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The Impact of Inquiry-Based Professional Development on Educator Self-Efficacy

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The Impact of Inquiry-Based Professional Development on Educator Self-Efficacy

A Project Presented to
The Graduate Faculty of
Minnesota State University Moorhead
By
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Requirements for the Degree of
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DEDICATION

Thank you doesn't even begin to cover it...endless gratitude to my ever-loving, superhero parent, supportive partner, Eric.

ABSTRACT

This 2021 study focuses on the impact of inquiry based professional development on educator self-efficacy. The study works to understand how practices like cognitive coaching and inquiry-based practices assist educators in developing self-efficacy related to their practice. Educators were given the New General Self-Efficacy Scale (Chen et al., 2001), before and after an observation process and were interviewed as a part of their post-observation. The research took place in a rural Minnesota school district with both primary and secondary education staff. The data and results that follow display both a consistent and increased level of self-efficacy as it pertains to cognitive coaching and inquiry based, reflective professional development practices.

CHAPTER 1 INTRODUCTION

Introduction

As a cognitive coach working to increase educator efficacy through inquiry-based professional development opportunities, it is important to recognize the different opportunities educators have to independently increase their efficacy through professional development, daily interaction, and reflective opportunities. Self-efficacy is a person's particular set of beliefs that determine how well one can execute a plan of action in prospective situations (Bandura, 1977). Due to the importance of providing cohesive professional development for educators who are looking to increase their self-efficacy through inquiry, it has been determined that work through professional development opportunities both formally and informally would assist them in doing so.

Professional development may be used "in reference to a wide variety of specialized training, formal education, or advanced professional learning intended to help administrators, teachers, and other educators improve their professional knowledge, competence, skill, and effectiveness" (Glossary of Education Reform, 2020). Professional development can be provided through multiple channels, whether it be a "sit and get" tutorial on best practices or cognitive coaching one on one sessions. This training may come in the form of many different practices that pertain specifically to subject area, specialized teaching techniques, earning certificates toward higher degrees, technology related skills, fundamental classroom techniques (management, etc.), specialized skills training to support specific students, leadership skills, mentoring, and advanced degree participation.

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Inquiry-based professional development practices give educators first-hand control over their learning and growth which heightens both intellectual engagement and practice. These opportunities also allow educators experience in the modeling they will issue for their students. To allow educators to formulate their own questions regarding their teaching and practices, their questions, and their observations of student learning only expands their sphere of knowledge to support students in their classroom.

To provide educators with tools to utilize the trainings provided to them to the best of their ability inquiry-based, reflective professional development practices can be implemented to increase educator efficacy through the development of their own practices and thinking. Cognitive coaching is one example of this type of professional practice. Through coaching practices, educators are asked to use inquiry to delve into their thought processes related to their teaching. This, in addition to development related to pertinent practices and licensure requirements, works to support teachers in the growth and development in a more self-directed way. In turn, their ability to be self-efficacious and reflective practitioners increases and directly affects student achievement.

The aforementioned tools also provide educators a means to sustain the frequent changes that occur. Retaining quality teachers in the age of digital learning, standards-based requirements, and constant upheaval can be difficult. Professional development should support educators in their learning and bring them consistency and contribute to their growth.

Brief Literature Review

Inquiry-based professional development serves as means to enable educators to have control over their learning and see their inquiry learning in action – which is a skillset valuable

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in the classroom environment. Inquiry is commonly used as a teaching strategy and having educators go through the processes with the hope that students will gain knowledge also provides them with a lens of how their teaching might impact student achievement and learning.

Professional development to support instruction, relationships, and social/emotional learning serves as a means for teachers to gain insight and reflect on their practice. However, it is not uncommon for professional development opportunities to be opposite or unparallel to those practices used daily within the classroom. By providing opportunities for reflective growth in the inquiry-based model, educators can better equip themselves from the starting point of their own thought – which is more relevant and personalized approach to then increase student achievement.

The literature and research done around this topic, though limited, suggest that providing educators with a lens that coincides with them as a reflective practitioner provides them with a means to increase student achievement through channels related to their own learning and growth. There is research that supports this in both educator and student learning.

Statement of the Problem

Within education, there are many perceptions about what instructional practices and professional development strategies best serve educators and their collective efficacy. If educators feel as though the given development is irrelevant to their practice or craft, the buy-in needed to promote efficacy will not be there and does not strengthen their desire to become more efficacious. Time is also a hurdle. As educators, there is very little time within the regular

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school day to schedule additional work. Thus, development comes during workshop days, inservice afternoons, or during the summer months – all of which are precious in teaching. Finding time that works seamlessly into each educator’s schedule can be difficult – on top of making the work relevant.

