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Induction Programs, Teacher Efficacy, and Inquiry Practices in Novice Teachers

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INDUCTION PROGRAMS, TEACHER EFFICACY, AND INQUIRY
PRACTICES IN NOVICE TEACHERS

A Dissertation

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by

Anisha Munshi

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INDUCTION PROGRAMS, TEACHER EFFICACY, AND INQUIRY PRACTICES IN NOVICE TEACHERS

by

Anisha Munshi

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ABSTRACT

INDUCTION PROGRAMS, TEACHER EFFICACY, AND INQUIRY PRACTICES IN
NOVICE TEACHERS

by Anisha Munshi

This purpose of this study was to identify the influence of Induction Programs on first-year teachers. Research shows that a large percentage of novice teachers leave the profession within the first five years. Novice teachers often begin the first year of teaching with a limited understanding of challenges that are faced daily by teachers in classrooms. While teacher training programs provide ideas of how teachers can plan effective lessons and manage classroom time effectively, it is often through daily experiences that novice teachers can truly understand the gamut of challenges associated with engaging students in learning. Induction Programs that are offered by districts to support novice teachers typically include mentoring, professional development, and administrative support. This research studied the role that mentoring and professional development seminars play in developing the self-efficacy and inquiry-based practices of novice teachers. The level of self-efficacy and shift in instructional practices among novice teachers was measured using surveys, an interview, and three observations of mentoring sessions. Data suggests that mentors play an important role in helping novice teachers to engage in inquiry and to reflect on the outcomes of their efforts in ways that support their growing sense of self-efficacy as professionals.

ACKNOWLEDGMENTS

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Background of the Problem

Education policy has often been referred to as a pendulum that swings with shifts in current research, curriculum, and politics. Since these changes are inevitable, the notion of well trained teachers that can adapt to these shifts and prepare students to become productive citizens has become even more significant. Darling-Hammond (2006) states that teachers are subject to the pendulum swings of polarized teaching policies that rest on the simplistic ideas of best practice such as "whole language" versus "phonics," or inquiry learning versus direct instruction. Teachers need to be prepared to use a range of practices that meet the different needs of students in different contexts and this task requires powerful teaching practices. Feiman-Nemser (2001) states that policy makers and educators are realizing that what students learn is directly related to what and how teachers teach; and what and how teachers teach is dependent on the knowledge, skills, and commitments they bring to their teaching and the opportunities they have to continue learning from their practice. The knowledge and skills that teachers possess often vary based on where they are in their career.

Novice teachers go through a preservice program before they can begin teaching. These programs help them in obtaining subject matter knowledge, and the beginning stages of planning lessons, instruction, and assessments. However, it would be a misrepresentation of the process of learning to assume that these new teachers are finished products. The unique learning needs of novice teachers cannot be predicted in advance or outside the context of their experiences (Feiman-Nemser, 2003.) They need

further support and guidance to grow as professionals and hone their skills. Darling-Hammond notes that in the classrooms that most novice teachers will enter, 25% of students live in poverty and many lack basic food, shelter, and health care; from 10% to 20% have identified learning differences; 15% speak a language other than English as their primary language, and about 40% are members of racial/ethnic minority groups (Darling-Hammond, 2006). She expresses her concern that while some teachers are better prepared than they ever were before, a growing number who serve the most vulnerable students enter teaching before they have been prepared and are ill prepared for the task they must accomplish. Darling Hammond (2006) states that many lay people and policy makers assume that anyone can teach, and all it takes is some knowledge about the subject, while the rest can be learned on the job. She associates this to a lack of understanding by policy makers about the complex nature of teaching and the nature of work that good teachers must do to be thoroughly prepared. She suggests that teacher education programs need to be restructured to allow more extensive and intensely supervised clinical work, which is integrated with course work. This allows novice teachers to learn the most effective practices from expert teachers that are already working in classrooms. This collaboration further allows opportunities for teachers to discuss newly emerging pedagogies, close analyses of learning and teaching, case methods, and performance assessments. To make learning practical for novice teachers, action research has to be conducted by connecting theory to daily practice.

Some researchers also suggest that novice teachers who are in the first or second year of teaching have limited experience in handling the challenges of a typical classroom.

Earlier studies done by researchers such as VeenMan (1984) emphasized the idea that novice teachers enter the profession with a set of prior beliefs that are formed through their own experiences of elementary and secondary schools. For decades, the role of a teacher was seen as imparting knowledge, while students absorbed information passively. In reality, students learn only if the conditions allow for the building of knowledge by engaging in discussion and challenging prior knowledge. Most importantly, a learning environment has to be created where every student feels safe. The transition from teacher training to the first teaching job can be a dramatic and traumatic one, and VeenMan (1984) refers to it as the "reality shock." He notes:

> In general, this concept is used to indicate the collapse of the missionary ideals formed during teacher training by the harsh and rude reality of everyday classroom life. Reality shock deals with the assimilation of a complex reality which forces itself incessantly upon the beginning teacher, day in and day out. This reality must be mastered continually, especially in the first period of actual teaching (p. 143).

Ball (1988) shared similar observations suggesting that when they imagine themselves teaching, prospective teachers often picture themselves standing in front of a group of attentive students presenting information, going over problems, and giving explanations. These views held by novice teachers are far from the reality of present day classrooms and vetted effective instructional strategies. Darling-Hammond (2006) notes that the demands on teachers are increasing and in addition to keeping order and providing useful information, teachers need to be effective in enabling a diverse group of students to learn complex materials. In previous decades, they were expected to prepare only a few selected students for ambitious intellectual work, whereas now they must prepare to provide every student with higher order thinking tasks. While the public

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expects beginning teachers' performance to resemble that of experienced teachers, novice teachers without adequate support need three to seven years of teaching to reach their maximum impact on student learning (Stanulis & Floden, 2009). Feiman-Nemser (2001) points out that pre-services programs provide basic training while basic induction programs encourage novice teachers to stick with whatever practices enable them to survive, instead of embracing effective instructional practices.

A lack of adequate training and limited support from administration can lead novice teachers to feel frustrated and ineffective. Johnson and Birkland (2003) found in their 2000-2001 study of 50 teachers in their first three years that 11 of the 50 had left teaching, and eight of the teachers who had left teaching did so for reasons related to job dissatisfaction and little hope for change. The study also found that of the 28 teachers that stayed, more than half felt unsettled because of organizational reasons such as discipline and/or classroom management, unsupportive administration, lack of resources, and lack of parent involvement. Stanulis & Floden (2009) caution that schools face serious challenges if beginning teachers leave before they can develop fully as high-quality teachers. Their research indicates that 14% of teachers leave the profession after the first year with as many as 50% leaving within 5 years.

Based on the large number of studies that point to the challenges faced by novice teachers, it is apparent that there is an urgent need to provide support for novice teachers. Novice teachers need support that will allow them to achieve a sense of satisfaction from the work they do. In addition, they also need to continue their own learning by improving their pedagogy and content knowledge.

Statement of the Problem

Novice teachers face a number of challenges and would benefit greatly from mentoring by experienced colleagues as well as professional development that strengthens their content knowledge and pedagogy. This support can be offered in the form of induction programs. Strong (2005) draws attention to the fact that many new teachers are often placed in challenging assignments for which they are not trained. He suggests that mentoring can play a significant role in averting feelings of stress and lack of support among new teachers. Other advocates for induction also point out that beginning teachers are very receptive in their early years and induction programs can make them effective, both during and after the induction period (Wechsler, Caspary, Humphrey, & Matsko, 2010). Induction programs that provide opportunities for teachers to be involved in decision-making and strong administrative support along with support to develop strong classroom management can keep teachers in the profession (Ingersoll & Smith, 2004). Novice teachers are not adequately prepared to face the challenges of the teaching profession and many feel frustrated after their first year of teaching. Induction programs provide the much needed support that causes teachers to feel efficacious and effective, which in turn motivates them to continue in the teaching profession.

Having the ability to influence the mindset of novice teachers seems to be critical in their development as professionals. Hoy (2000) states that more attention needs to be paid to factors that support the development of a strong sense of efficacy among preservice and novice teachers. He also suggests that novice teachers completing their first year of teaching who had a high sense of teacher efficacy found greater satisfaction in teaching,

had a more positive reaction to teaching, and experienced less stress. An understanding of these factors seems to be worth the effort and care that may be involved because, once established, efficacy beliefs of experienced teachers seem resistant to change (Tschannen-Moran et al., 1998).

In an educational setting, teachers hold the responsibility to create environments that are conducive to learning. The manner in which novice teachers perceive their personal efficacy impacts not only their own goals, but goals that they set for their students. In their evaluation of 100 Title III projects of the 1965 Elementary and Secondary Education Act, Berman and McLauglin (1977) found that teachers' sense of efficacy was the most important factor in determining the effectiveness of change-agent projects. Another similar study by Ross (1992) followed a group of 18 seventh and eighth grade history teachers to study the relationship between student achievement, teacher efficacy, and interactions with coaches. This study also had similar findings, and found that students achieved at higher levels when their teachers felt more efficacious. Considering the connection between student achievement and teacher efficacy, it is imperative that novice teachers are provided support that will allow them to have an increased sense of self-efficacy.

This study will examine changes in novice teachers' self-efficacy and practices in their first year of an induction program. It will explore how mentoring and professional development seminars contribute to novice teachers' growing sense of what they can do to improve their effectiveness in the classroom.

Purpose of the Study

While it is more difficult to make a direct causal claim about the impact of induction

programs on student achievement, various studies have found that teacher participation in

induction programs is correlated with teacher commitment and retention, effective

instructional practices, and positive student learning outcomes. Ingersoll and Strong

(2011) examined results from 15 empirical studies and concluded that teachers who

participated in some form of induction program had higher job satisfaction, commitment,

and retention. The same study also showed that new teachers performed better at various

aspects of teaching, such as keeping students on task, developing workable lesson plans,

using effective questioning, and modifying lessons based on students' needs. Students of

beginning teachers also had higher scores or gains if teachers were enrolled in induction

programs.

The purpose of this study is to understand which specific components of the induction

program novice teachers believe to have the most significant impact on their own self-

efficacy and instructional practices. If novice teachers develop a strong sense of self-

efficacy and develop inquiry-based instructional practices, they are more likely to

become long-term learners and high-quality professionals. It is therefore important to

understand to what degree mentoring and professional development seminars influence

the self-efficacy and instructional practices of novice teachers. This topic has a personal

significance for me given my role as a former principal and a current director of human

resources. In this role, my goal is not only to hire the most talented teachers, but also to

help them in becoming life-long learners that use an inquiry process to guide their practices.

The focus of the study will be first and second-year teachers. The research will focus on two components of induction programs - mentoring and professional development, to study the role they play in fostering novice teachers' self-efficacy and instructional practices. The questions that will guide this research are:

1. How do induction programs influence the long-term growth of novice teachers?

    a. What role do professional development seminars and mentoring play in the self-reflection and refinement of instructional practices among novice teachers?

    b. What roles do professional development seminars and mentoring play in the self-efficacy among novice teachers.

2. Are there other components of induction programs besides mentoring and professional development seminars that impact the self-efficacy and instructional practices of novice teachers?

Significance of the Study

Liston, Borko, and Whitecomb (2008) suggest that there are three factors that influence the quality of the teacher work force: supply/demand, preparation, and retention. Supply and demand involves selection of a candidate based on skills that new teachers possess and matching those with the needs in various content areas; preparation pertains to training teachers to be effective in the classroom; and retention relates to identifying and keeping the strongest teachers. An omission in any one area creates a deficit in the remaining two areas. A poor pool of candidates limits the impact of teacher

preparation. Receiving a teaching license typically ends the preparation process and transfers the responsibility on ongoing professional development to districts and schools. A failure by districts to provide the necessary support would result in novice teachers being unprepared to meet the challenges of a 21st -century classroom. Feiman-Nemser et al. (1999) state, "Providing induction support to beginning teachers is a humane response to the trials and tribulations associated with the first year of teaching." They warn that if we don't take into account that novice teachers are still learners, we may design induction programs that focus on reducing stress and addressing problems, rather than building long-term skills that will allow them to experience success.

Teacher shortage is becoming an impending crisis and it is necessary to understand the reasons that cause beginning teachers to leave the field. Teachers do an important job and their efficacy can have a lifetime influence on the young students they teach. Most new teachers will agree that the first year of learning new curriculum, honing on classroom management skills, and identifying effective instructional strategies is challenging and can be discouraging. It is therefore important to understand what supports can be provided for new teachers so they will continue in this profession. Various studies suggest that providing teachers with supports like induction programs, mentoring, and high quality professional development increases the rate of teacher retention and also improves teachers' instructional practices. Feiman-Nemser (2003) states that keeping new teachers in teaching is not the same as helping them become good teachers. To accomplish the latter, we must treat the first years of teaching as a phase in learning to teach and surround new teachers with a professional culture that supports

teacher learning. It would therefore be prudent for school districts to invest in induction

programs, provide mentors that can guide beginning teachers, and provide professional

development that is pertinent to daily practices.

Research Design

This study will investigate the opportunities opened up by mentoring and professional

development to address teacher efficacy and instructional practices. The study will be

conducted in a suburban Transitional-kindergarten through 8th grade (TK-8) school

district. The district has recently introduced an induction program. The induction

program matches first-year teachers with veteran teachers who serve as mentors. Novice

teachers receive professional development that is designed specifically for them in

addition to training provided by the district to all of the teachers. These teachers also

meet with their mentors on a weekly basis to discuss instructional strategies, lessons,

classroom management strategies, and other aspects of teaching. The professional

development series that is designed specifically for novice teachers and addresses topics

such as classroom management, holding productive parent conferences, and other topics

that are meaningful for first-year teachers. These sessions are taught by the mentors that

are part of the program and are held twice a month.

This qualitative research will be conducted using surveys, interviews, and

observations of meetings between novice teachers and their mentors. It will focus on

eight sets of novice teachers and their mentors. The self-efficacy of novice teachers will

be measured twice using a survey, that will be administered once at the beginning of the

school year in September and once again in January. The survey will include questions to

determine if novice teachers feel that their instructional practices have improved as a result of mentoring and professional development. The questions will also survey the perspectives of novice teachers on their ability to identify, try out, and refine research-based practices to improve their teaching practices. Their deeper understanding of effective instructional practices will be noted during three observations of collaboration meetings with their mentors, in November. Those conversations will be recorded. During these collaborative meetings, the focus will be on whether the novice teacher is able to draw learning from professional development seminars to have a rich and meaningful discussion with the mentor. The study will attempt to identify themes that are related to inquiry-based instructional practices and their developing sense of self-efficacy. Novice teachers will also participate in an interview following the second survey. The interview will allow participants to give detailed responses regarding their experiences and to speak directly to research questions of the study.

The purpose of this research is to study various components of induction program, particularly mentoring and professional development to find their influence on self-efficacy and inquiry-based instructional practices of novice teachers. Teachers that embrace such practices tend to be self-reflective and refine their practices based on the feedback and student work. The study will also attempt to identify any other component that may be highly significant in providing support for novice teachers. As part of the study, demographic data on mentors and their experience will also be noted to determine trends. These findings could be used to identify emerging patterns that can be used for further research.

Conceptual Framework

The theory on which induction programs are based suggests that teaching is complex and most of the learning for new teachers occurs on the job. Therefore, school systems hold the responsibility of providing an environment where new teachers can learn. Another theory underlying induction is Zey's Mutual Benefits model, drawn from social exchange theory. This model is based on the notion that individuals enter into a partnership and maintain that, only as long as they benefit. Zey compares schools to organizations where both mentors and mentees stand to gain from the partnership (Ingersoll & Strong, 2011).

There are a number of theories that provide a framework for teacher learning and the foundational idea behind induction programs. Ingersoll and Strong (2011) examined results from 15 empirical studies and concluded that teachers who participated in some form of induction program had higher job satisfaction, commitment, and retention than those who were not enrolled in induction programs. The same study also showed that new teachers enrolled in induction programs performed better at various aspects of teaching, such as keeping students on task, developing workable lesson plans, using effective questioning, and modifying lessons based on students' needs. Students of beginning teachers also had higher scores or gains if teachers were enrolled in induction programs.

Ingersoll & Strong (2011) provide a theory of teacher development that is shown in Figure 1. It suggests that preservice preparation followed by an induction program results in improved teaching practices and improved student outcomes.
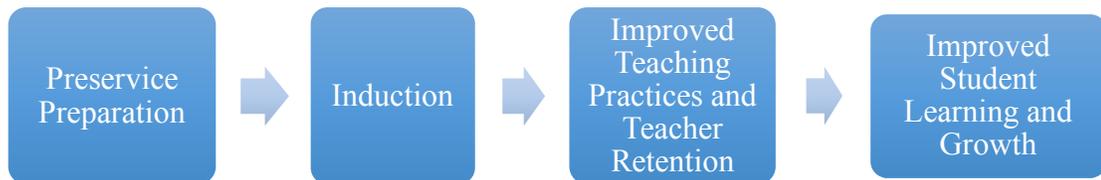
Figure 1. Theory of teacher development. Adapted from "The impact of induction and mentoring programs for beginning teachers: A critical review of the research," by R. M. Ingersoll and M. Strong, 2011, *Review of educational research*, 81, p. 203.

This model suggests that novice teachers that have gone through preservice preparation would benefit from continued support in the form of induction, which in turn would result in improved teaching practices.

The framework for this research is grounded in the theory provided by Ingersoll and Strong (2011) stating that establishing induction programs can result in increased teacher self-efficacy and improved instructional practices. The influence of mentoring and professional development on the long-term growth of teachers is outlined in Figure 2.
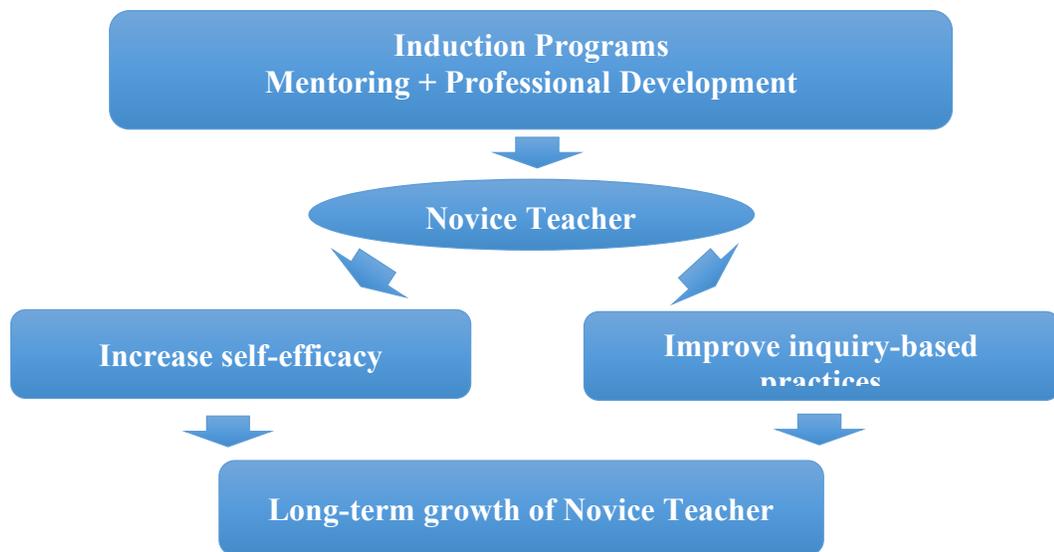
Figure 2. Conceptual framework for induction programs.

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The framework above identifies mentoring and professional development, the two components of induction programs that will be observed during the study. It suggests that novice teachers that are exposed to mentoring and professional development seminars will show in increase in self-efficacy and improve their instructional practices. That in turn will lead to the long-term professional growth instead of a quick-fix solution to everyday problems for the novice teacher. The framework is grounded in the belief that mentoring and professional development seminars can shape the manner in which novice teachers shape their own learning.

Research Questions

The questions that this research will address are:

1. How do induction programs influence the long-term growth of novice teachers?

   a. What role do professional development seminars and mentoring play in the self-reflection and refinement of instructional practices among novice teachers?

   b. What roles do professional development seminars and mentoring play in the self-efficacy among novice teachers?

2. Are there other components of induction programs besides mentoring and professional development seminars that impact the self-efficacy and instructional practices of novice teachers?

The independent variable in this study is the induction program, while self-efficacy and instructional practices are the two variables that are dependent on the quality of support being provided by the program.

Assumptions and Limitations

There are certain assumptions that are being made during this research, one of them being the definition of quality teaching. One could measure teachers' effectiveness by looking at student achievement, instructional practices in the classroom, management of students' behaviors, student engagement, teacher engagement during collaboration with peers, and many other factors. This study will not measure improvement based on any of those factors. While efficacy and inquiry-based practices are generally associated with student achievement, this study will not look at student outcomes. Instead, it will focus on the refinement of instructional practices through the research-based teacher inquiry process, during the coaching sessions between the novice teacher and mentor. The depth of discussion around pedagogy and the information that the novice teacher draws from professional development is part of the teacher inquiry process and will be used to determine if the novice teacher is refining practices.

One of the limitations of this study is that the design is non-experimental, therefore it will be difficult to make any inferences about the causal relationship between any of the variables under study. The value of professional development and the level of self-efficacy is self-reported by novice teachers using the survey and will not be corroborated through external measures other than a survey of mentors' perspective on their growth and observations of meetings with mentors. Instead, this study will examine the quality of conversations during meetings and the degree to which these meetings open a space for novice teachers to develop their self-efficacy and refine their teaching practices through inquiry and reflection.

Another limitation is that findings will be based on three observations of the coaching session. One would have to assume that all the sessions are held in the same manner with similar defined outcomes. A third limitation is that the data is reflective of the induction program in one district and it cannot necessarily be generalized to other induction programs.

Definition of Terms

The key words used for the search will include: novice teacher, teacher induction programs, mentoring, professional development, teacher self-efficacy, and inquiry-based instructional practices. Resources like ERIC, Google Scholar, jstor, and SJSU online library will be used to collect literature related to the above stated areas.

1. Novice teacher - For this study, this term will be used to describe first-year and second-year teachers that are considered new to the profession. Second-year teachers who were interns the previous year and did not receive support through the induction program. Interns will not be part of the study.

2. Teacher induction programs - This is the support provided to novice teachers in the form of mentoring by veteran teachers and administrators; additional professional development; and additional staffing in the classroom.

3. Mentoring - This term will be used to describe the collaborative process where veteran teachers meet routinely with novice teachers to discuss lessons plans, instructional strategies, classroom management strategies, grading, assessments, and any other challenges that the teacher is faced with.

4. Professional development seminars - This term describes the training that is provided to the novice teacher to increase an understanding of content as well as pedagogy. This training is part of the induction program and provided routinely.

5. Teacher self-efficacy - This describes a feeling of contentment with the environment and being a productive member of the school community.

6. Inquiry-based instructional practices - The daily practices used to engage students in the learning process and maximize student achievement. In an inquiry-based model, the teacher is reflective and refines instructional practices routinely to maximize learning opportunities for students.

7. Cognitive coaching - This is a coaching process in which teachers act as coaches and apply a set of strategies designed to enhance the novice teacher's perceptions, decision, and intellectual functions. These thought processes can improve the instructional behaviors of novice teachers, which in turn leads to improved student learning.

Chapter Two: Review of Literature

Introduction

When novice teachers enter the teaching profession, they typically bring an understanding of what it means to be a teacher based on experiences they have acquired during teacher training and internships to the classroom. While they have a foundational understanding of the demands of teaching, they need to continue the learning process to refine their own skills and evolve as inquiry-based practitioners. The preservice training does not address the intensity of daily challenges faced by teachers and often leaves first-year teachers feeling inadequate and frustrated. The challenges come in a variety of forms that include managing challenging student behaviors in the classroom, content knowledge, pedagogy, time management, or dealing with difficult parents. Not being able to cope with any of these can lead to teacher burnout and high rates of attrition for districts (Stanulis & Floden, 2009). Having served as an administrator and being closely involved in supporting novice teachers has allowed me to observe this struggle first-hand. First-year teachers often feel overwhelmed by the daily demands of teaching and benefit greatly from support provided by trained veteran colleagues. This support goes beyond quick-fix strategies and focuses instead on learning the art of reflection and refinement of pedagogy.

Feiman-Nemser (2003) states that the learning needs of novice teachers cannot be predicted in advance, in the absence of context. She notes that preservice programs give beginning teachers an opportunity to acquire subject matter competency, study the learning process, understand students' cultural backgrounds, and acquire a basic selection

of strategies to plan instruction and assessments. However, novice teachers cannot be considered as finished products because it undermines the process of learning to teach. The process requires sharpening skills and continual learning through inquiry and refinement. Feimen-Nemser (2003) states that novice teachers need three to four years to achieve a level of proficiency.

To support novice teachers that are in the first year of teaching, many districts offer support in the form of induction programs. Induction program support can include administrative coaching, mentoring, professional development, additional support in classroom, and collaboration with peers and varies by school district across the country. While research points to evidence that induction programs have a positive impact on teachers, it is unclear which components have the most influence or how they influence novice teachers.

Impact of Various Types of Induction Programs

Feiman-Nemser and colleagues outline three uses of the term induction (Feiman-Nemser, Schwille, Carver & Yusko, 1999). First, induction is used to identify a unique time of intense learning and anxiety, which beginning teachers typically experience in their first year of teaching. Second, the term is used to describe the transition from learning to practice. This is a process of socialization where teachers are placed in an occupational setting alongside their professional colleagues. They receive messages about what it means to be a teacher, and these messages influence their practices and how they eventually identify themselves. The third meaning for the term induction implies an organized and structured program which offers a variety of supports to novice teachers.

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This review focuses primarily on the last definition of induction as described by Feiman-Nemser et al. (1999) even though the supports provided in the form of mentoring influence the first two areas as well.

While there has been a significant surge in the number of newly hired teachers in the U.S. since the mid-80s, from 50,000 in 1987-88 to 200,000 in 2007-2008, there is a large exodus of teachers from the work force within the first few years. Data indicate that teachers often leave long before retirement for a variety of reasons, which include lack of support from school and district administration (Ingersol and Strong, 2011). Many districts have created support systems in the form of induction programs. Even though the programs that are offered vary significantly, teachers seem to benefit from any level of support. Ingersoll and Strong (2011) also suggest that beginning teachers who received some type of induction had higher job satisfaction, commitment, or retention. Other positive outcomes include increased self-efficacy and enhanced instructional practices, two key factors associated with the long-term growth and job satisfaction for teachers. In order to understand their impact, it is important to review different types of induction programs that are typically offered to support novice teachers. This review begins with a focus on inductions programs and the components of each. Then the review presents research on the role that each component plays in benefiting the new teacher.

Data from a recent study indicates that the number of beginning teachers enrolled in some form of induction program had increased from 50% in 1990 to 91% by 2008 (Ingersoll, 2012). However, there is a wide variety of structures and services that induction programs offer. A large number of districts now offer mentoring or induction

programs for first-year novice teachers. Ingersoll and Strong (2011) note that mentoring is the personal guidance provided to new teachers by veteran teachers. However, mentoring programs have now become a dominant part of teacher induction, thereby resulting in both terms being used interchangeably.

