University of North Dakota
UND Scholarly Commons

Theses and Dissertations

Theses, Dissertations, and Senior Projects

January 2014

North Dakota State Policy Effects On State Public K-12 Schools' Ability To Offer Effective Professional Development

Stephen Ryan Townsend

Follow this and additional works at: https://commons.und.edu/theses

NORTH DAKOTA STATE POLICY EFFECTS ON STATE PUBLIC K-12 SCHOOLS'
ABILITY TO OFFER EFFECTIVE PROFESSIONAL DEVELOPMENT

by

Stephen Ryan Townsend
Bachelor of Science in Education, Valley City State University, 2000
Master of Science University of Nebraska, 2005

A Dissertation

Submitted to the Graduate Faculty

of the

University of North Dakota

in partial fulfillment of the requirements
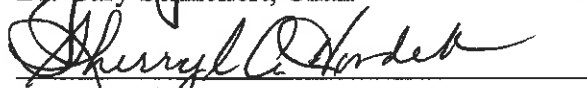

for the degree of

Doctor of Education

Grand Forks, North Dakota
December
2014

ii

This dissertation, submitted by Stephen Ryan Townsend in partial fulfillment of the requirements for the Degree of Doctor of Education from the University of North Dakota, has been read by the Faculty Advisory Committee under whom the work has been done and is hereby approved.

_____
Dr. Gary Schnellert, Chair

_____
Dr. Sherryl Houdek

_____
Dr. Pauline Stonehouse

_____
Dr. William Siders

_____
Dr. Pamela Beck

This dissertation is being submitted by the appointed advisory committee as having met all of the requirements of the School of Graduate Studies at the University of North Dakota and is hereby approved.

_____
Wayne Swisher
Dean of the School of Graduate Studies

_____
December 8, 2014
Date

iii

PERMISSION

Title   North Dakota State Policy Effects on Public K-12 Schools' Ability to
                   Offer Effective Professional Development

Department   Educational Leadership

Degree   Doctor of Education

        In presenting this dissertation in partial fulfillment of the requirements for a
graduate degree from the University of North Dakota, I agree that the library of this
University shall make it freely available for inspection. I further agree that permission
for extensive copying for scholarly purposes may be granted by the professor who
supervised my dissertation work or, in his absence, by the Chairperson of the department
or the dean of the School of Graduate Studies. It is understood that any copying or
publication or other use of this dissertation or part thereof for financial gain shall not be
allowed without my written permission. It is also understood that due recognition shall
be given to me and to the University of North Dakota in any scholarly use which may be
made of any material in my dissertation.

                                             Stephen Ryan Townsend
                                             December 2, 2014

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

ACKNOWLEDGEMENTS

I would never have been able to finish this dissertation without the support and guidance of my committee members, my family and friends, and support from countless people in my life.

A very special thank you to Dr. Houdek and Dr. Schnellert for their leadership on my committee. Their guidance and support have kept me moving toward my goal of completing this research and doctorate. I would like to thank Dr. Stonehouse for her particular knowledge in teacher development and her help with my research on adult learning styles. I would like to thank Dr. Siders particularly for his input on the statistical analysis conducted with my findings. I would like to thank Dr. Beck for agreeing to join my committee as the member at large and her valuable input during this process.

Dr. Magdalena Brockel, it is with her guidance and support through my statistical analysis that I was able to complete this research. Her knowledge and time were invaluable to me as I worked to discover the findings from my research.

A thank you to my editor Hayley Kaffar for her expertise in editing my dissertation. Her timely work has made this project something that is worth publishing.

Most importantly I need to thank my wife Maggie Townsend for all her support and encouragement. Without her help, love, and encouragement, this process would have been impossible. She is the reason I strive to be a better person, professional, and father every day.

x

ABSTRACT

Through research I have identified eight constructs of effective professional development (collaborative, content focused, active practice, inclusive of technology, goal oriented, evaluated, sustained, increases self-efficacy). North Dakota state law requires two days of professional development that are defined by their length of time. The purpose of this quantitative study was twofold: (a) to identify if the eight constructs of effective professional development are embedded in North Dakota public schools' professional development opportunities and (b) whether or not the schools that offer professional development given the restraints of North Dakota state law are offering effective professional development. North Dakota public school teachers and North Dakota public school administrators were surveyed regarding their perceptions of effective professional development.

Although state law only requires two days of PD, 370 of the 437 responses to this question indicated that their districts offered more than two days. Nearly 64% of the responses indicated that the number of PD days in the district calendar was adequate to accomplish their PD needs for the year. Sixty three percent of the respondents believed the PD their district was offering during those days was effective. The results show the quality of the professional development is more important than the length of the professional development.

CHAPTER I

INTRODUCTION

North Dakota (ND) state policy regarding Professional Development (PD) was last updated in 2007 (NDCC, 15.1-06-04). Nationally PD research has been conducted between 2007 and 2014 which outlines what effective professional development is in K-12 schools, how adults learn, and how to evaluate PD effectiveness. ND's seven-year-old state policy includes a precise definition of PD in their school calendars: to count a day must consist of six hours of programming, exclusive of meals and other breaks, conducted in a single day; or two 4-hour periods, exclusive of meals and other breaks, conducted over two days.

In the current educational paradigm of high expectations and accountability, do school districts understand whether or not the PD they are offering is effective? Are school districts designing their PD opportunities to best develop their professional staff? Teacher effectiveness is an important part of determining student achievement (Ding & Sherman, 2006). In order to have the most impact on teacher effectiveness and student achievement, school districts need the funding, resources, and flexibility to offer all forms of effective PD. The current ND state policy on PD is based on time limits and not effectiveness. ND school districts' PD opportunities should be analyzed regarding how effective they are.

In 2001 the US federal government passed a law known as No Child Left Behind (No Child Left Behind [NCLB], 2002). It is an educational law that attempts to increase public school accountability. NCLB includes identifying schools on whether or not they made adequate yearly progress (AYP) as defined by student achievement on standardized tests. Each state's education department was tasked with developing a formula that would be utilized to identify school and districts' AYP targets and statuses. States submitted to the Department of Education an accountability workbook that outlined what factors, such as test scores, graduation, and attendance rates as well as the goals, schools would need to accomplish in order to make AYP (NCLB, 2002). ND submitted its Accountability Workbook to the Department of Education with a formula defining AYP based on student achievement on standardized tests, school attendance rates, and school graduation rates (North Dakota Department of Public Instruction, 2003). These three factors are indicators of school and district success in preparing students for their next phase in life beyond K-12 education. Effective PD for staff and administration will help schools improve the scores they report in these factors annually.

As accountability expectations of public schools continue to increase and make headlines in our national media, the need for effective professional development has grown (Erbert-May et al., 2011). School districts are being held to higher standards of accountability. Teacher effectiveness is capable of increasing a student's ability to achieve (Darling-Hammond, 1999). NCLB has led to many reform efforts across the country. These reforms include requiring research-based curriculum to be implemented in classrooms and ensuring teachers are highly qualified to teach their content areas. In order to meet many of these reforms, school districts have focused on improving

2

professional development for teachers. Along with a focus on PD comes a focus on PD effectiveness. As school districts increase the amount of funding they are spending, they now want their PD providers to show evidence of the effectiveness of the programs they offer (Penuel, Fishman, Yamaguchi, & Gallagher, 2007).

North Dakota School Calendar and Professional Development Requirements

Currently (2014) school district administrators, from every ND public school district, must build a school calendar that is at least one 182 days long. One hundred seventy five days must be used for instruction, three days must be used for holidays, two days must be used for parent teacher conferences or compensatory time for parent teacher conferences held outside of the regular school day, and finally two days of PD for teachers. Schools also have the option of a third day should they choose it (NDCC 15.1-06-04). According to North Dakota Century Code 15.1-06-04, each of those PD days must consist of six hours of professional development, exclusive of meals and other breaks, conducted within a single day; or two 4-hour periods of professional development, exclusive of meals and other breaks, conducted over two days. The third day can meet the requirements of a day of professional development by either following the guidelines of the other two days, or the school may shorten four instructional days for the purpose of providing two-hour periods of professional development. There is no expiration date on this section of century code, and there is no requirement to revisit it in the future (NDCC 15.1-06-04). There is nothing in ND state law that would limit current school districts from offering more than the two mandatory professional development days if a district chooses to fund it locally and meets the 182-day calendar requirements. North Dakota Century Code does forbid schools and districts from offering PD on any

day that coincides with the Teachers' Convention offered each year by the North Dakota Education Association (NDEA).

Need for the Study

Education is a field that cannot stand still. PD or professional learning is an integral part of an educator's career. From the rookie teachers to the most veteran teachers, they can always learn something new. Effective PD will help teachers become more effective and in turn better prepare students for their next stages in life (Buczynski & Hansen, 2010).

The federal law NCLB was last reauthorized in 2001. On the federal level, it has been thirteen years with little to no change in the requirements of schools (NCLB, 2002). The current ND state law that stipulates how ND public schools offer their professional development began in 1997. During that time period, school districts were required to send their teachers to two days of the NDEA annual conference. Those days were included in the school's calendar and were funded through the state by per pupil state funding. In 2007 the law was changed to allow school districts to use any two days of in-service for professional development days, but they still cannot offer any professional development or instructional time that interferes with the NDEA fall conference. Nationally, there has been seven years of PD research between 2007 and 2014, which outlines what effective professional development is in K-12 schools. Much of the research during that seven year span points to professional development opportunities that are not pursuable under the current restrictive North Dakota Century Code guidelines. How is a district that is confined to offering two 6-hour days going to provide additionally-funded ongoing support? Many of the activities that fall into these

4

constructs would require more flexible schedules. When locked into two or three large days, the PD is often offered large scale and is not differentiated to content needs, does not include time to practice, and can be difficult to include technology.

Although there is nothing stopping ND school districts from offering additional professional development beyond the two mandatory required by the state, school districts receive no additional funding from the state to do so and would have to allocate their own additional resources to fund it. The ND legislature only meets once every two years. There appears to be ineffective time restrictions on what constitutes professional development in ND schools for a law that can only be changed every two years.

Purpose of the Study

The purpose of this quantitative study is twofold: (a) to identify if the eight constructs of effective professional development (as identified through the literature review) are embedded in ND public schools professional development opportunities, and (b) whether or not the schools that offer professional development, given the restraints of the two-day minimum requirements for PD in ND state law, are offering effective PD.

The literature review identifies numerous activities that theme into eight constructs I have identified that define effective PD. Some of the constructs are themes that appear often by name in research (collaborative, ongoing and sustained, content driven), and others are more over arching general statements (engage in practice, integrated with goals). Below are examples of activities that were used in the survey (Appendix A).

- Collaborative

  PD is collaborative when teachers are able to work together to reach a
  common goal or expectation. Often Professional Learning Communities
  (PLCs) are used to allow teachers to collaborate on a content area or grade
  level. Teachers planning time may be scheduled to overlap with other
  teachers of similar content areas or grade levels to allow for collaborative
  work.

- Content Driven

  An example of content driven PD would include biology teachers gaining
  deeper understanding of cellular processes, or English teachers studying stage
  combat during Shakesperian productions. Teachers may also be given
  opportunities to attend specific conferences or join content specific
  organizations.

- Engage in Practice

  Teachers are provided time to engage in their practice by leading
  presentations, or creating actual lessons they intend to teach. Perhaps they are
  allowed to observe other teachers in action.

- Technology Driven

  PD that is driven by technology provides teachers access to the most relevant
  and timely technology so that they can become comfortable with it in their
  classrooms. It allows them to develop curriculum that integrates the
  technology to become a part of the lesson.

- Ongoing and Sustained

Ongoing and sustained PD is offered in substantial lengths of time that allow

for meaningful work to be accomplished. It is offered in a way that allows

teachers to revisit the learning throughout the year, and the PD is spaced

throughout the year to allow learning to occur throughout the calendar year.

- Integrated with other Goals

   In order for the PD to be relevant to teachers, the learning they experience

   should be linked with goals the district has for student achievement, school

   improvement processes like AdvancEd, and program improvement. The

   learning should also be aligned with each district's mission and vision

   statements.

- Evaluated

   In order to determine if PD is effective it is important that it be evaluated with

   a method that relates the learning to increased student achievement or

   improved job performance. The evaluation should be seen as a way for staff

   to have input on the success of future PD offerings.

- Increase Teacher Self-Efficacy

   Effective PD should be offered in a manner that improves a teacher's self

   confidence. They should leave the PD feeling more confident in their ability

   to teach. Increasing a teacher's self confidence helps them make better

   decisions when leading their classrooms.

Surveying teachers and administrators statewide provided their perception of

whether or not schools, which are only offering the two-day minimum, are able to offer

effective professional development. It also determined if that two day minimum allows

for effective PD and whether or not those districts that only offer the state minimum number of PD days are able to offer effective PD.

I hypothesized that those schools which only offer the two days of professional development mandated by the state are not offering many of the effective professional development opportunities embodied in the constructs as identified in the literature review. I also hypothesized that schools which go above and beyond the state two-day professional development mandate and fund their PD from local sources are offering a greater variety of professional development opportunities with varying levels of effectiveness. It is further hypothesized that school districts are not collecting data on the effectiveness of their professional development; however, those districts that are collecting data are collecting it from a variety of places to evaluate its effectiveness.

Research Questions

This study was designed to research what effective PD looks like and whether the aspects of effective PD was happening in ND public schools according to the perceptions of public school teachers and administrators. There are a wide variety of school calendars varying in the number of PD days they offer. North Dakota school districts range from offering the two-day minimum of PD to offering more than six days of PD. This study aimed to discover if there was a difference in the types of PD activities that were being offered by schools with varying number of PD days and whether or not teaching staff believed the PD was effective.

The following research questions guided this study.

1. What professional development constructs are identified for effective professional development?

2. How prevalent are the eight constructs of effective professional development in ND school districts as perceived by teachers and administrators?

3. Can school districts that offer the two-day minimum offer effective PD?

Delimitations of the Study

The delimitations are that the study was only conducted in ND and only within ND public schools. This study is bound to ND because ND Century Code only affects schools within this state. The state law that defines PD in ND would not apply to schools beyond the borders of this state. This study is also limited to public schools in ND since private schools are not bound to all of the calendar restrictions of public schools. Private schools also do not receive public state funds to support their PD efforts.

Assumptions of the Study

It is assumed that each survey respondent completed one survey for the position that he or she held within a ND public school at the time the survey was conducted. It is assumed that each respondent was honest about his or her perceptions of PD offered or received in a ND public school. It is further assumed that each respondent had a working understanding of his or her school's calendar and the types of PD that the specific school district offered.

Researcher's Experience

I have been a professional educator since 2000, having worked as a science teacher, dean of students, and superintendent in school districts in both Alaska and North Dakota. I started my career as a science, health, physical education, math, and English teacher at Chief Paul Memorial School in Kipnuk Alaska. After two years in Alaska, I moved to Minto, ND, as the science teacher and the dean of students. After seven years

in Minto, I moved to Crosby, ND, where I was a science teacher and then the superintendent of Divide County School District. As Divide County School District superintendent, I was responsible for scheduling PD for the district.

After four years in Crosby, I took a position with the North Dakota Department of Public Instruction (NDDPI) as the Assistant Director of Teacher and School Effectiveness. Part of my responsibilities in the Teacher and School Effectiveness unit was to make sure ND public school districts were making the most out of their professional development opportunities. After a year with the Teacher and School Effectiveness unit I was promoted to director of Academic Standards, a new unit in NDDPI. My responsibilities in this new unit included working with school districts to ensure they are properly implementing the state's various academic standards.

All of my experiences from classroom teaching through to my time at the state department have led me to my current position as the Director of Curriculum, Instruction, Assessment, and Teacher Development for Bismarck Public Schools. In this role I am responsible for most of the professional development that is delivered to teachers and administrators. This study is timely and relevant to the needs of the roughly 1,100 teachers and administrators within Bismarck Public School District, and I will be able to use what I have learned about the effectiveness of PD to be a better director of teacher development.

Definition of Terms and Acronyms

The following terms are found in this study. The definition of terms is intended to provide clarity and specificity regarding use of terminology in the study. The terms include:

(ANOVA) Analysis of Variance: This is a test of differences between two or more means within an analysis of data.

(AYP) Adequate Yearly Progress: Under No Child Left Behind each state is given the power to define their own methods of determining adequate yearly progress. In ND Adequate Yearly Progress is determined by a combination of ND State Assessment scores, attendance data, and graduation rates.

Effective Professional Development: K-12 professional development that contains elements of the eight constructs of professional development and through some form of evaluation has had a positive impact on student achievement or school improvement.

Highly Qualified Teacher: A highly qualified teacher in ND has a major in the area he or she is teaching, has completed a portfolio demonstrating their qualifications to teach in the specific subject area, or has passed a Praxis test demonstrating qualifications in the specific subject area.

(NCLB) No Child Left Behind: Federal law that supports standard-based education reform. It is based on the premise that high standards and measurable goals can improve education in the United States. NCLB holds schools accountable for highly qualified teachers and making adequate yearly progress.

(NDCC) North Dakota Century Code: This code embodies the state laws of North Dakota. The terms North Dakota Century Code and law are used interchangeably.

