools tended to score highly on this scale, with 75% or more schools scoring greater than 4 (corresponding to an average endorsement of the *Frequently* or *Always* options across all items) on all scales except for the Learning Designs subscale.

Table 4. Descriptive Statistics for a Total Scale Composite Score and Subscale Scores Derived from the SAI2

	Mean	Median	Standard Deviation	Minimum	Maximum	25 th Percentile	75 th Percentile	Reliability	SEM
Learning Communities	3.88	3.93	0.47	2.00	4.86	3.66	4.19	0.97	0.08
Leadership	4.22	4.26	0.44	3.00	5.00	4.00	4.52	0.98	0.06
Resources	3.68	3.71	0.45	2.19	4.86	3.39	4.00	0.93	0.12
Data	3.81	3.88	0.47	2.46	5.00	3.52	4.14	0.99	0.05
Learning Designs	3.60	3.62	0.49	2.02	5.00	3.30	3.90	0.93	0.13
Implementation	4.08	4.08	0.41	3.00	4.86	3.86	4.38	0.99	0.04
Outcomes	4.14	4.16	0.39	3.00	5.00	3.90	4.43	0.99	0.04
Total Score	3.92	3.96	0.41	2.81	4.90	3.70	4.20	0.99	0.04

The composite scale and subscale scores exhibited excellent reliability, with all coefficients estimated > .90. This is largely due to the SAI2 having a large number of highly correlated items along with several respondents from each school. Based on an estimate of the standard deviation for the composite (scale)

and subscale scores and their respective reliability coefficients, the standard errors of measurement can be calculated as $SEM = S \sqrt{(1 - r^2)}$. The standard error of measurement can be used to form confidence bands around scores for specific schools. It should be noted that although the exceptionally high reliability for this scale is a positive attribute, achievement of the high reliability, in large part, comes at the cost of a relatively lengthy instrument. In the psychometric literature, reliabilities of .90 are often considered sufficient for most or all practical uses of an instrument. With reliabilities generally approaching or exceeding .99, one or two items could be trimmed from most subscales while retaining sufficient reliability and breadth of coverage. This might facilitate more efficient survey administration and less response burden on the schools and their teachers.

Subscale correlations are presented in **Table 5**. All correlations were very high, with an average correlation of .83. These statistics indicate substantial overlap in the information conveyed by the subscale scores and support a one-factor conceptualization and use of the SA12.

Table 5. Correlation Matrix for Subscale Scores Derived from the SA12

	Learning Communities	Leadership	Resources	Data	Learning Designs	Implementation	Outcomes
Learning Communities	⌘	!	!	!	!	!	!
Leadership	0.82	⌘	!	!	!	!	!
Resources	0.73	0.77	⌘	!	!	!	!
Data	0.85	0.80	0.85	⌘	!	!	!
Learning Designs	0.75	0.77	0.91	0.84	⌘	!	!
Implementation	0.87	0.86	0.83	0.90	0.82	⌘	!
Outcomes	0.84	0.82	0.81	0.88	0.79	0.91	⌘

Note: All correlations are statistically significant at $p < .01$.

Predictive Validity

In addition to survey item responses, data were gathered for the Adequate Yearly Progress status of each school where these data were readily available. AYP data (2010–2011) in reading and math based on the entire student body and subgroups were used in coding a dichotomous, summary AYP variable, as described in the Methodology subsection. This summary AYP variable was then regressed on the composite SA1 and subscale variables in separate logistic regression analyses. Due to the unavailability of these data for some schools, including parochial and international schools, the effective sample size for these analyses was 75 schools. However, the results indicated that none of the relations were statistically significant. Though these results might suggest that the SA12 is not predictive of student performance as summarized!

by AYP, caution is warranted in overinterpreting or overgeneralizing these results. As previously described, AYP was chosen because it was the only proxy variable for student achievement that was readily available for most of the schools in our sample. AYP, however, is an imperfect proxy variable given that each state determines, with approval from the U.S. Department of Education, its own criteria for meeting AYP. States vary significantly in the rigor of their standards for student learning and the threshold for AYP designation. Inconsistencies in criteria may have introduced enough error variability in these analyses to render statistical power too low to detect a significant relationship. Moreover, schools in states with lower standards for AYP may approach professional learning differently than schools in states with higher standards. Another cautionary note concerns the temporal relation between the AYP data (2010–2011) and the ISAI2 data (January to February 2012). Particularly during a period of significant cuts to many school budgets that may hinder both AYP and professional learning improvements, any predictive relations that may in fact exist may be observable only over another time interval. In general, AYP, with its flaws recognized by many educators, may not be sensitive enough for the detection of a relationship in this study. It is recommended that these analyses of the predictive validity of the ISAI2 be considered preliminary in light of the noted limitations and that a future study be conducted with sufficient sample sizes of schools within a select few states for separate within-state analyses of predictive relationships between the ISAI2 and student achievement outcomes of interest.

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APPENDIX C: RANDOM SAMPLE ANALYSIS

Table A1

Random Sample t-test Analysis: Elementary Teachers & Administrators and Instructional Coaches

	<i>Teachers</i>			<i>Administrators / Instructional Coaches</i>			<i>df</i>	<i>Sig. (2-tailed)</i>
	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>		
Learning Communities	52	3.9	1.3	55	3.9	1.1	105	.955
Leadership	52	3.5	1.9	54	3.2	1.5	104	.407
Resources	52	3.7	1.3	53	3.7	1.2	103	.887
Data	52	4.2	1.7	51	4.1	1.5	101	.827
Learning Design	52	3.8	1.2	51	4.1	1.7	101	.328
Implementation	52	4.0	1.6	51	3.6	1.4	101	.199
Outcomes	52	4.1	1.7	51	3.8	1.8	101	.526

Table A2

Random Sample t-test Analysis: Secondary Teachers & Administrators and Instructional Coaches

	<i>Teachers</i>			<i>Administrators / Instructional Coaches</i>			<i>df</i>	<i>Sig. (2-tailed)</i>
	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>		
Learning Communities	15	4.0	0.8	14	3.9	1.4	27	.739
Leadership	14	3.7	1.5	14	3.6	1.4	26	.881
Resources	14	3.9	1.1	14	3.8	1.3	26	.721
Data	13	4.3	1.5	13	3.9	1.6	24	.468
Learning Design	12	3.4	0.7	13	3.3	1.2	23	.649
Implementation	10	4.4	0.7	13	3.9	1.5	21	.396
Outcomes	10	3.3	1.1	13	3.7	1.6	21	.534

APPENDIX D: LEARNING FORWARD APPROVAL FOR USE OF SAI-2 SURVEY



January 6, 2016

Tim Hanson
Assistant Superintendent
Metropolitan School District of Warren Township
975 North Post Road
Indianapolis, IN 46219

Tim,

Learning Forward grants you permission to use the Standards Assessment Inventory (SAI) in your research as an instrument to measure the teacher perceptions of their professional development practices and its alignment with professional learning standards.

Please ensure that this credit line appears in your work in reference to the SAI:

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