Even though there is a variety of models of induction programs, there are some common features that induction programs share with one another. Glazerman, Dolfin, Bleeker, Johnson, Isenberg, Lugo-Gil & Ali (2008) recommend that comprehensive induction programs should include the following features: (1) Careful selection and training of full-time mentors; (2) A curriculum that provided intensive and structured support for beginning teachers; (3) A focus on instruction and an opportunity for novice teachers to observe veteran teachers; (4) Formative assessment tools that permit ongoing evaluation of practices and feedback; (5) Outreach to districts and administrators to educate them about program goals and garner their support.

The informal or low-intensity programs pair a new teacher with another full-time teacher without providing training, supplemental materials, or release time. The much more intensive programs are comprehensive and the delivery is based on the new teacher's pedagogical needs Ingersoll & Strong (2011) state that researchers, educators, and policy makers are constantly faced with decisions regarding the level of support that should be provided through induction programs. While they understand that providing support in the form of induction programs enhances the effectiveness of new teachers, "it also poses the risk of losing investment in human capital due to the high turnover rate among novice teachers."

Smith and Ingersoll (2004) conducted a study that included 3,235 beginning teachers in the United States, between 1999-2000. The data source was the Schools and Staffing Survey (SASS) administered by the National Center for Educational Statistics (NCES). They studied various levels of support in induction programs to see the impact on teacher retention. The first level, Level 1 did not provide any support for novice teachers in the form of induction program. The second level, Level 2 provided a basic level of support in the form of mentoring as well as supportive communication with principal or other administrators. The third level, Level 3 provided the support in Level 2, but also added opportunities to collaborate with colleagues and participate in professional development seminars. The maximum level of support was provided at Level 4 where novice teachers received all of the above mentioned support, and also received additional resources such as being assigned a teacher's aide, reduced number of preparations, etc. The findings from the study are shown in Table 1.

Table 1

First Year Teacher Attrition Based on Induction Support

Level	Support Provided	Percentage Enrolled	Left After a Year	Moved a Year
1	No support	3%	20%	21%
2	Mentoring and communication with principal	56%	18%	21%
3	Support in Level 2 + collaboration with colleagues + PD opportunities	26%	12%	15%

	Support in Level 3+ additional resources	1%	9%	9%
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This data indicates that a majority of teachers received support at levels 2 and 3 for induction programs. A small percentage of beginning teachers received basic support, while an even smaller percentage received the maximum support. The authors found that as the level of support increased, the probability of turnover decreased, but the number of teachers receiving the maximum support also decreased significantly. These programs include mentoring and professional development, which seem to be standard components of induction. A very small percentage of teachers did not receive any support or received a very high level of support. The teachers that were not enrolled in an induction program showed the lowest rate of retention. In comparison, only 9% of teachers that received a high level of support left for another job opportunity or left the profession after a year. Clearly, additional support is one of the determining factors in novice teachers' satisfaction. Interestingly, there is a small difference in teachers that receive no support or receive the basic mentoring and administrative support. The biggest change is from Level 2 to Level 3. This suggest that collaboration with colleagues and high quality professional development play a significant role in how teachers feel about their jobs.

Stanford Research Institute partnered with the Consortium on Chicago Schools Research and the Illinois Educational Research Council to study the new teacher induction program in Illinois school districts for four years. The study used a mixed-

method approach to examine the effect of the state funded Mentoring and Induction

Program in 39 sites. The results were based on the analysis of teacher and mentor

surveys; case studies of six programs; and interviews of program administrators. It

studied the impact of induction programs on student achievement, and teacher retention

(Wechsler et al., 2010.) This state-funded induction program in Illinois was established in

2006 and started with 10 pilot programs. By 2010, there were 63 new teacher induction

programs that served more than 4,500 first and second-year teachers. The programs could

be run by individual school districts, regional offices of education, universities that

partnered with districts, or nonprofit organizations that collaborated with districts. In all

cases, there were three criteria that each program had to meet: (1) Provide a mentor, who

is an experienced teacher and has been trained on being a mentor for first and second year

teachers (2) Provide professional development for new teachers, as well as the mentors

and administrators who have a role in the program (3) Align formative assessment of new

teachers' performance with relevant content-area standards and Illinois Professional

Teaching Standards.

The results of this study indicated that there was an overall increase in the

effectiveness of teachers that participated in induction programs. There was an increase

in teachers' sense of efficacy as well as professional growth. The group also found that

intense mentoring and strong focus on instruction were the two main contributors to

positive teacher outcomes. However, the study did not shed light on specific indicators of

teacher effectiveness such as inquiry-based practices. The study also did not find a link

between induction programs and improved teacher retention or student achievement.

There are a number of studies that suggest that induction programs have a positive impact on teachers' instructional practices. The positive influence impacts not only the novice teacher, but the mentor teacher as well. Danielson (1999) found that novice teachers that are mentored are able to improve their teaching practices through reflective activities and professional conversations. She also states that mentoring is comparable to professional development for the mentor as well as the novice teacher. Glazerman et al. (2008) conducted a study that examined the effect of a comprehensive teacher induction program on retention as well as positive teacher and student outcomes. The study sample was composed of beginning teachers in 17 school districts spread across 13 states and serving students from low-income families. They focused on two programs, one developed by the Educational Testing Service and the other by the New Teacher Center at the University of Santa Cruz. Both programs include similar components. Mentor teachers had at least five years of experience, were recognized as exemplary teachers, and had experience mentoring. Teachers received training from program managers and met with the teachers on their case load for about two hours, every week. Discussions were supposed to focus on learning activities identified by the induction program, but mentors could select other activities based on novice teachers' needs. In addition, beginning teachers attended monthly professional development sessions and also observed their mentor teachers.

While the findings from the study did not reflect a significant change on student test scores and retention in the first year, there was a significant increase in practices that lead to improved pedagogy. Teachers that were enrolled in induction programs spent more

time (70% versus 44%) discussing instructional goals and how to achieve them compared to the control group. The former group were also more likely to receive guidance reflecting on instructional practices, managing classroom activities, reviewing student work, and using student work to inform instructional practices. Teachers also reported spending significantly more time in professional development that focused on analyzing student work, planning lessons, engaging in parent and community relations, and record keeping.

Allen (2013) conducted a study at Trinity University to examine if additional support for novice teachers during the induction years had an impact on teacher retention and teacher development. The university developed the Masters of Arts in Teaching (MAT) degree, a five-year teacher preparation program. In 2005, Trinity University developed the Summer Curriculum Writing Institute (SCWI) to continue support for MAT graduates. The focus was on the following four goals—writing curriculum, teacher efficacy, connectedness, and teacher retention. The responses from participants in the study indicated that the additional training had a positive influence of their feeling of effectiveness, with participants using terms such as "recharged," "more competent," and "meaningful learning." An increased sense of self-efficacy came across in areas such as curriculum writing, connecting with colleagues, and collaboration.

There are a number of components that comprise an induction program, and each component plays a significant role. Mentoring and professional development seminars are two common features found in induction programs offered by school districts. While there is some evidence that mentoring and professional development have a positive

impact on novice teachers, it is important to understand if they play any part in increasing their self-efficacy and shaping their instructional practices so they can become long-term learners.

Professional development for novice teachers. The impact of professional development on students' achievement is one of significant importance and much research had been devoted to this topic. Two decades ago, a groundbreaking study was published demonstrating that teacher professional development (PD) could improve student achievement. Carpenter, Fennema, Peterson, Chiang, and Loef (1989) randomly assigned 40 first-grade teachers to two groups. One group received a brief, 4-hour PD program. The other group received an extensive 80- hour program known as cognitively guided instruction (CGI). The students of the teachers who received CGI outperformed the students of the other teachers on three of the six student achievement measures that were examined.

Other studies (Corcoran, McYay, & Riordan, 2003; Superovitz & Turner, 2000) also suggest that although other factors influence learning, the amount of time spent on professional development had a significant impact on its effectiveness. Teachers that had received 80 or more hours of professional development in inquiry-based science were more likely to use their learning and improve instructional practices than teachers that received less hours of professional development. Studies such as this encouraged researchers to probe deeper and study the influence of professional development on student achievement.

Scholars from the American Institute of Research conducted an extensive research that analyzed findings from over 1,300 studies that focused on the effect of professional development on student learning outcomes (Guskey & Yoon, 2009). The study was sponsored by the Regional Education Laboratory-Southwest and funded by the Institute of Education Sciences of the US Department of Education. There were several findings of the study that help in understanding the relationship between professional development and student achievement. A key finding suggested that professional development in the form of workshops or summer institutes had a positive impact on student learning as long as the workshops focused on the implementation of research-based instructional practices, provided active learning experiences for participants, and provided participants opportunities to modify learning to their classrooms. The study also indicated that professional development provided by outside experts brought more improvement in students' learning. Train-the-trainer models, peer coaching, and school based trainings were not as effective. Professional development was shown to have more positive results when more than 30 hours of training was provided to teachers and included a variety of practices that are adapted to specific content, process, and context. High quality professional development focuses on enhancing teachers' content knowledge in combination with pedagogical knowledge. The last finding was that there is more improvement in student learning when teachers are provided sustained and structured follow-up time to support the initial training.

Guskey (1995) notes that professional development must be designed, implemented, and evaluated to cater to the unique needs of each group of teachers in any setting.

Spending time on training that one cannot apply to one's classroom can frustrate novice teachers and cause undue stress. Teachers need to be equipped with learning that can allow them to keep up with new policy demands as well as learn research-based practices. Darling-Hammond & Richardson (2009) state that in order to help students learn the more complex and analytical skills that are required for the 21st -century , teachers must learn to teach in ways that develop higher-order thinking and performance. This requires designing professional development that goes beyond a few days in the year designated to learning.

Kedzior & Fifield (2004) also note that recent research and policy are moving away from the model where teachers would have to sit in long general sessions. Instead, professional development is now being designed to solve instructional problems and enhance daily practices. They also point to three types of professional development that focus on teacher development, student thinking, and lesson design respectively— Mentoring; Content-Based Collaboratively Inquiry and Cognitively Guided Instruction; and Lesson Design.

Feiman-Nemser et al. (1999) propose that induction programs must serve as part of a professional development continuum. Rather than stand-alone programs that bridge the gap between teacher preparation programs and in-service training, induction programs should serve as part of the ongoing teaching process. Instead of one-shot workshops and short-term training, teachers need ongoing professional development that is related to their daily work and includes opportunities to build a wider network with outside teachers, in addition to their own colleagues.

There are various studies that point to the benefits of high quality professional development on teachers. Similar to Kedzior & Fifield recommendations, Loucks-Horsley and Matsumoto (2003) proposed a model that suggested that professional development needed to be hands-on to provide positive impact. They studied the relationship between professional development in the areas of science and mathematics and improved teacher learning (i.e., knowledge, skills, and beliefs), which in turn would lead to improved student achievement. They identified various strategies for professional development that can be grouped into five categories: (1) Immersion strategies involve teachers by "doing" math and science activities to gain experience with a scientist or mathematician; (2) Curriculum implementation involves having teachers using and refining the use of instructional materials in the classroom; (3) Curriculum development involves having teachers help create new instructional materials to better meet the needs of students; (4) Examining practices includes case discussion of classroom scenarios or examining real classrooms; (5) Collaborative work includes study groups, peer coaching, mentoring and classroom observations followed by feedback.

There are few studies that point to the impact of professional development on student achievement. Huffman, Thomas, & Lawrenz (2003) state that there is limited research studying the impact of professional development on student achievement. They state that the link between professional development and student achievement is complex due the large number of factors that can influence student learning. Most of the research examines the impact of professional development on instructional practices, teachers' knowledge, teachers' beliefs, and other variables that may be indirectly linked to student

achievement (Loucks-Horsley & Matsumoto, 1999). One study that was able to find a connection between professional development and student achievement was conducted by Yoon, Duncan, Lee, Scarloss, and Shapley (2007.) They reviewed nine studies that found that sustained and intensive professional development was connected to student achievement. Three studies showed that less than 14 hours of professional development had no impact on achievement, while more than 14 hours showed positive gains. The greatest impact on students' achievement resulted from professional development that was offered over a period of 6 to 12 months and ranged from 30 to 100 hours.

The mindsets and instructional practices of novice teachers are greatly influenced by the experiences they have in their initial years of teaching. The high quality of professional development, in addition to self-reflective dialogue with mentors and colleagues allows novice teachers to develop a repertoire of effective practices, which in turn allows them to feel successful. Having conversations with more experienced educators that act as mentors can help in developing habits of inquiry, which can help in providing students with meaningful learning experiences.

Mentoring for novice teachers. Huling & Resta (2001) note that teacher mentoring programs have dramatically increased since the early 1980s as a vehicle to support and retain novice teachers. They suggest that there are substantial benefits of mentoring for novice teachers as well as mentors. Systems that are created to allow experienced teachers to work with novice teachers ultimately benefit the students of both mentor and novice teachers. Hobson et al. (2009) summarize their findings from various studies and report benefits for mentees as one of three advantages of mentoring. Their research

suggests that mentoring reduces the feeling of isolation among novice teachers; increases confidence and self-esteem; provides professional growth; and improves self-reflection and problem-solving capacities. The support that mentoring provides for novice teachers is emotional and psychological, which is significant in enhancing their feeling of confidence and boosting morale. Furthermore, mentoring has been seen to have a deep impact on the behaviors and classroom management capabilities of novice teachers.

Little (1990) points to three areas of policy requirements that mentoring programs meet: occupational induction of teachers, incentive for teacher retention, and the concentration of discretionary resources on mentors. The last factor is also fiscally beneficial for organizations. By shifting the responsibility of professional development and program innovation on a small proportion of local experienced teachers, districts can yield the benefit of training a large teacher population.

Mentoring is typically thought of as a partnership between a novice teacher and a veteran teacher. Through the process of one-on-one meetings and classroom observations, the mentor provides guidance and counseling to the novice teacher. Little (1990) states that mentors can provide emotional support that can make novice teachers feel comfortable in addition to professional support that enhances an understanding of teaching. She argues that the promise of mentoring lies not in easing novices' entry into teaching but in helping them confront difficult problems of practice and use their teaching as a site for learning. As a result, participating in a serious mentoring relationship may actually make the first years of teaching more strenuous in the short run

while promoting greater rewards for teachers and students in the long run (Feimen-Nemser, 2001.)

Carter & Francis (2001) focused their research on the effectiveness of mentoring in the context of beginning teacher induction. They suggest that contextualized learning or workplace learning mediated by mentors has the potential to assist beginning teachers in their development of an appropriate body of practical professional knowledge. Their research also found that workplace learning is a powerful source of learning and change in individuals, groups and organizations. When the mentoring process is implemented as an interactive process of learning, rather than imparting strategies, it has the capacity to generate a dynamic, interactive learning process that has the potential for transforming existing practices. Other researchers have also emphasized the importance of mentoring being an interactive process. Feimen-Nemser (2001) refers to "educative mentoring" an idea based on Dewey's concept of educative experiences. These experiences promote future growth by equipping an individual to develop a deeper and richer understanding of their subsequent experiences and lead to richer subsequent experiences. Dewey (1938) states that the responsibility for arranging the physical and social conditions so that learners have growth-producing experiences falls on the educator. Teachers must equip students to learn from their direct experiences of the world rather than to rely on the accretion of facts transmitted to them from others. Mentors who share this orientation interact with novices in ways that foster an inquiring stance. They cultivate skills and habits that enable novices to learn in and from their practice. They use their knowledge

and expertise to assess the direction novices are heading in and to create opportunities

and conditions that support meaningful teacher learning in the service of student learning.

Various studies show that mentoring can be successful only when certain conditions

are put in place. The most essential factor that impacts the quality of mentoring is the

willingness of the teacher-mentee to be mentored (Little, 1990). Based on their research

findings, Hobson et al. (2009) note that successful mentoring programs focus on the

following factors: (a) contextual support for mentoring; (b) mentor selection and pairing;

(c) mentoring strategies; and (d) mentor preparation. Their research found that mentoring

is more likely to be impactful if it's a setting that has a culture of collegiality. In addition,

mentoring sessions would be more beneficial if mentor teachers are provided release time

to prepare for their sessions with mentees. This preparation includes not just planning

time, but training that is specific to their roles as mentors. Another factor that is critical is

the relationship between the mentor and mentee. The pairing must keep in consideration

the strengths and limitations of the mentee, along with the skills and knowledge of the

mentor. The mentor must be supportive, approachable, non-judgmental, trustworthy, and

have a positive attitude. Most importantly, the mentor must be a teacher that is skilled

and respected by their peers. Some specific strategies that are employed by effective

mentors include providing emotional support for mentees, scheduling on-going meetings,

and allowing mentees to have a sense of autonomy so they can develop their own

teaching styles.

Several researchers believe that novice teachers need individualized guidance in

learning the nuances of the teaching profession. However, others assert that novice

teachers learn best in teaching communities where they can work alongside experienced educators and learn through daily experiences, that can sometimes be "messy and uncertain" (Feimen-Nemser et al., 1999.) They express concern over the false dichotomy portraying novice teachers either as independent learners that shape their own identities based on their interests and capabilities, or as members of a community that works collaboratively to develop common standards, improve instructional practices, and share responsibility for students' progress. It therefore becomes the responsibility of mentors in induction programs to encourage collaboration and inquiry when they guide novice teachers.

Inquiry-based reflective practices among novice teachers. The process of inquiry-based instruction is an ongoing reflective practice in which the learner identifies a problem, prepares a plan of action to address the problem, collects evidence that the plan is effective, and plans next steps based on the derived results. Supovitz, Mayer, and Kahle (2000) describe inquiry-based instruction as a process through which teachers gain an understanding of students' thought process by investigating and reflecting on their own pedagogy. The purpose of this practice is to acquire meaningful feedback that can be used to increase students' capacities.

In the last few years, a number of inquiry-based models have been developed by researchers. Most of these models define teacher inquiry as the search for knowledge and solutions through the systematic and intentional study of practice (Cochran-Smith & Lytle, 1993, p. 23.) The idea of teacher inquiry dates as far back as Dewey, 1933 who described inquiry as a process of on-going problem solving. He also saw it as a nurturing

opportunity to reflect, that was an essential part of improving teaching practices over time.

Korthagen and Vasalos (2005) also emphasize the importance of systematic reflection and teachers engaging in a deeper cyclical process that allows them to get to the root of a problem, instead of looking for a quick fix. They proposed a model called ALACT which defines five stages of the reflective process. It also identifies the response of the supervisor or mentor at each stage of the cycle. The reflection process focuses on the following four areas to determine the cause and develop a solution: 1. The environment; 2. Behavior; 3. Competencies; 4. Beliefs. Table 2 shows the responses that mentors apply at each stage of reflection. The level of interventions that is provided with each progressive stage allows the mentee to become more aware of the problem and reflect deeply to identify solutions.

Table 2

ALACT Model of Reflection

Stages of Reflection	Interventions provided by supervisor
A – Action	Help in finding useful experiences
L – Looking back on action	Acceptance + Empathy + Genuineness + Concreteness
A – Awareness of essential aspects	Acceptance + Empathy + Genuineness + Concreteness + Confrontation + Generalizing + Utilizing here's and now + Making things explicit
C – Creating alternative methods	Acceptance + Empathy + Genuineness + Concreteness + Confrontation + Generalizing + Utilizing here's and now + Making things explicit + Help in finding and choosing solutions

T – Trial	Help in continuing the learning process

The five stages of reflection identified in the ALACT model allow a teacher to think about a problem in the context of the four areas mentioned above. Through the process of discussion, the mentor and teacher get to the cause of the problem, determine alternative actions or interventions, and implement the new plan. The supervisor in turn uses a variety of strategies to facilitate the conversation and helps the teacher in reflecting on the issue.

Based on a review of three models - Japanese lesson study, action research, and getting the results - Ermeling (2010) concluded that there are four key features to teacher inquiry processes that are focused on improving classroom instruction. First, they identify and define important and recursive instructional problems specific to the local context of the participating teachers. All the models recommended that the problem-solving process should be relevant and focused on students' needs. In addition, to have maximum impact on sustaining the inquiry process, the instructional problem should be studied recursively. Teachers should develop the curriculum in a manner that allows the problem to be embedded and spiraled over a period of time. Second, they connect theory to action through planning and implementing instructional solutions. Once a problem has been identified, the teacher plans and implements curriculum that addresses the problem. Third, they utilize evidence to drive reflection, analysis, next steps. In inquiry-based models, teachers use a wide variety of data as evidence to measure if the practices being

implemented are effective. Finally, they emphasize carefully framing a problem in terms of evidence-based outcomes in student learning. This involves a shift in teachers' thinking. Instead of trying out a variety of new strategies before moving on to another topic, this would encourage teachers to identify specific practices that show a marked improvement in student learning.

The results from a national survey conducted by Grater, Porter, Desimone, Berman, & Yoon (2001) indicate that teachers increase their knowledge and skills, and change their instructional practices when they receive professional development that is coherent, focused on content knowledge, and involves active learning. Teachers reported that the hands-on work allowed them to enhance their learning of what to teach and how to teach, which in turn produced a sense of efficacy.

Supovitz and Turner (2000) conducted a study using data from a National Science Foundation Teacher Enhancement program to examine the relationship between professional development and teaching practices in the area of science. The results indicated that the quantity of professional development in which teachers participate is strongly linked with inquiry-based teaching practices and investigative classroom practices. They proposed a model that depicted student achievement as an outcome of high quality professional development. They suggested that professional development will lead to improved teaching in classrooms, which in turn will translate to higher levels of student achievement. Supovitz, Mayer, and Kahle (2000) also concluded similar results based on their study of teachers that participated in Ohio's Statewide Systemic Initiative in science and mathematics. They found that inquiry-based professional

development that was highly intensive (160 hours), changed the attitudes that teachers held toward reform, their preparation to use reform-based practices, and their use of inquiry-based practices. The effects of this change also lasted longer. Galbo (1998) states that 90% of participants will transfer a new skill into use if theory, demonstration, practice, feedback, and on-going coaching are provided as part of professional development.

The first few years of a beginning teacher's professional life are critical in shaping their beliefs and practices. Novice teachers need training in the art of engaging in the ongoing process of data collection, analysis, and reflection to improve pedagogy in order to grow professionally. The role of a mentor in an induction program goes beyond providing emotional support and guidance on the day-to-day functions of teaching. Feiman-Nemser (2003) suggests that providing emotional support is not as valuable as helping new teachers learn to create safe classroom environments, engage all students in worthwhile learning, work effectively with parents, and base instructional decisions on assessment data. Teachers must develop a mindset that promotes growth for their own learning cycle, as well as their students. They must also be trained to have a mindset that intuitively follows the cycle of reflection, refinement, and inquiry. An effective way of providing such support is in the form of cognitive coaching. When mentors are trained in cognitive coaching, they can guide novice teachers in developing inquiry-based practices and becoming life-long learners. The process of transforming novice teachers into life-long learners involves consideration of adult learning theory. Galbo (1998) states that adults are self-directed learners who are unique based on their personal experiences.

Their desire to learn arises from the desire to face their daily challenges. In the case of novice teachers, the experiences that they face in their classrooms would be the driving factor to engage in this learning process.

Edwards, Green, Lyons, Rogers, & Swords (1998) state that the purpose of cognitive coaching is to increase teacher efficacy and provide a climate in which teachers can interact in a professional and collaborative manner. Showers and Joyce (1996) point out that cognitive coaching is different from other types of coaching that often focus on innovation in curriculum and instruction. Cognitive coaching focuses on improving existing practices through a process of planning, observation, and reflection. Costa & Garmston, (1989) describe cognitive coaching as "the supervisor's application of a set of strategies designed to enhance the teacher's perceptions, decisions, and intellectual functions. These inner thought processes are prerequisites to improving overt instructional behaviors which in turn produce greater student learning." A study conducted by Edwards & Newton (1995) indicated that teachers that were trained in cognitive coaching had a higher rate of efficacy and empowerment. In addition, teachers that were trained were significantly more satisfied with teaching as a career than those not trained.

According to Costa and Garmston (1994) the three main goals of cognitive coaching include: 1. Establishing and maintaining trust; 2. Facilitating mutual learning; and 3. Enhancing teacher holonomy. Holonomy describes the act of teachers behaving in an autonomous manner while simultaneously acting interdependently with a group. The process involves three phases that include planning conferences, classroom observations,

and the reflection process. The focus is student outcomes and the discussions revolve around evidence of students' learning. The coach and the teacher meet frequently to analyze evidence of students' learning collected through classroom observations and assessment data. During the discussions, teachers engage in a reflective process and identify areas that need refinement. The coach asks probing questions that allow the novice teacher to reflect on the purpose of their practices and the evidence that the practice is enhancing student outcomes. Loughran (2002) states that reflection and reflective practices can have several meanings. For some it means thinking about something, but for others it's a well thought out practice that carries specific meaning and action. In all cases, a common element is the existence of a problem. With the mentor acting as a coach, novice teachers can be trained to follow an on-going inquiry cycle of reflection, refinement, and inquiry. In the cognitive coaching process, the emphasis is on learning through questioning and investigation that leads to better understanding of the issue at hand (Loughran, 2002.) When teachers become trained to follow this process of inquiry repeatedly, it soon becomes part of their practice.

While there is some evidence that intense professional development impacts the inquiry-based practices of teachers, there isn't research that points to the quality of professional development that is offered in induction programs. To see comparable results, induction programs would need to include professional development that models such practices and follows-up on progress over a period of time. To sustain such efforts, teachers must believe that the additional work that they put in their learning will result in positive outcomes in teaching and learning.

Self-efficacy among novice teachers. Bandura (1977) defined perceived self-efficacy as "personal judgement of one's capabilities to organize and execute courses of action to attain designated goals." He stated that it influences how people feel, think, behave, and motivate themselves. He proposed a model which defines an outcome expectancy as a person's assumption that a given behavior will lead to certain outcomes. An efficacy expectation is the conviction that one can successfully execute the behavior required to produce the outcomes (p. 193). Outcome and efficacy expectations can be different because an individual can believe that certain behaviors will produce specific outcomes, but if there is a lack of belief that one can perform the necessary activities, the relevant behaviors are not even initiated, or if they do, they will not persist (Gibson & Dembo, 1984). A term that is often confused with self-efficacy is self-esteem. Gist and Mitchell (1992) explain that self-esteem is usually considered to be a trait that reflects an individual's feeling of self-worth or self-liking. On the other hand, self-efficacy is a judgement about one's capability to complete a task.

Bandura (1977) implies that the strength of conviction individuals held regarding their own effectiveness could largely influence how they cope with any given situation. Individuals that have a perceived low self-efficacy are more likely to avoid situations that seem challenging or intimidating due to fear of failure. The response to any situation by an individual is directly influenced by the perceived self-efficacy that the person holds. Bandura (1977) states, "Efficacy expectations determine how much effort people will expend and how long they will persist in the face of obstacles and aversive situations."

This notion of perceived self-efficacy can play a significant role in how novice teachers react to the challenges that they face and the level of reflective adjustments they are willing to take in their instructional practices.