(NDDPI) North Dakota Department of Public Instruction: The department at the state level responsible for ensuring a free and appropriate education for students of North Dakota.

(NDEA) North Dakota Education Association: The teachers union in the state of North Dakota. They sponsor and facilitate a two-day teachers' convention each year.

(NDPDR) North Dakota Professional Development Report: A report of data collected and analyzed by the ND Professional Development Advisory Committee in 2011.

Professional Development: Activities for teachers and other staff in a K-12 public district designed to have a positive impact on student achievement or school improvement. Activities may be as formal as a graduate class or conference to as informal as a reflective conversation between teachers.

Organization of the Study

This study is organized into five chapters. Chapter I includes the introduction, need for the study, experience of the researcher, purpose of the study, delimitations of the study, assumptions of the study, and definitions of terms and acronyms. Chapter II includes a literature review of effective professional development and ND State Law. Chapter III includes a description of the methodology utilized in the study, including the collection of data and analysis of data. Chapter IV includes data results. Chapter V includes a discussion, summary, conclusions, and recommendations.

CHAPTER II

LITERATURE REVIEW

Introduction

In the current world of questioning public school quality and massive public education reform, the effectiveness of PD for teachers and administrators has become a priority (NCLB, 2001). School and teacher accountability have led reform efforts over the last twenty years as law makers have worked to close the achievement gaps among our nation's youth (Hochberg & Desimone, 2010). Effective PD is the buzzword in education right now whenever discussing education improvement and national reform efforts (Guskey, 2002). It is hard to argue, regardless of one's opinions on current reform efforts, that teachers don't need effective professional development. In fact, according to the National Commission on Teaching and America's Future (2003), "strong professional development opportunities must be embedded in the very fabric of public education" (p. 129). While PD is sometimes mandated to teachers, PD is often seen as a way for teachers to improve themselves and grow professionally. They use PD as a way to increase their competency and content knowledge (Fullan, 1991).

As the world changes and becomes more technological and globalized, the field of education must also change to provide a product that remains relevant and practical to students. PD for teachers is important for keeping teachers effective as their standards, resources, and methods change during their careers.

The current paradigm of "sit and get" sessions of PD is slowly shifting as schools and providers realize this format is ineffective at best. Teachers need to be engaged in collaborative PD that is specific to their jobs and relevant to their workday. They need sustained PD that allows them to actively practice teaching and includes technology. The PD needs to be aligned to other goals within their districts and should increase their sense of self efficacy. The PD needs to be regularly evaluated for its effectiveness. These characteristics of effective PD are hard if not impossible to offer in short one time sessions. Instead teachers need prolonged contact with their PD (Moldonado, 2002).

History of North Dakota Professional Development

North Dakota Century Code 15-47-33 was amended in 1997 by Senate Bill 2173 to include teacher participation at the NDEA Teachers' Convention (NDCC 15-47-33, 1997). North Dakota Century Code 15.1-06-04 which stipulates what must be in a submitted school calendar each year originated with House Bill 1034 in 1999. House Bill 1034 required school districts to include two days in their calendar for teachers to attend the NDEA Teachers' Convention (NDCC 15.1-06-04, 1999). In North Dakota Century Code, PD is first mentioned when 15.1-06-04 was amended in 2007 through House Bill 1270 (NDCC 15.1-06-04, 2007). This bill amended 15.1-06-04 from including two days for attendance of the teachers' convention to requiring school districts to include two days in their calendar for professional development activities. It also included language to mandate what can be considered PD. This bill also barred schools from offering any PD or instructional time that conflicted with the ongoing yearly NDEA convention (NDCC 15.1-06-04.1.d., 2007). With the change in century code from attending the NDEA convention to providing two days of PD activities, schools were given flexibility

14

in what could be counted as PD in their calendar. This section of code was again

amended in 2009 with House Bill 1400 to clean up language regarding what can be PD

activities and how for long they must be scheduled during a day (NDCC 15.1-06-04,

2009). Under current ND Century Code 15.1-06-04, in order to be a day of PD included

in the calendar for state funding, the activities must meet one of the following

requirements:

> 15.1-06-04. School Calendar Length
>
> 4. A day for professional development must consist of:
>
> a. Six hours of professional development, exclusive of meals and other breaks, conducted within a single day; or
>
> b. Two four hour periods of professional development, exclusive of meals and other breaks, conducted over two days.
>
> 5. If a school district offers a four hour period of professional development, as permitted in subdivision b of subsection 4, the school district may schedule instruction during other available hours on that same day and be credited with providing one half day of instruction to students. This subsection does not apply unless the one half day of instruction equals at least one half of the time required for a full day of instruction, as defined in this section.
>
> 6. a. In meeting the requirements for two days of professional development under this section, a school district may require that its teachers attend the North Dakota education association instructional conference and may pay teachers for attending the conference, provided their attendance is verified.
>
> b. In meeting the requirements for two days of professional development under this section, a school district may consider attendance at the North Dakota education association instructional conference to be optional, elect not to pay teachers for attending the instructional conference, and instead direct any resulting savings toward providing alternate professional development opportunities.
>
> c. A school district may not require the attendance of teachers in school or at any school sponsored, school directed, school sanctioned, or school related activities and may not schedule classroom instruction time nor alternate professional

development activities on any day that conflicts with the North Dakota education
association instructional conference. (NDCC 15.1-06-04, 2014)

House Bill 1400 (2009) also included the creation of sections 15.1-18.2-01, 15.1-
18.2-02, and 15.1-18.2-03 that mandated schools create and submit for approval a PD
plan for their district. These sections of code were created so the state could get a better
understanding of how the funding was being spent and if the PD being offered was
effective. All three sections of code were repealed in 2011 effective July 1, 2013. The
NDDPI analyzed the data from those PD plans, created a survey of the field, and
published the results in "North Dakota Professional Development Report (NDPDR)"
(Myran, 2011). There were four areas of the submitted plans that the NDDPI chose to
focus on in the report: data to determine PD goals, PD aligned to school improvement
goals, PD and collaboration, and leadership role in successful PD. Eighty percent of the
administrators surveyed responded that they used their districts school improvement
goals to determine PD needs for their schools, while only a little over 50% of the teachers
responded the same way. When selecting PD, ND schools reported that they used data
from several sources. Some of the most popular sources include the ND State
Assessment, Northwest Evaluation Association-Measures of Academic Progress, ACT
and Work Keys, and various survey results. Most school districts reported having a
school improvement or data team that reviewed the data to help make PD decisions.
When teachers and administrators were asked how their school districts would structure
the required two days of PD for 2010-2011, most of the districts reported that they would
utilize full days (at least 6 hours). The collaborative portion of the NDPDR indicated that
only 28% of administrators and 40% of teachers believed that collaborative work was

16

occurring at least weekly in their schools. When asked if they thought the current PD offerings of their school district was effective, one third of administrators and half of the teachers reported that it wasn't very effective.

The NDPDR (2011) also indicated that many of the school districts reported their PD goals in terms of student achievement rather than staff development. For example a district might report that because of PD in math instructional strategies, its students' math scores on the North Dakota State Assessment will improve by 5%. A better goal for teacher PD might have been that in the next year, principals will observe 75% of their staff using new instructional strategies in math learned from our PD offerings. Through this shift our students' math scores should improve on the North Dakota State Assessment.

While North Dakota law stipulates that to count on a school calendar, PD must be at least four hours in length exclusive of meals and breaks, teachers have many types of PD experiences during their careers. The PD offerings can be something as structured as a college course, a scheduled presenter, a local or national conference, or a workshop. PD can also be as informal as a staff meeting, a book study group, or a conversation between peers in a lunch room. This can make defining and measuring the effectiveness of professional development difficult. For a long time, PD in schools was not evaluated for effectiveness, or if it was, the evaluations were based on teacher satisfaction and attitude (Desimone, 2009).

Teaching is a profession that like other professions expects their members to continue to learn and improve over their careers. Therefore, PD is an important part of any teacher's career. In today's world of higher standards, tougher curricula, and greater

expectations, teachers are being asked to achieve more than ever (Desimone, Smith, & Ueno, 2006). With the increase in accountability of teachers comes a much needed increase in accountability of the professional development they attend (Penuel, Fishman, Yamaguchi, & Gallagher, 2007). Educators, of course, play a major role in student achievement and are being asked to maintain high levels of achievement as states and districts increase their expectations (Firestone, 1996). The success or failure of these recent pushes to raise achievement expectations will ride on teachers' abilities to gain content knowledge and provide their students with critical thinking and problem solving skills (Penuel et al., 2007).

In many states professional development for teachers is voluntary rather than mandated. Therefore, teachers who need sustained content knowledge to improve their skills can choose to avoid professional development altogether or avoid the challenges of content driven and sustained professional development (Desimone et al., 2006). Guskey (2002) reports that most teachers, regardless of any mandates, often engage in PD because they simply want to become better teachers. In a study Moldonado (2002) reports that some states require teachers to take a certain number of PD hours to maintain licenses and credentials. North Dakota currently requires six semester hours of education to renew a teaching license every five years (Education Standards and Practices Board, 2013). Daniels (n.d.) gave testimony before the U.S. Senate Labor and Human Resources Committee Subcommittee on Education, Arts and Humanities where he said that teachers need effective offerings of PD rather than mandates to improve their teaching. In his same testimony, Dr. Daniels also discusses the need for flexibility with funds so that schools can focus their PD on their own needs.

Adult Learning Styles

It is important to take into account that PD for teachers should be geared toward adult learning styles. Adults have different needs when it comes to learning new information. Adults are more experienced, self-directed, and learn for different reasons than children do (Papastamatis, Panitsidou, Giavrimis, & Papanis, 2009). Often what attracts teachers to PD is "their belief that it will expand their knowledge and skills, contribute to their growth, and enhance their effectiveness with students" (Guskey, 2002). According to Wassermann's principles of PD (2009), most of the time, teachers are attending PD sessions because they have to, so it is important for the material to be relevant to their needs since adult learning is more productive when they want to be there and can properly engage. Teachers need to be given PD that allows them to sharpen existing skills while gaining new ones. Teachers as adult learners need to be treated with respect as they work to improve themselves within the profession and increase student achievement (The Center, 2006).

Often research into effective PD takes a simple approach and does not account for how PD for teachers is often embedded in their work (Opfer & Pedder, 2011). Past and current PD offerings from school districts often do not provide multiple opportunities for teachers based on their specific needs or interests. Most school districts employ a "banking model" of PD that has experts in a specified component of education delivering information to the masses. (Seely Flint, Zisook, & Fischer, 2011). In fact 91.5% of teachers report having been involved in the workshop model of PD (Gulamhussein, 2013).

19

Historically these methods have been an efficient way to deliver the mandated two-day PD requirements currently in North Dakota law. Webster-Wright argues for a paradigm shift from the traditional delivering of content to true authentic learning for adults (2009). The questions to ask now are if these methods are effective and if effective PD can be offered within the minimum requirements of North Dakota law. Moldonado comments that "if teachers do not expect their students to gain all their learning in one sitting, professional development program planners should not expect teacher to learn effectively all at once" (2002).

The State's Role in Effective Professional Development

Can states promote policies that promote effective PD while giving local school districts the flexibility to accomplish their goals?

In the era of standard-based reforms, like NCLB, states across the country have worked to create policy to provide teachers with effective PD. While ND state policy has not changed much, many states are implementing policies that increase local accountability (Phillips, Desimone, & Smith, 2011). Research into the state role has found that these policies typically are focused on high stakes subject areas like reading and math. Those policies that promote consistency in the form of alignment between state standards and their assessments are possibly the most important policies states can implement (Phillips et al., 2011). Although states are working to create new policies to hold schools accountable, research is showing that the most effective PD comes "from within," from the local level and from a district itself (Firestone, Mangin, Martinez, & Polovsky, 2005). According to Desimone, Smith, and Ueno (2006), state and local policy makers should offer incentives to schools and school districts to offer more sustained,

challenging PD to their teachers. This would perhaps eliminate the sit-and-get-one-shot PD offerings that are currently so popular yet ineffective.

Effective Professional Development

The state's public school districts need to offer professional development to help its teachers grow and be as effective as possible in order to help students succeed. In an age of public accountability of both student achievement and public dollars, it is important for schools to use their PD dollars as effectively as possible. What then does effective PD look like? How do we know PD is effective? Guskey (2003) finds the research isn't clear on what effective PD looks like. Wayne, Yoon, Zhu, Cronen, and Garet (2008) and Glazerman et al (2008), found no link between PD and student achievement. In Guskey's 2003 study, he analyzed 13 different lists of characteristics of effective PD and found that the evidence for including certain characteristics is unclear and sometimes contradictory. In the same study, Guskey points out that much of the research on effective PD does not show a direct link to improvements in student achievement (2003). In fact only two of the 13 lists he reviewed showed such a link. However, a study done by Carpenter, Fennema, Peterson, Chiang, and Loef (1989) showed that first graders, who were instructed by teachers who had undergone an extensive 80-hour PD course, out-performed a similar group of students whose teachers received only four hours of PD on three of the six student achievement measures examined. Policy makers have used studies such as this one as evidence for mandating PD in our schools.

There have been several studies done nationwide in the last two decades that attempt to define effective PD (Garet, Porter, Desimone, Birman, & Suk Yoon, 2001;

Loucks-Horsley, Stiles, & Hewson, 1996; Moldonado, 2002; Penuel et al., 2007). These studies contain similar characteristics that make up effective professional development, yet no two are identical.

While no two lists are identical, many of their lists share similar characteristics. The research identifies eight constructs, which many of these studies agree on. Of the eight constructs, five are universally identified as aspects of effective PD (collaborative, active practice, ongoing, integrated, and content specific). The research makes a case from additional literature for including the other three constructs identified (integrating technology, evaluated, and increasing teacher self-efficacy). Each of the eight constructs is detailed in a section of this literature review.

The following table was created for this study from the research of effective PD. Across the top are the eight constructs identified from research as the constructs of effective PD. Along the side are the studies that contain the construct in their findings.

Meister (2010) conducted a qualitative research study that went straight to the source and asked ten teachers who had been identified by others in the field as "the best" how they have remained so engaged and motivated throughout their careers. While the findings of the study are not new, they do shed light on what good teachers feel is important about professional development. The teachers interviewed agreed that student success was the most important part of their job. Administrations and policy makers need to be aware of this fact and create professional development opportunities that align with teachers' ability to impact student success. Interestingly, the teachers interviewed for Meister's study did not talk about their content knowledge or methods when asked to talk about how they have grown throughout their careers. Instead they discussed their

unchanging attitude or devotion to students. They talked about being wiser and more caring to individual student needs (Meister, 2010).

Table 1. Eight Constructs Found in Various Studies.

	Collaborative	Content Specific	Active Practice	Integrates Technology	Integrated with District Goals	Evaluated	Ongoing and Sustained	Increase Teacher Self-Efficacy
(Desimone et al., 2002)	✓	✓	✓		✓			✓
(Penuel et al, 2007)	✓	✓	✓	✓	✓		✓	
(Yamagata-Lynch, 2003)	✓	✓	✓	✓	✓		✓	
(Seely Flint, Zisook, & Fisher, 2011)		✓	✓					✓
(Moldonado, 2002)	✓	✓	✓		✓	✓	✓	
(Cumming, 2011)					✓		✓	✓
(Garet et al., 2001)	✓	✓	✓		✓	✓	✓	
(Bybee, 2001)		✓		✓	✓			

If the field of education is going to form consensus on what makes up effective PD, we have to start with what teachers hope to accomplish through PD. According to Mundry and Loucks-Horsley (1999), "the ultimate goal of all professional development is improved student achievement." While it says essentially the same thing, Reese's 2010 definition is stronger: "PD involves comprehensive, sustained, and systemic learning experiences that are based on identified needs of teachers, and result in improved instructional effectiveness and increased student achievement and performance outcomes."

A study by Zimmerman and May (2003) found that while many principals understood the importance of effective PD and knew many of the aspects that made PD effective, those principals listed both financial and time constraints as reasons why they could not be instructional leaders. While administrators' beliefs mirror what research says is effective PD, there is still a gap between what is effective and what is being done in schools (Lutrick, & Szabo, 2012).

Collaborative

Collaboration isn't a new idea in teacher PD. A study by Little (1993) showed the promise of teacher collaboration and networking as models that bucked the current trend of PD and fit well with many reform efforts in education. Many studies on effective PD included some form of collaboration among teachers. Although collaboration and working in teams are important for teachers, the practice of teaching is still a largely lonely process spent by one teacher in front of a room full of students. Teachers have very little time in their work day to collaborate and reflect on their instructional practice (Darling-Hammond, Wei, Andree, Richardson, & Orphanos, 2009). In *Supporting the Growth of Effective Professional Learning Communities (PLCs)*, Thessin and Starr point out that "simply putting well-meaning individuals together and expecting them to collaborate was not enough." Districts should make concerted effort to create ownership of the PLCs by the staff and teach their staffs how to work together. Districts should also integrate the PLC into existing plans, show a link to other areas of work, and lastly, provide differentiated support to each PLC to help them move forward and grow (2011). A recent study by Doolittle, Sudeck, and Rattigan points out the many detours that collaborative teams can experience and the need for team members to speak up and keep

the group on task (2008). Horn and Little (2010) found that two collaborative groups that were equally staffed with committed competent teachers differed in the amount of learning opportunities they experienced because of variations in the groups' conversational routines. In Stanley's (2011) study of teacher study groups, she noted that these small team structures flew in the face of the one-size-fits-all massive workshops that many districts use to deliver PD to their staffs. Her study notes six important factors of collaborative teacher learning communities:

- Length and quality of commitment: The longer a group is held together the more likely the group members will accomplish real work in their collaboration time.