To support educators in their ability to be reflective practitioners, it is imperative that we allow them to enhance their own growth and development through inquiry. Whether this be asking questions, observing other staff members, or expanding their ideas through cognitive coaching, this supports their ability to be self-efficacious. It also aids in their relationship with colleagues in increasing their ability to share their ideas and growth in professional learning communities.

A more individualized, reflective approach, similar to what is expected for students, is a model that allows educators to be actively involved in their learning and professional growth. This time, provided to them to strengthen their thinking and successes, has a direct impact on student achievement as they return to the classroom to provide the instruction impacted by their own processes and able to facilitate the same for their students. Providing this time and room for growth and development also assists in addressing the issue of retention in our schools. Finding quality educators is a hurdle, keeping quality educators is an even bigger feat.

Purpose of the Study

In education, we commonly look toward professional development as a means to assist educators in their consistent quest for learning and growth. Schools utilize professional development to help teachers discover new practices that support an ever-changing vocation. There are many theories behind what makes effective professional development. It is an

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interest to uncover what is working best for educators while also researching formats that have proven effective in other areas.

Research Question

How does inquiry-based, reflective professional development impact educator self-efficacy?

Definition of Variables.

The following are the variables of this study:

Independent Variable – Inquiry Based Professional Development: Professional development that aims to increase educator self-efficacy by implementing best practices that are relevant to teacher reflection and growth. This professional development could come in the form of cognitive coaching sessions, facilitated professional development that offers reflective practices, or colleague-based teaming where best practices and strategies are discussed.

Dependent Variable – Educator Self-Efficacy: Teacher identification of their self-efficacy by a measure of behaviors, surveys, and discussions. Self-efficacy refers to an individual's belief in his or her capacity to execute behaviors necessary to produce specific performance attainments (Bandura, 1977, 1986, 1997). In laying the groundwork for this study, discussion will play an important role in developing topics that will invite educators to reflect on their growth and learning.

Dependent Variable - Educator attitude toward inquiry-based concepts: Educator attitude is a measure of educators' positive and negative feelings toward this type of professional development (cognitive coaching / professional development format).

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Dependent Variable – Educators at the primary and secondary levels: Educators refers to people currently coached at both primary and secondary levels.

Significance of the Study

As an educator, student achievement and the desire to provide opportunities for them to construct their own meaning is essential. Educators can do this through their own growth, reflective processes, inquiry, and the modeling of it. This is considered “best practice” and continues to serve students far beyond the walls of the classroom. It is important for both the educator and the student to find a way to reflect, question, and learn from practices that connect to self and others. This approach, through cognitive coaching, inquiry, and reflection in professional development can be a more flexible and personalized model that will serve a diverse population of teachers and make the learning that comes from it more individualized.

Additionally, it is the goal of this study to provide an environment where educators are able to be more comfortable in taking a step back as the “expert” and are able to accept and embrace the role of “facilitator”. The skills that come from this approach could lead to better outcomes for both the educators’ sense of self-efficacy and the learner.

Research Ethics

Permission and IRB Approval

In order to conduct this study, the researcher will seek MSUM’s Institutional Review Board (IRB) approval to ensure the ethical conduct of research involving human subjects (Mills & Gay, 2019). Likewise, authorization to conduct this study will be seek from the school district where the research project will be taking place (See Appendix A).

Informed Consent

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Protection of human subjects participating in research was assured. Participant minors were informed of the purpose of the study via the Method of Assent (see Appendix C) that the researcher read to participants before the beginning of the study. Participants were aware that this study was conducted as part of the researcher's master degree program and that it benefitted her teaching practice. Informed consent means that the participants were fully informed of the purpose and procedures of the study for which consent was sought. Confidentiality was protected through the use of pseudonyms (e.g., Educator 1) without the utilization of any identifying information. The choice to participate or withdraw at any time was outlined both verbally and in writing.

Limitations

There is the possibility that the two groups within the experiment will consist of varying numbers, abilities, demographics, and other factors that cannot be controlled. Additionally, the study will be performed within a limited caseload of educators at differing levels that may not accurately represent the general population.

Conclusions

In providing support for educators, there is a call to provide opportunities for them to make their own meaning and define rigor through professional development opportunities (both formal and informal). This could be within the realm of the classroom, through cognitive coaching, or in a directly instructed professional development opportunity.