Bandura (1993) notes that self-efficacy effects cognitive, motivational, affective, and selection processes. He notes that goals people set for themselves are influenced greatly by their perception of their own capabilities. Therefore, people who have strong self-efficacy are more likely to set higher goals for themselves and have a firmer commitment to meet those goals. They also focus on success instead of dwelling on failure. Collins (1982) conducted a study that reaffirms the notion that self-efficacy influences the manner in which individuals deal with tasks. She selected students at three levels of math—high, medium, low. Students were given challenging problems to solve. The study found that students who believed in their capabilities performed better. They reworked problems that they solved incorrectly and did so more accurately that students that had self-doubt. Bandura (1993) suggests that one of the reason for this behavior is their conception of ability being a fixed attribute. Some people regard ability as a skill that can be acquired by gaining knowledge and competencies. Others, view ability as an inherent trait and that prevents them from engaging in tasks where they could experience failure. For this group, perceived efficacy diminishes as they encounter challenges.

Another factor that influences self-efficacy is motivation. Most human motivation is generated cognitively and is initiated by the exercise of forethought (Bandura, 1993.) People generally form beliefs about what they can do and anticipate likely outcomes of prospective actions. They set goals for themselves and then plan steps designed to meet

those goals. Forethought is thereby translated into incentives and actions. Motivation based on goals is further influenced by three factors: reaction to one's performance, perceived self-efficacy for goal attainment, and readjusting goals based on progress that is made. Self-efficacy beliefs contribute by enabling people to determine personal goals, determining the amount of effort they will apply, and determine how long they will persevere in the face of a challenge.

The third factor that influences self-efficacy is the affective process. People's belief in their capabilities affect how much stress and depression they experience in threatening or difficult situations, as well as their level of motivation (Bandura, 1993). Some people magnify the severity of possible threats and distress themselves, which in turn impairs their level of functioning. People who believe they can control threats easily do not think of extreme negative situations. On the other hand, people who feel a lack of control in controlling situations experience high levels of anxiety.

Bandura (1997) also proposes four sources of self-efficacy: mastery experiences, vicarious experiences, verbal persuasion, and physiological arousal, with mastery experiences being the most powerful. According to his theory, self-efficacy beliefs are raised if a teacher perceives his or her performance to be successful, which leads to the path for future success. The interactions between a teacher and others that are part of the teaching environment, can also play a significant role in raising the self-efficacy of teachers. This would be an important factor to study when one is observing the interaction between novice teachers and their mentors. Vicarious experiences involve modeling of activities by another person. When a teacher identifies closely with the

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person modeling the activity, the self-efficacy of the observer is enhanced. Based on this, one could make the assumption that novice teachers would see an increase in self-efficacy if their philosophy is aligned with the mentor. A feeling of joy while teaching can lead to emotional surge which would result in an increase in self-efficacy.

People's beliefs of personal efficacy can influence their choices of actions and environments, which in turn can shape the course of their lives. They can cultivate competencies, interests, and social networks that impact life courses and also affects the direction of personal development (Bandura, 1993). The level of self-efficacy that people feel determines the activities and environments they select. People avoid activities they believe exceed their coping capabilities, but they are more likely to take action if they believe they will be successful. This can affect the choices people make for their personal development or career pathways.

Gist and Mitchell (1992) point to work done by other researchers (Bandura, 1988; Bandura & Wood, 1989a; Wood & Bandura, 1989b) that highlights the three aspects of self-efficacy. First, self-efficacy is a comprehensive summary or judgment of perceived capability for performing a specific task. In the context of any organization, information derived from the individual, the task, and others in the work environment may contribute to the comprehensive assessment of capability. Second, self-efficacy is a dynamic construct. The efficacy judgment changes over time as new information and experience are acquired. Third, efficacy beliefs involve a mobilization component, which means that an individual's performance may adapt based on circumstances. Therefore, people who

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have the same skills may perform differently based on their utilization, combination, and sequencing of these skills over a period of time.

These finding seem to suggest that self-efficacy can be developed based on experiences, circumstances, and personal beliefs. Bandura (1993) states that ability is not a fixed attribute. Instead, it is a generative capability in which cognitive, social, motivational, and behavioral skills must be organized effectively to serve various purposes. Induction programs have a variety of components with mentoring and professional development being two essential parts. Based on Bandura's social theory, one could speculate that the experiences associated with induction programs would result in an enhanced sense of self efficacy among novice teachers.

Teachers' self-efficacy can have a significant influence on teachers' ability to sustain practices that contribute to their professional growth. Tschannen-Moran & McMaster (2009) conducted a quasi-experimental study to examine the impact of four different professional development formats with varying levels of self-efficacy-relevant input on the self-efficacy for teaching. The study involved nine schools from five different public school systems with a diverse profile. The Tucker Signing Strategies for Reading was selected as the reading strategy that would be implemented following professional development. In order to differentiate between various sources of self-efficacy, training was separated into four formats. The four sources of self-efficacy as identified by Bandura (1997) were key components of the four varied treatments. A survey was administered at the beginning of the study for participating teachers to access their self-efficacy as well as their prior use of the strategy. During Treatment 1, all the participants

received a three-hour workshop with verbal persuasion as the identified source of self-efficacy beliefs. The presenter presented each of the 44 hand gestures that are part of reading program and teachers followed in their manuals. During Treatment 2, vicarious experiences were added as a second source of self-efficacy and the presenter modeled the use of the Tucker hand gestures on a group of struggling students. Treatment 3 added a one-and-a-half-hour mastery experience where teachers were given an opportunity to practice the new learning. Treatment 4 included all the components of the first three treatments, but also added follow-up coaching as a final self-efficacy belief. While a steady increase in self-efficacy was anticipated because of the additive approach of including additional sources, the study showed that all the participants reported an increase in self-efficacy. The study also found that with exposure to a new strategy, a large percentage of teachers saw a drop in self-efficacy. Tschannen-Moran & McMaster (2009) suggest that introduction of a new strategy may have caused some teachers to reassess their definition of good teaching and recalibrate their own self-efficacy beliefs to match the new standard. In order to feel successful and self-efficacious, teachers need time to hone their new skills through the inquiry-based process. They need to have the opportunity to implement, observe, reflect, and refine their practices to achieve the highest level of effectiveness.

According to social cognitive theory, if teachers have a preconceived notion that they will not do well with a specific group of students, they are more likely to put little effort in preparation and delivery of instruction, and give up easily even if they are adept at strategies that would be helpful to students (Tschannen-Moran & Hoy, 2007). They

suggest that the self-efficacy belief thus becomes a self-fulfilling prophecy. When teachers have low expectations they transmit that belief to students through their actions and messages. Students in turn, pick on those messages and hold back since there is a lack of agency. Another study (Melby,1995) found that teachers that are more efficacious were less likely to judge their students as having behavior issues and felt more confident in managing discipline issues while they arose. They also were less likely to feel angry when students behaved poorly and expected those behaviors to improve.

Schwarzer & Hallum (2008) suggest that even though self-efficacy often guides people's response to particular situations, there is also a general sense of self-efficacy that refers to global confidence in how one would cope with a wide variety of challenging situations. General self-efficacy targets a broader sense of personal competence that allows one to deal effectively in difficult situations. They conducted a study to examine the relationship between self-efficacy, job stress, and burnout as reflected by *Emotional Exhaustion, Depersonalization,* and *Reduced Personal Accomplishment*. The construct of self-efficacy suggests that an optimistic belief in one's ability to cope with daily challenges would motivate a person to engage with a challenge more positively. Therefore, teachers with high self-efficacy, should see the daily challenges of the teaching profession in a less threatening manner than teachers who have self-doubt. The study included teachers in Syria and Germany. The assumption was that self-efficacy acts as a resource that protects against job stress, which in turn prevents work related burnout. For this study, self-efficacy was identified as the independent variable, job stress as a mediator, and the three burnout components as dependent variables. Some of the findings

from the study indicated that age was a determining factor for teachers feeling less successful. There was also a high negative relation reflected with job stress and burnout. The study indicated that teachers with low general self-efficacy might be more vulnerable to job stress, which further results in burnout (Schwarzer & Hallum, pg. 163.) This is a significant finding for the purpose of studying the impact of induction programs. Teachers enrolled in such programs tend to be first or second year teachers with limited experience.

The presence of self-efficacy among novice teachers is critical for a variety of reasons. Research shows that teachers that have high self-efficacy tend to be more effective. In addition to feeling confident about their teaching, these teachers are also most receptive to implementing new instructional practices in their classrooms (Guskey, 1987). Another reason that self-efficacy is critical is due to its cyclical nature. Tschannen-Moran, Hoy, & Hoy (1998) believe that a teacher with high self-efficacy is more likely to perform a task and attain mastery, which in turn provides information that will shape future efficacy beliefs. They state:

> Greater efficacy leads to greater effort and persistence, which leads to better performance, which in turn leads to greater efficacy. The reverse is also true. Lower efficacy leads to less effort and giving up easily, which leads to poor teaching outcomes, which then produce decreased efficacy (p. 234).

Given the important part self-efficacy plays in positive outcomes for teachers as well as students, it is necessary to understand ways in which efficacy can be developed among novice teachers. Once efficacy beliefs are established in beginning teachers, they become somewhat resistant to change (Tschannen-Moran et al., 1998). They suggest that

providing an apprenticeship approach, where the complex task of teaching can be broken down into smaller learning experiences, providing feedback, assigning smaller classes and more capable students in their first year, can help in enhancing efficacy. They also propose engaging in more research to study what events and influences teachers attribute to development of their efficacy beliefs. Tschannen-Moran and Hoy (2007) state that there are other factors that impact self-efficacy among novice teachers. These are: (a) school climate and culture; (b) principal leadership; and (c) collective efficacy.

Teaching involves solving problems that are complex, dynamic, and non-linear. It is therefore largely dependent on the personal agency, which is the capacity of a teacher to be organized, self-reflective, self-regulating, and proactive (Bray-Clark & Bates, 2003.) They state that there is a link between personal agency and a teacher's efficacy beliefs, which is drawn from the personal experiences of the teacher and the ability to reflect and determine future actions. They also suggest that positive self-efficacy beliefs can increase the extent to which teachers are willing to transfer skills that they learn during professional development to the classroom. This in turn allows teachers to be more effective, which enhances self-efficacy further. This cyclical efficacy-performance relationship leads one to believe that self-efficacy is a critical component of professional development, and to continue this cycle of enhanced performance among teachers, resources will need to be directed to ensure that professional development targets building self-efficacy.

The model of social cognitive career theory presented by Lent, Brown, and Hackett (1994, 1996) identifies self-efficacy, outcome expectations, and goal setting as the three

factors that work together to help individuals exercise personal agency and become self-directed. They emphasize that personal agency plays a significant role in the career decision-making process. The internal and external factors that an individual is exposed to can cause personal agency to be enhanced or constrained. They posit that self-efficacy seems to be the essential element in defining the personal agency of an individual and draws from four sources of information: performance accomplishment, vicarious learning, verbal persuasion and psychological arousal. Outcome expectations are personal beliefs of an individual regarding the consequences of performing a certain behavior. This can play a role in the motivating factor for engaging in certain behaviors. The third factor is goal setting and that plays a role in the self-regulation of behavior. This theory is of significance when considering how novice teachers develop personal agency, which in turn enhances self-efficacy. The decisions beginning teachers make, can influence the outcome of their actions. A positive outcome can build personal agency and allow a novice teacher to feel successful.

There are other factors that need to be considered when one studies novice teachers and the influence of outcomes on their sense of personal agency and self-efficacy. According to Weiner's (1985) attribution theory, people are more likely to talk about outcome and events that they consider important. Their cognition and emotions are directly linked to what they attribute the cause to be. His proposal of a three dimensional taxonomy for classifying all attributes is shown in the Table 3.

Table 3

Model of Attribution Theory

Attribution	Locus of Causality	Stability
Ability	Internal	Stable
Effort	Internal	Unstable
Task Difficulty	External	Stable
Chance/Luck	External	Unstable

Note. Adapted from "An Attributional Theory of Achievement Motivation and Emotion," by B. Weiner, 1985, *Psychological Review*, 92, p. 551.

In the model describer by Weiner (1985) locus of causality defines the location of a cause as internal or external to the individual. The dominant causes can be attributed to ability and effort, which are both internal because they reflect the personal traits of the individual. The other two causes – task difficulty and chance/luck are external because they are not controlled by the individual. The stability dimension designates causes as constant or varying over a period of time. Ability is stable since a person's ability to perform a task remains constant, while effort is unstable and may change depending on a person's mood or motivation to perform a task. Finally, controllability indicates personal responsibility or whether a cause is related to personal influence. Effort is controllable because individuals are responsible for how hard they try. On the other hand, ability and luck are perceived to be beyond a person's control (Weiner, 1985).

Another key factor to consider when studying the self-efficacy of novice teachers is their mindset. Dweck (2010) posits that individuals with a *fixed mindset* believe that

intelligence is trait that one is born with and is fixed. In contrast, individuals with a *growth mindset* believe that intelligence can be developed over time depending on a variety of factors. Individuals with a fixed mindset value looking smart and often overlook the importance of learning from every opportunity. They also do not like to put in effort and handle setbacks poorly. This is an important factor that can greatly influence the self-efficacy of novice teachers that are still honing their skills and may view every setback as a failure. This could prove to be a detriment in developing personal agency, which would result in low self-efficacy. Teachers tend to project their personal beliefs on students. Therefore, a novice teacher that believes in a fixed mindset is more likely to expect the same for students. Dweck (2010) emphasizes the need for teachers to create a growth mindset in classrooms because students respond differently to tasks based on their mindsets. Students with a fixed mindset are more likely to feel threatened by challenging tasks. In contrast, students with a growth mindset would welcome the challenge and feel excited. This suggests that in order to develop their own self-efficacy, as well as that of their students, teachers would have to believe that they can grow through effort and practice.

Hoy (2000) points out that there are few studies that have looked at the development of self-efficacy among novice teachers, but the results seem to suggest that novice teachers who had a high sense of efficacy were more satisfied with teaching and felt less stressed. They also ranked the level of support they received higher than teachers with low self-efficacy. Highly efficacious teachers gave high ratings to the level of support they received compared to less confident teachers, who also had a less optimistic view of

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what teachers can accomplish. This suggest that more research needs to be done in this area, and the impact of induction programs on novice teachers' self-efficacy and instructional practices needs to be studied further.

Conclusion

The review of literature presented above suggests that induction programs play an important role in supporting novice teachers. The support provided by mentors can be crucial in developing beliefs and practices that would allow a novice teacher to navigate the challenges of first year teaching. High quality professional development seminars typically offer a selection of learning opportunities that are focused on curriculum as well as instructional practices. The area that current research does not shed much light on is the influence of mentoring and professional development on the long-term self-efficacy of novice teachers. Much of the research highlights the benefits of self-efficacy, but there isn't much research that shows how it can be sustained over a period of time. While it is evident that there are immediate benefits to providing support through induction programs, it is unclear if this support transforms the mind-set of novice teachers so they can become long-term learners. To become true learners, teachers would have to adopt inquiry-based practices through which they are constantly reflecting on their practices and refining instruction for positive outcomes for students. To become practitioners that are reflective, novice teachers would need to have a strong sense of self-efficacy which can be developed by mentoring and professional development. The question that needs to be answered is how induction programs attend to factors that can, in turn, influence the development of novice teachers for a lifetime. This study will shed light on the influence

of mentoring and professional development seminars on the practices of novice teachers

and their self-efficacy beliefs that have been found to sustain such practices over time.

This is crucial since other studies have shown that practices and beliefs that teachers

develop in the early stages of their careers can have a lifetime impact on their beliefs and

perceptions about their work.

Chapter Three: Methods

Introduction

Induction programs are a common form of support that is provided to novice teachers. The support includes administrative coaching, mentoring, professional development seminars, additional classroom support, or modified schedules. The purpose of this qualitative case study was to study the relationship between induction programs, self-efficacy, and inquiry-based reflective practices of novice teachers. The study focused on two components of induction programs – mentoring and professional development. Both of these components were considered as independent variables. Data was collected to explore ways in which these variables created space for novice teachers to develop their self-efficacy beliefs and improve instructional practices. Data was collected using a survey that included questions about novice teachers' self-efficacy and inquiry-based reflective practices. Seven novice teachers completed surveys in September and once again in January to assess the influence of induction programs on their self-efficacy and instructional practices before and after their experience of mentoring and professional development seminars. The novice teachers also participated in an interview in January, following the second survey. The purpose was to get more detailed responses from novice teachers regarding their experiences related to the induction program. Three mentoring sessions were also observed between September and January. The purpose for the observations was to gauge if novice teachers were using inquiry-based practices to reflect and refine their instruction and the role that self-efficacy beliefs played in this

process. It was also noted if teachers discussed strategies that they had learned during professional development seminars.

Research Questions

The questions that guided this research were:

1. How do induction programs influence the long-term growth of novice teachers?

    a. What role do professional development seminars and mentoring play in the self-reflection and refinement of instructional practices among novice teachers?

    b. What roles do professional development seminars and mentoring play in the self-efficacy among novice teachers?

2. Are there other components of induction programs besides mentoring and professional development seminars that impact the self-efficacy and instructional practices of novice teachers?

Context

    The study was conducted at a suburban Transitional-kindergarten through 8th grade (TK-8) school district in Northern California. The district has 16 elementary schools and 3 intermediate schools, with a student enrollment of 10,628 students. Four out of nineteen schools receive Title 1 funds. Twenty-nine percent of students are English Learners, representing 60 languages. 40% of students qualify for the Free and Reduced Lunch program and 10% of students are identified for Special Education services. The district serves a diverse student population which comprises of 19% White, 49% Hispanic, 24% Asian or Pacific Islander, 4% African American, and 6% Other students.

I selected this district because I had heard from my colleagues that the program is well established and based on the Standards of Induction established by California Teaching Commission (CTC.) After being in induction programs for two years, novice teachers can receive their clear credential from the CTC. My interest was in identifying components of induction programs that have the most significant impact on two factors associated with teachers' long term professional growth, self-efficacy, and inquiry practices. Having an understanding of the components of induction programs that have the most significant influence in developing strong learning skills in novice teachers can allow administrators and policy makers to design better induction programs.

The mentors for the induction program were selected based on their teaching experience within the district and their willingness to participate. All the mentors had gone through training for cognitive coaching. The coordinator for the induction program had matched mentors with novice teachers based on the common areas of work. Within the first 60 days, teachers developed year-long goals, which could be revised at Benchmark. The Benchmarks were three check-in periods during the year, where Induction Program staff could assess if goals set by novice teachers were met successfully. The inquiry cycles focused on one of the three goals: professional development, classroom observations, and reflections on personal growth based on student work. The mentors and novice teachers were scheduled to meet once a week for an hour to have reflective conversations. The focus could be just-in-time support or long-term goals. The just-in-time conversation focus on immediate needs like grading, parent conferences, management issues, etc. Both, the mentors and novice teachers also attended

professional development workshops, once a month. The professional development workshops included the following topics: Sub Plan Template, Mandated Reporting, IEP and 504 review, Classroom Management, Math Best Practices, NGSS Overview, Equity, Grant Research and Writing, Writing Across the Curriculum, iReady Reports and Data Analysis, and Engagement Strategies Using Technology.

Participant Selection

The participants of this study were seven sets of first and second-year teachers and their mentors engaging in the district-sponsored induction program. Teachers were invited to volunteer for the study at the orientation meeting. I actively recruited a diverse pool of participants to include racial, ethnic, and linguistic diversities to get a truly representative sample of novice teachers. I wanted to observe if teachers responded in a different manner to the support being provided based on the above mentioned factors.

Novice teachers come to the profession with limited experience and mostly theoretical knowledge of how classrooms function. By understanding the unique perspective of first-year teachers, administrators can provide support through induction programs that increases self-efficacy and improve pedagogy. This will result in multiple positive outcomes including job satisfaction, reduced attrition rates, and improved student achievement.

Design

This was a basic qualitative multiple case study and the participants were seven sets of first and second-year teachers and their mentors. An underlying assumption of qualitative research is that participants construct reality within their social context.

According to Merriam and Tisdell (2016) a basic qualitative research would be interested in the following: 1. How people interpret their experiences 2. How they construct their world, and 3. What meaning they attribute to their experiences. During this study, novice teachers were able to share their daily experiences with their mentors who in turn coached them to use the evidence they were collecting to reflect on how they could improve their instructional practices. Teachers' perspectives were studied through two surveys, observations of three coaching sessions with their mentors, and one-on-one interviews with novice teachers. The survey was completed by the participants in September, and once again in January. Given the time constraint for this study, this seemed to be a reasonable period of time for novice teachers to develop a sense of self-efficacy in their teaching context as well start developing research based instructional practices. Between September and January, I also observed three meetings for each novice and mentor teacher pair to determine if novice teacher were using inquiry-based practices. During their meetings, I looked for self-reflective discourse and a follow-up plan to refine practices. At the end of the study, I interviewed novice teachers. The interview provided novice teachers an opportunity to provide detailed responses regarding the influence of mentoring and professional development on their self-efficacy and instructional practices. It also gave them an opportunity to discuss any other factors that might have influenced their sense of self-efficacy and their ability to reflect on their practices.

Data Collection Tools

The study was conducted using a survey, observations, and interviews. The survey and interview questions were initially vetted by a group of teachers who are now in their third or fourth year of teaching. They provided feedback on the relevancy of the survey questions from a first-year teacher's perspective.

The survey is based on an instrument developed by Tschannen-Moran and Hoy (2001) and some questions were used to compile the survey. It was created and administered using Google Forms and is included as Appendix A. It was emailed to novice teachers that were participating in the study in September and once again in January. The survey had 21 questions and was based on a 5-point Likert scale. The responses included: nothing; very little; some influence; quite a bit; and a great deal. The study noted the responses to determine a change in self-efficacy and reflective practices. Appendix C identified the research questions that were addressed using the survey.

The second tool that was used during the study was observations. I observed three coaching sessions between the novice teachers and their mentors. The observations were recorded and coded to look for changes in self-efficacy and instructional practices.

The third tool that was used for this study was an interview. All eight novice teachers were interviewed in January. The interview was recorded and coded later to identify common themes. The instrument is included as Appendix B. The purpose of the interview was to get detailed responses from participants related to their experiences while they were enrolled in the induction program. Appendix D identifies the research questions that were addressed during the interview.

Data Analysis

Data from the survey was collected initially in September and for the second time in January. I noted the change in levels of self-efficacy and instructional practices based on the responses given by novice teachers. The responses were measured on a five-point scale. Moving to a more affirmative response indicated an increase in self-efficacy and enhancement in reflective practices.

The interview questions administered at the end of the study allowed participants to give a detailed response regarding their experience related to mentoring and professional development seminars. It also allowed novice teachers to identify other experiences as first-year teachers that may have been responsible for an increase in self-efficacy and instructional practices. The interview was audio recorded and transcribed later.

At the meetings between novice teachers and their mentors, I observed the conversations between the two. The meetings were audio recorded and a coding system was developed to identify common themes. One of the themes that I was actively looking for was an increase in self-efficacy which was measured by using the model of Growth Mindset (Dweck, 2010) and Attribution Theory (Weiner, 1985). Since self-efficacy is intrinsic and hard to measure, I decided to use models that would focus on the state of mind and beliefs of novice teachers. Table 4 outlines the characteristics of a growth mindset.

Table 4

Characteristics of Growth Mindset

Traits	Fixed	Growth
Beliefs	Intelligence is an inborn trait; one only has a certain amount	Intelligence can be built over time
Focus	Performance and outcomes; not looking bad	The process; getting better
Effort	Do not like effort; believe everything should come naturally	Value effort; realize even geniuses have to work
Challenges	Sacrifice learning for fear of learning	View challenges as opportunities to learn
Mistakes	Believe setbacks call intelligence in question	Respond to setback by staying involved
Feedback	Get defensive and discouraged	Use all resources and try new strategies

Note. Adapted from "Even Geniuses Work Hard." by C. Dweck, 2010, *Educational Leadership*, *68*, p. 16.

The coding pattern was developed using Weiner's Model of Attribution Theory shown in Table 3 and the Characteristics of Growth Mindset shown in Table 4. The comments made by novice teachers were categorized using the descriptors for fixed and growth mindset. In the same manner, the reasons that a teacher attributed for any changes in ability, effort, task difficulty, and chance were noted as indicators of high or low self-efficacy. High self-efficacy was noted for areas where a teacher showed characteristics of a growth mindset.

I also tracked parts of the conversation where novice teachers were posing questions related to learning from the professional development seminars that they had attended or were related to their students' learning experiences. If teachers are using the cycle of inquiry to reflect on lessons presented, student data collected, and information presented at professional development sessions, it indicated that they were motivated to reflect on their practices and refine them for better outcomes.

To calculate reliability, 25% of the observations were analyzed by a colleague. I first shared my coding scheme with my colleague. She then coded one observation independently, and the results reviewed together to note differences. We discussed the parts where our coding was different. Finally, my colleague coded three observations independently. The inter-rater reliability was calculated as 88.2% exact agreement.

There were three coaching styles that were observed during the meetings. They were as follows:

A. Consulting—In this style of mentoring, the mentor shares information and expertise from her/his own professional experience. It also includes modeling planning, data-analysis, problem solving, and self-reflection that will help the new teacher in improving practices.

B. Collaboration—The mentor and new teacher work side-by-side with each one sharing a responsibility. The two brainstorm solutions to problems, co-facilitate lessons, and develop goals together. Through this style, the mentor demonstrates respect for the new teacher as a professional and provides a collegial model that she can apply in other work-related relationships.

C. Cognitive—This style of coaching allows the new teacher to analyze and synthesize information and experience, and apply these to planning and problem-solving. The new teacher gets an opportunity to reflect on his/her practices, clarify thinking, and reach his/her own conclusions. This is done through careful listening, reflecting back key ideas, and asking questions to determine if the teaching strategy has been effective, how the activity links to the outcomes, and find alternative solutions.

The free response section of the survey and interview was used to gather data that will indicate if novice teachers find other factors or supports more influential in increasing their efficacy and improving instructional practices.

Ethics and Positionality

There were certain assumptions that were made during this research, one of them being the definition of quality teaching. One could measure teachers' effectiveness by looking at student achievement, instructional practices in the classroom, management of students' behaviors, student engagement, teacher engagement during collaboration with peers, and many other factors. This study did not measure improvement based on any of those factors. While efficacy and inquiry-based practices are generally associated with student achievement, this study did not focus on student outcomes. Instead, it observed the refinement of instructional practices through the research-based teacher inquiry process, during the coaching sessions between the novice teacher and mentor. The depth of discussion around pedagogy and the information that the novice teacher drew from

professional development was part of the teacher inquiry process and was used to determine if the novice teacher is refining practices.

One of the limitations of this study is that the design is non-experimental, therefore it will be difficult to make any causal inferences. The value of professional development and the level of self-efficacy is self-reported by novice teachers using the survey. The results are not being verified through other instruments. Giving the mentor teachers a survey to note their evaluation of improved practices may help in verifying the results. Another limitation is that findings will be based on three observations of the coaching session. One would have to assume that all the sessions are held in the same manner with similar defined outcomes.