- Content area versus pedagogical knowledge: Should PLCs focus on content knowledge or can they include cross curricular instructional practice knowledge? Stanley (2011) suggests that the tension created by working with others outside a content area can be productive and challenging to group respondents. Often small schools will only employ one member of each grade level or content area and are therefore forced to form PLCs across disciplines.

- Diverse teacher goals and roles: Diversity in the group leads to greater depth of conversations and changing roles within the group makes the leadership fluid and democratic allowing for group members to take on multiple roles and responsibilities.

- Ways to examine teaching and practice structure conversation: Because teaching has long been a lonely profession, teachers have practiced their trade without an audience, and it can be hard to have others critique a performance.

25

However, teachers can be reassured through the PLC process that they are not

alone, that other teachers may have shared in their challenges as well, and that

they are not being evaluated on their performance.

- Teaching assignments within the group: Effective PLCs may consist of

    teachers from many grade levels or different buildings from across the district

    within one content area that work vertically to develop curriculum and

    resources for their area.

- Support for classroom implementation: It is crucial that the knowledge gained

    in a PLC is put into practice in a member's classroom (2011).

Some other keys to collaborative PD include establishing ground rules for the

group, setting clear expectations of the work of the group, ensuring a shared vision and

mission exists within the group, and establishing needed support for implementation of

the group's work (Doolittle, Sudeck, & Rattigan, 2008). While collaboration is not a new

concept when it comes to education, the idea of formalizing the collaboration to increase

its effectiveness is (Gersten, Dimino, Jayanthi, Kim, & Santoro, 2010). Gersten, Dimino,

Jayanthi, Kim, and Santoro (2010) created a framework model they call the Teacher

Study Group. The teachers who participated in the Teacher Study Group

overwhelmingly believed positive about their participation and that it would help them be

better teachers. Statistically the program had significant impact on Teacher Study Group

teachers implementing at least some types of instruction that were discussed in the

sessions. A study done by the University of Iceland showed "relatively strong evidence

on the relationship between a school's level of effectiveness and its level as a

professional learning community" (Siguroardottir, 2010). They defined a professional

learning community as consisting of:

> A group of professionals sharing common goals and purposes, constantly
>
> gaining new knowledge through interaction with one another, and aiming
>
> to improve practices. It is a cycle where learning is normally embedded
>
> into daily work; teachers gain new knowledge, try it in practice, and, from
>
> the experience, gain yet more knowledge. They do this in interaction with
>
> each other, by working collaboratively. (Siguroardottir, 2010)

A large-scale survey of California elementary schools that serve low-

income students entitled *Similar Students, Different Results: Why Do Some*

Schools Do Better? listed encouraging teacher collaboration and professional

development among the domains that influenced a schools' academic

performance indexes (Williams et al., 2005).

Ongoing and Sustained

Some studies have tried and failed to find a "tipping point" or magic number of

hours that PD must be in order for it to affect teacher practice and therefore improve

student performance (Desimone, 2009). However, PD that is ongoing and sustained does

not necessarily have a number of hours or days attached to it. In fact several studies have

shown that duration of the PD activity has no effect on teacher practice (Desimone,

Porter, Garet, Kwang Suk Yoon, & Birman, 2002; Penuel et al., 2007). In this study

ongoing and sustained refers to repeated concerted attempts at gaining the learning for

teachers through multiple opportunities and experiences. As Opfer and Pedder stated

(2011), PD must be "sustained and intensive rather than brief and sporadic (p. 384)."

Ongoing and sustained also refers to a principal's role in working with teachers through instructional leadership to ensure that the learning is being applied to effective practice (Desimone, 2009).

Change can be a difficult and slow process for teachers. A teacher will have to contribute both time and effort if he or she is going to learn something new and intended to be used in the classroom. This surely means extra work for teachers, especially in the beginning. According to Opfer and Pedder (2011), research shows that teachers need ample time to take in any new learning, reflect on it, and then practice with the learning. The time required is intensive and cannot be completed in the sporadic trainings that occur in many schools currently.

In order to see a teacher develop and use new strategies or materials gained from PD, there must be sustained support for the teacher and the learning (Guskey, 2002). Part of that support should come in the form of feedback on student achievement. Teachers need to see the effects of their efforts to improve student success. As well as feedback, teachers will need follow-up in the form of accountability in order to carry through the change beyond initial implementation (Guskey, 2002).

Countries like England have long seen the benefits of ongoing sustained PD. England's Training and Development Agency for Schools has published documents for schools that outline effective PD and establish standards for teachers. This system of continuous PD is centrally devised and locally delivered through schools throughout England (Pedder, Opfer, McCormick, & Storey, 2010).

Inclusive of Technology

Technology is almost inescapable in today's world. As early as 2000, the necessity of technology literacy for citizens was deemed an increasing priority (Bybee & Loucks-Horsley, 2000). The NCLB act has requirements of technology proficiency for students by the eighth grade, as well as more access to distance learning (NCLB, 2001). Technology has changed the way the world operates (Hicks, 2011). How has education changed with it? Teachers in every content area and grade level are being asked to include curriculum and instruction that was once relegated to a single computer teacher in a technology department. PD for teachers should seamlessly integrate the use of technology in their classrooms to improve their instruction. Teachers around the world should view the integration of technology into their PD as a part of the natural teaching profession (Uslu & Bumen, 2012). According to the National Education Technology standards, "teachers exhibit knowledge, skills, and work processes representative of an innovative professional in a global and digital society" (International Society for Technology in Education, 2008). A recent study showed the effectiveness of technology integration on teachers; the study looked at how teachers included technology in their instruction and what their attitude was toward technology integration in their classrooms. Those teachers who received PD in technology integration were still using the technology regularly in the classroom six weeks later (Uslu & Bumen, 2012).

Many of today's students come to school from homes that are wired with internet and have at least some access to mobile devices capable of accessing seemingly limitless data. These students have grown up in a world that always had the internet, cellular phones, tablets, and laptop computers. Students come to school wired to take advantage

of that information; it is teachers who really require learning when and how to use these devices to engage students in teaching and learning (Schrum & Levin, 2013). In *Revamping Professional Development for Technology Integration and Fluency*, Plair suggests that many veteran teachers are unprepared, frustrated, and downright scared to integrate technology into their instruction for many reasons. Teachers listed lack of confidence, fear of breaking something, fear of messing up and losing the lesson, and being unaided in the classroom during technology delivery as just a few of the reasons they avoided including technology in their classes (2008). Teacher buy-in is an important part of making professional development effective. Helping veteran teachers through identifying their stage of comfort (survival, mastery, impact, or innovation) with technology is helpful for meeting the teachers where they are and making the PD relevant to their classroom (Barnett, 2003).

One popular education reform is called learner-centered instruction, where students are given a complex problem to solve, and they use knowledge from several different content areas to solve the problem with little or no direct guidance from a teacher. In order to facilitate such learning, teachers must be given access to technology in order to develop key skills and knowledge of technology. These innovative teaching strategies are difficult to attain without proper access to PD that contains quality technology integration (Polly & Hannafin, 2010).

Technology is being introduced into our lives at an unprecedented pace. Teachers cannot be expected to keep up with the changes in technology on their own time. Teachers today face many needs for their PD time, and learning new technology can be frustrating or intimidating for veteran teachers. It is more important than ever that

technology be integrated into their PD rather than something that is added to their PD.

Schlager & Fusco (2003) warn against putting the cart before the horse with technology

and PD. In their study, they suggest that technology for technology's sake is not

supporting teacher learning and effective practice but steals away the effectiveness of PD.

Technology instruction should instead be an integral part of as many PD opportunities as

possible (King, 2002). Yamagata-Lynch (2003) suggests that teachers' work lives are

very complex, and their time faces many demands. For new learning to become a part of

instructional practice, it must be gained within the context that it will be used (Yamagata-

Lynch, 2003). Krajcik & Soloway (1998) suggest:

> Knowledge about teaching and practices related to this knowledge
>
> cannot be learned independently of the situation in which it will be
>
> used. Teachers cannot merely apply a set of predefined prescriptions,
>
> they need to plan and teach in order to tailor innovation to fit their
>
> unique circumstances, anticipating possible problems and devising
>
> strategies to deal with them. (p. 34)

There are numerous success stories of teachers using their new skills in

technology to increase the learning of their students. Veletsianos, Doering, and

Henrickson (2012) examined the experiences of teachers who were given the opportunity

to travel with arctic explorers and then deliver learning to student via distance. The

teachers enjoyed the technological experience and, after becoming comfortable with the

technology, wanted to include further authentic distance learning opportunities for their

students.

Teachers who attended the Teacher Institute for Curriculum Knowledge about Integration of Technology (TICKIT) found the PD rigorous but well worth their time. TICKIT teachers also were able to bring their learning and activities back to their colleagues gaining confidence and increasing collaboration (Yamagata-Lynch, 2003).

Technology to Deliver Professional Development

According to Dash, Magidin de Kramer, O'Dwyer, Masters, and Russell, the technology that many teachers possess today also offers opportunities to take PD through online offerings that can be done anywhere and at any time. In their study on teacher quality and student achievement of fifth-grade mathematics teachers, those teachers in the experimental group, who had access to online PD, had significant gains in their pedagogical content knowledge and pedagogical practices of fractions, algebraic thinking, and measurement (2012).

Content Driven

One of the most discussed aspects of effective PD is that the PD is based within a teacher's content area. Teachers need to see a connection between what they are learning and what they do in their daily routines. The learning must be directly connected to their work with students (Darling-Hammond & McLaughlin, 2011). While not all PD has been linked to increasing teacher effectiveness, there is evidence that links effective content-based PD to change in teacher practice (Firestone et al., 2005). In fact PD programs that focus on aspects of teacher behavior have smaller impacts on student achievement than programs that are content-focused (Wayne, Yoon, Zhu, Cronen, & Garet, 2008). Phillips, Desimone, and Smith (2011) point to research that shows "of all the features associated with high quality PD, the focus on subject matter content has the

32

strongest relationship with student achievement and seems to hold the most promise for fostering real change in teachers' knowledge and subsequently in their instruction and in their students' learning (p. 2589)."

Content knowledge must come in a form that is useful for teachers in their classrooms. According to Luke and McArdle, different teachers within a cohort may need different content types of content knowledge. Take for example a group of mathematics teachers; some may need content knowledge in mathematical operations while others may need content knowledge of pedagogy or instructional methods (2009). Content knowledge is not necessarily limited to knowledge of what is to be taught; it may come in the form of new teaching methods or how it is taught (Firestone et al., 2005). Teachers who attend PD that is focused on their content knowledge must work to develop deep understanding of the material and gain true knowledge of core concepts rather than a wide vague understanding (Loucks-Horsley et al., 1996). Although student achievement is often defined as more than a test score, there are findings that student test scores improve for students of teachers who have attended PD that focuses on increasing a teachers' mathematical understanding (Cohen, 2004).

Sadly Desimone et al. (2006) found that most of the teachers who needed content knowledge PD were avoiding it most often out of fear of showing ignorance. Instead the teachers already strong in content knowledge challenged themselves with their PD opportunities. Administrators should encourage all their teachers to take advantage of challenging PD and push themselves to improve.

A study by Wasik (2010) found that the best PD programs provide teachers with strategies to serve their student populations. *What Teachers Can Do to Promote*

Preschoolers' Vocabulary Development: Strategies from an Effective Language and Literacy PD Coaching Model also found that even the most expensive and effective models are sporadic if they are not implemented properly with teachers. Park Rogers et al. found that teachers most appreciated PD opportunities that were practical to their own classrooms. This included curricular needs as well as resources to implement the learning (2006).

Content-based individual PD is not unique to teachers in education. A study by Schostak et al. (2010) conducted in the medical field suggests that effective PD is able to add knowledge, skills, and make changes in practice specific to the needs of the individual doctor. Content-based PD has the ability to change the way teachers view their own teaching strategies. McGee, Polly, and Wang (2013) listed knowledge of content and pedagogy among their list of aspects of effective PD. In their study, a teacher suggested that he or she was teaching math to just get the answers correct. After a two week intensive institute, the teacher understood that math teaching was about connecting math to everyday life and giving students multiple pathways to answer their questions.

Linked to Other Goals in the District

According to Krajcik and Soloway (1998), teacher learning cannot happen in a vacuum. For new learning to be incorporated into a teacher's practice, the learning must be relevant to daily work. Linking PD opportunities to other goals and initiatives within the district can help teachers better understand changes that are occurring and help them make the most of learning opportunities (Loucks-Horsley et al., 1996). PD opportunities

for teachers should be integrated with other district goals and any long term strategic

plans a district has to improve education (The Center, 2006).

As Linda Darling-Hammond said (1990), "Policies do not land in a vacuum; they

land on top of other policies" (p. 346). In order to minimize the negative effects of

adding new policy to an existing culture, PD should be integrated with other district goals

and practices (Kaufman and Stein, 2009).

Includes Time for Teachers to Engage in Practice

Effective PD is delivered to teachers in a manner similar to the way their students

will learn. It allows the teachers to become the student and see the methods and materials

from another viewpoint (Park Rogers et al., 2006). Active learning may include teachers

making presentations, evaluating student work, or observing and evaluating teaching

methods (Desimone, 2011). Active learning in effective PD may also include modeling,

application, formative assessment, reflection, and feedback. Principals' perceptions of

PD were gained from *Instructional Leaders' Beliefs about Effective PD,* an emerging

theme included making sure the learning for teachers was designed to be interactive

(Lutrick & Szabo, 2012). Webster-Wright (2009) suggests that authentic PD is about

being a "professional in practice." The learning is a part of a holistic experience rather

than a separate environment where learning is gained and then applied elsewhere.

Evaluated

PD in schools has become a multimillion dollar industry (Luke & McArdle,

2009). Administrations are eager to find out how the resources their districts are

allocating are being spent and how well the allocated resources are used (Alton-Lee,

2011). Evaluating PD can mean the difference between large gains in student

35

achievement and "business as usual" in schools (Alton-Lee, 2011). There is wide spread

agreement that PD and training that occurs during a person's career is important. How to

determine the proper way to evaluate it though can be difficult (Schostak et al., 2010). In

order to determine if the PD we offer is effective, it must be somehow evaluated. Often

teachers will fill out a survey at the end of a PD session to offer the presenters or the

school district feedback. Teachers often then self-report how the PD has affected their

teaching practices (Erbert-May et al., 2011). In Erbert-May et al.'s (2011) study about

workshops that helped undergraduate science teachers shift their focus from a teacher-

centered lecture environment to a more active learner-centered classroom, 89% of the

teachers self-reported a significant change in their presentations and instructional style.

However, when video tape evidence was scored, 75% of the teachers were still using

lecture-based practices. When evaluating teachers' styles two years after the PD, there

were no major shifts in styles. Fifty-seven percent of the teachers showed no change

from their first video tape to their last. Rather than the ineffective practice of self-

reporting, Saunders (2012) looks at the Concerns Based Adoption Model as a framework

to help understand how teachers change through their PD. The model was used in the

vocational education and training sector of schools in Australia. The model was shown

to be effective at identifying the effectiveness of PD initiatives in the Australian

vocational education and training sector. Their model takes into account that people

change before systems change, and that can cause stress and anxiety for teachers. A

similar model like the one called Model of Teacher Change presented by Guskey (2002)

also accounts for the fact that change is a gradual and often difficult practice for teachers.

Guskey also suggests continuous feedback to teachers on their students' learning

progress. The PD that teachers receive should be evaluated through actual feedback based on improved student performance (2002). A model like this could be employed by school districts in the United States to determine the effectiveness of PD offerings in public K-12 schools. A key to evaluating PD is the use of student achievement data. That data can be used to show how the learning of teachers has been implemented into changing their teaching practices for the betterment of their students (Alton-Lee, 2011).

Another important education reform that is sweeping the United States is a revamping of teacher evaluation systems (Stecher, Garet, Holtzman, & Hamilton, 2012). In *Implementing Measures of Teacher Effectiveness*, Stecher, Garet, Holtzman, and Hamilton discuss teacher and leader perceptions of the new evaluation systems in pilot areas. Overall teachers believed that the evaluations were going to be used to help them improve rather than be punitive. The study points to a link between the teacher evaluation and an individual's need for PD. These new evaluations could be used as a way to determine PD effectiveness through direct observation of teacher practice before and after they have attended individual PD sessions. This method could use a teacher evaluation tool to identify PD needs and then use observations of the teacher to evaluate the PD offerings (2012).

PD must be continually evaluated for its effectiveness in order to determine teacher satisfaction and engagement. This evaluation process will allow for immediate course correction in the PD program as well as improve the impact of the PD on teacher effectiveness and therefore student achievement (Loucks-Horsley et al., 1996).

Increases Teacher Self-Efficacy

Throughout many studies in teacher self-efficacy, it has been shown that students perform better when they have teachers who have confidence in their ability to teach. (Ashton & Webb, 1986; Caprara, Barbaranelli, Steca, & Malone, 2006; Ertmer, 2005; Roberts, Henson, Tharp, & Moreno, 2001; Ross, 1992; Tschannen-Moran & Johnson, 2011). Self-efficacy however is a fragile subject when working in education. Teachers from day to day may waiver in their confidence to teach (Hunzicker, 2012). *Professional Development Effects on Teacher Efficacy: Results of Randomized Field Trial* suggests that professional development models, when executed correctly and offered in effective methods, can have significant effects on teacher efficacy (Ross and Bruce, 2007).

According to Lee, Cawthon, and Dawson, teacher self-efficacy is simply "an educator's beliefs about his or her capability to teach and effect student outcomes" (2013). To increase a teacher's belief in his or her ability to teach and effect student outcomes, research suggests that we place them in leadership roles, develop their confidence and decision making skills, provide them with support, and help them experience success. Hunzicker showed that teacher self-efficacy increased when teachers found success in their classrooms, as support from fellow staff and administrators grew, and when they were placed in leadership roles (2012).

Villarreal makes a strong case for PD that increases teacher self-efficacy in his study *Rethinking Professional Development as a Tool to Stimulate Teacher's Decision Making Authority*. Villarreal points out that although there is strong research showing a link among teacher self-efficacy, teaching performance, and student achievement, yet we rarely see PD that focuses on improving a teacher's self-efficacy (2005).

38

In a study on inspiring novice special education teachers, Kaufman and Ring (2011) note that lack of support was often listed as the reason for a teacher leaving the profession. The authors suggest that to counteract this, teachers should celebrate successes as often as they come, seek pathways to leadership, read professional literature, and seek balance in their lives.

Roeser, Skinner, Beers, and Jennings discuss mindfulness training and habits of the mind in their study of PD. Their study suggests that because teaching is a human service occupation, it contains "high levels of uncertainty, emotion, and attention to others" (2012). Teachers therefore must develop "mental flexibility, emotion regulation, and relationship management skills" (2012). Many of our current PD programs do not focus on these teacher needs and leave teachers unprepared for these demands of the occupation. Mindfulness training focuses on these underrepresented aspects of PD in order to reduce stress in teachers and empower them with the self-confidence to meet their students' needs. Similarly a study by Tschannen-Moran and Johnson explored teachers' self-efficacy and found that "many teachers view teaching students with a wide range of reading levels as one of the greatest challenges that they face" (2011). Teachers with a higher sense of self-efficacy are more likely to try and differentiate their instruction to engage the greatest number of student abilities possible, while teachers with a lower sense of self-efficacy are likely to remain with the teaching strategy that they are most comfortable with and blame other factors for the lack of student engagement.

A model proposed by Gregoire suggests that teachers who are given new reforms will first determine whether or not the reform will impact their day to day teaching. Once the teachers have determined it will impact them, they decide whether to view the change

as a "challenge or a threat" (2003). Teachers with a higher sense of self-efficacy are likely to view the change as a challenge and more deeply and systemically implement the change in their classroom.

Tschannen-Moran and Woolfolk Hoy (2001) established the Teachers Sense of Efficacy Scale (TSES) that identifies three subunits of teacher self-efficacy; classroom management, student engagement, and instructional strategies. In addition and related to these three subunits, a 2010 study by Buczynski and Hansen also addressed teacher preparedness to teach subject matter. For instance across the United States, many elementary teachers are not well prepared to teach science, and their difficulty in asking and answering science-related questions can cause classroom management, student engagement, and instructional strategy problems.

Alternatively, Seely Flint, Zisook, and Fisher's (2011) study of implementation of a writer workshop curriculum found that as the teachers became more comfortable with the material, they were better able to transform their teaching styles to help more students. In the end, they believed more confident in their ability to teach. Teachers who have access to appropriate PD build their own confidence, and their sense of self-efficacy allows them to become more effective teachers.

In Scotland in 2001, the "McCrone Inquiry Report" presented an agreement that included a commitment to continuous PD. Continuous PD is then defined in the Scottish context as "anything that has been undertaken to progress, assist, or enhance a teacher's professionalism" (2011). Some of the highlighted continuous PD opportunities presented by Carol Cumming included opportunities for teachers to help develop school policy, take instructional leadership roles in their schools, and develop strong senses of

ownership among teachers. This commitment to continuous PD that is improving

teachers' leadership skills and self-efficacy has had success in Scotland (2011).

According to Bos (1995) there is reason to be encouraged by changes to PD

occurring in schools. Bos' review of three PD programs designed for teachers of students

with disabilities showed the importance of including characteristics like teacher self-

efficacy into every PD program.

If the importance of teacher self-efficacy were realized in both teacher preparation

programs as well as PD offerings during a teacher's career, the field of education could

see very positive changes in how teachers are prepared and supported during the

formative years of their careers. Rather than the all or nothing "student teacher"

experiences where students are dropped into a full-blown classroom, teachers could

slowly be exposed to ever increasing teaching situations where they could build

confidence in their ability to manage classrooms, engage students, and develop

instructional strategies (Tschannen-Moran & Woolfolk Hoy, 2001), while mastering

content specific material.

Given all the reform efforts that public school teachers face in today's world of

ever increasing accountability, it is important for PD to include opportunities for teachers

to increase their self-efficacy. Teachers who attain confidence in their ability to impact

student learning and authentically help students achieve will do so (Ross & Bruce, 2007).

Conclusion

Meister makes suggestions for improving professional development. First

Meister suggests that at the secondary level teachers should be given time and resources

to collaborate with other teachers in their content areas. While many teachers share a

grade level, teachers who share a content area felt more closely associated. Secondly teachers need a "community of friends" that they can use as models of collaboration and support successful accomplishments (Meister, 2010). The struggle comes with finding the time and resources to establish these professional learning communities within a school or district. Ironically those in a school district tasked with developing professional development for teachers were deemed the least likely to influence professional development by the teachers interviewed in this study. Since many of the teachers in this study had taught for long periods of time, they had seen good and bad administrators come and go and believed they had little impact on their daily teaching lives. However, several sources cited in *Experienced Secondary Teachers ' Perceptions of Engagement and Effectiveness: a Guide for Professional Development* (2010) urged that administrators can have a significant impact on teacher professional development when they promote both formal and informal education of teachers in an environment that supports and encourages growth. Meister includes Maeroff's (1993) suggestion that outstanding teachers are enhanced by supportive and understanding administrators. Teachers are more willing to take risks and try new methods when they feel supported and safe to do so. Firestone, Mangin, Martinez, and Polovsky (2005) state in *Leading Coherent Professional Development: A Comparison of Three Districts* that administrators as high up as the superintendent can have a meaningful impact on teachers' day to day classroom activities through effective professional development. The professional development must be coherent and content-focused. Content-driven knowledge must come in a form that teachers can use in their classrooms. Teachers need exemplars that they can take back to their classrooms and use or modify to make them applicable to their

42

own students. The professional development should have some sort of focus on teaching methods. Teachers should learn methods that allow the student more freedom to explore and manipulate the curriculum. The methods should include critical thinking skills and problem solving. Lastly professional development should include knowledge of students' special needs, like cultural differences, learning disabilities, and other exceptions that require teachers to differentiate their instruction. In their study, the district that focused most on helping teachers gain deeper content knowledge in their subject areas reported that the professional development had the largest impact on teachers (Firestone et al., 2005).

In the end professional development should improve a teacher's skills and methods and improve student learning. Recently federal and state law, one such law being No Child Left Behind, have crept into public education, and with it, policy makers have jumped on the research to create laws that impacts professional development for teachers (Wayne et al., 2008). Some states are working to help improve professional development by offering teachers incentives such as scholarships, financial assistance, apprenticeships, and credits for coursework completed (Ackerman, 2004). Due to the small pay and ever-rising costs of licensing, financial assistance for required professional development is a popular way to help teachers who are willing to take the coursework (Ackerman, 2004). As more federal money is allocated for professional development, more research is needed to determine the effectiveness of different aspects of professional development (Desimone, Garet, Birman, Porter, & Yoon, 2003). Postsecondary institutions provide a lot of the professional development teachers receive. Most of that professional development is offered through workshops, institutes, and other activities

(Garet et al., 2001). According to Desimone et al. (2003), there is a lack of collaboration and coordination between postsecondary institutions and local school districts. Professional development for teachers could be greatly improved by developing policies that encourage local school districts to work closely with their postsecondary institutions when creating professional development opportunities.

There is a recent body of knowledge about how professionals learn, and it flies in the face of many current professional development practices. Current research suggests that professional development that promotes professional learning is sustained and takes place in an environment that is supportive to learning (Webster-Wright, 2009). Even though the research suggests that professional learning is best achieved by professional development that is substantive and based on critical thinking skills, many districts still provide brief "workshops" of professional development (Webster-Wright, 2009).

In *Experimenting with Teacher Professional Development: Motives and Methods*, the authors discuss federal policy makers' recent quest to have teachers participate in scientifically-based professional development that has shown to raise student achievement. This study suggests there are plenty of other studies that have shown the need for quality professional development. However, the authors make the case that there are not enough studies to provide guidance on how to spend federal and state investments in professional development. The authors suggest that professional development is best presented directly by those who developed it in the most conducive environment available (Wayne et al., 2008). Quality professional development that has the highest impact on student learning does not focus necessarily on the teachers' behaviors so much as the teachers' content knowledge (Wayne et al., 2008). According

to this study, professional development that is school-based and given in larger chunks of time is more effective than when it's broken up into smaller sessions. In *What Makes Professional Development Effective? Results from a National Sample of Teachers* (Garet et al., 2001), the authors also look at characteristics that make for effective professional development. Although their study develops a different list of measures for what effective professional development looks like, they do share similarities. Both studies suggest the importance of content knowledge driven professional development that involves small local groups of teachers working together. The planning and collaboration that these teachers share should be driven by student needs. In other words, it should center on improving curriculum and methods of delivery to ensure the most student success. The duration of the professional development was mentioned in both studies, and they agreed that professional development is more effective over longer sessions of time and spread out over a length of time. According to Garet, Porter, Desimone, Birman, and Yoon the length of a professional development activity is directly related to the depth of a teachers change (Garet et al., 2001). In *What Makes Professional Development Effective? Strategies that Foster Curriculum Implementation* (2007) the authors suggest that along with content knowledge based professional development there should be room for the addition of best practices and research based teaching strategies (Penuel et al., 2007). Between the suggestions that quality professional development be local, content focused, and given in meaningful sessions of time, it can be hard for policy makers on a state of federal level to create guidelines that fit every situation.

Today's teachers are being asked to teach more children, more material, in meaningful ways that will allow all the students to be proficient upon graduation. Teachers know this and realize that it is a tough task to accomplish. While most teachers support high standards for students and teachers, many are not prepared to tackle the new strategies required to accomplish these new educational goals (Penuel et al., 2007). According to Garet et al. (2001), although studies show ample research about what quality professional development looks like, there is much less information available on how quality professional development affects student and teacher achievement. It can be hard for policy makers to develop policy meant to support effective professional development when so little research is actually conducted to show how effective that professional development is. Unfortunately much of the professional development available to teachers does not necessarily meet their needs. For instance, professional development in reading comprehension and vocabulary has been deemed a priority. However, most professional development opportunities in reading are related to decoding and fluency (Gersten et al., 2010).

Before policies can be developed that guide school districts in their choices of professional development, a consensus of what constitutes effective professional development must be determined. The profession needs to develop a framework on which to evaluate professional development and its method of delivery. One such model that has been shown to improve student reading test scores in first-grade classrooms is the Teacher Study Group (Gersten et al., 2010). With this model, the data shows that students of teachers who received this type of professional development outperformed other students in oral vocabulary. Teachers who received the PD were grouped with

similar teachers who did not receive the PD to discuss recent research in the field. The

teachers who received the PD outperformed the other teachers in vocabulary instruction.

The less formal form of evaluation allowed teachers to relax and collaborate more freely

(Gersten et al., 2010).

Recent educational reform efforts in the United States have created demand for

the current research into effectiveness of professional development. States are adopting

new policy and creating laws about professional development in schools in order to allow

school districts more flexibility to meet the requirements of their new accountability.

North Dakota is in a unique position with its current economic boom to fund additional

professional development time and resources for all public schools in North Dakota.

With increased funding and more flexibility in the North Dakota Century Code, the North

Dakota public school districts have the potential to offer outstanding professional

development.

CHAPTER III

METHODOLOGY

Purpose of the Study

The purpose of this quantitative study was twofold: (a) to identify if the PD activities contained in the the eight constructs of effective professional development are embedded in ND public schools' professional development opportunities and (b) whether or not the schools that offer professional development given the time restraints of North Dakota state law are offering effective professional development. More specifically, I sought to understand which of the eight constructs I identified from the literature review are endorsed by ND educators as playing a significant role in their ongoing PD, and can differences be found in educator perceptions between districts that adhere to the two-day minimum standard only versus the districts that offer beyond that standard?

North Dakota Century Code only requires two days of PD each year; however, many of the activities that themed into the constructs identified in the literature require substantial amounts of time in order to be implemented properly. This study and the analysis of this study identifies whether or not the activities contained in the eight constructs of effective PD are present in schools that offer a varying number of PD days in their school calendars. This study compares schools that offer two days of PD with those that offer more, and determines if, according to the perceptions of those completing the survey, the PD is rated more or less effective.

While the state provides funding for the two minimum days required by the school calendar law, schools may be struggling to offer effective PD opportunities within the state's definition of a PD day. Some of ND's school districts have funding sources that allow them to go beyond the state minimum, which would theoretically lead to greater teacher effectiveness and therefore higher student academic achievement in those districts. However, not all school districts have additional sources of funding for more extensive teacher development.

Quantitative Methods

This study was approved to take place through the IRB approval process at the University of North Dakota. IRB approval (Appendix B) was applied for and granted (IRB-201312-209) on December 18, 2013 through May 15, 2014. The survey was conducted over two weeks in February 2014.

This study was conducted using quantitative research methods to assess levels of endorsement of ffective PD strategies in ND public schools as well as to identify potential group differences between districts with varying amounts of PD days. Since the number of PD days within school districts' calendars and the teachers' and administrators' perceptions on a PD survey consisted of ratio and interval measures, respectively, for these two variables, a quantitative study was the best method approach. Some demographic data was also obtained and reported to provide information about the sample of respondents in the study.

In order to identify a difference in the effectiveness of PD when provided through a varying number of days within a year, quantitative methods are appropriate for determining not only if a difference exists but also whether or not that difference reaches

statistical significance (Warner, 2013). Since a sample drawn at random from a

population should be representative of the entire population, a survey is an appropriate

means to gather data from teachers and administrators in public schools (Warner, 2013).

The survey was sent via email providing an online access link to 276 public school

administrators. The administrators, after taking the survey for their own perceptions of

effective professional development, were asked to forward the survey to their teachers.

All administrator and teacher responses obtained have been analyzed through IBM's

software called Statistical Package for the Social Sciences (SPSS) version 22 (IBM

Corp., 2013).

Respondents

A survey was sent to the ND administrators that report their email addresses to

NDDPI for its listserv, a publicly available list from the NDDPI. An electronic link was

sent via email to 276 ND public school administrators (superintendents, assistant

superintendents, and principals). 113 administrators and 305 teachers completed the

survey regarding their perceptions of effective professional development as defined by

the literature review. Another 50 respondents also completed the survey, but they chose

not to indicate the position they held within their district (see Table 2 for more details).

The survey population consisted of North Dakota public school administrators and the

teachers within their districts. By having only administrators who took the survey

administer the survey link to their teachers, I was able to ensure that the perceptions of

teachers and administrators from this study were associated with one another.

Instrument

The survey for this study (Appendix A) was developed based on: a) research from the Chapter II literature review, b) the author's background and experience in public schools in ND, c) dialog with professionals in the field (including the author's graduate school adviser and doctoral committee), and d) a pilot of the instrument with school administrators. Research into effective PD shows substantial variance in what is necessary and/or beneficial for effective professional development (Cooper, 2009; Guskey, 2003; Moldonado, 2002; Penuel et al., 2007). Though there are several published reports on what makes PD effective, the research body does not agree entirely on what effective professional development looks like (Cooper, 2009; Guskey, 2003; Moldonado, 2002; Penuel et al., 2007). From the research that was reviewed for the purposes of this study, eight constructs have been identified as relating to effective professional development. The eight PD constructs tested in this instrument are all noted in multiple sources as being a part of effective professional development (Garet et al., 2001; Guskey, 2003; Moldonado, 2002; Penuel et al., 2007; Thompson & Goe, 2009). The eight constructs are:

- Collaborative

- Engage in Practice

- Content Driven

- Technology Driven

- Ongoing and Sustained

- Integrated with other Goals

- Evaluated

- Increase Teacher Self-Efficacy

The survey is divided into two components recording both categorical and quantitative variables (Warner, 2013). The first six questions collect demographic data and will be categorical variables of the respondents' responses reported as descriptives regarding the sample of respondents in the study. Questions 5 and 6 pertain to research questions in the study. The next eight questions (7-14) include the statements dealing with an individual effective professional development construct. The remaining questions (15-38) are designed to ascertain the level of effective professional development opportunities implemented by those school districts. These questions are based on a six-point Likert scale. The choices were: strongly disagree, disagree, slightly disagree, slightly agree, agree, and strongly agree. The statements were designed to reflect themes revealed in the literature review of effective PD practices, as well as the author's experience as a superintendent and educator.