Another limitation was that my position may have an influence on the responses that novice teachers would provide during the interview and survey. Novice teachers are non-tenured and are typically cautious of how they may be perceived by others, especially administrators. They may overstate their levels of self-efficacy out of fear that a lower response would make them seem ineffective. To overcome this limitation, I spoke with the teachers at their Orientation Meeting in August. I also met them personally a few times to assure them that the data I was collecting is confidential and I would not include their individual names or identifiable information. The data would be presented for the group. I am hopeful that the personal meetings helped in building trust and allowed them to respond without fear of judgement.

Pilot Sample

The survey and interview questions was vetted by a group of teachers that are now in their third or fourth year of teaching. They provided feedback on the relevancy of the survey questions from a first-year teacher's perspective. I also used the interview questions with the same group of teachers to see if their responses based on their perspective from a few years ago meets the conditions of this study.

Chapter Four: Report of Findings

Overview

The purpose of this research is to study the influence of induction programs on novice teachers. Novice teachers often begin their career with a limited understanding of the daily challenges teachers face. While teacher training programs and pre-induction programs provide theoretical knowledge and some classroom experiences, they may not be applicable to all situations. Beginning teachers need to continue the learning process and feel successful to avoid frustration, teacher burnout, and a sense of low self-efficacy, ultimately leading to teachers leaving the profession. Research suggests that 50 percent of teachers leave the profession within the first five years.

Induction programs provide support for novice teachers in a variety of ways, such as administrative coaching, mentoring, professional development, additional classroom support, or modified schedules. The two most common forms of support that districts can provide are professional development and mentoring. Professional development can address specific needs of first-year teachers and focus on classroom management and pedagogy. Mentoring typically matches veteran teachers with novice teachers to provide one-on-one coaching, as well as collaborate on content specific issues. Having the opportunity to collaborate with a seasoned teacher can enhance understanding of best instructional practices, but more importantly influence the mindset that a novice teacher develops toward students' needs and learning.

This research was conducted to study the influence of induction programs on novice teachers. It specifically focused on the influence of mentoring and professional

development seminars on the self-efficacy and instructional practices of novice teachers. It also identified other factors that influence the self-efficacy and instructional practices of teachers.

Response Rate

This qualitative study collected data using a pre-post survey, an interview, and observations of meetings between the novice teachers and their mentors. The 21-question survey was given to novice teachers at the beginning of the school-year, in September and once again in January. The responses were measured on a 5-point Likert Scale and noted changes from September to January. The three observations were scheduled around 6-week long inquiry cycles. Some observations fell within the same cycle due to scheduling issues. The interview was conducted with the novice teacher and was scheduled as the concluding activity for the research. There were 13 open-ended questions that were aligned with the research questions. During the interview I asked follow-up questions if I needed more information or for clarity. I also included a question related to the survey results for teachers where the survey responses were in stark contrast to the observations.

The original target for the research was 8 sets of novice teachers and their mentors. I was able to recruit 10 sets of participants. However, a novice teacher from one set and the mentor from another set declined to participate due to heavy schedules. A third set was unable to complete the study due to concerns about the time commitment for participating in the study. I was able to collect all three pieces of completed data. As a

result, the data set presented here comprises data for the 7 sets that continued to participate in the research.

<div align="center">**Demographic Data**</div>

The novice teachers were first-year or second-year teachers. Every participant was in the first year of the induction program. The second-year teachers were hired as interns the previous year and were not enrolled in the Induction program. They performed the same duties as other teachers and the only support they received was through collaboration with grade level colleagues or through professional development seminars offered to all the teachers in the district. Table 5 shows the demographic data for participants. Since some mentors were working with more than one novice teacher, the table identifies the novice teacher with whom they were working. It should also be noted that Mentor 1, Mentor 4, and Mentor 5 were site-based mentors while Mentor 2 and 3 were district-based mentors. The three site-based mentors worked with all the new teachers at the site itself, while district mentors worked with teachers at various school sites. In addition to working with their caseload of novice teachers, the district mentors also assisted in the presentation of professional development seminars.

Table 5

Demographic Data

Teacher	Gender	Years Taught	Grade Level	Mentor
NT1	Female	First Year	$7^{th}/8^{th}$ P.E.	Mentor 1
NT2	Female	First Year	4th	Mentor 2
NT3	Male	First Year	Music	Mentor 2
NT4	Male	First Year	Preschool	Mentor 3

NT5	Female	Second Year	Resource	Mentor 3
NT6	Female	Second Year	3rd/4th	Mentor 4
NT7	Male	Second Year	8th Science	Mentor 5

Survey Findings

The first piece of data that was collected as part of the research was the survey. The survey was composed of 21 questions that asked novice teachers to gauge the influence of mentoring and professional development seminars on their self-efficacy and self-reflective practices. Each question was measured on a five-point Likert-type scale with the following levels: 1. Nothing; 2. Very Little; 3. Some Influence; 4. Quite a Bit; 5. A Great Deal

The questions also included a comments section where respondents could add details.

The survey was first administered at the beginning of the research, in September. At that time all of the novice teachers were in the beginning stages of the Induction Program and had just attended the orientation session. The novice teachers were given the same survey in January to monitor their progress. Appendix E shows the individual responses for all the participants and indicates the changes in levels from September to January (*Same, Up, Down*). The responses are categorized as Low (1, 2), Mid (3), and High (4, 5) to reflect the level of influence that novice teachers felt mentoring and professional development seminars had on their self-efficacy and instructional practices.

While most teachers reported some increase in all areas, NT6 reported a decrease in response to 13 questions. A few other teachers also reported similar changes, the reasons for which are explained later in this paper. When asked during the interview if she could

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elaborate on the reasons for marking a decline in the influence of induction program,

NT6 said:

> Maybe I'm just done with the induction program. I'm only halfway done
> though….That would definitely be caused by mood. Maybe I had to go
> to a meeting, I felt like, 'No, I don't wanna do it.'

Since the responses for the survey were self-reported, the mood and mindset of the

participants played a role in the type of response reported. During the interview NT6

reported that she was having a challenging day and that may have been the reason for the

change in scores. An analysis of this data will be presented later in this chapter.

Observations

The observations were conducted during the meetings held between the novice

teachers and their mentors. They typically followed the timeline of inquiry cycles

determined by the induction program. Each teacher had a two-year *Individualized*

Learning Plan (ILP) which was designed to provide a road map for the induction work

that teachers were doing. Each novice teacher and mentor met at the beginning of the first

year to develop the goals, measurable outcomes, and ways to meet the goals. There were

three inquiry cycles planned for the year that focused on California State Standard

Practices (CSTP) and each cycle was six weeks long. During this time novice teachers

met with their mentors to discuss their goals, effective teaching strategies, analyze

student work, reflect on outcomes, and plan interventions. The meetings were held at the

novice teachers' school sites. The purpose of conducting the observations was to identify

patterns of self-efficacy and reflective conversations that led to change in instructional

practices. The self-efficacy was coded using indicators noted using the tenets of growth

mindset and attributions in the comments made by novice teachers. The observations were also coded for the different coaching styles used by mentors to facilitate the conversations. The three coaching styles were described earlier in the paper. The purpose was to investigate whether some teacher-mentor pairs used more of one style than the other.

The following sub-sections present the observations that were noted during meetings. For each meeting, areas that were focused on were inquiry-based reflective practices, self-efficacy, and the coaching style of the mentor.

NT1 inquiry-based reflective practices. During all three meetings, NT1 came across as a reflective teacher and showed initiative in looking for resources and ideas. She shared strategies that she was using, asked questions that would allow her to meet the needs of her students, and reflected on her practices. She gave details of why she was planning an activity in a specific manner and shared how she had changed an activity when she found that students were not engaged. NT1 seemed well aware of areas that individual students need to grow in and provided a safe and nurturing environment for them to take chances. This became evident during the meetings as she described strategies she was using and conversations she was having with students. At the first meeting she discussed her student that had special needs and had trouble understanding and interpreting social cues. She shared how she was encouraging him to embrace being part of a group and sometimes allowed him to say things (silly comments or joking around) that she would not allow other students to say. She did not want to discourage him from participating in conversations and felt that correcting him would shut him

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down. She explained that this was a classroom management strategy that she was

implementing because it allowed her students to learn at their own pace. NT1 made the

comment:

> It's like a fine line that I play with, and so most of the time there'll be
> behaviors that I wouldn't normally allow, but because he is exploring
> these social cues and really trying to embrace being part of the group,
> which he normally wouldn't do, I'm just like, you know what, I'm going to
> look the other way right now. I'm just happy that he's willing to try, because
> for him, it would be acceptable for him to have an alternative lesson. But I
> don't want to isolate him anymore, so letting him be isolated is an issue
> from my point of view, especially because where you want to be is being
> as inclusive as possible.

NT1 was also cognizant of the different learning styles of her students and attempted

to differentiate her lessons. An example of this was providing students who were visual

learners with a key ahead of time so they could identify different positions while playing.

Another strategy was asking students to run to the locations like a sideline and inner

circle. She also used other instructional strategies that included "fist to five" and setting

the agenda on the board. At another meeting, the two discussed other strategies that NT1

was implementing. These included modeling the correct way to throw a ball during a

bowling unit and telling students the progression of activity. She also divided students

into small groups, and students were asked to explain skills/concepts to each other. She

found that students' understanding improved when they had an opportunity to talk to

each other. She was also well aware of different learning styles and cognitive abilities

students exhibited across grade levels. She shared her observation of seventh grade

students with her mentor and noted that they understood better when she chunked

information and tied it to movement. Her eighth grade students did not need information

to be broken down as much. During all three observations, one could sense that NT1 was spending time reflecting on the needs of her students, ways in which she could deliver her lessons to meet the wide range of learning needs and styles, checking to see if students were learning, and refining her lessons when students were not engaged. The type of questions the mentor asked allowed NT1 to look for evidence of learning rather than just reporting what she doing.

The progression in NT1's learning became apparent during the third meeting. NT1 shared that she was going to be observed by her principal and the two had spent some time discussing her lesson. It was apparent that NT1 was very reflective and thorough. Even her mentor made a comment about how well thought out the entire lesson was. NT1 made the comment, "I have plans for backup plans" and through the conversation it became clear that she truly did have several options prepared. It seemed that she had reflected on all the nuances of the lesson and built in ways of correction as she was going through the lesson. In addition, NT1 described several strategies that she used in her classroom with success, which indicated a high level of confidence. She shared that she was planning on front-loading new lessons by sending a short video clip of a new skills/sport that she was going to teach in class to students. This would allow them to have basic prior knowledge of what was going to be taught.

NT1 self-efficacy. NT1 was self-motivated and believed in taking charge of her own learning and growth. She was very open about sharing her successes as well as challenges without hesitation. In response, her mentor appeared to be nurturing and supportive. During the three observations she spoke about things that she was doing to create a safe

and nurturing learning environment for her students. NT1 was undeterred by lack of

resources and was able to create meaningful lessons with the help of materials that she

could gather from her colleagues or by asking her mentor for help. One time she

explained enthusiastically:

> My vision and my goal is that on Thursday or Friday, I'm going to make
> cheapo white boards. I'm going to grab the transparency papers. I'm sure
> they have a name, and put white paper in there, and then you've got a
> white board. I'm going to look around the school and ask teachers for
> markers. Or I'm sure we might have some, and I'm going to put them in
> groups.

She possessed a high sense of self-efficacy and believes that she could shape the

learning environment and was willing to take action instead of being a bystander. At the

first meeting she shared how she had taken the initiative to create white boards using

plastic sleeves and sheets of paper. She also asked other teachers for markers because she

wanted her students to have whiteboards and markers. This was apparent again at the

second meeting where she needed chart paper for a lesson and asked her mentor if they

had "those giant sticky notes that teachers sometimes have." Her mentor responded by

saying that they have easels and chart paper. Without any hesitation, NT1 asked if she

could borrow them. This is an unusual quality for a novice teacher since many are shy

and hesitant in their first year.

In addition to taking responsibility for her own growth, she was also thinking of how

she could provide learning and growth opportunities for her students. She did this through

well thought out lessons where she was building knowledge gradually for a new skill that

would be taught. An example of this was teaching about offense and defense strategies

(basketball) using a whiteboard, before she actually introduced the play. She also

demonstrated confidence in her own abilities to teach a challenging lesson when she stated, "I'm a little ambitious, but because it's so much fun, with P.E. time, the kids need to be on it that day."

One of the most prominent characteristics that NT1 displayed throughout the observations was her desire to build a safe and nurturing environment for her students. She spoke about how students respond to her actions and mentioned that sometimes she has to slow down when she is giving directions so students can focus. She stated, "My energy level brings their level down." She shared that she was more enthusiastic than her students about starting a new unit. She understood very well that her attitude influenced her students, but she also realized that there were external factors that influenced their actions. At one of the meetings, she talked about students having "good days and bad days" and how just one student being down could bring the entire group down. She seemed to have a good connection with them and believed that they had the potential to learn and grow. For NT1, self-efficacy informed more than her own efforts as a teacher. She also saw it as a learning outcome for her students. She saw making mistakes as a path to learning and believed that by giving students ongoing feedback, she could help them learn. She made a comment, "I want them to get to a level where critique is not an issue." She was training her students to not feel threatened by feedback. She modeled this behavior to her students and was not afraid to admit when she made a mistake. NT1 had strong self-awareness, a quality that allowed her to reflect on her own actions, as well as the responses that she received from her students. She was able to attribute their behaviors to her own actions, which demonstrated an internal locus of control.

NT1 coaching. In all three observations, it was quite evident that the mentor and NT1 had a close connection, and NT1 felt comfortable talking about her ideas and experiences. The mentor was always complementary and supportive of the things NT1 was trying with her students. The two had established a trusting relationship and their conversations were always reflective and positive. Each time, the two began by talking about NT1's weekend and gradually moved on to talk about her students and instructional practices. The style used by mentors during the meetings was mostly consulting and cognitive. During the first meeting, the mentor advised her about the class that she should select for her evaluation observation so she would have more success. She advised:

> I'm going to be honest with saying that this is your first observation. I don't care what administration says about give me your challenging class. I can help you with that. Really, think about making it your most comfortable, confident class that you're with.

Later in the conversation she also suggested:

> If you don't get to the end of the lesson, then you could get it next time, and you just let the principal know that we didn't make it through. That's how it typically goes.

She also advised her to inform the principal ahead of the observation about the SPED and EL students in her class. Clearly, the mentor understood that her advice related to situations and practices could have a significant influence on NT1's confidence and self-efficacy. She took every opportunity to remind NT1 of ways in which she could be successful with her teaching.

At the following meeting, the mentor used a combination of cognitive and consulting coaching to advise NT1. She asked questions that allowed NT1 to reflect and plan next

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steps for her lessons. She also clarified concepts. An example was their conversation about formative assessments. NT1 commented that she thought formative assessments were always done in writing. However, during their conversation it became apparent to NT1 that she was already doing it every time she adjusted her instruction based on what she observed. An example was when she had adjusted the distance between the bowling pins and students after she realized that students were throwing the ball too hard. NT1 and her mentor discussed goals that she had picked for her ILP. Completing the ILP is one of the requirements of the Induction Program and each teacher identifies specific learning goals that the mentor monitors. Most of the strategies that NT1 was trying out were tied to her learning goals. The mentor shared several resources and ideas at all the meetings. One time, she offered to share a graphic organizer that could be used to teach argumentative style of writing. NT1 is a P.E. teacher and felt that writing was not her area of expertise. Her mentor advised her to collaborate with some of the other teachers to discuss how English Learners could be supported. She also suggested picking a topic that students could relate to. NT1 stayed reflective and open to feedback throughout the meetings. The mentor facilitated the conversations with ease and switched from one style to the other depending on the nature of the conversation. Something that was noted during the meetings was that the mentor used a consulting style when NT1 needed guidance related to pedagogy or in dealing with work related issues that impacted her self-esteem or confidence. In addition to sharing her knowledge of effective practices and resources, the mentor constantly drew attention to keeping a balance between work and personal life. On other occasions, the mentor used strategic questioning to help NT1

understand the essential purpose of every action in which she was engaging to drive her instruction. This made NT1 become more reflective and purposeful in developing her lessons.

NT2 inquiry-based reflective practices. A quality that stood out during all observation was NT2's desire to teach her students to be accountable and self-reflective. She spoke to them about their behaviors and helped them develop strategies that allowed them to hold each other accountable. An example was having students say the word "goldfish" to draw attention to an undesirable behavior instead of yelling at the student to put him or her down. She also set individual behavioral goals for every student at the beginning of each month. Another strategy that NT2 used to create a safe and nurturing environment for her students was spending her lunch time with them twice a week. During that time, students took turns at talking about their interests and getting to know each other. NT2 attributed the change in atmosphere in her classroom to this practice. She stated, "It's not nearly as hostile as it used to be. I am attributing it to the efforts we are taking and the conversation we're having." Clearly, NT2 had reflected on the behaviors she was observing in her classroom and developed strategies to address those behaviors. Providing students with a space where they could learn more about each other was a thoughtful approach to dealing with this issue. It demonstrated her ability to assess a situation and reflect on how she could provide intervention to resolve the problem. To teach students responsibility, NT2 established the chrome cart monitoring process where she would hang the key on the wall and students were assigned responsibility to check-

out Chromebooks. She told her students," It's very much trying to promote that your learning is not dependent on me. There's ways in which we can get started on our own."

One of the most reflective conversations occurred during the second meeting. This meeting began with a reflection of the lesson that NT2 had just finished. She had planned a lesson that was completed in less time than she had anticipated. NT2 found herself at a loss of ideas to carry on with another activity. Her mentor was present in the classroom and stepped in to continue the lesson. During the meeting, NT2 seemed discouraged and shared that her idea of removing the schedule from the whiteboard so students wouldn't fixate on transitioning to the next activity hadn't been successful. She stated, "It isn't working with this utopian idea that I came up with, that I just so fell in love with…...I have the idea in my head, but executing is different." Removing the schedule caused her to get confused about the sequence of activities. As the two continued talking, NT2 began to reflect on what had happened from a more global perspective. What began as a reflection about the cause for the lesson to end abruptly and for her to feel unprepared and unsuccessful led to a discussion about everything she was doing to develop as a teacher. In order to build better relationships with her students, NT2 was spending most of her lunch period and after school hours leading activities and social clubs. This wasn't allowing her to have much time to take care of herself or devote time to the development of her lessons. Through their dialogue, the mentor was able to make NT2 think about the root cause for her to be in that situation. She realized that part of the problem was that she had taken on too much. This appeared to be a recurring theme and her mentor reminded

her again to slow down and back away from some commitments. NT2 stated, "I think I have too many irons in the fire right now."

During all three meetings NT2 demonstrated that she was reflective of her practices and used a variety of strategies to meet the needs of her students. One time she shared that she had just started using small group instruction in math. This was following a professional development session that she had attended. Her thoughts about the professional development seminar were:

> The math talk seminar was awesome. Even if it is okay, and you're not ready, then the person giving the PD who is usually the coach will come into your classroom and model or help you set that up. And all of them are like that. I just don't feel like I'm wasting my time. I feel like I'm sitting there and getting a lot of information on how to do something and resources on actually doing these things in my classroom. The way that it's most effective to carry them out and not winging it.

NT2 was constantly thinking of routines that would allow a smooth transition from one activity to another, such as leaving math books out before lunch, reasoning that even a small step like that would help students refocus and save instructional time.

NT2 self-efficacy. NT2 also showed a high sense of self-efficacy because she believed that the positive changes in her room were an outcome of her effort to model behaviors that she wanted her students to demonstrate. She stated, "There's been a noticeable improvement from the beginning of the year. I am making a very focused effort to model the behavior I expect from my kids." She also recognized the effort her students were putting in to improve their behaviors and gave them praise and credit for that throughout the observations. She made the comment, "I am noticing the environment

shift significantly from where it was. I think it was a testament to their fortitude and their

willingness to check how they are acting and reflect." Another comment she made was:

> We do a lot of reflecting on what works for them and what they need from
> me in order to be successful to do that. So, we do have a lot of those
> conversations. This morning one this little girl forgot her backpack and
> came in crying. I told her, 'I remember the day that happened to me and
> it ruined my life. I felt so bad. I'm not upset, I'm not angry. It happens.' It
> was a reminder for me that I really need to make sure that I'm focusing
> more on the positive things that they're doing.

Throughout the observations, NT2 demonstrated not only a high sense of self-efficacy in

herself, but there was a tremendous effort on her part to instill the same in her students.

She did this by setting clear expectations and making students aware of how she would

hold them accountable. This shifted the onus of creating an environment where everyone

felt safe and respected on all the students instead of just her. She modeled good behavior

which gave her students an example to follow.

NT2 exhibited an understanding that she was in a position to create a safe learning

environment for her students. She set high standards for her students combined with clear

expectations not only for their behavior, but academic areas as well. She discusses

academic and behavioral goals with her students. At one point she stated:

> I give them a lot of choice in this classroom. I give them a lot of control
> over their own learning and when they didn't follow through I was just
> like, 'When I ask you to do something, you need to do it. When there's
> not a choice ... this is one of those things that's not a choice ... you need to
> do it. We need to work on it. We need to improve on it.

In this case, NT2 was describing how she allowed students to read books that they choose

during Choice Reading time, but she selected books for *Accelerated Reader* (AR)*,* a

reading program used by the district to monitor their reading growth. In this instance she

had given students direction to read the AR books that she had selected, but when she walked away, they disregarded her directions. She reminded her students about their responsibility and once again shifted the onus of holding themselves accountable to them.

Not only did NT2 set the expectations high for her students, but she also did the same for herself. She shared:

> Yes. I've been really pushing myself to find things to say about kids who I know struggle in the classroom. Like this morning, Juan came right it. He got right to work. This never happens. I wrote him a note and I said, 'I really loved how you came in. You got right to work. I appreciate that work ethic.' We're going to put that on the board this afternoon. I've been trying this. The last couple of days I've been putting a really strong effort on not correcting, but just finding the positives. And I've noticed the difference. He's just a little bit happier to be in class in general, and he's a little more on-task than he was. It's like one of those things that's so ... it takes a lot of mental energy. I'll train myself to the point where it's a lot more second nature and I think we all ... me and my students will be happier people.

This comment by NT2 alludes to her strength and motivation to improve herself, because through that process her students would also continue to learn and grow. The meetings with her mentor provide NT2 with an opportunity to reflect on the cause of her own success and how it relates to the success of her students. In the comment above, NT2 was able to analyze and verbalize the steps she is taking to make her student feel successful. She noted that changing her own mindset and focusing on the positive behavior of her students resulted in a positive student outcome. In doing so NT2 is building personal agency as well as student agency, which will ultimately lead to higher self-efficacy.

NT2 coaching. The close connection between NT2 and her mentor was evident at all the meetings. They meet once a week during lunch and the mentor visited the classroom every week as well. The two seemed very comfortable sharing ideas and NT2 didn't

hesitate to ask for help in areas where she was struggling. The mentor used consulting, collaborative, and cognitive coaching styles throughout the meetings. Typically, she used the collaborative style when the two planned activities together. The mentor was able to offer her expertise and knowledge in guiding the lesson and at the same time NT2 was able to contribute her ideas as well. The mentor used the consulting style while recommending a variety of resources for the student that had lower reading skills. She also advised NT2 on information that should be added to the file for a student that was moving. She also suggested attaching a note to the cumulative records of the student that was moving. The note would inform the new school personnel that the student has an IEP and draw their attention to resources that the student would need right away. Small details such as this are not something a new teacher would know to include. The two brainstormed how NT2 could remove the unkind behaviors that some of her students were exhibiting in class. She offered to create a rubric and collect data through observations to monitor how many times NT2 complimented students on behaving in a positive manner. The mentor is guiding NT2 through the cycle of inquiry by having her focus on the problem, thinking of ways to solve the problem, gathering data using the rubric to see if the strategy of complimenting students is changing their behaviors, and looks at other options if the strategy doesn't work. The purpose of such conversations seems to be more than just giving advice. It is a training process that allows these practices to be internalized until teachers begin to follow these steps intuitively. The mentor also reminded NT2 that just because a strategy didn't work once didn't mean that

it would always be ineffective. She suggested that NT2 try it again after thinking of how it could be modified to suit a group of students.

At all the meetings, the mentor was very positive and complemented NT2 on the strategies she was using and the progress she was making. At one meeting she told NT2 how much she liked the changes that she had made in rearranging the classroom to make it more conducive to student activities. Another time, the mentor complimented NT2 on trying out a strategy. She clearly articulated what NT2 had done so she could understand the impact it created. She stated:

> You need to really recognize what problem solving you did there. The power you gave was the power of choice. You acknowledged what they wanted and you made it work for them. You made it available to them.

The mentor recognized the effort NT2 is putting in to build student agency in her classroom. She also validated the process of inquiry that NT2 had used to identify a problem in her classroom, reflected on ways to address it, and found a solution that built her students' confidence. As with NT1, the mentor is opening up a space for NT2 to explore the relationship between her own and her students' sense of agency and self-efficacy in the classroom. Exploring the intersection of the two helps NT2 build her own confidence and self-efficacy while also framing her recognizing role of student self-efficacy in positive outcomes.

NT3 inquiry-based reflective practices. The typical challenges that are faced by first-year teachers were very noticeable in NT3. At the first meeting he shared his challenge in not getting back responses to a survey he had sent to other teachers. He told the mentor that he would use the survey responses to determine the language skills of his

students. If a student was EL (new to the county and did not speak English) and needed more support, he would partner him/her up with another student. He also stated that some students would need more time to process information and may need to speak with another student. He would recognize that and give that group a "thumbs up" sign to let them know that their behavior was acceptable in class and they were on-task.

NT3 was beginning to use a variety of strategies in his classroom to support the learning needs of his students. He was using more visuals to support his Els. Other strategies included table group names, teaching students how to clean up instruments to save on instructional time, and creating a system of tracking materials that had been checked-out to students. At one meeting, NT3 and his mentor brainstormed strategies that could be used to address the lack of materials when students forgot to bring their own. NT3 shared that he had found old materials in the warehouse that could be cleaned and repaired for students to use. This was an issue that he had brought up at a prior meeting as well and the mentor had made some suggestions. At this meeting, it was apparent that NT3 was feeling proud that he had been able to find a solution to a problem. The discussion with his mentor had allowed him to identify the problem, reflect on options available, and find a solution that worked for him and his students. The discussion with the mentor had helped NT3 in going through the steps on an inquiry cycle. The more efficacious NT3 feels, the more likely he is to follow these steps. Once again, reflecting back on the process of inquiry allows the new teacher to develop a growth narrative, which he clearly owns and identifies with.