Collection of Data

Data for this study was collected through a computer survey program called Qualtrics available to University of North Dakota students. A link to the survey was emailed to the public school administrators in ND. Once the administrators had completed the survey, they were asked to forward the survey link to their teachers.

The Qualtrics program recorded both the started and completed survey results and stored the data received from respondents of the survey, which was then exported into a Microsoft Excel data file and imported into the SPSS program for analysis. The survey was sent out on February 28, 2013, and was open for a two-week timeframe. A 40% return rate was anticipated, and a 59% return rate was obtained from the administrators

who received the initial email with the link to the survey. There were several

administrators who listed themselves as "other" and are not counted in this percentage.

Since I am unaware of the number of teachers who received the link from the

administrators a return percentage is not available for teachers.

Confidentiality of survey respondents was maintained by not collecting

identifying data from respondents or school-identifiable data. Data results that are

published in this dissertation are aggregate data only. This measure was taken to

engender greater participation of the educators from whom participation was requested.

Data Analysis

Both parametric and nonparametric statistical tests were used to analyze the data

from this survey. For data analysis of the Likert scale questions within the survey;

strongly disagree was given a value of one, disagree was given a value of two, slightly

disagree was given a value of three, agree was given a value of four, agree was given a

value of five, and strongly agree was given a value of six.

Parametric Tests

Descriptive analyses were run on the demographic questions from the survey

collecting *n* counts and percentages of the population that fell into each category. As

well, descriptive analyses were made on the construct questions, collecting percentages

of those who responded in the affirmative to each question. Descriptive analisis of the

individual survey questions related to each construct were also carried out and the

percentage of some form of agreement, that being anyone who answered somewhat agree

through strongly agree, was reported together with the means and standard deviations.

A Pearson correlation *(r)* and the Cronbach Alpha (α) were used as reliability measures of the eight constructs. The Pearson correlation helps to determine the validity between the eight constructs, whereas the Cronbach Alpha helps to determine the internal correlation of the individual items within each construct. Cronbach's Alpha is one of the most popular reliability assessments for a multiple item scale (Warner, 2013).

An Analysis of Variance (ANOVA) was run as a comparison between the respondents' perception of effective PD and the presence of the eight constructs. This analysis was used to assess significant differences between those with higher versus lower perceptions of effectiveness and how this may relate to the identified constructs.

Nonparametric Tests

A Chi-square (X^2) test of association between variables was used to determine the significance of the difference between the number of people who perceived that the number of PD was effective and sufficient to meet their needs at each selection of days. More specifically, is there a significant difference in perceived effectiveness and sufficiency of PD between schools with a different number of PD days embedded in their school calendars? If so, what, if any, turning point might be identified where PD days changed perceptions of effectiveness and sufficiency of teacher development?

CHAPTER IV

RESULTS

Presentation of the Data

This chapter is a report of the findings of the data analysis of this study. The findings are reported in the summary of the following tables and graphs. Each research question is addressed as it relates to the data collected. Recommendations based on the analysis of data can be found in Chapter V.

Table 2 contains the demographic information of those responding to the survey. There were 305 teachers, 51 superintendents or assistant superintendents, 35 elementary principals, 27 secondary principals, and 50 who identified themselves as "other" who completed the survey. Included in those that chose "other" were assistant principals, counselors, librarians, Title I teachers, middle school principals, and special education teachers. Sixty-six percent of the respondents were female. The largest share of those who returned the survey had more than fifteen years of experience in education (47.4%). Although state law only requires two days of PD, 370 of the 437 survey responses to this question indicated that their districts offered more than two PD days. Nearly 64% of the responses indicated that the number of PD days, in the district calendar, was adequate to accomplish their PD needs for the year. Sixty-three percent of the respondents believed the PD their district was offering during those days was effective.

Table 2. Demographic Information of Survey Respondents.

Demographic Category	Sample Count (n=484*)	%
Position		
Teacher	305	65.0
Superintendent/Assistant Supt	51	10.9
Elementary Principal	35	7.5
Secondary Principal	27	5.8
Other	50	10.7
Gender		
Male	158	33.9
Female	308	66.1
Years of Experience		
1-5	107	23.0
6-10	65	13.9
11-15	73	15.7
16+	221	47.4
Number of PD days our district calendar offers		
2	67	15.3
3	79	18.1
4	136	31.1
5	49	11.2
6+	106	24.3
The number of PD days our district offers is sufficient to meet our annual needs		
Yes	278	63.6
No	159	36.4
The PD our district offers is effective		
Yes	275	63.2
No	160	36.8
*some respondents did not answer all the questions		

Table 3 contains the eight construct questions. Through the literature review, the

eight constructs were created to contain PD activities that are parts of effective PD.

Seven of the eight constructs were identified as being present in more than half of the

surveys completed. Evaluation of PD was the only construct not present in almost half of

the surveys (49.5%). While constructs 2, 3, 4, and 8 were present in over half of the

respondents' PD, they still ranged between 50% and 60%. 40.3% of the respondents felt

like their PD did not *increase teacher self-efficacy*. Forty-three percent of the

respondents PD did not contain a focus on their individual *content* needs. 41.9% of the

survey respondents felt their PD did not include *technology integration*.

The construct with the highest percentage of "yes" responses was *our PD is*

linked to other goals and objectives we have for our students. Another construct with a

high percentage (81%) of yeses returned was *our PD encourages collective participation*

and collaboration among staff.

Table 3. Eight Construct Survey Questions.

Construct Questions	Yes (%)
C1. Our PD encourages collective participation and collaboration among staff	81.0
C2. Our PD focuses on content knowledge of subject matter content	55.0
C3. Our PD contains opportunities for teachers to engage actively in the planning and practice of teaching	62.3
C4. Our PD is driven by and inclusive of necessary technology	58.1
C5. Our PD is linked to other goals and objectives we have for our students	85.5
C6. Our PD includes an evaluation piece that we use to determine the effectiveness of our PD	49.5
C7. Our PD is ongoing, sustained, and maintained within our district	74.0
C8. Our PD is designed to increase teacher self-efficacy	60.7

Table 4 contains the survey questions related to the eight constructs of effective

PD. There are three questions associated with each construct in the survey. The

questions are arranged in Table 4 by construct. Questions 1-3 are associated with

construct one, questions 4-6 are associated with construct two, questions 7-9 are

associated with construct three, questions 10-12 are associated with construct four,

Table 4. Survey Questions With Percentages of Agreement, Mean, and Standard Deviation.

	Survey Questions	% of Agreement	M	SD
	Q1. Our PD includes staff collaboration activities.	82.2	4.4	1.18
C1	Q2. We encourage staff to work together across content areas and or grade levels.	77.7	4.3	1.35
	Q3. Our schedules are designed to allow common time for staff to collaborate during their day.	53.8	3.4	1.69
	Q4. Our PD is focused and delivered to specific content teachers.	60.0	3.7	1.37
C2	Q5. We provide a variety of PD opportunities of which teachers in content areas may take advantage (newsletters, pay for conference attendance, pay to join associations).	55.6	3.5	1.43
	Q6. Our PD helps teachers to more deeply understand the content they teach.	60.2	3.6	1.40
	Q7. Our teachers spend time observing expert teachers in our district or out of our district for the purpose of improving their own instruction.	26.9	2.5	1.31
C3	Q8. Our teachers work during PD to create lessons and units that they will use in their classrooms.	54.9	3.4	1.41
	Q9. Our PD contains opportunities for teachers to actively engage in their learning.	68.7	3.9	1.31
	Q10. Our PD contains recent technology relevant to our district.	77.1	4.2	1.23
C4	Q11. Our PD includes opportunities for teachers to integrate technology into their curriculum.	76.4	4.1	1.25
	Q12. Our PD includes technology from many different platforms such as computers, tablets, mobile devices, etc.	62.4	3.7	1.42
	Q13. Our PD offerings are in line with our district's vision and mission statements.	82.9	4.3	1.15
C5	Q14. Our PD goals are tied to our school improvement process (NDMILE, SEIP, or AdvancEd)	82.4	4.4	1.19
	Q15. Our PD is integrated into our work to improve student achievement	80.8	4.4	1.21
	Q16. Teachers and administrators are given an opportunity to evaluate our PD offerings.	60.9	3.7	1.43
C6	Q17. Evaluations are an important part of determining our PD needs	58.8	3.7	1.50
	Q18. Evaluations are used to guide improvements to PD offerings	52.0	3.5	1.47
	Q19. Our PD is offered in suitable lengths of time to compete meaningful tasks.	68.0	3.8	1.24
C7	Q20. Our teachers have opportunities to revisit the PD learning throughout the year.	63.4	3.8	1.31
	Q21. PD opportunities are spaced out throughout the year to continue teacher learning all year long.	83.2	4.4	1.22
	Q22. PD opportunities are designed to improve teacher decision making skills.	65.9	3.9	1.28
C8	Q23. Our PD opportunities increase leadership skills of teachers.	61.9	3.7	1.30
	Q24. Our PD instills confidence in teachers' ability to be effective.	66.3	3.8	1.34

questions 13-15 are associated with construct five, questions 16-18 are associated with construct six, questions 19-21 are associated with construct seven, and questions 22-24 are associated with construct eight. Each of the questions in the survey included a Likert Scale with six choices; strongly agree, agree, slightly agree, slightly disagree, disagree, and strongly disagree. The first column of Table 4 is the percentage of some form of agreement or the total of the slightly agree, agree, and strongly agree percentages.

For data analysis slightly agree was given a value of four, agree was given a value of five, and strongly agree was given a value of six. The mean (*M*) of the value is listed in the second column of data. A high mean indicated a stronger form of agreement with the question. The final column of data in table 4 is the standard deviation for each question.

The question with the highest percentage of some form of agreement was *PD opportunities are spaced out throughout the year to continue teacher learning all year long* with slightly over 83%. The lowest percentage of some form of agreement came from Question 7; *our teachers spend time observing expert teachers in our district or out of our district for the purpose of improving their own instruction*. Questions 1, 14, 15, and 21 all had the highest mean values of 4.4. Question 13 had the lowest standard deviation of 1.15.

Respondents to Question 7 reported that only 26.9% felt their teachers spend time observing expert teachers from within and out of the district for the purpose of improving their own instruction. This is one activity contained in the constructs of effective PD practice that has not made its way into many of ND's schools. Question 9 related to

teachers being given time to engage in active practice during their PD. 31.3% of the time, teachers are not actively engaging in the learning they are receiving.

Questions 16, 17, and 18 were all related to the evaluation of effective PD. The highest percentage of agreement was with question 16 at 60.9%. Nearly half of the PD being offered in the state of ND according to the perceptions of this population is not being evaluated for its effectiveness.

Figure 1 presents the number of "yes" (diamond) and "no" (squares) responses to the question, whether or not the current number of PD days the district offers is sufficient to accomplish all the districts' work considering the number of days a district offers. A third line (triangles) presents the percentage of the population that said "yes" per day. Figure 1 visualizes the fact that the "no" responses outnumber the "yes" responses until districts offer four days. In fact there is a significant difference shown in table 5($<.001$) between the number of people who said "yes" and "no" based on the number of days offered.

Figure 2 presents the number of "yes" (diamonds) and "no" (squares) responses to the question, is the PD your district offers effective considering the number of days a district offers? A third line (triangles) shows the percentage of the respondents that said "yes" per day. Figure 2 also shows a relatively flat line of the number of "yes" and "no" responses to the question if PD is effective considering the number of days it is offered. This indicates that the number of days is not significant to the effectiveness of the PD being offered.

	2	3	4	5	6+
Yes	26	39	92	37	83
No	41	40	44	12	22
% Yes	39	49	68	76	79
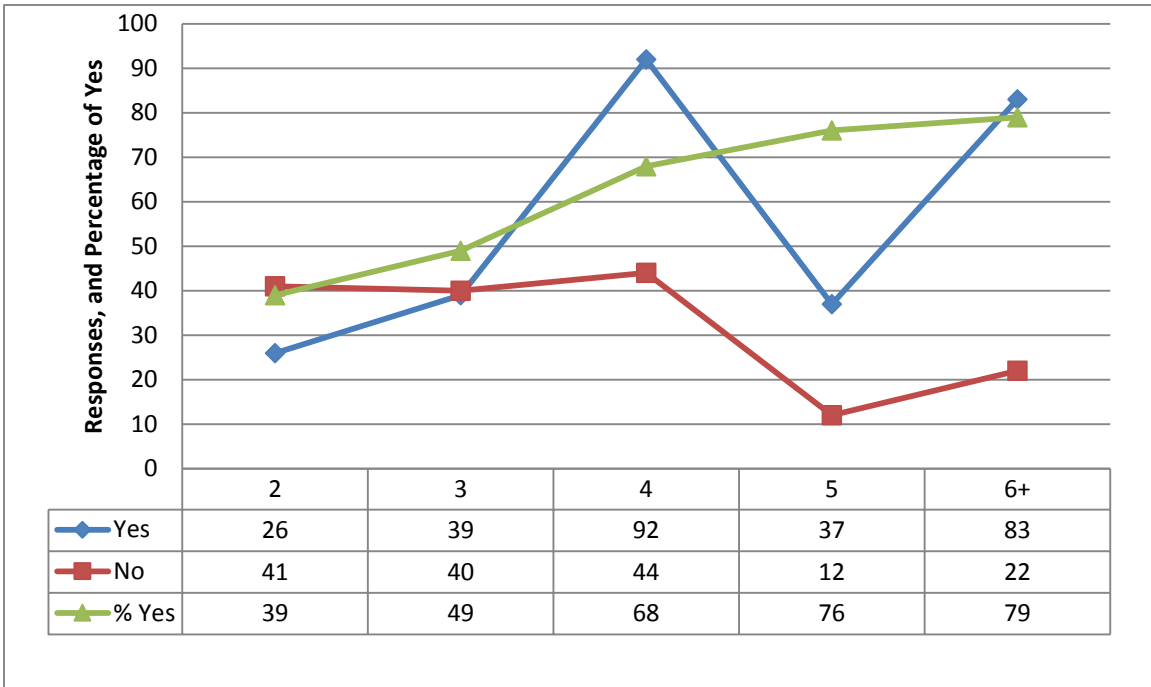
Figure 1. Survey responses to sufficiency of PD days considering the number of PD days.

	2	3	4	5	6+
Yes	42	52	91	28	61
No	24	26	45	21	44
% Yes	64	67	67	57	58
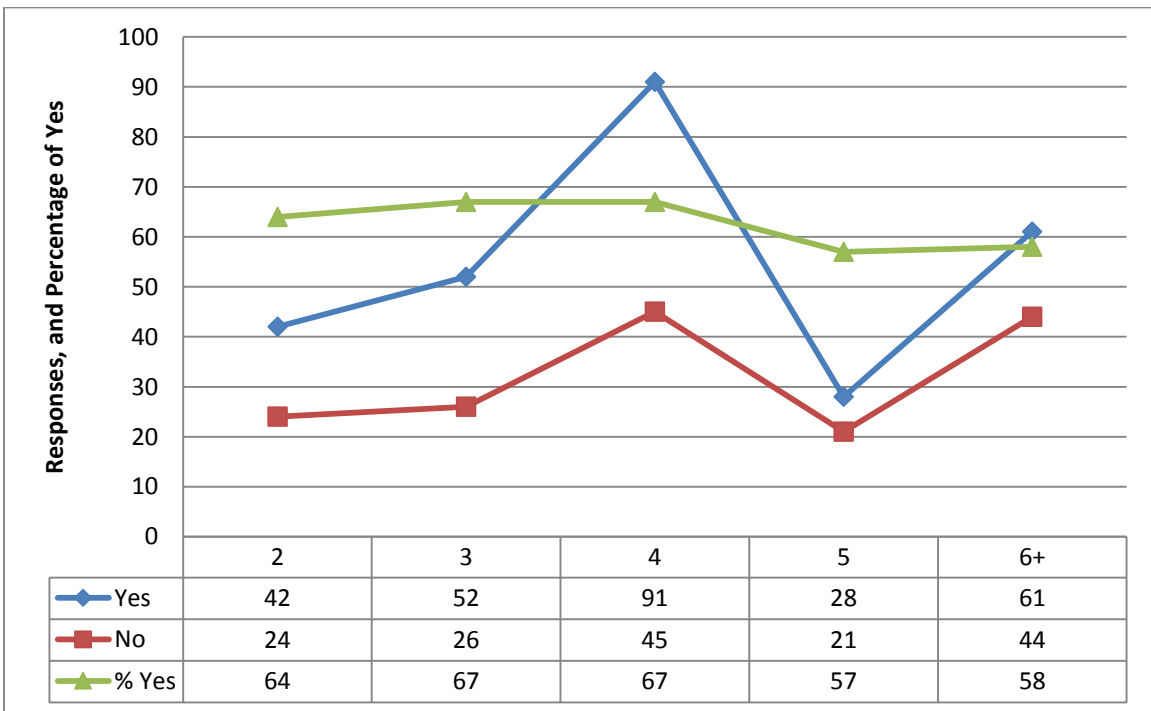
Figure 2. Survey responses to effectiveness of PD considering the number of PD days.

In addition to Figure 2, Table 5 presents that there is no significant difference (.531) between the number of days a district offers and whether or not the respondents believed their PD was effective.

Table 5 is a Chi square test that shows there is a significant difference (<.001) between the number of "yes" and "no" answers when asked if the number of days the school district offers is significant when considering the number of PD days. The number of "no" responses outnumber the number of "yes" responses until the district has offered teachers four days of PD. The table presents that there is no significant difference between "yes" and "no" responses to whether or not their district offers effective PD when considering the number of days a district offers (.531).

Table 5. Survey Responses to Effective PD and Sufficient Number of PD Days.

| Number of PD Days | 2 | | 3 | | 4 | | 5 | | 6+ | | Pearson Chi- | | |
Response	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Square	df	Sig.
The PD our district offers is effective	42	24	52	26	91	45	28	21	61	44	3.160	4	.531
The # of PD days is sufficient to meet our needs	26	41	39	40	92	44	37	12	83	22	39.460	4	<.001

Table 6 presents the eight constructs and their reliability measures. The table shows the correlation between each of the constructs and within each construct. Since each of the eight constructs identified contain activities that focus on individual aspects of effective PD, theoretically the constructs should show a significant correlation (Trochim & Donnelly, 2007). Table 6 presents that according to the measure, the

constructs are highly correlated with each other. The highest correlations are seen

grouping on construct eight, *increases teacher self-efficacy*. The Cronbach alpha scores

should range between .7 and .9. Constructs 1-7 are within that range. Construct 8 has an

alpha score of .943 which may indicate that the three questions are too similar to one and

other

Table 6. Correlation of Constructs and Measures of Internal Consistency.

Construct	Subscale	C1.	C2.	C3.	C4.	C5.	C6.	C7.	C8.	α
C1.	q1,q2,q3									.724
C2.	q4,q5,q6	.540**								.758
C3.	q7,q8,q9	.599**	.620**							.789
C4.	q10,q11,q12	.469**	.528**	.604**						.900
C5.	q13,q14,q15	.606**	.564**	.636**	.522**					.883
C6.	q16,q17,q18	.386**	.522**	.509**	.407**	.524**				.872
C7.	q19,q20,q21	.606**	.606**	.647**	.515**	.733**	.487**			.785
C8.	q22,q23,q24	.615**	.701**	.700**	.571**	.756**	.611**	.753**		.943

**. Correlation is significant at the 0.01 level (2-tailed).

       Table 7 presents the results from a comparison between the mean of the three

individual questions related to each construct and those who said yes or no to the

question whether PD is effective. In the case of all eight constructs, those who said the

activities listed in the questions were present significantly more often, reported that their

PD was effective even though Figure 2 and Table 5 show that the number of days was not

significant in whether PD was effective. The ANOVA results here suggest that the

presence of all eight of the constructs is significant ($<.001$) to the perceived effectiveness

of PD.

Table 7. Comparison Between Positive and Negative Responses to Effectiveness of PD.

Constructs	*M* Yes	*M* No	F	*P* (sig 2 tailed)
C1 q1,q2,q3	4.35	3.48	62.77	<.001
C2 q4,q5,q6	4.00	2.91	99.94	<.001
C3 q7,q8,q9	3.70	2.57	116.43	<.001
C4 q10,q11,q12	4.31	3.44	54.38	<.001
C5 q13,q14,q15	4.77	3.68	122.43	<.001
C6 q16,q17,q18	3.95	3.11	39.26	<.001
C7 q19,q20,q21	4.38	3.33	114.22	<.001
C8 q22,q23,q24	4.28	2.92	145.87	<.001

Table 8 presents the percentage of respondents who said "yes" to the questions, of whether their PD is effective and if the number of days is sufficient? The responses show that teachers believe the number of days they receive is sufficient, but that fewer respondents say the PD is effective. On the contrary, fewer administrators tend to say the number of days is sufficient but a greater percentage thinks that what is offered is effective. This shows a discrepancy between teachers' and administrators' perception of effective PD.

Research Questions

The following data pertains to this study's research questions.

Research Question 1. What professional development constructs are identified for effective professional development?

All eight of the constructs, that contain PD activities offered to teachers in ND, identified in this study were found significantly more often (<.001) when respondents

Table 8. Survey Respondent Demographic Category Concerning the Sufficiency of the Number of Days of PD and the Effectiveness of PD.

Demographic Category	Number of days is sufficient % Yes	PD is effective % Yes
Position		
Teacher	73.1	54.2
Superintendent/Assistant Supt	31.4	80.4
Elementary Principal	48.6	68.6
Secondary Principal	42.3	88.5

replied that their PD was effective. Table 6 presents the significance of the difference between those who said their PD was effective and whether or not the activities listed in the survey questions were present in their PD.

- In the first construct, those who responded that their PD was effective had an average score on Questions 1-3 of 4.35, and those who responded negatively, had an average score of 3.48.

- The second construct, when respondents said their PD was effective, averaged a 4.00 on Questions 4-6, and those who responded negatively that their PD was not effective averaged a 2.91.

- Respondents to questions associated with construct three who claimed their PD was effective averaged a score of 3.70 on Questions 7-9, and those who responded negatively had an average score of 2.57.

- Those who said their PD was effective on the fourth construct have an average score of 4.31 on Questions 10-12, and those who responded negatively to the effectiveness of their PD averaged 3.44.

65

- On the fifth construct, those who responded affirmatively whether or not their PD was effective averaged a 4.77 on Questions 13-15, while those who responded negatively averaged a 3.68.

- Those who responded in the affirmative that their PD was effective averaged a 3.95 on Questions 16-18, which are related to the sixth construct, while those who responded negatively to the effectiveness of their PD averaged a 3.11.

- On the seventh construct, those who responded that their PD was effective averaged a 4.38 on Questions 19-21, while those who responded negatively averaged a 3.33.

- The eighth construct had the largest difference in the mean score of whether or not the activities were present and whether or not the PD was effective. When respondents said that their PD was effective, the average score on the three related Questions 22-24 was 4.28. When respondents said their PD was ineffective, their average score was a 2.92.

Research Question 2. How prevalent are the eight constructs of effective professional development in ND school districts as perceived by teachers and administrators?

Table 2 displays that seven of the eight constructs were present in the PD offered to more than half of the survey respondents. *Evaluation* of PD was the only construct not present in more than half (49.5%) of the PD offerings. Eighty-one percent of respondents said their PD contained the construct of *collaboration*. Fifty-five percent of the respondents claim that their PD contained the construct of *content based,* while 62% said their PD allowed for *active practice*. Of the respondents, 58% said their PD contained

technology, and 74% said it was *sustained and maintained.* Sixty percent claim their PD

increases teacher self-efficacy. This suggests that many of the educators in ND are

receiving the eight constructs of effective PD identified in this study.

Research Question 3. Can school districts that offer the two-day minimum offer

effective PD?

Table 4 shows, that regardless of the number of PD days a school district offers,

there was no significant difference in the perception of the effectiveness of the PD

offered. What mattered to the perception of the effectiveness of the PD was 'what' was

being offered during those PD days. However, there was a significant difference in the

number of people who responded that the number of days their district offered was

enough to meet their PD needs. Table 4 shows that in districts that offer two and three

days of PD the number of people reporting no the number of days is sufficient

outnumbers the respondents who claimed "yes". Figure 1 presents the number of yes and

no responded by the number of days offered as well as the percentage of those that said

yes. There is a clear distinction between those that offer two or three days and those that

offer four or more.

CHAPTER V

DISCUSSION, CONCLUSIONS, LIMITATIONS, AND RECOMMENDATIONS

Discussion

The data collected and analyzed for this study reveals several important findings for ND related to the three research questions. The first research question was, what professional development constructs are identified for effective professional development? All eight of the effective PD constructs identified from the literature review were present significantly more (<.001) when respondents perceived that their PD was effective.

The second research question was, how prevalent are the characteristics of effective PD represented by the eight constructs of effective professional development in ND school districts as perceived by teachers and administrators? The eight constructs of effective PD are found frequently in ND public schools. Seven of the eight constructs are present in the PD of those who responded more than half of the time. The only construct present less than half the time was present 49% of the time.

The third research question was, can school districts that offer the two-day minimum offer effective PD? The number of PD days that a district offers in their calendar did not affect the respondents' perceptions of PD effectiveness. In fact those that only offered the two PD day minimum were just as likely to include the eight constructs of effective PD. However, two days was often not enough to meet a district's needs. Those who identified the number of days of PD offered was adequate, did not

outnumber the respondents who said the number of days of PD was inadequate until at least four days of PD was offered.

The effectiveness of PD in ND public schools needs to be evaluated by formats other than exit evaluations. The only construct not present in more than 50% of the responses was evaluation of PD. Currently school districts are not collecting much data on the effectiveness of their PD. In fact there is only one state report that gets submitted to the NDDPI, that report only requires administrators to include funding sources for PD and a brief description of the PD being offered. How are school districts to determine the effectiveness of their PD without a proper evaluation and reflection that allows for improvements? I would argue that state law and any reporting associated with it should set up guidelines for school districts to identify the effectiveness of their PD rather than mandating seat time. This would allow the state to monitor the effectiveness of spending of tax payer dollars on PD while not mandating an arbitrary length of time.

Teacher and Administrator Perception

Table 8 presents the clear difference between the perceptions of PD for teachers and administrators. I would expect a difference in perception as it is often the job of administrators to plan and deliver the PD and the job of the teacher to attend the PD. The teachers who were attending the PD reported more frequently that the PD they were offered was enough while administrators who were planning the PD and trying to get all of the work scheduled into too few days more often reported that the amount of time was insufficient. Teachers who were again attending the PD reported less often that it was effective, while the administrators who were responsible for the PD felt more often than not it was effective. This difference in perception about the required amount and

69

effectiveness of PD is all the more reason the state should develop guidelines to help

school districts determine the effectiveness of the PD.

Significant Constructs

All eight of the constructs selected from the literature review of effective PD were

present significantly more often (<.001) when a respondent claimed the PD they offered

or received was effective. This affirms the eight constructs identified in the literature

review are constructs of effective PD. The fact that these constructs were present in half

or more of the respondents' PD days, demonstrates that they are prevalent in PD offered

in ND public schools. The two most frequently noted constructs were *collaboration* and

linked to other district goals. The survey results identified that more than 80% of the

respondents claimed that these two constructs were present in their PD days. Along with

the correlation of constructs analysis that shows each construct is indeed a separate

construct of effective PD, this finding validates the constructs of effective PD selected

from the literature review. While this finding does not rule out the existence of other

constructs, it does identify that each of the eight constructs is present in PD that is

perceived as effective.

While no single offering of PD is likely to contain all eight constructs of effective

PD, a well-designed program of effective PD in ND will contain more of these constructs

more often than not. Many effective PD offerings may only include a few of the eight

constructs.

Collaborative PD allows teachers to work together saving time that it might take

them to accomplish a task on their own. It allows teachers and administrators to

maximize their strengths and minimize their weaknesses by working together to accomplish new learning.

Content specific PD allows teachers to dive deeper into the material that they will be presenting to students. A deeper understanding of content knowledge allows teachers to feel comfortable with students exploring the content beyond the available curricular resources. Teachers who received content based PD will feel a greater connection to the learning as they will likely see its relevance to their day to day work.

PD that allows teachers to *engage in active practice* is again a time saver as teachers will be developing new materials and methods that they will put into use in their classrooms. The aspect of time saving is important in a profession that provides so little time for teachers outside of their classroom.

As technology becomes a more and more significant part of our lives PD that *integrates technology* will become more and more important. If our students are to compete with students on a global scale they will have to be proficient with many forms of technology. Our teachers who will be supporting the learning of those students, should also know and be comfortable with the technology. Teachers often are afraid of the repercussions of breaking an expensive piece of technology and tend to be hesitant to bring them into their classrooms (Yamagata-Lynch, 2003). Effective instruction on the use and care of technology can go a long way to easing anxieties for both teachers and administrators.

PD that is *integrated with other district goals* tends to become a part of a school's culture and more likely to be effective at changing practices within the school. Staff members who see the learning as meaningful to the work they are trying to accomplish

71

will be more likely to use the learning to reach their goals. As a superintendent it was frustrating to have long range plans, strategic plans, and separate plans for student safety, student nutrition, school improvement, program improvement, and so on. Our district worked hard to streamline those plans and form common goals that worked within our districts mission and vision for our school and students. Once those plans were aligned in the same direction it was easier to decide on PD offerings that could support those plans and our goals.

Evaluated PD is useful for any administration desiring to improve on their PD offerings. While studies have shown that self-reporting the quality of PD through exit surveys are not effective at predicting the actual change in teacher practice (Erbert-May et al., 2011), exit surveys is often the extent of our evaluations of PD. Sixty-one percent of the teachers who responded to this survey believed they were given an opportunity to evaluate their PD, however, only 52% believed that the evaluation was used to guide future improvements to PD offerings. The evaluations need to be more accurate at determining the changes to practice within our schools and the evaluations need to effectively change PD offerings to make them more effective in the future.

In addition, to being aligned with other district goals, for PD to become a part of a school's culture the PD must be *ongoing and sustained*. The previous model of PD where a teacher sits for a few hours to hear a speaker, all the while writing lesson plans and grading student papers, and then returns to their classroom to continue with the 'same old same old' was never effective at changing practice. Our learning should begin at the PD offering and continue long after the PD is over. It should be discussed at staff meetings and over coffee in the lounge; it should be mentioned during observations and

evaluations of staff. The learning should be sustained and supported so that it has a chance to truly change staff practices.

Lastly effective PD should *increase teacher self-efficacy* as teachers who are confident in front of their students, and develop leadership skills, tend to be more effective at delivering their content. Self-confidence can go a long way toward making a difficult lesson more successful in a classroom. The confidence to lead students as they struggle with material is important for any teacher. Leadership qualities and confidence in one's abilities to make the right decision also help teachers dealing with students who may act out or disrupt the learning of other students. A teacher's ability to deal with difficult students and manage their classroom does mean a lot when it comes to the other students' ability to achieve.

School districts in ND desiring to offer effective PD for their teachers and administrators should focus the offerings on the eight identified constructs of effective PD. While no two PD programs will be the same, and no one offering of PD will contain all eight constructs, a well-designed program will tailor their individual PD to these constructs of effective PD.

Table 6 displayed that many of the highest correlations were found in the construct *increases teacher self-efficacy*. This could be a result of the fact that no matter what the "topic" of the PD is, the goal of any activity should be to increase a teacher's perception of their ability to teach. A teacher who feels more confident in his or her abilities is likely to actually be a better instructor. If a teacher leaves a PD activity feeling better about themselves as a professional, I would identify that as effective PD.

73

Calendar Days

In an analysis of the data from this survey I found no significant link between the amount of days a school calendar had and the perceptions of the PD's effectiveness of the respondents' PD opportunities. Across all number of days offered (2, 3, 4, 5, and 6+), there was no significant difference in the number of respondents who perceived the PD offering or receiving was effective. In fact at two, three, and four days, nearly twice as many people believed that the PD they were receiving was effective. None of the other studies I researched for this dissertation listed the length of time a teacher spent in the PD session as a component of the PD's effectiveness. Rather Desimone, Porter, Garet, Kwang Suk Yoon, and Birman (2002) and Penuel, Fishman, Yamaguchi, and Gallagher (2007) found no effect on student achievement for the duration of time a teacher spent gaining the new learning.

ND's only state law (15.1-06-04) that relates to PD for teachers requires a number of hours of seat time in order to count as a day of PD. The fact that effective PD is happening in ND in my experience is because of local school leaders that plan and offer PD that contains many of the activities contained in the eight constructs of effective PD rather than a state law requiring seat time hours.

Adequate Time

While the number of calendar days was not a significant factor in the perception of the effectiveness of PD, there was a significant difference in the number of respondents who perceived the number of PD days offered was adequate to meet their annual needs. The number of people who responded that the number of PD days offered was adequate to meet their needs, did not outnumber the respondents who perceived the

number of PD days was inadequate to meet their needs - until the district had offered at least four days! Since many of our public schools and districts are only able to fund the minimum number of PD days required by the state, we have a number of teachers who are not receiving enough PD in a calendar year to meet their needs. While that PD may be perceived as effective, it is not enough to support the teachers and administrators as they grow in their careers.

The only law that relates to PD for teachers in ND (15.1-06-04) is directly related to the number of days a district must offer and the duration of those activities. The quality of the opportunities districts offer their staffs is not mentioned. There is no requirement to offer these or other constructs of effective PD. So why then does our state law focus on the amount of time a teacher spends learning? In short, it is likely the easiest way to measure the amount of money spent on PD in our schools each year. It has little, if nothing, to do with whether or not the PD is going to be effective and more to do with how cost effective it is.

Limitations

There were limitations of this study. Since I asked the administrators to forward the survey link to their teachers, I am not certain of the total number of teachers who were asked to complete the survey, and a percentage of responses from teachers was not attainable. Some school districts schedule PD for the entire district of several buildings while others allow building level PD decisions, so there are administrators at varying levels making decisions on PD depending on the district that replied to the survey.