NT3 self-efficacy. One of the things that was apparent during the observations was how much more confident NT3 appeared by the third meeting. He seemed more aware of his influence on students' behaviors and spoke passionately about things he was doing. He also seemed more confident of his successes and shared those with his mentor. The mentor told NT3:

> It's your texts to me that communicate to me like, "My gosh this guy super cares." That day I got four different texts from you at four different points in the day. I'm putting under our successes that you're straight up enjoying your job. You're enjoying learning new stuff. You're enjoying trying new stuff, and the second that it's successful you want to share it, for celebration. The second it's not you want to share it and ask for advice, and there's literally nothing more that a teacher can do to be successful, is to report out when things are going well, to motivate yourself. Like, yes this extra work is totally worth it. That got that whole class able to answer those questions. And when things are not going well, you immediately ask for advice. That's so smart to do.

The mentor verbalized what NT3 was doing to share his successes and challenges. Hearing reinforcement in this manner draws attention to the process which then is more likely to become a habit. Furthermore, the mentor explicitly acknowledges the role that verbalizing a growth narrative has on self-efficacy and well-being.

An example that reflected NT3's increase in self-efficacy was an incident involving a student who had walked out of the classroom in frustration. NT3 had connected with the same student outside the classroom and struck a friendly conversation that motivated the student to return to class. The mentor complimented NT3 on this success by saying, "You went in this 180 with her. Can you just tell me, what is something around making your environment a safe place to learn, in all of this that we've been talking about? Just give me something that you've learned from this moment?" NT3 responded by saying, "I

guess, maybe, if they see a teacher like an authority figure, then maybe they might be afraid to go in, but less inclined to." NT3 was gradually beginning to see how he could influence the motivation of students that he taught and also how he was responsible for providing a safe learning environment for them. By drawing NT3's attention to the process and the outcome, the mentor was trying to highlight the value of following the process of reflection and looking for solutions, to address the issue of a disengaged student. She is also creating a space for NT3 to develop a sense of efficacy from the experience.

NT3 coaching. The mentor switched between consulting coaching and cognitive coaching at all three meetings. She gave advice and also asked probing questions that would allow NT3 to reflect on the reason for doing things. One time she asked him about the results of a survey he had sent to other teachers, "So still thinking about this, what are successes that you have gleaned from having that information. Can you identify anything that you have referred to? Has it helped with anything?" They discussed how the information could be used to partner students or differentiate instruction. Being reflective and thinking about the outcome of each activity allows teachers to become purposeful and efficient.

It was interesting to see NT3 move from asking a variety of questions to sharing more strategies that he was using in his classroom. At all the meetings, the two discussed how NT3 was using the learning from a professional development seminar to support his English Learners (EL.) The mentor also reminded him about the importance of engaging students by saying, "Anything to get kids connected to the subject area, because this

could be their doorway to happiness, their doorway to want come to school, their

doorway to getting a scholarship there." She also recommended that NT3 observe another

teacher to get some more ideas that he could apply in his classroom. They also discussed

the idea of NT3 varying strategies now that he had been in the position for a few months

and was more confident. NT3's mentor advised:

> You've bought yourself time and organization. The name tags, the way
> you're collecting them, the names, all of that, your points, all working.
> Now is when you start to tweak it. You're halfway through the first year
> and you're like, hmm okay, majority of classes are doing fine. These two
> would need some behavior support. Here's your thing. For now, it's a 'do
> now.' We're gonna pick one or two classes.

Something noticeable from the observations was that the mentor was drawing attention to

NT3's growth and encouraging him to continue on the continuum of learning and

growing. The meetings had gradually evolved from opportunities to ask questions and

report what NT3 was doing to ongoing reflection of student outcomes and thinking of

improvisation.

The coaching that NT3's mentor provided allowed him to reflect on things that he

was doing because she always asked him about the purpose. At the same time, she acted

as his cheerleader and complimented him every time he tried something new with

success. She complimented him by saying:

> Let's put in another success was having the students draw their answer. I'm
> sorry, but for somebody in your first official year of teaching, teaching
> music, specifically. For you to be getting this deep into EL supports right
> now in your second cycle of inquiry is pretty commendable.

One can see that NT3 is making a concerted effort to meet the needs of all his students.

His mentor noted that his thinking had become deeper and his lessons were transforming

to become more inclusive. Focusing on student outcomes and having reflective conversations about steps that need to be taken to provide a learning environment for students is the one of the essential goals of mentoring. NT3 is moving in that direction and being more reflective about how he can achieve that goal. Once again, the mentor drew his attention to a problem and she wanted him to reflect on how he was monitoring that his EL students were learning at the same pace as everyone else. This would lead to a conversation about evidence of learning, strategies that would be implemented to provide the support, and checking again if the interventions had worked.

NT4 inquiry-based reflective practices. NT4 appeared to be a very caring teacher and demonstrated a strong understanding of the needs of his students. This is a remarkable skill for a first-year teacher and shows a high sense of self-efficacy. He picked up on things like his student not getting enough sleep at home and providing him with time to take a break and re-energize at school. He knew what his students liked and used that information to reward them (e.g. one student liked cats). In addition, NT4 was also eager to try out new strategies. An example was using a timer to help a student with transitioning to other activities and keeping track of his schedule. He created color coded schedules that allowed his students to follow with ease. He demonstrated a high sense of self-efficacy and understood how his actions directly impacted his students.

At all three meetings, NT4 shared several strategies that he had tried. One time he shared the idea of a "buddy system" for his students that he had picked from another colleague at the site. His goal was to identify social skills goals for his students through this activity. NT4 was also reflective about his own learning goals. A significant goal for

him was to learn how he could identify learning goals for his students since most of them had ILP. NT4 and his mentor used the meetings to reflect on ways in which he could create authentic assessments and determine baseline measurements. At one meeting the mentor was asking NT4 to think carefully about how he would determine the baseline score for his class when a majority of the students were already demonstrating a skill. She pointed out:

> I would say either bump up your goal of how many of the group, the class, or we can make it more specific to certain students. You can think about that. You don't have to change anything right now, it's just something to kind of think about. As far as your goal goes right now, you've already met your goal, which is great.

During this conversation the mentor was drawing NT4's attention to behaviors that students were already exhibiting. He had selected 50% as benchmark, but during their conversation the mentor guided him to focus on what already exists and determine the next target. They also discussed what specific behaviors would be considered next in progression of development and would be considered appropriate for setting goals.

NT4 self-efficacy. NT4 demonstrated a high level of self-efficacy. He was well aware of his strengths and how they enabled him to become a better teacher. He had invested time in getting to know his students well so he could understand their behaviors at school and plan on support strategies. When his mentor was talking to him about assessments and setting goals for his students, he made the comment:

> Wow, I know a lot about my students. I could just picture them in my head, when I was going through all the measurements. I was like, 'Okay, they do this.' I was just surprised how much I know my kids.

He was confident that he had created a safe learning environment for his students. At one

meeting he shared his concern for a student that was moving to another school. He stated:

> It's kind of disappointing because she's made progress and so I don't know
> how she's gonna do at another school because she's made progress and then
> she's gonna be going to a different school, and then so she's probably gonna
> backtrack because it's a new environment.

This demonstrated the confidence NT4 had in his own ability to provide a learning

environment where students were growing and making progress.

NT4 coaching. The mentor used mostly consulting and cognitive coaching to support

NT4. She gave advice regarding Individualized Education Plan (IEPs) and also offered

ideas about managing students' behaviors. She also observed students during classroom

visits and helping NT4 in collecting baseline data that could be used to set goals for IEPs.

The mentor asked questions throughout the meetings that allowed NT4 to reflect on his

teaching practices. She complimented him on the strategies that he was using and offered

other ideas. She told NT4 that it must feel pretty good and validating. He responded by

saying, "I'm already doing most of them, so that was really good. It kind of felt more

natural because I already implement it every day, like with my students." Validation such

as this can help in building confidence and increasing self-efficacy. At one meeting she

asked NT4 how he handled his first IEP meeting. They discussed how difficult it is to

inform a family that their student has special needs. She stated:

> Yeah. That's a challenging thing, and I know as a teacher and part of a team
> trying to help a family with that information can be really hard. But, you do
> need to know that, that's gonna be sometimes emotionally draining and
> challenging for you guys as well. It's gonna obviously be very, very hard for
> the family, but it's hard to tell families that type of stuff too, so know that
> you guys need to take care of your mental health as well.

This kind of advice can help tremendously in providing emotional support which is just as critical as technical support. Families can often react negatively to being informed about their child's disability and can blame the teacher or the system for not doing enough. This reaction can be detrimental to a new teacher's confidence. The mentor's advice about taking care of mental health is helpful in maintaining high self-efficacy and seeing one's role as an advocate for students rather than a bearer of bad news.

NT5 inquiry-based reflective practices. At the first meeting NT5 shared that she had attended EL seminars during summer break and also attended online webinars. She also used online resources like the Teaching Channel and math-aids.com to get different ideas that she could use in her classroom. At the first meeting NT5 shared that she had not started implementing the strategies that she had learned. She attributed her failure to do so due to lack of time. She said she had lots of ideas that students could use for reference, but she could not find the time to put them up. In all three meetings, NT5 shared several strategies or ideas that she thought would benefit her students, but she was unable to implement most of them for reason that were outside her locus of control. She didn't exhibit a strong sense of self-efficacy and appeared to struggle with implementation of many good ideas. NT5 was gradually beginning to see that instead of waiting to schedule collaboration with other teachers, which was challenging, she would begin to implement changes in her own classroom.

NT5 was constantly looking for ways in which she could plan curriculum that met the unique needs of each student. The challenge she faced was that students were missing foundational mathematical skills which made it hard for them to do grade level work. She

shared ideas like moving both sixth-grade students to the same classroom, asking their

peers and teachers for help instead of getting upset, helping all the students that need

support so her students don't feel isolated and embarrassed, and attending planning

meetings with general education teachers so she could be aware of what they were

teaching. She shared that one of the goals was to try new strategies but she was struggling

in that area. She thought a couple were going well, like differentiating small groups even

further during Read 180, so students could do independent activities based on skills. NT5

also asked for help in developing assessments that could give her a more accurate sense

of how her students are performing. Another area that she needed help in was strategies

for reading comprehension. Her mentor asked questions about how she would plan an

activity that she had watched on an online teacher resource website. The two discussed

how the idea could be customized to cater to NT5's classroom.

While there were several challenges that NT5 was facing, there were successes as

well. She had tried new instructional strategies that included posting sentence starters on

the board that would help her students during collaborative conversations with their

peers. One of the things that NT5 wanted to try was observing her students in their

general Ed. Classroom settings to see how frequently they were using sentence starters

and how they were communicating. The mentor offered to watch her students while she

conducted observations in other classrooms. Another success that she shared was that one

of her students that never wanted to read, volunteered to be the narrator for Reader's

Theater. NT5 shared happily:

> Even my student with dyslexia, who generally does not read when she's
> here. She doesn't like to read in front of other people, and she's like that at

home, I learned from her mom. She'll only read with her mom. That's it.
She actually wanted to be the narrator, which had the biggest part. We sat
here together, and we read it together, her part, then the other kids read
their lines, and she was okay with that. That was the most reading I've ever
heard her do.

NT5 was very pleased with her student's progress, but wasn't able to identify what had

caused this change in her student. This exchange occurred during the third observation

and even though NT5 wasn't able to identify a specific factor that contributed to this

success, it was a clear indicator of her personal growth as an educator and the influence

that she was able to have on her students.

NT5 self-efficacy. Like most novice teachers, NT5 seemed unsure of how she can

have access to resources and information at her school, even though she had been able to

identify several online sources. Earlier in the school year, she shared her frustration about

her students not receiving the services that they deserved. NT5 shared her concern about

fifth grade math students being sent out in the hallway to complete "lower level" work.

She also shared her concern about the manner in which teachers in the other classroom

were delivering instruction. She felt that one teacher assigned too much independent

work, while the other divided students in groups but did not define roles for students.

NT5 admitted that she had not spoken with either teacher about her students and how

their needs were met in the general education classroom setting. She attributed the

challenges she was facing to external factors like teachers not being available for

meetings.

NT5 cared deeply for her students and shared several times how challenging it was for her to motivate her students because they had experienced academic struggles for a number of years and were performing below grade level. She shared:

> I have so many kids who have just kind of, especially in math, they just really have shut down. If you just say, 'Math,' they're like, 'Oh no.' I have one girl who just hated math and I've just been, this whole school year I've just been talking to her constantly about to have a more positive attitude and you don't have to be perfect right now, you're just learning this stuff. You have to keep trying. I keep, instead of giving her lots of worksheets, sometimes when they come in we'll just work on one problem and then they can do the one problem and then it makes a difference for her. She's like, 'Oh, that was easy.'

NT5 was gradually beginning to see that instead of waiting to schedule collaboration with other teachers, which had been challenging, she could start making changes to how she was instructing students during the time they were in her classroom. She pointed out the success that students were experiencing as a result of her actions. As a result of their success, she felt more confident and efficacious which was noticeable in her comments and willingness to share the things she was doing in her classroom.

NT5 was eager to add more strategies to her repertoire. She has a growth mindset about her students and planned on taking advantage of all learning opportunities by attending professional development seminars. She felt that by attending more trainings, she could add to her skills and meet the learning needs of her students. She planned on enrolling for Orton-Gillingham training so she could learn more strategies. She made the comment, "I just really want these kids to read. I just really want them to read."

NT5 coaching. The mentor used primarily consulting coaching and occasionally used cognitive coaching for the three meeting. She asked probing questions to draw responses

and make NT5 verbalize her thoughts. NT5 seems to have a quiet demeanor and did not

ask too many questions. However, she did respond to questions that the mentor asked.

The mentor made several suggestions like using the quick quiz as an exit ticket. She also

suggested introducing the use of sentence starters for students to explain their responses.

The mentor thought that modeling "math talks" where students engage in a discussion to

make a point would be a good instructional strategy. She shared another idea for

Language Arts:

> It's called Concept Attainment Theory and you basically do something and
> then you have the kids decide if it follows your rule or doesn't follow your
> rule but you don't tell them what the rule is. For example, say that you're
> looking at punctuation in a sentence. Your goal is that it follows the rule if
> it's correctly punctuated. It doesn't follow the rule if it's not correctly
> punctuated. That's your rule and you have it in your head but the kids don't
> know what the rule is.

The mentor suggested that she try the new strategies for a few days and assess whether

they were working or not. At one point during the meeting, the mentor talked about

developing a growth mindset among students if they are held accountable for tracking

their own progress. What new teachers hear and experience during their mentoring can

often shape how their mindsets develop for a lifetime. The understands that students'

mindset is tied to the mindset of the teacher and is sharing that insight with NT5. The

idea behind mentoring is not just sharing of ideas, but shaping of mindsets.

While brainstorming ways to motivate students, the mentor offered advice on how the

teacher in the general education classroom could use her desk as a reward to address the

lack of desks/space. She offered to coach NT5 on how she could start with small and

intentional goals instead of trying to accomplish too much at the same time. She pointed

out that it was better to try a few strategies and be consistent instead of trying several at the same time and not waiting to see results. She also offered ideas about imprinting and gave ideas of things NT5 could implement it. She complimented NT5 on figuring out barriers and coming up with solutions. She shared that one of the things she loved about NT5 was how reflective she was. She also advised her to find time to collaborate with her colleagues.

One of the observations that was noted for NT5 and her mentor was that the mentor used primarily the consulting style of coaching. Every time she asked questions, NT5 either gave a brief response or stated that she would need time to think. This resulted in the mentor switching to a consulting stance and making a suggestion on how to resolve an issue. NT5 demonstrated low-efficacy and even though she seemed passionate about the learning opportunities for her students, she often found herself struggling to implement new ideas for a variety of reasons. Unlike other participants, NT5 and her mentors did not seem to share a close relationship and the conversations between the two seemed to lack depth.

NT6 inquiry-based reflective practices. One of NT6's strengths seemed to be her desire to improve her instructional practices. During all three observations, she shared a variety of instructional practices she was trying out and discussed the successes or challenges for each. The mentor also recommended new ideas and the two often planned lessons together. NT6 was always open to suggestions made by her mentor and showed willingness to try out new strategies. They discussed strategies that would help NT6 in managing the behaviors of students in her classroom. These included rewarding students

for demonstrating positive behaviors, sending home a daily progress report for a struggling student, and one-on-one reflective conversation with students. She invited her mentor to model a strategy called the Viewing System. During this strategy, the teacher introduces a new skill and then walks around quietly and observes students. The teacher takes notes of how students are using the skill during collaborative activities. The notes are then shared with students. This was another example of NT6 using the inquiry process to guide her instruction. This strategy allowed her to observe students and collect data, reflect on the findings, and refine her practice based on the results of her findings. NT6 understands that she can change learning outcomes for her students by engaging in this ongoing process of inquiry. In addition, providing feedback to students allows them to do the same. She is training her students to look at evidence and use it to refine their behavior or work.

NT6 also shared how she taught words like synthesize, analyze, etc. that are frequently used in standardized assessments. She found that her students were often confused by what they were being asked to do and performed poorly. She decided that teaching the meaning of the words so students were able to add it to their daily vocabulary would benefit them.

NT6 and her mentor discussed trainings that the district was providing and ways in which learning could be applied in her classroom. NT6 had received training for Expeditionary Learning just prior to this meeting. She was eager to try out the new practices and stated, "Actually I do need to try it out, just try it out first without trying to alter it with anything else."

NT6 understood that in order to assess the effectiveness of a new program or strategy, she would need to implement it and collect evidence. That would provide her information that she could then use to reflect and refine her practices. She shared her dilemma that she may not be able to teach some of the other lessons that she had planned, but she was willing to try this new program. While reflecting on the benefits of doing it in this manner she told her mentor:

> I'll be able to and come up with a routine with it. The trainer told us to plan five days at a time, and that will usually take us seven days. So I'll be good for a week and a half before I have to plan again.

A few weeks later, NT6 shared her frustration about a lesson that hadn't gone well earlier that day. She had tried a lesson using Expeditionary Learning and she was eager to get feedback from the coach that is responsible for training staff. This was a lesson that she had wanted to teach without any modification in order to gather data that she could use for reflection and refinement. As NT6 reflected on the lesson she said:

> I was trying to stick with expeditionary learning, but I think with this one, I think we need something a little extra. According to this one, they've already explored primary source. I think we need to have a little activity that has them exploring primary versus secondary sources.

NT6 was very reflective and eager to find alternative ways in which she could provide instruction to meet the learning needs of her students. When discussing the Expeditionary Learning lesson, the mentor asked NT6 what she thought the benefits would be of going through it with fidelity. This resulted in a reflective conversation which allowed NT6 to think about how she was going to apply her new learning. The two also discussed ways in which students that were ready to move to the next level of learning could be engaged while NT6 was working with smaller groups of students to re-teach skills.

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NT6 self-efficacy. NT6 seemed to have a strong sense of self-efficacy. She was well aware of her influence over her students and environment. Most importantly, she constantly used that influence to shape the behaviors of her students. She was clear about her expectation of how students should treat each other. The class sets goals and students were given opportunities to identify specific changes that they would make to improve the environment in the classroom. This allowed students to have a sense of ownership and hold each other accountable. NT6 had a growth mindset and believed that her students would improve through her effort. She pointed out that every time she introduced a new protocol, it was challenging. However, once students had used it a couple of times, their understanding got better. She has created a safe learning environment for students and made the comment:

> I told them they're going to have to try hard with this because it's difficult, so they took it and they did it, and they had some good feedback. It was well thought out. If I had asked them, they probably could have given me a reasonable gist of the speech with just that first listen, and they haven't read it yet. They'll read it next week. I think they'll do a good job with it.

NT6 seemed to care deeply for her students. At every meeting, she shared strategies she was using to deal with the challenging behaviors of some of her students. For one student who was often getting in trouble outside, she had introduced a Daily Report Card for monitoring his behavior and holding him accountable. He earned a weekly reward for exhibiting positive behavior at school. She was clear about her expectation of how students should treat each other. At another meeting NT6 shared that the last couple of weeks had been challenging for her. Some of her students were behaving inappropriately and exhibiting regressive behaviors. NT6 shared that she had changed her lesson for the

day and focused on mindfulness practices instead. NT6 understood that the manner in which her students behaved could often be attributed to factors that are beyond her control. She used her influence at school to balance those factors by engaging students in one-on-one conversations and teaching them ways to cope with stress. She stated:

> We spent all afternoon talking about mindfulness. We didn't do social studies. We wrote about mindfulness and a bunch of mindful practices. Because I tried to teach math today and I couldn't. There's just so many of them that are having a hard time.

NT6 wasn't afraid to ask her students if she was the reason that they were struggling. She was willing to change her behavior and make the student feel successful. When discussing one specific student, she shared:

> He's not disrespectful that way, and he didn't really have anything to tell me. I just asked him, Is it home? Is it me? Is it the classroom? Is it your classmates?' He didn't really have an answer for that. He buried himself inside his shirt, and cried.

This was a great example that demonstrated the connection that NT6 has built with her students. Students feel safe in her presence and are willing to let their guards down. Her willingness to change her own behavior in order to help her students grow indicated a high level of self-efficacy.

NT6 coaching. NT6 and her mentor seem to have a strong connection. The mentor used consulting, collaborative, and cognitive styles of coaching. However, their conversations were often collaborative in nature and they would build ideas together as they conversed. At the first meeting NT6 shared that she was struggling with students using the skill that she was teaching with consistency. NT6 had introduced several sentence frames that students could refer to when they share ideas with a partner. NT6

was not seeing frequent use of these frames and asked her mentor for ideas. The mentor shared a strategy for monitoring use and offered to tally up responses during her next observation of the classroom. She is coaching NT6 to look for evidence of learning in her classroom which would then allow her to reflect and determine ways to refine her practices. She also recommended other strategies like asking clarifying questions during a Give-one, Take-one activity. The mentor also recommended strategies that would help NT6 analyze data for an online assessment that students had taken. They looked at the data together and discussed what the scores meant and ways in which it could be used to provide small-group instruction. They reflected on what may have contributed to students doing well on one question, but showing a lack of understanding on another similar question. The mentor was teaching NT6 to look for patterns and determine what students would need next. The mentor frequently used the cognitive coaching model to ask probing questions that allowed NT6 to be reflective and more purposeful about her practices.

One of the unique features of all the meetings between NT6 and her mentor was the collaborative nature of their conversations. One of the statements that the mentor made while they were reflecting on the practices NT6 had implemented was, "So we're ... Describe examples of professional developed attended during the cycles. What are some of the things that we did? What was our goal again?" The use of the term "we" made their work seem collaborative. NT6 and her mentor talked about lessons and shared ideas in a very collaborative manner. The mentor visited the classroom often to observe and model. When the two planned a lesson together, the mentor often came in to be part of

the lesson. NT6 and her mentor also spent a lot of time discussing the challenging

behaviors of some of her students. The mentor advised:

> You're in this weird gap right now though too. You think about the roller
> coaster of education in your school year where you're kind of making this
> uphill climb, and then you send them onto that November break. And then
> the other break is like three to four weeks only after. So they're in this
> limbo. Just look at it this way, it's not atypical.
> You do need mental days. There are days where you just really need to
> take that time, because when you're focusing on all 30 of them, and then
> within the 30 of them there are the 5 that need more. Sometimes taking that
> step back might be a way for us to think about, like the talk tomorrow about
> what might be some systemic things, overall things that we can put in place
> so that you're feeling like you have to differentiate for all of these kids
> individually.

While the mentor was providing support in the areas of curriculum and instruction, she

was also addressing the emotional demands that all new teachers typically face. The

stress faced by first-year teachers isn't related only to classroom practices. It includes

developing relationships with colleagues, parents, and families in order to establish a

meaningful role in the learning environment. It also encompasses developing the ability

to manage all other duties such as conferences, meetings, grading and reporting, and

several other tasks. The mentor was advising NT6 who was feeling overwhelmed that the

self-care is important. A constant feeling of stress can lead to low self-efficacy and

burnout.

   NT7 inquiry-based reflective practices. NT7 is a very confident first-year teacher.

At all three meetings, he shared strategies that he was using and also described changes

that he was making as he was noticing the response from students. NT7 is data driven and

spoke with his mentor at length about formative assessments, feedback, and being able to

modify instruction. He used *Cahoot, Quizlet*, and other digital resources to enhance

learning in his classroom and get immediate feedback from students about their

understanding of a skill being taught. He spoke confidently about "setting the stage" by

introducing vocabulary and sharing exemplars for an upcoming project. NT7 was very

reflective and was able to shift his instructional style promptly once he realized students

were not being responsive. He shared:

> One of the things we talked about yesterday that I was concerned about was
> the lack of, like how well they were acquiring the knowledge. That's one of
> the things I was seeking to figure out through formal checking the Magic
> Book process. Actually during fourth period, I put together a Google quiz,
> a seven-question quiz in Google Classroom, of course. I had them all do
> that, and that data actually backs up this data perfectly, which was nice
> because this is just my anecdotal, just one-on-one conversation, and me
> assessing, 'Yes, they got it. No, they didn't.' Just one or the other.

At one meeting, NT7 and his mentor engaged in a discussion about improving

communication with parents. The mentor suggested holding informal science expos, four

times a year to allow more parents to engage. Another idea was developing a rubric that

would allow NT7 to give more meaningful feedback to students. NT7 felt that by doing

so he could ask students what are some areas that they could improve on. He stated:

> They might even see that ahead of time, and then give them the clues.
> Because that would take it to the next level of them figuring out what they
> need in order to have a better bridge. If they're able to come up with those
> questions.

Developing a method for students to understand what they needed to do in order to be

successful, indicates that NT7 was beginning to understand how his instructional

practices impacted student success. His willingness to develop a rubric that would allow

him to provide meaningful feedback indicated his evolution as an educator that is

reflective and follows the cycle of inquiry to guide his instruction.

NT7 understands that his students have different levels of understanding and he needs to provide activities that are hands-on and visual in nature to help all students, especially those that have a difficult time understanding abstract concepts. This time they started the meeting by talking about the demonstration activity that NT7 had planned. To make the activity more engaging, NT7 asked students to work in groups and determine the number of revolutions for each ball. He believes that information has to be built up systematically and students need to have some fundamental understanding before moving to higher level skills. When the mentor pointed out that some students were still at the synthesis phase, NT7 responded:

> Yeah, they're still synthesizing….it still needs to absorb a little bit. They need to practice a little bit more. For that practice we're going to ... Pages five and six of the magic book will be focused on orbits.

The meetings between NT7 and his mentor are helping him in becoming more reflective. This was apparent from the comment, "My plan is different than it has been the last couple times based on the data and just the conversations that we've been having and the PD, things like that."

NT7 self-efficacy. NT7 exhibited a high sense of self-efficacy at every meeting. He seemed self-assured in his ability to gauge his students and modify his instruction based on their response. He made the comment:

> The data within the online quiz that I did is like spot-on with what I thought, so that's good. It means I know how to talk. I know how to read my students when I'm talking to them, so that's always a plus.

Prior to designing the quiz, NT7 was assessing students' knowledge through one-on-one conversations that he was having with them. He wanted to design a more authentic

assessment that allowed him to check their understanding. He was relieved to find that

the data was similar. This also indicated his evolution as a teacher where he was now

trying to gather evidence with a more focused approach.