I did not request the size of the school district in the survey which may have been a useful demographic in comparing against the number of days offered and the perceived

effectiveness of the PD. A size demographic might have been useful to determine the number of students being impacted by perceived effective or ineffective PD.

In the survey, some teachers chose "other" to describe their position based on their own individual definitions of the position. For instance, several teachers who teach Title I classes picked "other" and wrote in Title I rather than selecting teacher from the choices.

In the survey I did not include a choice for middle school principals in the demographics, so several of the administrators also listed themselves as "other" instead of selecting principal. Since I could not be sure that all middle school principals listed themselves as "other," I was not able to separate them as a demographic group.

<div align="center">**Conclusion**</div>

I created Figure 3 to demonstrate that while the eight constructs of effective PD are all significant, according to respondents not all eight constructs need to be present for the PD to be effective. It would be difficult to create PD offerings that consistently contained all eight constructs of effective PD. In fact most PD offerings may only incorporate a few of the constructs at a time.

Currently PD in public North Dakota school districts most often addresses local needs identified through some form of needs analysis. It could offer districts a chance to address teachers regarding changes to policy. It may include how-to seminars for technology. PD often includes motivational speakers to support staff preparation for the year ahead. Many public school districts in ND offer this PD as a day to teachers in the week before their school year starts and another during a break in January. These two days meet the minimum requirements of ND.
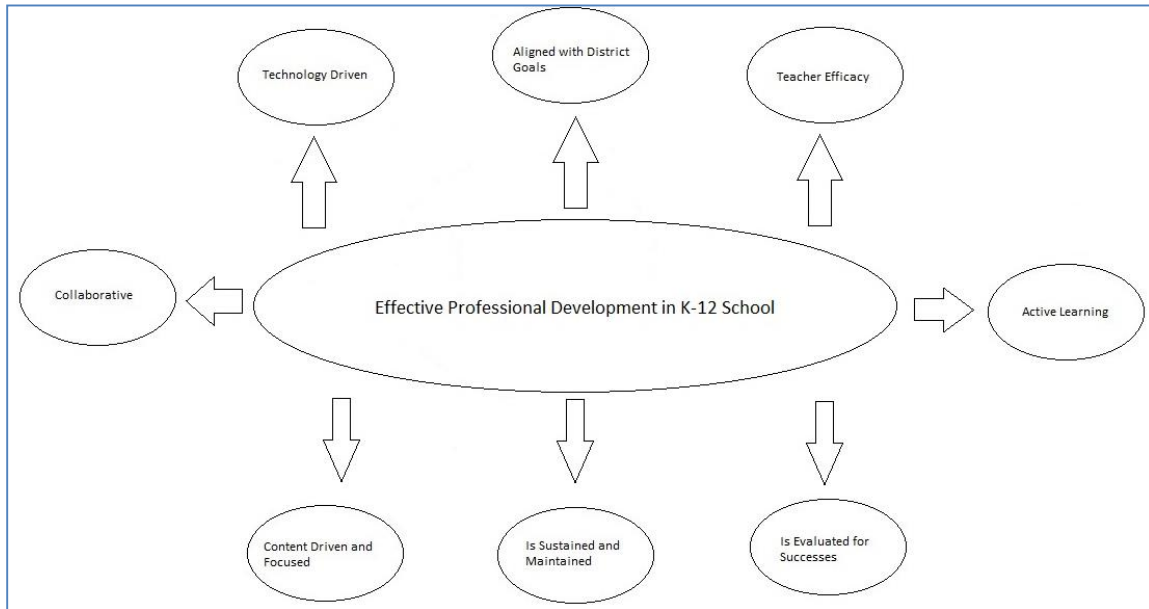
Figure 3. Eight constructs for effective PD in K-12 schools (Townsend).

While the PD should continue to address local needs, it must include activities that allow teachers to work together toward a common goal, while actively engaging in the learning around content that is relevant to their work day. It must include timely technology that teachers can become familiar with to use in their lessons. It should always be tied to district goals and improve student achievement. Teachers must leave the PD feeling better about themselves as a professional and feel more comfortable with their ability to deliver lessons in their classrooms. The PD days should be flexible in length so that they can be scheduled throughout the school year to allow for ongoing and sustained learning. Lastly the PD should be evaluated by all those involved so that improvements can be made and effectiveness can be ensured.

When it came to whether or not PD was effective, the number of days offered was irrelevant. However 'what' was offered during those days was highly significant.

77

Teachers and administrators responded that the two-day minimum was not an adequate amount of time to get their PD needs met for the year, but when the PD contained the eight constructs of effective PD regardless of the amount of days, teachers and administrators thought it was effective.

In my experience working in schools and at the state department, the most frequent comment from teachers is that, "there is never enough time in their day to teach, assess, offer feedback, eat lunch, use the restroom, and so on." This leaves very little time to make meaningful gains in improving their practice. By ensuring that the constructs of effective PD are present, ND schools can make the most of the time they are dedicating to PD and ensure that teachers are improving their skills and knowledge.

Educational professionals in North Dakota should be mindful of what makes PD effective and how teachers can most benefit from mandated PD as well as evaluating it for effectiveness. By taking a close look at the PD that is being offered in those two mandated PD days and including the eight constructs of effective PD school can be sure that the 'what' is effective during that time.

As a former teacher and superintendent, I took very seriously my responsibility to provide the best education to my students. Teacher effectiveness is extremely important and making teachers excel in their careers every year is my goal.

I have heard people say that kids today are different than the kids of the last generation or two. As a father of three, I would argue that kids are much the same. They are motivated by the same things, worry about the same things, and enjoy many of the same things. I would argue that the world these children are growing up in, is very different than the world that I grew up in. PD that is inclusive of recent technology and

knowledge is crucial as the field of technology is changing at an astonishing rate (Bybee, 2001; Daugherty, 2003).

Recommendations

I offer the following recommendations for educatiors and research.

For Educators

Students today are growing up in a 21st century world needing skills and knowledge to be successful, and are not the same as the ones their parents needed. Teachers and administrators must be aware of the shifts needed to prepare students to be college and career ready. It is important for educational leaders to decide what PD their staffs need to learn based on assessment, to help prepare students for the 21st century. The state laws developed to help schools offer that PD should be flexible. The PD that is necessary should be developed around the eight constructs of effective PD, and delivered over a range of days during the school year.

Ideally, the ND state legislature should fund at least two additional days of PD for teachers and school districts without the rigid hourly mandate. This would allow schools to offer at least four funded days of PD. Four days of PD would fit with the results of the survey that at least four days was needed for a significant number of respondents to say that the number of PD days was adequate to meet their needs. Schools and districts should be given flexibility to design effective PD that addresses each staff's needs and helps teachers grow in their profession.

For Research

Further research could be conducted to determine the power of the eight constructs. In other words, are there certain constructs that improve effectiveness more

than others? It would also be interesting to find out how other states approach PD for their teachers and administrators. A study that compared the effectiveness of PD from state to state and correlated that to their state laws regarding PD would be beneficial in promoting state laws that are effective at changing teacher effectiveness.

APPENDICES

Effective Professional Development in K-12 ND Public Schools Survey

My name is Ryan Townsend. I am a University of North Dakota graduate student pursuing a doctorate of Education. I am conducting research through this survey on the effectiveness of professional development in ND public schools. Please take a few moments to fill out the survey below. This survey and its results are anonymous and completely confidential. By completing this survey and returning it, you are agreeing to participate in the research. This survey is 100% voluntary, and there are no consequences for not participating. After January 25, 2015, you can receive a copy of the results of this survey by emailing a request to srtownsend@nd.gov.

1. Position:

Superintendent__ Teacher__ REA Director__ Elementary Principal__ Secondary Principal__ Other__

2. Gender:

Male__ Female__

3. Years of experience:

1-5__ 6-10__ 11-15__ 16+__

4. Number of days of professional development our district offers:

2__ 3__ 4__ 5__ 6+__

5. The professional development our district offers is effective:

Yes__ No__

6. The number of professional development days our district offers is sufficient to meet our annual needs:

Yes__ No__

7.	Our PD encourages collective participation and collaboration among staff.	Y	N
8.	Our PD focuses on knowledge of subject matter content.	Y	N
9.	Our PD contains opportunities for teachers to engage in the planning and practice of teaching	Y	N
10.	Our PD is driven by and inclusive of necessary technology.	Y	N
11.	Our PD is linked to the other goals and objectives we have set for our students (School improvement, program improvement, and mission	Y	N

	and vision statements).		
12.	Our PD includes an evaluation piece that we use to determine the effectiveness of our PD and ways to improve it in the future.	**Y**	**N**
13.	Our PD is sustained and maintained within our district.	**Y**	**N**
14.	Our PD is designed to increase teacher self-efficacy.	**Y**	**N**

	Please rate each of the questions to the best of your ability.	Strongly Disagree	Disagree	Slightly Disagree	Slightly Agree	Agree	Strongly Agree
15.	We utilize PLC's (or something similar) to encourage staff collaboration.	**1**	**2**	**3**	**4**	**5**	**6**
16.	We encourage staff to work together across content areas and or grade levels.	**1**	**2**	**3**	**4**	**5**	**6**
17.	Our schedules are designed to allow common time for staff to collaborate during their day.	**1**	**2**	**3**	**4**	**5**	**6**
18.	Our PD is focused and delivered to specific content teachers.	**1**	**2**	**3**	**4**	**5**	**6**
19.	We provide a variety of PD opportunities of which teachers in content areas may take advantage (newsletters, pay for conference attendance, pay to join associations)	**1**	**2**	**3**	**4**	**5**	**6**
20.	Our PD helps teachers to more deeply understand the content they teach	**1**	**2**	**3**	**4**	**5**	**6**
21.	Our teachers spend time observing expert teachers in our district or out of our district for the purpose of improving their own instruction.	**1**	**2**	**3**	**4**	**5**	**6**
22.	Our teachers work during PD to create lessons and units that they will use in their classrooms.	**1**	**2**	**3**	**4**	**5**	**6**
23.	Our PD contains opportunities for teachers to give presentations and lead discussions.	**1**	**2**	**3**	**4**	**5**	**6**

24.	Our PD contains recent technology relevant to our district.	1	2	3	4	5	6
25.	Our PD includes opportunities for teachers to integrate technology into their curriculum.	1	2	3	4	5	6
26.	Our PD includes technology from many different platforms such as computers, tablets, mobile devices, etc.	1	2	3	4	5	6
27.	Our PD offerings are in line with our district's vision and mission statements	1	2	3	4	5	6
28.	Our PD goals are tied to our school improvement process (NDMILE, SEIP, or AdvancEd)	1	2	3	4	5	6
29.	Our PD is integrated into our work to improve student achievement	1	2	3	4	5	6
30.	Teachers and administrators are given an opportunity to evaluate our PD offerings.	1	2	3	4	5	6
31.	Evaluations are an important part of determining our PD needs	1	2	3	4	5	6
32.	Evaluations are used to guide future improvement efforts	1	2	3	4	5	6
33.	Our PD is offered in suitable lengths of time to compete meaningful tasks.	1	2	3	4	5	6
34.	Our teachers have opportunities to revisit the PD learning throughout the year.	1	2	3	4	5	6
35.	PD opportunities are spaced out throughout the year to continue teacher learning all year long.	1	2	3	4	5	6
36.	PD opportunities are designed to improve teacher decision making skills.	1	2	3	4	5	6
37.	Our PD opportunities increase leadership skills of teachers.	1	2	3	4	5	6
38.	PD in our district instills confidence in our teachers' ability to be effective.	1	2	3	4	5	6

Appendix B
IRB Approval Documentation

U N I V E R S I T Y   O F   UN**D**   N O R T H   D A K O T A

December 18, 2013

Stephen Townsend
110 Montgomenry Place
Lincoln, ND 58504

Dear Mr. Townsend:

We are pleased to inform you that your project titled, "North Dakota State Policy Effects on Public K-12 Schools' Opportunities for Effective Professional Development"(IRB-201312-209) has been reviewed and approved by the University of North Dakota Institutional Review Board (IRB). The expiration date of this approval is May 15, 2014.

As principal investigator for a study involving human participants, you assume certain responsibilities to the University of North Dakota and the UND IRB. Specifically, any adverse events or departures from the protocol that occur must be reported to the IRB immediately. It is your obligation to inform the IRB in writing if you would like to change aspects of your approved project, prior to implementing such changes.

When your research, including data analysis, is completed, you must submit a Research Project Termination form to the IRB office so your file can be closed. A Termination Form has been enclosed and is also available on the IRB website.

If you have any questions or concerns, please feel free to call me at (701) 777-4279 or e-mail michelle.bowles@research.und.edu.

Sincerely,

Michelle L. Bowles, M.P.A., CIP
IRB Coordinator

MLB/jle

Enclosures

REPORT OF ACTION: EXEMPT/EXPEDITED REVIEW
University of North Dakota Institutional Review Board

Date: 12/6/2013   **Project Number:** IRB-201312-209

Principal Investigator: Townsend, Stephen

Department: Educational Leadership

Project Title: North Dakota State Policy Effects on Public K-12 Schools' Opportunities for Effective Professional Development

The above referenced project was reviewed by a designated member for the University's Institutional Review Board on _____ DEC 11 2013 _____ and the following action was taken:

☐ Project approved. **Expedited Review** Category No. _____
Next scheduled review must be before: _____

    ☐ **Copies of the attached consent form with the IRB approval stamp dated** _____
    must be used in obtaining consent for this study.

☒ Project approved. **Exempt Review** Category No. #2
This approval is valid until _____ MAY 15 2014 _____ as long as approved procedures are followed. No periodic review scheduled unless so stated in the Remarks Section.

    ☐ **Copies of the attached consent form with the IRB approval stamp dated** _____
    must be used in obtaining consent for this study.

☐ Minor modifications required. The required corrections/additions must be submitted to RDC for review and approval. **This study may NOT be started UNTIL final IRB approval has been received.**

☐ Project approval **deferred. This study may not be started until final IRB approval has been received.**
(See Remarks Section for further information.)

☐ Disapproved claim of exemption. This project requires Expedited or Full Board review. The Human Subjects Review Form must be filled out and submitted to the IRB for review.

☐ Proposed project is not human subjects research as defined under Federal regulations 45 CFR 46 or 21 CFR 50 and does not require IRB review.

    ☐ Not Research   ☐ Not Human Subject

PLEASE NOTE: Requested revisions for student proposals MUST include adviser's signature. All revisions MUST be highlighted and submitted to the IRB within 90 days of the above review date.

☐ Education Requirements Completed. (Project cannot be started until IRB education requirements are met.)

cc: Dr. Sherry Houdek

_____ 12-11-13
Signature of Designated IRB Member   Date
UND's Institutional Review Board

If the proposed project (clinical medical) is to be part of a research activity funded by a Federal Agency, a special assurance statement or a completed 310 Form may be required. Contact RDC to obtain the required documents.

(Revised 10/2006)

REFERENCES

Ackerman, D. J. (2004). States' efforts in improving the qualifications of early care and education teachers. *Educational Policy*, *18*(2), 311-337. doi: 10.1177/0895904803262145.

Alton-Lee, A. (2011). Using evidence for educational improvement. *Cambridge Journal of Education, 41*(3), 309-29.

Ashton, P. T., & Webb, R. B. (1986). *Making a difference: Teachers' sense of efficacy and student achievement.* New York: Longman.

Barnett, H. (2003). Technology professional development: Successful strategies for teacher change. *ERIC Clearinghouse on Information and Technology.* 1-8.

Bos, C. S. (1995). Professional development and teacher change. *Remedial and Special Education, (16)*6, 379-382.

Buczynski, S., & Hansen, C. B. (2010). Impact of professional development on teacher practice: Uncovering connections. *Teaching and Teacher Education 26,* 599-607.

Bybee, R. W. (2001). Effective professional development for technology teachers. *The Technology Teacher, 61*(3), 26-29.

Bybee, R. W., & Loucks-Horsley, S. (2000). Advancing technology education: The role of professional development. *The Technology Teacher 60*(2), 31-34.

Caprara, G. V., Barbaranelli, C., Steca, P., & Malone, P. S. (2006). Teachers' self-
efficacy beliefs as determinants of job satisfaction and students' academic
achievement: A study at the school level. *Journal of School Psychology, 44*,
473-490.

Carpenter, T. P., Fennema, E., Peterson, P. L., Chiang, C., & Loef, M. (1989). Using
knowledge of children's mathematics thinking in the classroom teaching: An
experimental study. *American Educational Research Journal*, *26*(4), 499-531.

Cohen, S. (2004). *Teachers' professional development and the elementary mathematics
classroom.* Mahwah, NJ: Lawrence Erlbaum Associates Publishers.

Committee of Inquiry. (2011). A teaching profession for the 21st century: The report of
the committee of inquiry into professional conditions of service for teachers.
Retrieved from http://www.scotland.gov.uk/Resource/Doc/920/0113667.pdf.

Cooper, J. D. (2009). Professional development: An effective research-based model.
Houghton Mifflin. 1-13.

Cumming, C. (2011). CPD: Support strategies for professional learning, national
initiatives and major curriculum reform. *Improving Schools, 14*(2), 145-155.