NT7 also demonstrated a growth mindset and was constantly assessing his own

growth as well. While reflecting on his own growth he said:

> So looking at this, this year, this CSTP-5 would be, was a major goal for
> me, just from the beginning of the year. I went from definitely like,
> emerging, exploring, from these first ones especially, providing students
> with feedback and formative assessments and lessons, to applying and
> integrating.

NT7 seems very goal oriented and driven. He believes that his growth in all these areas

that are indicators of practices automatically translates to growth for his students.

NT7 has a high sense of self-efficacy and held the bar high for himself. When his mentor

asked him about his approach to check-in with high achieving students first, he

explained:

> I'm worried about the instructions. I wrote them once, and it's brand new
> instructions because we've never done the magic book. It's kind of like the
> marble mover, I had never done that before, so writing those instructions ...
> my instructions were all over the place. I got to revise those four times, and
> now they're good, they're perfect for middle school math. They've got all
> sorts of examples and all sorts of little things. I just typically write at the
> wrong level ... at a higher level, which is good, because I leave those words
> in and then I don't reduce it, I just provide explanation for the words that are
> problematic or things like that.

His mentor complimented him by saying, "That's something I notice about you. You're

really, really good about using high-level language, and then rephrasing it in language

that they understand." NT7 and his mentor used the meeting time to have these

conversations where he was able to verbalize his thinking and share ideas that he was not sure about. He used his mentor as a thought partner to enhance his practices.

NT7 coaching. The mentor used consulting and Cognitive styles of coaching. Since the mentor was located at the same school site, they communicated almost every day. She observed his classroom frequently and provided feedback. During their meetings, the mentor asked clarifying questions and gave suggestions. At every meeting, she reminded NT7 about meeting the needs of ELs and SPED students and asked him how he was supporting all his students. She also asked about the use of rubrics and suggested introducing them at the beginning of the project so students have a clear understanding of what they are expected to do.

NT7 and his mentor seemed at ease with each other and spoke like colleagues. Since the mentor was frequently in NT7's classroom and they communicated almost daily, they were able to pick up a conversation where they had left off the previous day. At the last meeting they talked about the change NT7 had been able to make based on a conversation they had the previous day. The mentor pointed out that she was in the classroom the first period of the day, and had noticed that students were struggling. They talked and as a result NT7 shifted his instruction. He said:

> Yeah, I shifted. It started throughout the day. I had more explicit
> instructions, actually. I specifically called out some of the things that I
> was looking for, and then we did a review at the end of that first period.

The mentor complimented NT7 by saying, "Changing your instruction based on what you're noticing from your formative assessments is good." Comments like this validate the practices being implemented by a teacher and help in building self-efficacy.

Summary of observations. The three observations provided rich data that gave a true

sense of how mentoring and professional development seminars were developing the

self-efficacy and practices of novice teachers. There was a tremendous shift in the quality

of conversations that took place during the meetings. The most noticeable difference was

the manner in which novice teachers began to talk about their students, their practices,

and their role in the school community. During the first meeting that took place in

September, the mentors seemed to drive the conversation. An example of that was the

contrast in how NT1 and her mentor discussed an upcoming observation by NT1's

principal. At the first meeting the mentor stated:

> I would do more of an outline for her, something that she can easily follow.
> Then make sure that you hit in all of those teaching standards that you are
> going to be hitting. Then we talked, too, a little bit about making sure that
> you have that closure at the end, where the kids are self-assessing their
> learning and able to give some feedback to you about their self-assessment.

In contrast, during the third meeting, NT1 appeared much more confident and

sure of how she was going to present. She made the comment, "I want whole group

instruction, because you get to see more of me interacting with the kids as opposed to go

around and observing them, and then giving them feedback as needed. It's a prolonged

period of independent practice." She added, "I have plans for backup plans." During

initial meetings the mentors used more of the consulting style of coaching and gave

advice related to the lesson and other questions that novice teachers asked. However, by

the third meeting, the novice teachers were not just sharing what they were doing, but

also discussing the purpose behind the practices. They spoke with confidence about how

their own behaviors and practices played a critical role in student outcomes. Another

example was observed during NT3's observations. During the first observation, the mentor gave ideas about ways NT3 could communicate effectively with other staff. During the third observation, NT3 was sharing strategies he was using in his classroom to make things run smoothly.

The novice teachers seemed to have gained an understanding of their influence over their students and the importance of creating a safe learning space for them. This allowed them to build personal agency which they were then able to transfer to their students. The discussions regarding practices were more inquiry-based and had a purpose that was tied to student outcomes. It became apparent that what appeared as simple questioning by the mentors in the first few meetings had gradually trained the minds of novice teachers to become more reflective and intentional about their practices. The novice teachers were becoming trained to become inquiry-based practitioners with the help of their mentors.

Another aspect that was noted during the observations was the coaching style of mentors and how that changed the dynamics of the meetings. NT2 and NT3 had the same mentor, as did NT4 and NT5. All the mentors used more of the consulting style during the first couple of meetings. The coaching style gradually shifted to being more cognitive coaching and asking probing questions that allowed the novice teachers to reflect on their practices. The mentors for NT2 and NT6 used collaborative coaching a few times. Interestingly, NT2's mentor did not use the collaborative style with NT3. She used consulting and cognitive coaching styles with both her mentees. She also seemed to have a close relationship with both of them. NT2 responded faster to the cognitive coaching style than NT3, which indicated that the existing self-efficacy and mindset of a novice

teacher also plays a role in how they develop their instructional practices. On the other hand, even though NT4 and NT5 had the same mentor, the coaching style used by the mentor was very different. NT5 did not seem to be close to her mentor and the coaching style during their conversations was mostly consulting. A factor that should be noted is that NT5 was the only novice teacher that did not get an opportunity to select her mentor since she was not present for the orientation meeting at the beginning of the year.

The observations were extremely helpful and provided valuable data regarding the transformation that occurs through the process of mentoring. Since this data was not self-reported, it allowed deeper insight into the nuances that played a role in developing the self-efficacy and inquiry-based practices of novice teachers.

Interviews

The instrument used for the interview comprised 13 questions. The questions were designed to allow participants to speak directly to the research questions and serve as a means of triangulating evidence from the surveys and observations. For the analysis of the interview responses, the data has been organized by the themes within the research questions. The first section addresses the influence of mentoring on the inquiry-based practices adopted by novice teachers. The second section addresses the influence of professional development on the inquiry-based practices of teachers. The third section addresses the influence of mentoring and professional development on the self-efficacy of novice teachers. The last section will identify other factors that were reported to have a positive influence on the self-efficacy and reflective instructional practices of novice teachers.

Influence of mentoring on inquiry-based practices. All the novice teachers except NT5 reported that mentoring had been very beneficial in developing their self-reflective and instructional practices. For instance, NT1 gave several examples of adjusting her instructional practices to meet the needs of all students based on the reflective conversations she had with her mentor. She described a lesson that ended well even though she had observed her students struggling when she introduced the lesson. She attributed that success to going back the following day and reviewing the vocabulary and objectives again. She also "buddied up" students who were struggling with transitions. The students reviewed the skill in class and then went outside to practice with their partners. NT1 noted that just by making sure that her directions were explicit and direct, she was able to turn a challenge into a successful experience. This example illustrates how NT1 is able to use the conversations with her mentor and apply them in her daily practices. She is reflecting on the response she is receiving from her students to modify her lessons and make them more effective. Gradually, she is internalizing the reflective conversations from her mentoring sessions so they turn into intentional practices. NT1 shared that being able to work on her own ILP during mentoring helped her tremendously because they talked about what was working and what needed to be changed. She spoke passionately about the influence that mentoring had on her and described the experience as follows:

> Through mentoring, I'm able to vent, I'll catch things and then we'll discuss that. Just venting and discussing just helps with keeping the stress levels low, so that I can be more focused and energized and just happy to be here.

NT1 feels that the Induction Program is beneficial in entirety and had a hard time picking the part that was most helpful. She pondered the question and finally responded:

> It's hard to pick most, because the meetings help with the planning, and then the observations give me feedback, and then that feedback I take in, and I put it out there. Sometimes it works for me, and sometimes it doesn't, then I gotta go punch the bell, but it's like a cycle. There's no part of it that can be missing, because then it wouldn't be as successful.

NT1 understands the purpose of feedback is to improve her practices. She is using feedback given by her mentor to refine what she is doing and ensuring that she is providing instruction that engages all her students.

NT2 shared similar sentiments and stated that in addition to one-on-one meetings, the modeling of lessons by her mentor has helped her in seeing how to implement what they discuss. Her mentor had recently modeled a lesson that focused on speaking and listening standards. She added:

> I've always been super, super self-reflective. Having my mentor there has definitely helped me to focus my reflection into something that's a little more helpful. So, she's really great at seeing where I'm coming from. She asks me 'Where do we go from here?' She is super helpful on helping me set those next steps for myself.

Often, new teachers may find themselves with an idea that seems hard to implement. Having a mentor that asks questions to clarify the purpose of the strategy and also model it, allows a new teacher like NT2 to visualize the process and use it later with success. When responding about support from his mentor, NT3 stated that his mentor had helped him in in developing classroom management skills specific to elementary school students. He noted:

> Every single thing that my mentor has done to support me has led to how successful I can be with elementary students that I've never dealt with

before. So I'm taking in everything. I'm sponging up everything that I can.

He added further that he wanted to share his successes as well as challenges with his

mentor. He texted her whenever something went well, but also when something didn't go

well. She was really good at keeping track because she wrote it down in her notes for

their following session. She would bring it up at their meeting and they would discuss it

to figure out the reason for the success or challenge. This ongoing reflective process

helped him figure out a way that things can done better. NT3 stated:

> I guess when I try something a certain way or have an issue with
> classroom management or a lesson that doesn't go well, having someone to
> bounce ideas off of is helpful.

Thus, while emotional support plays a role in NT3's experience of mentorship, it is

coupled with careful reflection on the experience to mine it for insights into effective

practice. Similar to NT3, NT4 also attributed his growth in the area of classroom

management to the reflective conversations with his mentor. He said that she shared

strategies that he could use with students' behaviors and that allowed him to become

more effective. He also appreciated her prompt response when he had a question related

to an IEP or needed advice. When asked about an area of growth, he responded:

> I would say class management. I would say that would be an area that I had
> major growth. In the beginning of the year it was hard for me manage a
> whole group, like all my students' behaviors. I learned strategies like going
> over the rules prior to an activity, just to remind them. And then also to hold
> them accountable for their behavior. Earlier, I wouldn't continue with an
> activity unless everybody was sitting in their seat. Now, I'll just tell them,
> "Oh I'll wait." And then they'll kind of like ... they'll self-correct. They
> figure we're not doing what we're supposed to be doing, so they'll like have
> a quiet mouth or sit in their seat. Then I am able to continue with reading a
> book or with our songs during the morning.

A similar response was noted for NT6 who said:

It's just that the structure requires you to reflect. It requires you to look at teaching standards, and say, 'Okay. Have I reached the standard? Have I not? What am I doing that I wouldn't do on my own?' There are a million things that you're thinking all at once. To be asked specific questions that makes "[sic]" you think is helpful.

The benefit of receiving prompt feedback following a classroom observation that led to reflection and change was reported by NT7. He gave an example of how a quick conversation and feedback from his mentor helped him modify a lesson so more students had access to the curriculum. He gave a specific example that had helped him:

She's in my classroom observing every week and we do talk during that time. I walk her through where I am and what my thought process is in the moment. Even though that's not part of the induction program and it's not on any of the forms, but I find it useful for me to walk it through, because even in the moment I'll tell her, 'this is what I'm thinking and this is what I'm planning on doing.' And she'll say something like, 'Well, why don't you just read this out loud with everybody in the class and see how that changes next period?'

A common theme that ran through the conversations in response to the influence of mentoring on the self-reflective practices was the opportunity to have unconditional support of mentors. While the formal, scheduled meetings were helpful, most of the teachers talked about the ability to reach out to their mentors at any time and get a quick response. The response from NT7 captured the importance of having a thought-partner that can provide feedback or guidance at the moment it is needed by stating:

I've always had a pretty high degree of the ability to change what I'm doing around me. It's also through self-reflection. To increase my self-efficacy and improve practices in terms of teaching, the most useful part is the observation part of it. The observation part of it can be the most terrifying, but I relish it when I get somebody to approve me and then give me feedback, because that feedback tells me to keep doing this or change doing this. It's such a gift to have someone tell you what they think and what you can do. It's my choice how I want to take it, if I want to get offended that's my choice, if I want to take it and roll with it, that's still my choice. It's a

gift, thank you for the gift, but don't tell me what do with it.

The main component of mentoring included twice-a-month meetings. However, most mentors were spending a significant amount of time conducting classroom observations and providing feedback; modeling lessons; and responding to needs-based messages via texts, emails, or phone calls. The teachers that spoke the most positively about their experiences were the ones whose mentors spent more time conducting observations and providing feedback.

In contrast to these positive reports on mentorship from the majority of the participants, one that stood out was the response from NT5. She indicated that mentoring had not influenced her instructional practices in any way, stating:

> I don't think so. I'm not really getting a lot out of it that's having any impact on what I do every day with the kids. I like it when my mentor comes, and we can talk and I can tell her about things I'm doing, and she can make suggestions for different ways to go with that. Or let me know if I'm trying to bite off more than I can chew. That piece I think I appreciate the most. She keeps telling me not to do everything all at once. I do have a tendency to try to take on more than I should.

NT5 reported that her mentor did not conduct any classroom visits and they did not communicate other than the scheduled meeting times. She attributed the changes that she was able to make in her instructional practices to her ability to teach concepts a different way until students found success. She felt that emotional support and reminders to maintain work-life balance were the primary value of mentorship. It is also noteworthy that the way she characterizes her interactions with her mentor reflect the consulting stance observed in the previous section. She also stated that her classroom management

skills had improved since the beginning of the year, but she did not indicate that

mentoring had any influence. She shared:

> As a new teacher, you never know. Every time you get students, you don't
> know how that dynamic is going to play out. I don't know, I think I'm just
> more organized now, and I know my students a little better. That kind of
> helps me figure out how to deal with them.

Unlike all the other participants, NT5 attributed all the positive changes in practices to

her familiarity with the school system and getting to know more about her students. She

was also the only teacher that did not have any contact with her mentor outside the

schedule meeting times.

Influence of professional development on inquiry-based practices. The responses

regarding the influence of professional development on instructional practices were split

with more teachers leaning toward minimal influence. The data was aligned with the

survey results where NT1, NT3, NT6 indicated a lower score on the influence of

professional development on their instructional practices at the end of the study. NT4 and

NT7 marked a score of 3 both times. NT2 and NT5 found the professional development

seminars quite helpful while NT1, NT3, NT4, and NT6 were less enthusiastic about the

effectiveness. NT7 found some sessions very helpful and rated the rest "medium to

okay." NT2 liked the option of having a trainer come to her classroom to model a lesson

because that helped her tremendously. She was able to bring back a lot of information

that she could try in her classroom. She was able to use some parts with success and had

the option of changing the parts that didn't work. She expressed the following thoughts:

> I really think that the professional development seminars have been really
> effective. The seminars that they offer us are very much how to do

something, here are the resources, here's how you go into your classroom tomorrow and start. Which is really great. I just don't feel like I'm wasting my time.

In contrast, NT1 seemed less enthusiastic about professional development seminars and shared that she felt that they were geared more toward general education teachers. When asked about the influence that professional development seminars have had on her instructional practices and self-efficacy, she stated:

With P.E., it's a little different, because although those are great instructional pieces, I feel like they're very geared towards elementary teachers. The emphasis now is classroom management, and my classroom management looks a lot different, but I like going because I do get to learn something new.

Another teacher that expressed very similar thoughts was NT3. He made the comment:

A lot of these thing are geared towards regular teachers. And I am a music teacher... so it doesn't always completely apply Sometimes there are things that do and I'll write them down, take note, and try to implement those strategies. But other ones have been like okay I take this, and I'll take that, and the rest of it doesn't apply.

Every once in a while, everyone has to do the same thing, but they let you for most part, choose the one that applies more to you. That and then the fact it's not homework crazy. One can go to these things, and reflect about them. In a manner that treats us as professional working busy adults. So it's not busy work.

NT4's response to the influence of professional development on instructional practices mirrored that of NT3. He also felt that the professional development seminars were not geared to his needs and he could only apply some parts to his practices. He stated:

A lot of the PDs are more for Kindergarten and higher so it's kind of hard to find any that pertain to preschool. But there is professional development for special education for all. I can kind of tailor it to preschool, but it's hard sometimes because it's totally different than K and up, like preschool curriculum.

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NT6 found that there was a lot of repetition and didn't feel that the seminars had much influence on her practices. NT5 gave a similar response and said that while some professional development seminars were helpful, most didn't address the manner in which she operated her classroom. Her students switched every 45 minutes and she couldn't plan lessons for such a short duration. In response to professional development seminars having an influence on self-reflection and refining practices, NT7 stated:

> Becoming more self-reflective, no. Refining my instructional practices, yes. Especially right now in science, they're mostly focused on ensuring that teachers the knowledge of how to teach the new standards and the way that the new standards are supposed to be taught, which is very different from standard lectures.

While NT1 indicated that most seminars were not geared toward P.E. teachers, like NT7 she also found that she was able to use information from some of the sessions in her classroom. During the interview NT1 described a situation where a few students were being uncooperative in class and not following directions. NT1 was able to apply learning from a PBIS training session to address the behaviors of students. NT1 also spoke enthusiastically about technology training that she had recently received and shared:

> During the technology professional development, I like that I got in touch with EdTech and it brought me an iPad, which really works so that I can show the kids something, and I'm working on something for the future, towards the end of the school year when students tend to be a little more excited and everything.

Influence of mentoring and professional development on self-efficacy. While some teachers were able to state clearly how mentoring and professional development seminars influenced their self-efficacy, most seemed less clear. All of the responses pointed to mentoring having some influence. The only exception was NT5 who reported

that mentoring and professional development had no influence on her at all. None of the teachers reported professional development seminars as playing a significant part in influencing their self-efficacy.

NT1 shared that she felt that she had grown in her organization as a first-year teacher. She talked about her close connection with her students and how confident she felt working with them even though things were sometimes chaotic. She shared:

> I feel like we're cohabiting at school, and I think that's why I feel like I am confident that I am doing a good job. I feel like I understand my role as a teacher and how it affects my students, which is interesting because my mentor and I, we're always talking about how you're feeling, the kids could read you. If I'm having a bad day, they're going to have worse, so I definitely have to go out there, and put my emotions in the box, and say, "All right. Let's go do this P.E. thing."

NT1's comment about cohabiting indicates her confidence in creating and maintaining a safe environment for her students as well as herself. New teachers can often feel like they are being challenged by their students and that can create a constant sense of being on guard. NT1 is demonstrating control over her environment and understands how her beliefs and attitudes can influence her students. By NT1 and her mentor have these conversations, NT1 is able to strengthen the belief that her mindset determines the outcomes for her students. Having the ability to recognize this can have a long-term learning impact on NT1 as well as her students.

NT2 noted a similar increase in self-efficacy and belief that she could influence her environment. She remarked:

> I feel a lot more confident going in and saying, okay, this is what we're going to do. I know this is going to be effective.

One of the teachers that had the most significant shift in understanding his power in shaping his environment was NT3. He felt that his mentor had helped him see that by shifting his mindset and building relationships with students, he would have more success in his classroom. He shared an incident where his mentor coached him to reach out to a student and see how his own attitude could change how his students felt about learning. His response about the influence of mentoring was:

> The other thing that hit home too is that there are some students who weren't ... I don't know, didn't seem like they were having a good time and they couldn't care as much. My mentor demonstrated making those personal connections and telling them that you care, and that it's a safe spot, safe place, and that I'm human too. And this is me. I'm not this one-dimensional teacher up here. Her demonstration of that, and then me being able to have the strategies to have time to do that. All that made a huge difference.

NT4 shared similar sentiments and described how his mentor validated his challenges by telling him it's not uncommon and that made him feel better as a teacher. He stated:

> When I meet my mentor I'm asked what we thought was successful and any concerns or things we want to talk about. When I talk about things that I'm concerned about….like with students behavior or a lesson that didn't go as I planned, I'm reassured when my mentor says, "Oh, it's pretty normal. You just have to be flexible and don't take it too personal." Sometimes I feel like I'm the worst teacher, and just talking to somebody that's been through it and says this is normal to feel this way. Just that reminded, self-reflection. Basically, I am being told you're growing every year and learning. So, it's just building your skills.

The responses from NT3 and NT4 highlight how having a mentor that is seen as a non-judgmental and non-evaluative entity can bring a sense of confidence among new teachers. The typical challenges of first-year teaching can have negative effects on the self-efficacy of new teachers. NT3 and NT4 pointed out how their mentors helped them

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in overcoming self-doubt and realizing their roles as lifetime learners where they would keep building new skills.

One of the teachers that showed a sense of high-efficacy throughout the research was NT7. His response to the influence of mentoring and professional development on his self-efficacy was:

> I've always had a pretty high degree of the ability to change what I'm doing around me. It's also through self-reflection. To increase my self-efficacy and improve practices in terms of teaching, the most useful part is the observation part of it. The observation part of it can be the most terrifying, but I relish it when I get somebody to approve me and then give me feedback, because that feedback tells me to keep doing this or change doing this.

> It's such a gift to have someone tell you what they think and what you can do. It's my choice how I want to take it, if I want to get offended that's my choice, if I want to take it and roll with it, that's still my choice. It's a gift, thank you for the gift, but don't tell me what do with it.

Influence of other factors on inquiry-based practices and self-efficacy. One of the purposes for this research was to identify if there were factors other than mentoring and professional development that influenced the self-efficacy and reflective instructional practices of novice teachers. NT1 and NT 4 identified collaboration with colleagues as the most significant factor that influenced their self-efficacy and inquiry-based instructional practices. NT2, NT3, NT6, and NT7 found collaboration to be the second most significant factor that influenced those areas. NT5 found professional development followed by collaboration to have most influence.

NT1 shared that having other staff members close by that she knows she can depend on influences how she has developed as a teacher. She ranked collaboration as the most important factor that was helpful as a first-year teacher, followed by mentoring, and

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professional development seminars. She also appreciated having a principal that believed

in her and didn't micromanage because that helped in creating the atmosphere for

learning to happen. This is how she felt about her colleagues:

> I really like that I have become a little more independent, because I know
> that if something were to go wrong, I have help and I know where to ask
> for help. I love that we are very honest and that nobody takes anything
> personally, and that we come up with the best decision. Just like in a
> democracy we end up putting a vote on it, and majority rules. Always. I
> think that's really nice because once it fails, then we'll try something else. I
> like we are definitely willing to try to anything.

Just like NT1, NT4 also saw collaboration as the most significant factor in influencing his

self-efficacy and practices. He described his experience with his colleagues as follows:

> Our preschool team's very strong. We collaborate all the time. We have
> regular meetings or we just pop in each other's classroom when we're free
> to ask a quick question, or through email. Actually my team has helped me
> a lot, especially this being my first year of teaching. So, they've been a
> go-to. If I have a question, I'll have it answered pretty quickly, because I
> have one of my co-workers next to me. She's been teaching over 12 years
> now so ... and just swapping ideas is helpful.

While the collaboration component wasn't as strong for NT2 as it was for NT1, she

also spoke about the benefits of collaborating with grade level colleagues. She listed

mentoring, followed by professional development, and collaboration as the factors that

had the most impact on her self-efficacy and instructional practices. NT2 felt that the

networking through professional development seminars was very valuable because one

got an opportunity to collaborate with district coaches as well as other teachers that had

specific strengths. When talking about collaboration at her own school-site, NT2 noted:

> We collaborate pretty regularly...probably not as much as I should be doing.
> I've been trying to be better about going to them for help and ideas. They
> have such great projects and long-term project ideas and resources and they
> share that with me a lot. I really think the fact that the staff in general is

> very open and they're very willing to help. If there's a question, I can go to any team member at the school and get help.

Similar to NT2, NT6 also found collaboration with her grade level team to be the second-most influential, with mentoring having the most influence. She said that even though it didn't happen frequently, it was very helpful.

> I communicate with the fourth grade teacher. She's a four-five teacher. We don't have a full fourth this year. I communicate with her…. Often we'll swap ideas of what we're doing, I've talked to her also, about the unit I'm doing, because she's going to be getting my fourth graders as fifth graders theoretically next year. Just touching base so that there is no overlap. We meet pretty often. It's never anything really formal. It's not like what I hear at the bigger schools, where your grade level team could be like four teachers who are all teaching the same grade, or three teachers. We don't even really have two.

As a music teacher that serves several schools in the district, NT3 does not have a traditional grade level team that he collaborates with. He collaborates with the Visual Performing Arts (VPA) team from the district once a month and finds it very helpful.

> We meet informally probably every couple of days at least. But we have a formal meeting once a month. It has a lot of influence on my instructional practices and self-efficacy. Again just because they have ideas and I can say, 'Oh I'm going to draw from that, pull from that.' I also like the feedback that I get from other teachers and parents. That helps me a lot.

During the interview NT3 shared that while he found collaboration useful, he found mentoring and professional development to have a greater influence on his self-efficacy and instructional practices. This was due to the subject matter that he taught. The district has only a handful of music teachers.

NT7 described his grade level collaboration by stating:

> The three of us talk all of the time, we have an incredible rapport within our department and within our grade levels. The other eighth grade teacher and I, the full time eighth grade teacher, we basically write every lesson

from scratch because we don't have curricula, so we write, we plan everything from scratch….We have a joke that wherever we meet, it's a science meeting because we'll all stop, and we'll talk about what's going on, what's happening next, what our plan is. We even share our calendars.

NT7 shared that in addition to mentoring, collaboration was the factor that influenced his self-efficacy and instructional practices the most.

Unlike all of the other teachers, NT5 was the only one that found professional development outside the district to be the most influential factor. She found that having the ability to choose professional development seminars that are relevant to what she needed helped her. She shared that she had just registered for an Orton-Gillingham certification program for students with dyslexia. She found collaboration to have more influence than mentoring on her self-efficacy and instructional practices.

Summary

NT1. Based on the responses of the survey and the interview, one can infer that NT1 is a novice teacher who started with a fairly high sense of self-efficacy and continued to grow in that area. She selected option 5 for several questions related to her influence over students, her environment, and her ability to develop meaningful learning experiences for her students. She has created a safe and respectful environment for her students. At the same time, she sets clear expectations for her students and holds them accountable for their behaviors. She has a growth mindset and understands that her students need opportunities to grow not only in technical skills, but behavioral areas as well.

The interview and surveys are self-reported, and NT1 made several comments

indicating that mentoring had influenced her in a positive way. She indicated that she had

grown as a professional by saying:

> I want to say there was an increase in just my organization as a teacher, a
> freshman teacher. I feel like I understand my role as a teacher and how it
> affects my students…... If I'm having a bad day, they're going to have
> worse, so I definitely have to go out there, and put my emotions in the box.

NT1 has strong self-awareness, a quality that allows her to reflect on her own actions, as

well as the responses she receives from her students. She is able to attribute their

behaviors to her own actions, which demonstrates an internal locus of control. During all

the observations, NT1 was reflective about her approach in developing lessons as well as

the manner in which students responded to it. She made adjustments based on how her

students were responding and included several ways for her to assess their learning.

While discussing the influence of professional development seminars during the

interview, NT1 did not indicate that the seminars she had attended as part of the

Induction Program had influenced her ability to improve her instructional practices. She

stated:

> With P.E., it's a little different, because although those are great instructional
> portion, I feel like they're very geared towards elementary teachers. The
> emphasis now is classroom management, and my classroom management
> looks a lot different, but I like going because I do get to learn something
> new.

When asked to list factors that had the most influence on her self-efficacy and

instructional practices, NT1 stated:

> Collaboration with grade level department. That would be number one.
> Because we all need to have a steady mindset. Then, we would go
> informal mentoring conversations, formal mentoring conversations,

professional development provided through the induction program, and that's only because I haven't received anything outside of it.

Based on NT1's responses one can say that she has found mentoring to have a significant influence on her self-efficacy and reflective instructional practices. Most of the help she needed came in the form of reflective conversations with her mentor and the feedback from classroom visits. Professional development did not have any influence on her self-efficacy and had very little influence on practices. Other than mentoring, collaboration with colleagues was the factor that had the most significant influence on self-esteem and practices.

NT2. Even though, NT2 is a first-year teacher she started the year with a high self-efficacy. She selected option 5 (A great deal) for questions 2, 5, 6, 7, 8, 13, and 15 which were related to her ability to influence her students, and her ability to design effective curriculum for her students even at the beginning of the school-year and maintained that score a few months later. She has continued to put tremendous effort into creating a safe learning environment for her students. During the first observation NT2 made the comment:

> I am making a very focused effort to model the behavior I expect from my kids….. I am noticing the environment shift significantly from where it was. I think it was a testament to their fortitude and their willingness to check how they are acting and reflect.

During all three observations, I noted that she intentionally carved out time to set individual goals for students and create opportunities to build accountability. She reminded her students frequently that they had to take responsibility for their learning and there were ways that she could support them in doing that. Not only is NT2 aware of the

influence she has on her students, but she is also aware that by building her own repertoire of strategies and resources, she can create a better learning environment for her students. She is fully utilizing every component of the induction program and shared this by saying:

> Really the modeling that both my mentor and other coaches in the induction program are able to do, has really helped me be able to see how to implement what I'm talking about. So, it's really great, because when I sit down with them and I'm talking about what I want to see in my classroom or problems that I'm encountering, it isn't oh, well you can try this big thing. It's sit down and go figure out…. like an AR program with me or math program, or my mentor came in and modeled a lesson that focused on speaking and listening standards.

After evaluating the results of the observations, survey, and interview it became apparent that for NT2 the greatest value related to the induction program came from the ideas that were shared at the professional development seminars and during the one-on-one meetings with the mentor. The meetings allowed her to reflect on her practices and she pointed that out during the interview by stating:

> I've always been super, super self-reflective. Having my mentor there has definitely helped me be able to focus my reflection into something that's a little more helpful. So she's really great at being like, I see where you're coming from. Where do we go from here. So the next step she is super helpful on helping me set those next steps for myself.

Some other factors that NT2 found helpful this year included other coaches and teachers that she met during the professional seminars. She stated:

> I really do think that the most helpful is having the actionable seminars that we're taking. And probably even more important than that is the contacts in that networking. Because you're not only with the district coaches but with other teachers who have specific strength and I really do think the networking part of it is super important in that the program is a lot of things that I can take back and not so much busy-work.

It appears that NT2 has found greater value in her connections through the induction program than her team at the school. She acknowledged that she had received help from her colleagues and share:

> We collaborate pretty regularly, probably not as much as I should be doing. I've been trying to be better about going to them for help and ideas. They have such great projects and long-term project ideas and resources and they share that with me a lot.

Based on NT2's responses one can conclude that she has found mentoring to have a significant influence on her self-efficacy and reflective instructional practices. She also found the professional development seminars to have a significant influence on her self-efficacy and instructional practices. Other than mentoring, collaboration with colleagues was the factor that had some influence on self-esteem and practices.

NT3. At the beginning of the study, NT3 selected option 3 (Some influence) for questions 5, 6, 7, 8, 10, 14, 15, 18, 19, 20. All these questions measured the influence of mentoring and professional development on self-efficacy and instructional practices. He also selected option 1 (Nothing) for questions 3, 4 and 12 related to his influence over families. He selected a higher level in most areas when he completed the survey at the end of the study.

NT3 is a first-year teacher and his assignment requires him to serve students at several elementary school sites where students are sent to his classroom for one period. At the beginning of the year, one of the biggest challenges that NT3 faced was communication with the rest of the staff. Unfortunately, he had not received responses from other staff members which was frustrating for him because he wanted a better understanding of the needs of his students. When describing the benefits of mentoring,

NT3 said, "I guess when I try something this way or classroom management or a lesson

or whatever and it doesn't go well, having someone to bounce ideas off of and that's

helpful."

One of the changes that was noticeable over a period of time was NT3's heightened

sense of self-efficacy. During the second meeting, something that was apparent was how

much more confident NT3 appeared. He seemed more aware of his influence on students'

behaviors and spoke passionately about things he was doing. He also seemed more

confident of his successes and shared those with his mentor. She made the comment:

> It's your texts to me that communicate to me, My gosh this guy super cares!
> That day I got four different texts from you at four different points in the
> day and I'm putting that under our successes. You're straight up enjoying
> your job. You're enjoying learning new stuff.

During the interview, when NT3 spoke about the influence of mentoring on self-efficacy

his response was:

> The thing that hit home is that there were some students who weren't ... I
> don't know, didn't seem like they weren't having a good time. Or they
> couldn't care as much. My mentor demonstrated that making those
> personal connections and telling them that you care, that it's a safe spot and
> a safe place, and that I'm human too. And this is me. I'm not this one
> dimensional teacher up here. Her demonstration of that, and then me being
> able to have the strategies to have time to do that. All that made a huge
> difference.

NT3 found that other factors influenced his teaching as well and shared, "Feedback

from other teachers, feedback from parents. When asked about the influence of

professional development on his self-efficacy and instructional practices, NT3 stated:

> A lot of these things are geared towards regular teachers, and I teach music
> ... so it doesn't always completely apply. Sometimes there are things that
> do, I'll write them down and take note and try to implement those strategies.

Based on NT3's responses during in the survey, interview, and meeting observations, one can conclude that he has found mentoring to have a significant influence on his self-efficacy and reflective instructional practices. He showed an increase in the survey responses but the most significant change could be noted in his response during the interview and the quality of conversations during their meetings. There wasn't a significant influence on self-efficacy and instructional practices as a result of professional development seminars. He found feedback from colleagues as well as parents and collaboration with colleagues to be factors that also had some influence on his instructional practices and self-efficacy.

NT4. NT4 began the year with a fairly high sense of self-efficacy. He selected option 4 and 5 (Quite a Bit and A great deal) for questions 1, 2, 4, 6, 7, 8, 9, and 12 which were related to his ability to influence students and create a safe learning environment for his students. These questions were measuring self-efficacy. He selected option 3 (Some influence) for questions 3, 5, 10, 13, 14, 15, 17, 18, 19, and 20 which measured the influence of mentoring and PD on his ability to manage students' behaviors and design instruction.

NT4 appears to be a very caring teacher and demonstrates a strong understanding of the needs of his students. This is a remarkable skill for a first-year teacher and shows a high sense of self-efficacy. He picks on things like his student not getting enough sleep at home and providing him with time to take a break and re-energize at school. He knows what his students like and uses that information to reward them (student likes cats). In addition, NT4 is also eager to try out new strategies. At all three meetings he shared

strategies he was using and changes he was making based on the how his students were responding to his instructions.

NT4 demonstrates a high level of self-efficacy. He is well aware of his strengths and how they enable him to become a better teacher. He has invested time in getting to know his students well so he can understand their behaviors at school and plan on support strategies. When his mentor was talking to him about assessments and setting goals for his students, he made the comment, "Wow, I know a lot about my students." I could just picture them in my head, when I was going through all the measurements." He is confident that he has created a safe learning environment for his students. At one meeting he shared his concern for a student who was moving to another school. He stated, "It's kind of disappointing because she's made progress and so I don't know how she's gonna do at another school." He added, "... because she's made progress and then she's gonna be going to a different school, and then so she's probably gonna backtrack because it's a new environment." This demonstrated in the confidence in his own ability to provide a learning environment where students were growing and making progress.

Based on the responses NT4 gave in the survey and interview, as well as meeting observations it appears that NT4 is benefiting from the mentoring and it has influenced his self-efficacy and reflective instructional practices. In addition to mentoring, he found collaboration with his team to be helpful in enhancing his instructional practices and self-efficacy. He did not feel that professional development had any influence in those areas.

NT5. NT5 is a first-year teacher and provides services to students in a pull-out program. Like many novice teachers, she often appeared unsure of how she could have

access to resources and information. During all three observation meetings NT5 and her

mentor discussed her challenges and what she could do to meet the unique needs of her

students. One of the greatest challenges seems to be lack of collaboration with General

Education staff. On several occasions she stated that she had not been able to follow-up

on an idea or make a connection with other staff members due to lack of time. She also

attributed the challenges she was facing to factors like teachers not being available for

meetings. During the meetings, the mentor mostly gave advice or asked clarifying

questions.

NT5 enjoys learning but indicated that the PD offered through the Induction Program

had not been very beneficial. When asked about the influence of PD on her self-efficacy

and instructional practices, she noted, "the professional development workshops that they

do are useful, but they're less useful to me because of how I have to operate during the

day with my students. I can't do like 45-minute lesson with my kids." She spends a lot of

time looking for resources and strategies on her own. She used online resources like the

Teaching Channel and math-aids.com to get different ideas that she could use in her

classroom.

When asked to list factors that have influenced her instructional practices and self-

efficacy the most, NT5 stated, "Professional development outside of the district,

collaboration with other Special Education teachers, professional development provided

through the induction program, some of them are useful, and then the formal mentoring."

She indicated the same in her survey response where she selected option 1 or 2 (low) for

13, 14, 15, 16 which asked about the influence of mentoring on her self-efficacy and

instructional practices. NT5 did not find any overall benefit of the Induction Program and stated, "Not really. I really don't feel ... It feels like it's just been a bunch of extra work, and I'm not really getting much out of it."

NT6. NT6 seems to have a strong sense of self-efficacy and understands that she has a significant influence over her students. She is clear about her expectation of how students should treat each other. The class sets goals and students are given an opportunity to identify specific changes that they will make to improve the environment in the classroom. This allows students to have a sense of ownership and hold each other accountable. At one of the meetings while discussing students' behaviors NT6 shared that she had changed her lesson for the day and focused on mindfulness practices instead. She understands that the manner in which her students behave can often be attributed to factors that are beyond her control. She uses her influence at school to balance those factors by engaging students in one-on-one conversations and teaching them ways to cope with stress. She stated, "We spent all afternoon talking about mindfulness. We didn't do social studies. We wrote about mindfulness and a bunch of mindful practices. Because I tried to teach math today and I couldn't. There's just so many of them that are having a hard time."

One of the unique features of the meetings between NT6 and her mentor was the collaborative nature of their conversations. NT6 and her mentor talked about lessons and shared ideas in a very collaborative manner and often used the term "we" when discussing lessons. The meetings between the two were used to have reflective conversations where the mentor asked probing questions that allowed NT6 to reflect on

the purpose of her practices and refine that to be more effective. The mentor offered

advice related to strategies and resources. She recommended several other strategies like

asking clarifying questions during a Give-one, Take-one activity. Another time they

reviewed data together to monitor the growth of students. The mentor offered advice on

how NT6 could use the information to differentiate learning for her students. She also

recommended using Go Formative as a tool for formative assessment.

In addition to offering advice about strategies and resources, the mentor also provided

emotional support for NT6. When NT6 expressed frustration over things being

challenging due to students' behaviors, the mentor advised:

> You do need mental days. There are days where you just really need to
> take that time, because when you're focusing on all 30 of them, and then
> within the 30 of them there are the 5 that need more…..And sometimes
> taking that step back might be a way for us to think about ... Like the talk
> tomorrow about what might be some systemic things, overall things that
> we can put in place so that you're feeling like you have to differentiate for
> all of these kids individually.

NT6 selected option 4 and 5 (Quite a Bit and A great Deal) for all the questions

related to self-efficacy and reflective instructional practices when she took the survey the

first time. The only questions where she selected options 2 and 3 were for questions that

asked about her ability to support families so their students could do well at school and

her influence over making students come to school. NT6's responses decreased for most

of the questions when she took the survey the second time. On being asked why she felt

her influence had decreased in most areas, she responded by saying, "The only thing

could be just me trying to let things go. It might be why. This feeling like, at the

beginning of the year. That would definitely be caused by mood. Maybe I had to go to a meeting, I felt like, "No, I don't wanna do it."

Based on the responses NT6 gave in the survey and interview, as well as meeting observations it appears that NT6 is benefiting significantly from mentoring and it has influenced her self-efficacy and reflective instructional practices. Professional development seminars have not had any influence in those areas.

NT7. NT7 began the school-year with a strong sense of self-efficacy. When he took the survey, he selected options 4 or 5 for questions 2, 3, 5, 6, 7, 8, 9, 10, 11, 13, and 15. These questions asked his influence on creating an effective learning environment and his instructional practices. He selected option 3 for questions 4 and 14 which measured his influence on families. He selected 2 and 3 for questions that measured the influence of mentoring and professional development seminars on his self-efficacy and instructional practices. His response did not change significantly for professional development questions when he took the survey the second time.

NT7 demonstrated the same high-efficacy at all the meetings. He has a strong connection with his students and has high expectations for all of them. He is also a very thoughtful and reflective teacher. At all three meetings, he talked about changing practices because he hadn't found them effective or following-up on something that he had discovered during the process of teaching. One of his goals for this year was developing strong formative assessments. NT7 was very reflective and was able to shift his instructional style promptly once he realized students were not being responsive. He shared, "One of the things we talked about yesterday that I was concerned about was the

lack of, like how well they were acquiring the knowledge. That's one of the things I was seeking to figure out through formal checking the Magic Book process. Actually during fourth period, I put together a Google quiz, a seven-question quiz in Google Classroom, of course. I had them all do that, and that data actually backs up this data perfectly, which was nice because this is just my anecdotal, just one-on-one conversation, and me assessing, 'Yes, they got it. No, they didn't.' Just one or the other." NT7 seemed to be well versed in technology and used a variety of tools and strategies to enhance learning in his classroom. He used *Cahoot, Quizlet*, and other digital resources to get immediate feedback from students about their understanding of a skill being taught.

Something unusual about NT7 and his mentor is that they communicated on a daily basis. The mentor is located at the same school site which allows them to communicate more frequently. At all three meetings, the mentor asked questions that allowed NT7 to think through all the steps of a plan or made him reflect about something that he had observed in his classroom. It seems that the mentor was able to observe a lot of the lessons that NT7 presented and she was able to provide him with ongoing feedback.

Based on the data collected through the surveys, interview, and meetings it appears mentoring is having a very positive influence on NT7's self-efficacy and ability to reflect on his instructional practices. Professional development seminars have not had any influence in those areas. He also saw collaboration having a significant influence on his self-efficacy and instructional practices. The discussions with his colleagues allowed him to plan well thought out lessons and also reflect on whether they were successful in engaging students.

Synthesis

The findings that were derived after merging the data from the surveys, three

observations, and the interview are presented below. They are sorted by themes that

emerged from the research questions RQ1. a and RQ1. b. While the responses for survey

and interview are self-reported, the response for the observation was gauged on the

quality of conversations during the three meetings. Both the surveys and interview were

divided in a manner where the questions captured responses individually for the influence

of mentoring as well as professional development seminars on self-efficacy and

instructional practices. Table 6 captures the influence of mentoring and professional

development seminars on the self-reflective and inquiry-based practices of novice

teachers.

Table 6

Influence on Inquiry-based Practices

Teacher	Survey	Observation	Interview
NT1 Mentoring	High	High	High
NT1 PD	Low	Low	Low
NT2 Mentoring	High	High	High
NT2 PD	High	High	High
NT3 Mentoring	High	High	High
NT3 PD	High	Low	Low
NT4 Mentoring	High	High	High
NT4 PD	Low	Low	Low
NT5 Mentoring	Low	Low	Low
NT5 PD	High	High	High

NT6 Mentoring	High	High	High
NT6 PD	Low	High	Low
NT7 Mentoring	High	High	High
NT7 PD	Low	Low	Low

Based on the results in the table above, it appears mentoring had a high influence on the self-reflective and instructional practices of novice teachers while professional development had low influence. The two teachers that show professional development having a high influence are NT2 and NT5. NT2 is a highly efficacious and motivated first-year teacher. For her the professional development seminars went beyond learning new skills. She also saw it as an opportunity to collaborate with other teachers. Her comment below shows how much value she found in the professional development seminars:

> Probably even more important than that is the contacts in than Networking, because you're not only with the district coaches but with other teachers who have specific strength and I really do think the networking part of it is super important because I can take back things and it's not busy work.

On the other hand, NT5 didn't find the professional development seminars offered through the Induction program valuable, but felt that professional development offered by other agencies had made a significant impact on her instructional practices. She found no influence of mentoring on her ability to becoming more reflective or her self-efficacy.

Similar to the Table 6, Table 7 captures the influence of mentoring and professional development seminars on the self-efficacy of novice teachers.

Table 7

Influence on Self-Efficacy

Teacher	Survey	Observation	Interview
NT1 Mentoring	High	High	High
NT1 PD	Low	Low	Low
NT2 Mentoring	High	High	High
NT2 PD	High	Low	Low
NT3 Mentoring	High	High	High
NT3 PD	Low	Low	Low
NT4 Mentoring	High	High	High
NT4 PD	Low	Low	Low
NT5 Mentoring	High	Low	Low
NT5 PD	High	High	High
NT6 Mentoring	High	High	High
NT6 PD	Low	High	Low
NT7 Mentoring	High	High	High
NT7 PD	Low	Low	Low

Based on the results above, one can conclude that mentoring had a significant influence on the self-efficacy of novice teachers while professional development had no influence. The comments from teachers indicated that mentoring had allowed them to become more aware of their influence over students and helped in creating a classroom environment that was conducive to learning. They also gained confidence through conversations with their mentors.

The research also identified others factors that influenced the inquiry-based practices and self-efficacy of novice teachers. Based on the responses received from all

participants, collaboration with grade level or department colleagues was identified as the most significant factor that influenced the self-efficacy and instructional practices of novice teachers.

An analysis of the data collected from the surveys, interview, and three observations seems to suggest that mentoring has a significant influence on the self-efficacy and reflective instructional practices on novice teachers. In contrast, professional development seminars do not have any significance in the same two areas. Another factor that appears to have a strong influence on the self-efficacy and instructional practices of novice teachers is collaboration with colleagues. These findings and their implications will be discussed in details in the following chapter.

Chapter Five: Discussions and Recommendations

This chapter provides an overall summary of the purpose of this research, highlights the existing literature, and the methodology used to conduct the research. It also provides an interpretation of the key findings and how those data shed more light on the literature related to self-efficacy and instructional practices among induction-phase novice teachers. Finally, the chapter examines the limitations of this study and makes a recommendation for future research.

Overview

Every year, hundreds of new teachers enter the workforce to begin a career that they believe will transform the lives of students that they teach. Educators and policy makers realize that what students learn is a direct outcome of what and how their teachers teach, which in turn depends on the knowledge, skills, and commitment that they bring to the profession (Feiman-Nemser, 2001.) The skills and knowledge that teachers bring to their classrooms largely depends on the number of years they have spent teaching. Often first and second-year teachers, also referred to as novice teachers come to the profession armed with subject-matter knowledge and a basic understanding of teaching practices. To stay motivated and grow as professionals, it is critical for these novice teachers to follow a learning path that allows opportunities to practice their skills, reflect on their teaching, and refine their pedagogy to better serve students in light of their particular assets and needs, their context and the local curriculum. Korthagen and Vasalos (2005) caution that reflection is generally a natural instinct and can be seen as looking for a solution to a problem. Systematic reflection is different because it teaches novice teachers to get to the

root of the issue rather than look for a quick fix. This allows them to develop a *growth competency,* which is the ability to grow professionally based on internally directed learning. This kind of deep reflection comes through training and ongoing practice, which should ideally be available in working with a more experienced colleague.

VeenMan (1984) points out that novice teachers often enter the profession with a set of beliefs that are formed through their own experiences as students in addition to the knowledge they gain when they are enrolled in teaching programs. Being solely responsible for creating a learning environment that allows all students to learn can be a daunting task and often causes teacher burnout and attrition. A study by Stanulis and Floden (2009) indicated that 14% of teachers leave the profession after the first year and as many as 50% leave within 5 years.

To guide novice teachers in navigating through this transition, many school districts now offer support in the form of induction programs. These programs offer a wide range of support that includes mentoring, professional development, and modified schedules. Ingersoll & Smith (2004) state that induction programs that provide opportunities for teachers to be involved in decision-making and provide support to develop strong classroom management skills are the most beneficial in keeping new teachers in the profession. These programs also provide opportunities for novice teachers to learn from more experienced colleagues that act as mentors. The mentors guide new teachers through the challenges that come with first year teaching and provide support in the areas of classroom management, lesson planning, effective instructional strategies, and managing daily routines. Mentors also provide emotional support and encouragement,

and a safe place to reflect on practices. The type of reflection that mentoring provides goes way beyond looking for quick solutions to get desired outcomes. Instead, it is a systematic process that focuses on the cause and finds ways to address the issue at that level. In addition to mentoring, induction programs also provide opportunities for ongoing professional development.

The purpose of this study is to understand which specific components of the induction program have the most significant influence on the self-efficacy and inquiry-based instructional practices of novice teachers. The questions that were used to guide the research are:

1. How do induction programs influence the long-term growth of novice teachers?

    a. What role do professional development seminars and mentoring play in the self-reflection and refinement of instructional practices among novice teachers?

    b. What roles do professional development seminars and mentoring play in the self-efficacy among novice teachers?

2. Are there other components of induction programs besides mentoring and professional development seminars that impact the self-efficacy and instructional practices of novice teachers?

The study included two surveys, three observations of meetings between the teachers and their mentors, and an interview with the participating novice teachers. The survey was administered at the beginning stages of the study and once again at the end of the study. It included 21 questions that measured the influence of mentoring and professional development seminars on the self-efficacy and instructional practices of novice teachers.

The three observations followed the inquiry cycles that were established as part of the induction program. The purpose was to look for self-reflective conversations and corrective plan to refine instructional practices. The interview with all participating novice teachers was held once all three observations were completed and the survey responses were reviewed. The interview asked questions about the role that the induction program played in enhancing their self-efficacy and instructional practices. During the interview, questions were also asked to clarify items from the survey responses. The data collected from all three tools was compiled to generate a report that is presented in Tables 6 and 7.

Interpretation of Findings

The qualitative analysis of surveys, observations, and interviews indicate that overall induction programs play a meaningful role in developing the self-efficacy and inquiry-based practices of novice teachers. Of the two components that were the focus of this study, mentoring had meaningful influence while professional development seminars had very little influence on the self-efficacy and instructional practice, according to the novice teachers receiving these supports. All the novice teachers except NT5 reported that mentoring had a significant influence on their inquiry-based practices. NT2 and NT5 were the only two that reported that professional development had a significant influence on inquiry-based practices. NT5 was the only teacher that reported professional development having influence over self-efficacy. The responses also identified collaboration with grade level or department colleagues as a significant factor that influenced the self-efficacy and instructional practices of novice teachers.

Additional Findings

Most mentors used consulting and cognitive coaching styles during meetings. The consulting style was used when giving advice related to instructional practices, identifying resources, and addressing daily operational issues. The cognitive coaching style was used to ask questions that allowed the novice teacher to reflect on the purpose of an activity or to reflect on evidence related to students' learning. Gradually, novice teachers begin to internalize such inquiry-based practices. This became quite evident as there was a shift in conversations that were noted from the first meeting to the third meeting. The mentors for NT2 and NT6 also used the collaborative style. Occasionally, they planned lessons together and worked with students in the classrooms to assess if the lesson was successful. Both mentors also modeled lessons for their mentees. NT5's mentor used primarily consulting style of coaching. It is important to note that NT5 is the only teacher for whom mentoring was found not to have any influence on self-efficacy and reflective instructional practices.

After looking at the responses given during interviews and listening to the conversations during the three meetings, there appeared to be a significant difference in the quality of conversations between mentors and novice teachers that were working at the same site. There were three teachers (NT1, NT6, and NT7) that had mentors at the same site and they appeared to have very close relationships with their mentors. Their conversations were richer and more in-depth in nature. The mentors visited the classrooms more frequently and were able to have more informal conversations related to these visits. The feedback they were able to provide was prompt and on-going. In

analyzing the data from the surveys, interviews, and observations, all three teachers

(NT1, NT6, and NT7) that had mentors at their sites, demonstrated very high self-

efficacy and instructional practices that were designed with student outcomes in mind.

Summary of Findings

Based on the findings of the study, the following conclusions can be made:

1. Mentoring plays a meaningful role in developing inquiry-based instructional

practices of novice teachers—While the results from this study support earlier finding in

this area, they go deeper into the true impact of mentoring on novice teachers. A study by

Yost (2006) had also indicated that mentoring has a positive impact on beginning

teachers. Similar to participants in this study, teachers reported that meeting with the

mentor to talk about daily challenges helps in getting new ideas. However, this study

went further to investigate the benefits that novice teachers receive from mentoring. The

results indicate that the purpose of mentoring goes far beyond providing emotional

support and guiding novice teachers on instructional strategies and resources. It provides

a space for novice teachers to get ingrained in the cycle of inquiry and get trained in the

process of looking for evidence that they can use to derive positive student outcomes.

The role of a good mentor is to help novice teachers find success and gratification in their

work. This would be hard to do if mentors limit their conversations to providing answers

to daily challenges faced in the classroom (Rowley, 1999.) The true benefit of mentoring

comes from the development of novice teachers becoming lifelong learners. The

coaching that mentor teachers provide during their meetings provides an opportunity to

ask questions that can guide the thinking process of novice teachers. Instead of simply

sharing information and resources, mentors ask about the purpose of each activity and how it relates to student outcomes. In doing so, they draw the novice teacher's attention to how this information is being collected. They also guide them to analyze all the information that pertains to the issue to determine the cause that has the most influence. Through this deep reflective process, novice teachers get trained to become practitioners that use a strategic method to designing a learning environment for their students. This is an art that novice teachers have not learned through teacher training because most of the knowledge they gain during that period is theoretical. Korthagen and Kessels (1999) emphasize that it is necessary that a connection is made between theoretical knowledge and practice. In order to empower novice teachers and make them feel successful, this connection must be taught through the process of reflection. Mentoring provides the opportunity for novice teachers to gain this knowledge with close guidance from their experienced mentors. This reflective process becomes more meaningful and genuine because the role of a mentor is non-evaluative. This takes away fear of being judged and allows the novice teacher to be more open to feedback and take risks in trying new ideas during the reflective process.