Darling-Hammond, L. (1990). Teaching and knowledge: policy issues posed by
alternative certification for teachers. In W. D. Hawley (Ed.), *Peabody Journal of
Education, 67*(3), 123-154.

Darling-Hammond, L. (1999). State teaching policies and student achievement. *Teaching
quality policy brief, 2*, 1-8.

Darling-Hammond, L. (1999). Teacher quality and student achievement: A review of

    state policy evidence. *Center for the Study of Teaching and Policy.* University of

    Washington. 1-38.

Darling-Hammond, L., & McLaughlin, M. W. (2011). Policies that support professional

    development in an era of reform. *Phi Delta Kappan, 76*(8), 597-604.

Darling-Hammond, L., Wei, R. C., Andree, A., Richardson. N., & Orphanos, S. (2009).

    Professional learning in the learning profession: A status report on teacher

    development in the U.S. and abroad. Stanford, CA: National Staff Development

    Council.

Dash, S., Magidin de Kramer, R., O'Dwyer, L. M., Masters, J., & Russell, M. (2012).

    Impact of online professional development on teacher quality and student

    achievement in fifth grade mathematics. *Journal of Research on Technology in*

    Education, 45(1), 1-26.

Daugherty, M. K. (2003). Advancing excellence in technological literacy: Professional

    development standards. *The Technology Teacher 63*(3), 27-31.

Desimone, L. M. (2009). Improving impact studies of teacher' professional development:

    Toward better conceptualizations and measures. *Educational Researcher*, *38*(3),

    181-199.

Desimone, L. M. (2011). A primer on effective professional development. *Kappan, 92*(6),

    68-71.

Desimone , L., Garet, M. S., Birman, B. F., Porter, A., & Yoon, K. S. (2003). Improving

teachers' in-service professional development in mathematics and science: The

role of postsecondary institutions. *Educational Policy*, *17*(5), 613-649. doi:

10.1177/0895904803256791.

Desimone, L. M., Porter, A. C., Garet, M. S., Yoon, K. S., & Birman, B. F. (2002).

Effects of professional development on teachers' instruction: Results from a

three-year long longitudinal study. *Educational Evaluation and Policy Analysis,*

24(2), 81-112.

Desimone, L. M., Smith, T. M., & Ueno, K. (2006). Are teachers who need sustained,

content-focused professional development getting it? an administrator's dilemma.

Educational Administration Quarterly, *42*(2), 179-215.

Ding, C., & Sherman, H. (2006). Teaching effectiveness and student achievement:

Examining the relationship. *Educational Research Quarterly, 29*(4), 40-51.

Doolittle, G., Sudeck, M., & Rattigan, P. (2008). Creating professional learning

communities: The work of professional development schools. *Theory into*

Practice, 47, 303-310.

Education Standards and Practices Board. (2013). License renewal:

Licensure. Retrieved from http://www.nd.gov/espb/licensure/renewal.html.

Erbert-May, D., Derting, T. L., Hodder, J., Momsen, J. L., Long, T. M., & Jardeleza, S.

E. (2011). What we say is not what we do: Effective evaluation of faculty

professional development programs. *Bioscience, 61*(7), 550-558.

Ertmer, P. A. (2005). Teacher pedagogical beliefs: The final frontier in our quest for

    technology integration? *Educational Technology Research and Development,*

    53(4), 25-39.

Firestone, W. (1996). Images of teaching and proposals for reform: A comparison of

    ideas from cognitive and organizational research. *Educational Administration*

    Quarterly, *32*, 209-232.

Firestone, W. A., Mangin, M. M., Martinez, M. C., & Polovsky, T. (2005). Leading

    coherent professional development: A comparison of three districts. *Educational*

    Administration Quarterly, *41*(3), 413-448. doi: 10.1177/0013161X04269605.

Fullan, M. G., (1991). *The New Meaning of Educational Change.* New York, NY:

    Teachers College Press.

Garet, M. S., Porter, A. C., Desimone, L., Birman, B. F., & Yoon, K. S. (2001). What

    makes professional development effective? results from a national sample of

    teachers. *American Educational Research Journal*, *38*(4), 915-945.

Gersten, R., Dimino, J., Jayanthi, M., Kim, J. S., & Santoro, L. A. (2010). Teacher study

    group: Impact of the professional development model on reading instruction and

    student outcomes in first grade classrooms. *American Educational Research*

    Journal, *47*(3), 694-739. doi: 10.3102/002831209361208.

Glazerman, S., Dolfin, S., Bleeker, M., Johnson, A., Isenberg, E., Lugo-Gil, J., Grider,

    M., & Britton, E. (2008). Impacts of comprehensive teacher induction:

    results from the first year of a randomized controlled study. NCEE 2009-4034.

    Washington, DC: U.S. Department of Education, National Center for Educational

    Evaluation and Regional Assistance, Institute of Education Sciences.

Gregoire, M. (2003). Is it a challenge or a threat? A dual-process model of teachers'
cognition and appraisal processes during conceptual change. *Educational
Psychology Review, 15*(2), 147-179.

Gulamhussein, A. (2013). The core of professional development. *American School Board
Journal*, 36-37.

Guskey, T. R. (2002). Professional development and teacher change. *Teachers and
Teaching: theory and practice, 8*(3/4), 381-91.

Guskey, T. R. (2003). Analyzing lists of the characteristics of effective professional
development to promote visionary leadership. *NASSP Bulletin, 87*(637), 4-20.

Guskey, T. R. (2003). Professional development that works: what makes professional
development effective? *Phi Delta Kappan.* June, 748-50.

Hicks, S. D. (2011). Technology in today's classroom: Are you a tech-savvy teacher? *The
Clearing House: A Journal of Educational Strategies, Ideas, and Issues, 84*,
188-191.

Hochberg, E. D., & Desimone, L. M. (2010). Professional development in the
accountability context: Building capacity to achieve standards. *Educational
Psychologist, 45*(2), 89-106.

Horn, I. S., & Little, J. W. (2010). Attending to problems of practice: Routines and
resources for professional learning in teachers' workplace interactions. *American
Educational Research Journal, 47*(1), 181-217.

Hunzicker, J. (2012). Professional development and job-embedded collaboration: How
teachers learn to exercise leadership. *Professional Development in Education,
38*(2), 267-289.

IBM Corp. Released 2013. IBM SPSS Statistics for Windows, Version 22.0. Armonk,

    NY: IBM Corp.

International Society for Technology in Education. (2008). ISTE standards teachers.

    Retrieved from http://www.iste.org/docs/pdfs/20-14_ISTE_Standards-T_PDF.pdf.

Kaufman, J. H., & Stein, M. K. (2009). Teacher learning opportunities in a shifting policy

    environment for instruction. *Educational Policy 24*(4), 563-601.

Kaufman, R. C., & Ring, M. (2011). Pathways to leadership and professional

    development inspiring novice special educators. *TEACHING Exceptional*

    Children, 43(5), 52-60.

King, K. P. (2002). Educational technology professional development as transformative

    learning opportunities. *Computers and Education, 39*, 283-297.

Krajcik, J. S., & Soloway, E. (1998). New technologies for teacher professional

    development. *Teaching and Teacher Education, 14*(1), 33-52.

Laws of North Dakota. (1997). Ch. 179. Pgs. 848-850.

Laws of North Dakota. (1999). Ch. 196. Pgs. 845-911.

Laws of North Dakota. (2005). Ch. 167. Pgs. 808-839.

Laws of North Dakota. (2007). Ch. 164. Pgs. 749-750.

Laws of North Dakota. (2009). Ch. 175. Pgs. 727-771.

Lee, B., Cawthon, S., & Dawson, K. (2013). Elementary and secondary teacher self-

    efficacy for teaching and pedagogical conceptual change in a drama-based

    professional development program. *Teaching and Teacher Education, 30,* 84-98.

Little, J. W. (1993). Teachers' professional development in a climate of educational

    reform. *Educational Evaluation and Policy Analysis, 15*(2), 129-151.

Loucks-Horsley, S., Stiles, K., & Hewson, P. (1996). Principles of effective professional

    development for mathematics and science education: A synthesis of standards.

    NISE Brief, 1(1), 1-6.

Luke, A., & McArdle, F. (2009). A model for research-based state professional

    development policy. *Asia-Pacific Journal of Teacher Education 37*(3), 231-251.

Lutrick, E., & Szabo S. (2012). Instructional leaders' beliefs about effective professional

    development. *Delta Kappa Gamma, 78*(3), 6-12.

Maeroff, G. (1993). Building teams to rebuild schools. *Phi Delta Kappan, 74*(7),

    512-519.

McGee, J. R., Polly, D., & Wang, C. (2013). Guiding teachers in the use of a standards-

    based mathematics curriculum: Teacher perceptions and subsequent instructional

    practices after an intensive professional development program. *School Science*

    and Mathematics, 113(1), 16-28.

Meister, D. G. (2010). Experienced secondary teachers' perceptions of engagement and

    effectiveness: A guide for professional development. *The Qualitative Report*,

    15(4), 880-898. Retrieved from http://www.nova.edu/sss/QR/QR15-4/meister.pdf.

Moldonado, L. (2002). Effective professional development: Findings from research.

    College Board Advanced Placement Program. 1-12.

Mundry, S., & Loucks-Horsley, S. (1999). Designing professional development for

    science and mathematics teachers: Decision points and dilemmas. *National*

    Institute for Science Education, 3(1), 1-8.

Myran, L. (2011). North dakota professional development report. North Dakota

    Department of Public Instruction. Retrieved

    from http://www.dpi.state.nd.us/resource/PD_rpt2011.pdf.

National Commission on Teaching and America's Future (2003). *No dream denied: A*

    pledge to america's children. Washington: National Commission on Teaching

    and America's Future.

No Child Left Behind (NCLB) Act of 2001, Pub. L. No. 107-110, § 115, Stat. 1425

    (2002).

North Dakota Department of Public Instruction. (2003). North dakota consolidated state

    application accountability workbook. Retrieved

    from http://www.dpi.state.nd.us/grants/proposal2011.pdf.

Opfer, V. D., & Pedder, D. (2011). Conceptualizing teacher professional learning. *Review*

    of Educational Research, 81(3), 376-407.

Papastamatis, A., Panitsidou, E., Giavrimis, P., & Papanis, E. (2009). Facilitating

    teachers' and educators' effective professional development. *Review of European*

    Studies, 1(2), 83-90.

Park Rogers, M., Abell, S., Lannin, J., Wang, C., Musikul, K., Barker, D., & Dingham, S.

    (2007). Effective professional development in science and mathematics

    education: Teachers' and facilitators' views. *International Journal of Science and*

    Mathematics Education, 5, 507-532.

Pedder, D., Opfer, V. D., McCormick, R., & Storey, A. (2010). Schools and continuing

    professional development in England - state of the nation research study: Policy

    context, aims and design. *The Curriculum Journal, 21*(4), 365-94.

Penuel, W. R., Fishman, B. J., Yamaguchi, R., & Gallagher, L. P. (2007). What makes

    professional development effective? strategies that foster curriculum

    implementation. *American Educational Research Journal*, *44*(4), 921-958. doi:

    10.3102/0002831207308221.

Phillips, K. J. R., Desimone, L., & Smith, T. M. (2011). Teacher participation in content-

    focused professional development and the role of state policy. *Teachers College

    Record, 113*(11), 2586-2621.

Plair, S. K. (2008). Revamping professional development for technology integration and

    fluency. *The Clearing House: A Journal of Educational Strategies, Ideas, and

    Issues, 82*(2), 70-74.

Polly, D., & Hannafin, M. J. (2010). Reexamining technology's role in learner-centered

    professional development. *Educational Technology Research and Development,

    58,* 557-571.

Reese, S. (2010). Bringing effective professional development to educators. *Online

    Education and Distance Learning*, 38-43.

Roberts, J. K., Henson, R. K., Tharp, B. Z., & Moreno, N. P. (2001). An examination of

    change in teacher self-efficacy beliefs in science education based on the duration

    of in-service activities. *Journal of Science Teacher Education, 12*(3), 199-213.

Roeser, R. W., Skinner, E., Beers, J., & Jennings, P. A. (2012). Mindfulness training and

    teachers' professional development: An emerging area of research and practice.

    Child Development Perspectives, 6(2), 167-173.

Ross, J. A. (1992). Teacher efficacy and the effects of coaching on student achievement.

    Canadian Journal of Education, 17(1), 51-65.

Ross, J., & Bruce, C. (2007). Professional development effects on teacher efficacy:

 Results of randomized field trial. *Journal of Educational Research*, *101*(1), 50-60.

Sanstead, W.G. (2011). *North Dakota century school code revised.* LexisNexis:

 Charlottesville, VA.

Saunders, R. (2012). Assessment of professional development for teachers in the

 vocational education and training sector: An examination of the concerns based

 adoption model. *Australian Journal of Education, 56*(2), 182-204.

Schlager, M. S, & Fusco, J. (2003). Teacher professional development, technology,

 community practice: Are we putting the cart before the hours? *The Information*

 Society, 19, 203-220.

Schostak, J., Davis, M., Hanson, J., Schostak, J., Brown, T., Driscoll, P., Starke, I., &

 Jenkins, N. (2010). Effectiveness of continuing professional development project:

 A summary of findings. *Medical Teacher, 32*, 586-92.

Schrum, L., & Levin, B. B. (2013). Teachers' technology professional development:

 Lessons learned from exemplary schools. *TechTrends, 57*(1), 38-42.

Seely Flint, A., Zisook, K., & Fisher, T. R. (2011). Not a one shot deal: Generative

 professional development among experienced teachers. *Teaching and Teacher*

 Education, 27, 1163-1169.

Sigurardottir, A. K. (2010). Professional learning communities in relation to school

 effectiveness. *Scandinavian Journal of Educational Research, 54*(5), 395-412.

Stanley, A. M. (2011). Professional development within collaborative teacher study

 groups: Pitfalls and promises. *Arts Education Policy Review, 112,* 71-78.

Stecher, B., Garet, M., Holtzman, D., & Hamilton, L. (2012). Implementing measures of teacher effectiveness. *Kappan, 94*(3), 39-43.

The Center for Comprehensive School Reform and Improvement (2006). Redefining professional development. Retrieved from http://www.senterforcsri.org.

The missing link in school reform: Professional development. Presentation before the U.S. Labor and Human Resource Committee Subcommittee on Education, Arts and Humanities (n.d.). (testimony of Harvey A. Daniels).

Thessin, R. A., & Starr, J. P. (2011). Supporting the growth of effective professional learning communities. *Kappan, 92*(6), 48-54.

Thompson, M., & Goe, L. (2009). Models for effective and scalable teacher professional development. *Educational Training Service,* 1-35.

Trochim, W., & Donnelly, J. P. (2007). *The reseach methods knowledge base.* Mason, OH: Atomic Dog Publishing.

Tschannen-Moran, M., & Johnson, D. (2011). Exploring literacy teachers' self-efficacy beliefs: Potential sources at play. *Teaching and Teacher Education, 27,* 751-761.

Tschannen-Moran, M., & Woolfolk Hoy, A. (2001). Teacher efficacy: Capturing an elusive construct. *Teaching and Teacher Education, 17,* 783-805.

Uslu, O., & Bumen, N. T. (2012). Effects of the professional development program on Turkish teachers: Technology integration along with attitude towards ict in education. *The Turkish Online Journal of Educational Technology, 11*(3), 115-127.

Veletsianos, G., Doering, A., & Henrickson, J. (2012). Field-based professional
    development of teachers engaged in distance education: Experiences from the
    arctic. *Distance Education, 33*(1), 45-59.

Villarreal, A. (2005). Seven principles for effective professional development for diverse
    schools. Retrieved from http://www.idra.org/IDRA_Newsletter/June_-
    _July_2005_Self_-
    _Renewing_Schools_Leadership_Accountability/Seven_Principles_for_Effective
    _Professional_Development_for_Diverse_Schools/.

Warner, R. M. (2013). Applied statistics: From bivariate through multivariate techniques.
    Sage: Thousand Oaks, CA.

Wasik, B. A. (2010). What teachers can do to promote preschoolers' vocabulary
    development: Strategies from an effective language and literacy professional
    development coaching model. *The Reading Teacher, 63*(8), 621-633.

Wassermann, S. (2009). Growing teachers: Some important principles for professional
    development. *Phi Delta felt, 90*(7), 485-489.

Wayne, A. J., Yoon, K. S., Zhu, P., Cronen, S., & Garet, M. S. (2008). Experimenting
    with teacher professional development: Motives and methods. *Educational
    Researcher*, *37*(8), 469-479. doi: 10.3102/0013189X08327154.

Webster-Wright, A. (2009). Reframing professional development through understanding
    authentic professional learning. *Review of Educational Research*, *79*(2), 702-739.
    doi: 10.3102/0034654308330970.

Williams, T., Kirst, M., Haertel, E., et al. (2005). Similar students, different results: Why

    do some schools do better? *A Large Scale Survey of California Elementary*

    Schools Serving Low Income Students. Mountain View, CA: EdSource.

Yamagata-Lynch, L. C. (2003). How a technology professional development program fits

    into teachers' work life. *Teaching and Teacher Education, 19*, 591-607.

Zimmerman, J. A., & May, J. J. (2003). Providing effective professional development:

    What's holding us back? *American Secondary Education, 31*(2), 37-48.