The purpose for any activity in a classroom setting must be tied to students' learning. Teachers should be able to measure this learning in a variety of ways such as formative or summative assessments. Having knowledge of authentic ways to assess learning and use that to drive future lessons is a hard skill, and one that is developed through reflective practice. Mentors guide novice teachers to look at the evidence they collect every day and use it to reflect on what their students have learned. Once they

derive meaning, they can determine how to refine their practice in order to achieve optimal results. When mentors guide novice teachers through this ongoing cycle of inquiry, they begin to internalize the pattern of reflection-refinement-inquiry which ultimately becomes a deeply rooted practice. Using critical reflection as a problem solving tool empowers novice teachers to cope with daily challenges in a more effective manner (Yost, 2006.) Therefore, one can conclude that the biggest benefit of mentoring is that novice teachers are becoming trained to become lifelong learners by following an ongoing inquiry cycle.

2. Mentoring plays an important role in developing the self-efficacy of novice teacher—The findings from this study indicate that there is an increase in the self-efficacy as a result of mentoring. The novice teachers demonstrated more confidence and seemed to have a better understanding of the role they play in creating learning opportunities for their students. While several studies point to the role that self-efficacy plays in increasing student outcomes, there weren't many studies that highlighted the link between mentoring and self-efficacy. One of the areas that this study focused on was the specific practices during mentoring that might play a role in enhancing the self-efficacy of a beginning teacher. In an earlier study Hoy (2000) suggested that teachers with high self-efficacy ranked the support they receive in their first year of teaching higher than teachers with low self-efficacy. Other studies linked high self-efficacy to enhanced teaching practices which would lead to positive learning outcomes for students. A study by Guskey (1987) suggests that in addition to feeling more confident, teachers with high self-efficacy are more likely to implement new strategies. Tschannen-Moran, Hoy, and

Hoy (1998) also assert that high efficacy leads to greater effort, which in turn leads to better performance and increased efficacy. Since a number of studies point to the advantage of high self-efficacy among novice teachers, looking at ways in which self-efficacy can be enhanced is important. Yost (2006) states that knowledge and skills that a novice teacher possesses are not necessarily accurate predictors of future performance. Instead, their performance has more influence in their feeling of self-worth and competence. If novice teachers feel more successful, they will feel more efficacious. To increase their competency and confidence, it is necessary that they attain mastery. That is made possible through the process of mentoring, where mentors coach novice teachers to reflect on their practices and develop habits that lead to success. The mentors helped in building a narrative every time the novice teachers had a successful experience. This allowed novice teachers to hear and internalize how that practice had influenced the learning outcomes for students. In some cases there was a more direct connection such as having a better idea of how to develop a formative assessment that could drive learning. In other cases, it was tied to the social-emotional needs of students. As pointed out earlier, one of the essential benefits of mentoring was novice teachers becoming engrained in the reflective inquiry cycle. This automatically leads to improved practices, positive student outcomes, a feeling of being successful, and ultimately enhanced self-efficacy.

There was another important finding that was noted in the study. As a few months progressed and novice teachers had been engaged in several meetings with their mentors, they began to demonstrate an understanding of the influence they had on the learning

environment they created for their students. This became apparent in their comments during meetings with mentors and the interview. They spoke excitedly about things they were doing to accommodate their students' social-emotional and academic needs. Most of them also spoke about the changes that they were making to build closer connections with students and the positive response they were receiving in return. This gave them a sense of pride and accomplishment which, we might infer, would strengthen their personal agency and self-efficacy. In several conversations, participating novice teachers expressed amazement at their ability to create an environment where students were responding positively and changing their behaviors. The mentors helped by modeling behaviors that would engage students and allow them to grow. During several meetings, mentors spoke about the importance of having a *growth mindset* in regards to students, but in addition they also discussed their own learning goals. The mentors also asked guided questions that allowed novice teachers to focus on the reasons that may have been contributing to the behaviors of students and shared ideas that novice teachers could use. All the mentors gave constant encouragement to affirm practices and celebrate successes. This finding supported earlier finding about the social-emotional support that novice teachers receive from their mentors, but it also shed light on how these practices increase self-efficacy among beginning teachers. As seen in this study, mentors do more than reassure teachers that they are good. They serve the important role of helping teachers see how the inquiry process leads to tangible change in teacher effectiveness and student outcomes. By helping teachers make this link, mentors direct novice teachers' attention to make the link between effort and outcomes. This link may be critical to building the

kinds of outcome and efficacy expectations that lead to persistence (Gibson & Dembo, 1984). In other words, mentors in induction programs may play the doubly important role of holding novice teachers to the inquiry-based practices that will most likely lead to improvements, and helping novice teachers reflect on the results in ways that increase persistence in these practices and self-efficacy.

3. Professional development seminars play some role on instructional practices of novice teachers—The findings from this study support earlier studies that professional development is meaningful only when it is consistent, relevant, and hands-on. The findings offered insight on specific reasons that novice teachers in this induction program found the professional development seminars to have little value. This finding will be valuable for the district in designing future seminars and also provide information for other induction programs that are looking for meaningful practices. Professional development seminars designed as part of the induction program were not found to be relevant to most participants. Often, they were unable to apply the learning from the professional development seminars in their classrooms because it wasn't related to what they taught. While NT2 and NT5 spoke favorably about the professional development seminars they had attended, NT6 was the only novice teacher that discussed the learning from these seminars during observations. Induction programs devote a significant amount of time and resources to develop professional development seminars. In order to maximize the learning, there needs to be a focus on the individual needs on novice teachers that are participants.

4. Professional development seminars do not play a critical role in developing the self-efficacy of novice teachers—The findings of the study indicated that professional development seminars did not play any role in developing the self-efficacy of novice teachers. Since teachers were not able to apply the learning from these sessions, there was no change to the learning environment and their sense of self-efficacy. An area for future studies could observe if the influence changed when professional development was found to be valuable by novice teachers.

5. Collaboration with grade level colleagues plays a significant role in developing the self-efficacy and instructional practices of novice teachers—One of the questions that the study wanted to answer was if there were any other factors that influenced the self-efficacy and reflective instructional practices of novice teachers. The results of the study indicated that besides mentoring, collaboration with grade level or department colleagues was a strong factor that had significant influence on the self-efficacy and inquiry-based practices of novice teachers. Teachers reported that they used the collaboration time to share ideas and resources. Since all the teachers are teaching the same content, planning activities, assessments, and interventions becomes part of teaching cycle. Little (2006) suggests similar benefits of creating learning communities where individual and collective expertise can be built. She states that schools that promote a shared responsibility for student learning by creating learning communities for teachers, are more likely to yield higher levels of student learning. One of the greatest advantages of collaboration with colleagues was that novice teachers felt safe in discussing their

challenges since there is no fear of being evaluated or judged. This automatically lowered the feeling of fear which in turn increases self-efficacy.

6. Novice teachers tend to have higher self-efficacy and engage more frequently in reflective instructional practices when their mentors are working at the same sites. An additional finding of the study was that teachers tend to have a higher self-efficacy if their mentor worked at the same site. The induction program that was part of the study had district mentors and site mentors. The teachers whose mentors were working at the same site appeared to display a higher sense of self-efficacy and their conversations regarding instructional practices were deeper. The mentors at the site were able to visit classrooms and provide feedback more frequently. This resulted in the novice teacher being able to reflect, refine, and assess the practice faster, thereby improving learning for students. Since district mentors serve teachers at various schools in addition to planning and providing professional development trainings, their schedules are greatly impacted. Meeting times with novice teachers aren't as consistent and scheduling meetings is challenging. All of these impacted the quality of mentoring that novice teachers receive.

Limitations and Recommendations

The biggest limitation of the study was the duration of time that was designated to conduct the study. It was designed to be conducted between August and January. In reality, by the time novice teachers had attended Orientation and scheduled meeting dates with their mentors, it was mid-September. Since meetings were scheduled around 6-week long inquiry cycles, and all the mentors were working with several mentees, scheduling meetings was challenging. Also, if a meeting had to be cancelled, rescheduling the next

one caused timelines to be extended. Another realization was that when all the holidays were factored into the designated time for this study, it only allowed data collection for two inquiry cycles.

Another limitation which had also been identified earlier was that the study is non - experimental, and it is challenging to make causal inferences. The conclusions that have been drawn are based on self-reported data from surveys and interviews. The observations were the interpretation of the researcher, whose role was to be a silent observer and not engage in the dialogue during the meetings. Therefore, it didn't always allow for clarification of comments that were made during the meetings.

The final limitation was that the study did not have information related to the professional experience and training of the mentors. Having that information would allow a better understanding of the role the mentor's experience has in developing self-efficacy and inquiry-based practices among the novice teachers. This information would also be helpful in the selection and training of mentors.

Recommendations for practice.

1. Provide a wider variety of topics during professional development seminars so all teachers can benefit from the sessions—The professional development seminars offered must be relevant to the area of teaching in order to have any influence on the self-efficacy or instructional practices of teachers. Providing a wider selection of trainings would allow all of the participants to select an option that was meaningful and applicable. Six out of seven teachers reported that the professional development seminars offered as part of the induction program were not useful to the work that they were doing. One teacher

reported that online trainings or professional development offered outside the district was more helpful. An area of focus for districts that offer induction programs would be to design professional development seminars that are more relevant to participants. Considering the amount of time and resources that districts spend on designing professional development, this finding would be helpful in customizing the offerings for participants.

2. Provide more opportunities to collaborate with grade level/department colleagues across the district—Another component that districts could add to the induction programs is collaboration time with grade level or content specific colleagues. Since time is already being allocated to meet as part of the induction program, it adds value and meaning to participants if they can utilize this time to meet with job-alike colleagues. This would be particularly useful for teachers that teach in specialized areas like art, music, or Special Education. Novice teachers would have an opportunity to share effective strategies specific to that content area.

3. Provide site-based mentors—While there may be higher cost associated with this recommendation, the benefit to districts would be significant. Having a mentor that understands the culture of the work setting and can contribute ideas for the novice teacher to overcome some of the challenges can help in building confidence and self-efficacy. It also allows for more classroom visits and ongoing feedback which is critical for growth as a developing educator. Based on the feedback, teachers can reflect on their daily practices and make changes that can have a positive impact on students' learning.

Recommendations for further study.

1. Conduct the study for the duration of the induction program to allow teachers time to have more practical knowledge to be able to reflect on their learning experiences— Since much of the data is self-reported, there is a likelihood that the responses were rushed and dependent of how the participant was feeling that particular day. The middle of school-year is typically packed with activities and deadlines. This can be daunting and stressful, especially for first-year teachers. Conducting the study over a period of the entire duration of the induction program would allow teachers to go through the gamut of teaching experiences; allow time to reflect and modify practices; and apply the new learning with a better understanding of student outcomes. It would also the research to note if there was a significant change in self-efficacy and whether teaching practices were truly inquiry-based.

2. Conduct the study in multiple districts so findings can be compared for reliability—Having a larger number of participants will allow data to be compared across districts for reliability. For example, in this study one could have compared the type of professional development being offered by various districts to analyze the responses from novice teachers. Would the offerings and quality of professional development seminars have made any difference on the responses given by teachers?

3. Study the characteristics of the mentor to measure the influence on the self-efficacy and instructional practices of novice teachers—Looking at the influence of mentoring on novice teachers based on the experience and coaching style of the mentor would help induction programs in selection and training of mentors. While there was

some indication that the coaching style of the mentor influenced the manner in which mentors responded, it was difficult to determine with certainty whether it was the mentor's style that influenced the conversation or if was the novice teacher's self-efficacy. A deeper study would help in understanding what factors influence the dynamics of a mentor and novice teacher's relationship.

Conclusion

While induction programs offer instant support, the goal must be to develop long-term learners that engage in inquiry-based practices. Feiman-Nemser (2003) points out that keeping new teachers in teaching is not the same as helping them become good teachers. Teachers must be surrounded by a culture that supports their learning and considers their first year as one phase in the continuum of the learning process. Induction programs provide opportunities for novice teachers to develop an inquiry-based mindset where they become trained to continually think of learning outcomes for students while planning lessons. This also creates a desire in them to become lifelong learners that are looking for ways to hone their own skills.

The purpose of this study was to understand the influence of Induction Programs on the self-efficacy and reflective instructional practices of novice teachers. Induction programs are offered by many school districts to provide support for first and second-year teachers and typically include mentoring and professional development seminars. These two aspects were specifically studied since they are the most common components of induction programs. The study also looked for other factors that have significant influence on self-efficacy and practices of novice teachers. Results from the study

indicate that mentoring has a meaningful role in the developing self-efficacy of novice teachers and also structures the way that they improve their instructional practices. It helps them in getting a better understanding of their role in influencing student outcomes. They understand how their attitudes and ability to reflect on their instructional practices shapes the learning environment for their students. Another factor that seems to figure largely in novice teachers' perceptions of a supportive environment is collaboration with colleagues. Through collaboration with colleagues, new teachers are able to share ideas and ask questions about lessons that they are planning or strategies that they are implementing in their classrooms. They also meet more frequently and see their experienced colleagues as a valuable resource. In contrast, professional development seminars have very little influence on the self-efficacy and reflective practices of novice teachers, limited in large part by the degree to which content from such seminars applies to daily needs and practices of teachers.

This study offers an insight into factors that have the most influence in shaping the beliefs and practices of novice teachers. District administrators can use this information to design induction programs that are meaningful and effective for novice teachers. With resources being limited, it is necessary that programs are designed to have the most impact. Another critical reason for developing strong induction programs is that many novice teachers find themselves working at schools that have students with the most severe needs. Typically, schools that receive Title I funding have higher percentages of English Learners, students that qualify for the free and reduced lunch program, and students with special needs. These schools tend to have higher rates of teacher attrition,

which in turn results in more new teachers being placed there. There is a greater need to provide strong supports for novice teachers at these schools so they are well prepared to meet the learning and social emotional needs of their students.

Induction programs play an important role not only in providing immediate support and avoiding burnout among novice teachers, but also in shaping their mindsets in becoming lifelong learners. Building self-efficacy at an early stage and developing instructional practices that follow an ongoing cycle of implementation, assessment, reflection, and adjustment can help teachers focus their work around student outcomes.

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Teacher Survey

Survey Question	Nothing	Very Little	Some Influence	Quite A Bit	A Great Deal
1. How much influence do you have to create the vision and mission at your school?	( )	( )	( )	( )	( )
2. How much influence do you have to create a positive learning environment at your school?	( )	( )	( )	( )	( )
3. How much influence do you have to make students come to school?	( )	( )	( )	( )	( )
4. How much support can you provide to families to ensure their children do well at school?	( )	( )	( )	( )	( )
5. How much influence do you have to control disruptive behavior in the classroom?	( )	( )	( )	( )	( )
6. How much influence do you have to motivate students who show low interest in school work?	( )	( )	( )	( )	( )
7. How much influence do you have in making students believe they can do well in school work?	( )	( )	( )	( )	( )
8. How much influence do you have in helping your students value learning?	( )	( )	( )	( )	( )
9. To what extent are you able to engage students in learning?	( )	( )	( )	( )	( )
10. To what extent are you able to get students to follow classroom rules?	( )	( )	( )	( )	( )
11. To what extent are you able to provide an alternative explanation when students don't understand a concept?	( )	( )	( )	( )	( )
12. To what extent can you assist families so they are able to support their children do well at school?	( )	( )	( )	( )	( )

13. To what extent does mentoring influence your instructional practices in the classroom?	( )	( )	( )	( )	( )
14. To what extent does mentoring influence how you design lessons with students' needs in mind?	( )	( )	( )	( )	( )
15. To what extent does mentoring influence how you assess your students' learning and make adjustments?	( )	( )	( )	( )	( )
16. To what extent does mentoring help you in refining your practices to have a greater impact on the learning of your students?	( )	( )	( )	( )	( )
17. To what extent do professional development seminars influence your instructional practices in the classroom?	( )	( )	( )	( )	( )
18. To what extent do professional development seminars influence the manner in which you plan lessons?	( )	( )	( )	( )	( )
19. To what extent do professional development seminars influence your ability to assess students' learning and make adjustments?	( )	( )	( )	( )	( )
20. To what extent do professional development seminars help you in refining your practices to have a greater impact on the learning of your students?	( )	( )	( )	( )	( )
21. How much influence does the Induction Program have on your overall confidence?	( )	( )	( )	( )	( )

Interview Question

1. Tell me about a recent lesson that went well. Please describe what happened and what contributed to its success.
2. Tell me about an area of teaching in which your grew this year. What contributed to this growth?
3. Tell me about a recent lesson that didn't go well. Please describe what happened and what you learned through this experience. Were you able to apply your learning through the Induction Program to the situation?
4. Please describe the structure of your Induction Program. How often do you communicate with your mentor in a formal or informal setting? How often do you get an opportunity to attend professional development seminars?
5. How frequently do you collaborate with your grade level team or your department team? How much influence does this collaboration have on your instructional practices and self-efficacy? Please explain.
6. Has mentoring been helpful in developing your self-efficacy? Which aspect of mentoring have you found most useful?
7. Has mentoring helped you in becoming more self-reflective and refining your instructional practices? Please explain.
8. How effective have the professional development seminars been in developing your self-efficacy? If so, describe how they have been useful.
9. Do you think professional development seminars have helped you in becoming more self-reflective and refining your instructional practices? Please explain.
10. Besides mentoring and professional development, what other factors have helped you in increasing your self-efficacy and improving your instructional practices?

11. Please list the following in order of which one has helped you the most in becoming an effective teacher: formal mentoring conversations; informal mentoring conversations; professional development provided through the Induction Program; professional development received outside the district, collaboration with grade level/department team.
12. What would you say is the most helpful component of the Induction Program? Please explain.
13. What would you say is the least helpful component of the Induction Program? Please explain.

Appendix C

Survey with Research Questions

Survey Question	Research Question
1. How much influence do you have in developing the vision and mission at your school?	RQ1.b RQ2
2. How much influence do you have to create a positive learning environment at your school?	RQ1.b RQ2
3. How much influence do you have to make students come to school?	RQ1.b RQ2
4. How much support can you provide to families to ensure their children do well at school?	RQ1.b RQ2
5. How much influence do you have to control disruptive behavior in the classroom?	RQ1.b RQ2
6. How much influence do you have to motivate students who show low interest in school work?	RQ1.b RQ2
7. How much influence do you have in making students believe they can do well in school work?	RQ1.b RQ2
8. How much influence do you have in helping your students value learning?	RQ1.b RQ2
9. To what extent are you able to engage students in learning?	RQ1.a
10. To what extent are you able to get students to follow classroom rules?	RQ1.a
11. To what extent are you able to provide an alternative explanation when students don't understand a concept?	RQ1.a
12. To what extent can you assist families so they are able to support their children do well at school?	RQ1.b

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13. To what extent does mentoring influence your instructional practices in the classroom?	RQ1.a RQ2
14. To what extent does mentoring influence how you design lessons with students' needs in mind?	RQ1.a RQ2
15. To what extent does mentoring influence how you access your students' learning and make adjustments?	RQ1.a RQ2
16. To what extent does mentoring help you in refining your practices to have a greater impact on the learning of your students?	RQ1.a RQ2
17. To what extent do professional development seminars influence your instructional practices in the classroom?	RQ1.a RQ2
18. To what extent do professional development seminars influence the manner in which you plan lessons?	RQ1.a RQ2
19. To what extent do professional development seminars influence your ability to access students' learning and make adjustments?	RQ1.a RQ2
20. To what extent do professional development seminars help you in refining your practices to have a greater impact on the learning of your students?	RQ1.a RQ2
21. How much influence does the Induction Program have on your overall confidence?	RQ1.a RQ1.b RQ2

Appendix D

Interview with Research Questions

Interview Question	Research Question
1. Tell me about a recent lesson that went well. Please describe what happened and what contributed to its success.	RQ1.a RQ2
2. Tell me about an area of teaching in which you grew this year. What contributed to this growth?	RQ1.a RQ1.b RQ2
3. Tell me about a recent lesson that didn't go well. Please describe what happened and what you learned through this experience. Were you able to apply your learning through the Induction Program to the situation?	RQ1.a RQ2
4. Please describe the structure of your Induction Program. How often do you communicate with your mentor in a formal or informal setting? How often do you get an opportunity to attend professional development seminars?	RQ1.a RQ1.b
5. How frequently do you collaborate with your grade level team or your department team? How much influence does this collaboration have on your instructional practices and self-efficacy? Please explain.	RQ2
6. Has mentoring been helpful in developing your self-efficacy? Which aspect of mentoring have you found most useful?	RQ1.b
7. Has mentoring helped you in becoming more self-reflective and refining your instructional practices? Please explain.	RQ1.a
8. How effective have the professional development seminars been in developing your self-efficacy? If so, describe how they have been useful.	RQ1.b
9. Do you think professional development seminars have helped you in becoming more self-reflective and refining your instructional practices? Please explain.	RQ1.a
10. Besides mentoring and professional development, what other factors have helped you in increasing your self-efficacy and improving your instructional practices?	RQ2

11. Please list the following in order of which one has helped you the most in becoming an effective teacher: formal mentoring conversations; informal mentoring conversations; professional development provided through the Induction Program; professional development received outside the district, collaboration with grade level/department team.	RQ 1.a RQ 1.b RQ2
12. What would you say is the most helpful component of the Induction Program? Please explain.	RQ 1.a RQ 1.b RQ2
13. What would you say is the least helpful component of the Induction Program? Please explain.	RQ 1.a RQ 1.b RQ2

Survey Results for Each Individual Teacher

	Question	NT1 Change Level	NT2 Change Level	NT3 Change Level	NT4 Change Level	NT5 Change Level	NT6 Change Level	NT7 Change Level
1.	How much influence do you have in developing the vision and mission at your school? (RQ1.b ; RQ2)	Same High (5-5)	Same Mid (3-3)	Same High (4-4)	Up High (4-5)	Up Low (1-2)	Down Mid (4-3)	Up High (3-4)
2.	How much influence do you have to create a positive learning environment at your school? (RQ1.b ; RQ2)	Same High (5-5)	Same High (5-5)	Same High (5-5)	Same High (4-4)	Same Mid (3-3)	Same High (4-4)	Same (High) (5-5)
3.	How much influence do you have to make students come to school? (RQ1.b ; RQ2)	Same Mid (3-3)	Up High (3-4)	Up Mid (1-3)	Up High (3-4)	Same Mid (3-3)	Same Low (2-2)	Down Mid (4-3)
4.	How much support can you provide to families to ensure their children do well at school? (RQ1.b ; RQ2)	Up High (4-5)	Up High (3-5)	Same (Low) (1-1)	Same High (4-4)	Same Mid (3-3)	Up High (3-4)	Same Mid (3-3)
5.	How much influence do you have to control disruptive behavior in the classroom? (RQ1.b ; RQ2)	Same High (5-5)	Same High (5-5)	Up High (3-4)	Same Mid (3-3)	Same High (4-4)	Same High (4-4)	Same High (5-5)
6.	How much influence do you have to motivate students who show low interest in school work? (RQ1.b ; RQ2)	Increase High (3-5)	Same High (5-5)	Same Mid (3-3)	Increase High (4-5)	Same High (4-4)	Down Mid (4-3)	Same High (5-5)
7.	How much influence do you have in making	Up High (3-5)	Same High (5-5)	Up High (3-4)	Up High (4-5)	Same High (4-4)	Same High (4-4)	Same High (5-5)

	students believe they can do well in school work? (RQ1.b ; RQ2)							
8.	How much influence do you have in helping your students value learning? (RQ1.b ; RQ2)	Same Mid (3-3)	Same High (5-5)	Up High (3-4)	Up High (4-5)	Same Mid (3-3)	Down Mid (5-3)	Same High (5-5)
9.	To what extent are you able to engage students in learning? (RQ1.a)	Up High (4-5)	Down High (5-4)	Same High (4-4)	Same High (5-5)	Up High (4-5)	Down High (5-4)	Up High (4-5)
10.	To what extent are you able to get students to follow classroom rules? (RQ1.a)	Up High (4-5)	Same High (4-4)	Up High (3-4)	Up High (3-4)	Same High (4-4)	Down High (5-4)	Same High (5-5)
11.	To what extent are you able to provide an alternative explanation when students don't understand a concept? (RQ1.a)	Down Mid (5-3)	Down High (5-4)	Up High (4-5)	Up High (4-5)	Up High (4-5)	Same High (4-4)	Same High (5-5)
12.	To what extent can you assist families so they are able to support their children do well at school? (RQ1.b)	Same Mid (3-3)	Same High (4-4)	Same Low (1-1)	Up High (4-5)	Down Low (3-2)	Down Low (3-2)	Up High (3-4)
13.	To what extent does mentoring influence your instructional practices in the classroom? (RQ1.a ; RQ2)	Same High (5-5)	Same High (5-5)	Up High (4-5)	Same Mid (3-3)	Same Low (2-2)	Same High (5-5)	Down High (5-4)
14.	To what extent does mentoring influence how you design lessons with students' needs in mind? (RQ1.a ; RQ2)	Same High (5-5)	Up High (4-5)	Up High (3-4)	Same Mid (3-3)	Same Low (2-2)	Down High (5-4)	Up High (3-4)
15.	To what extent does mentoring influence how you assess your students' learning and make adjustments? (RQ1.a ; RQ2)	Same High (5-5)	Same High (5-5)	Same Mid (3-3)	Up High (3-4)	Up Low (1-2)	Same High (5-5)	Down Mid (5-3)

#	Question							
16.	To what extent does mentoring help you in refining your practices to have a greater impact on the learning of your students? (RQ1.a ; RQ2)	Same High (5-5)	Up High (4-5)	Up High (4-5)	Same High (4-4)	Same Low (2-2)	Down High (5-4)	Same Mid (3-3)
17.	To what extent do professional development seminars influence your instructional practices in the classroom? (RQ1.a ; RQ2)	Down Mid (4-3)	Same High (4-4)	Down Mid (4-3)	Same Mid (3-3)	Same High (4-4)	Down Mid (4-3)	Same Mid (3-3)
18.	To what extent do professional development seminars influence the manner in which you plan lessons? (RQ1.a ; RQ2)	Same High (5-5)	Up High (4-5)	Up High (3-4)	Same Mid (3-3)	Up Low (1-2)	Down Mid (5-3)	Up Mid (2-3)
19.	To what extent do professional development seminars influence your ability to assess students' learning and make adjustments? (RQ1.a ; RQ2)	Same Low (0-2)	Same High (4-4)	Up High (3-5)	Same Mid (3-3)	Same High (4-4)	Down Mid (4-3)	Down Low (3-2)
20.	To what extent do professional development seminars help you in refining your practices to have a greater impact on the learning of your students? (RQ1.a ; RQ2)	Down High (5-4)	Up High (4-5)	Up High (3-4)	Same Mid (3-3)	Up High (4-5)	Down Low (4-2)	Down Low (2-2)
21.	How much influence does the Induction Program have on your overall confidence? (RQ1.a ; RQ1.b ; RQ2)	Up High (4-5)	Same High (5-5)	Same High (5-5)	Up Mid (2-3)	Up Mid (2-3)	Down Low (4-2)	Up High (2-4)