Within the support role, to be able to find connections that will assist educators in their quest for growth and learning is a growing need. This requires differentiation in professional development formats to allow teachers to expand their sphere of knowledge and grow through

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their own personal inquiry processes. This, in turn, will provide them with a higher sense of efficacy as they work with to increase student achievement in their classroom. The next chapter provides a brief overview of the current literature and research regarding educator self-efficacy, professional development formats, and inquiry-based professional development.

CHAPTER 2

LITERATURE REVIEW

Introduction

A detailed look into inquiry-based practices is necessary to provide the best outcomes for educators within the realm of professional development and reflection, in support of promoting teacher efficacy during a period of constant change. A literature review was conducted in relation to assisting teachers in their ability to have a strong sense of self efficacy, a desire for professional development that strengthens their self-efficacy, and the capacity to reflect on their practice. The themes therein were: educators' sense of self-efficacy, inquiry-based learning, professional development, and reflection in relation to cognitive coaching.

Context

The articles used in this literature review described differing ways of impacting teacher efficacy through both inquiry-based professional development and reflection. Through different channels for growth and for reflection, the impact of educator self-efficacy has the potential to increase given effective structures, time, and attention. While a topic that has not been deeply researched, it is vital that we discover more information that may help us retain effective educators who have a high level of self-efficacy to teach our students.

Teachers and self-efficacy

Perceived self-efficacy, as defined by Bandura (1997), is concerned with people's beliefs to produce given attainments. In education, a strong sense of self-efficacy may lead educators to remain in the profession and further develop their skills through professional development opportunities, whether formal or informal.

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Ashton et al. (1984) discovered that teachers tend to evaluate their effectiveness in comparison to other teachers. This designated significant bias because the teacher may have little to no first-hand knowledge of the other teacher's teaching beyond what is shared anecdotally. This presents a challenge as the bias is significant and limits the lens of teacher viewpoints. The authors stated that

effective approaches to increasing teachers' sense of efficacy may involve providing teachers with opportunities to share their feelings about their effectiveness with other teachers and to observe each other's teaching practices. A cooperative approach to developing their efficacy may be helpful. (p. 14)

High teacher self-efficacy sets a bar for high quality instruction and an environment that enhances student achievement. Human agency, or the idea that individuals exercise control over actions that affect their lives, plays a pivotal role in teacher self-efficacy. The impact of this also could influence teacher retention and educator capacity to integrate cohesive and coherent instruction. According to Zee and Koomen (2016),

Teachers with low self-efficacy seem to experience higher levels of emotional exhaustion and lower levels of satisfaction and commitment, ultimately leading them to quit their job. These indirect effects imply that positive feelings of well-being, such as commitment and satisfaction, are the mechanism through which the TSE [teacher self-efficacy] exerts its influence over teachers' intention to stay or leave. Overall, positive aspects of teachers' psychological well-being can thus be suggested to be more mutable due to their self-efficacy than negative aspects (p. 1007).

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Zee and Koomen went on to say that self-efficacy tends to be a motivational construct. It influences the efforts of an educator, the persistence and perseverance to complete tasks, affects performance and becomes a self-directed cycle of behaviors.

There is a lack of data that pertains to the reality that teacher self-efficacy and the reverberations of it are difficult to define and are measured by a plethora of different tools – which tend to have distinction on different facets. In the article by Zee and Koomen, there was not a recapitulation of the strength of student and teacher relationships, teacher self-efficacy, and student/teacher outcomes within the walls of a classroom.

Inquiry Based Learning

Inquiry based learning is commonly broken into inquiry phases that form the inquiry cycle. There are many different variations and ideologies about this support by literature. Though most research is related to inquiry-based learning in relation to student achievement, the ideas and processes through which we teach students to utilize directly correlates to educators as well.

In “Phases of Inquiry-Based Learning: Definitions and the Inquiry Cycle”, Pedaste et al. (2015 described inquiry-based learning as a method that

aspires to engage students in an authentic scientific discovery process. From a pedagogical perspective, the complex scientific process is divided into smaller, logically connected units that guide students and draw attention to the important features of scientific thinking. (p. 48)

The article continued to regard teacher inquiry-based learning and the parallels between the cycle and professional development growth. Educators must also envelop

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themselves in a framework involving the inquiry cycle which includes: orientation, conceptualization, investigation, conclusion, and discussion in order to evolve and increase their self-efficacy. In the development of curriculum and lessons, educators begin with curiosity in order to stimulate interest in a problem or lesson. By following curiosity with the next steps, educators are able to strengthen their ability to maintain locus of control and create lessons that are invigorating and exciting for students – further impacting their sense of self and accomplishment as teachers.

The main goal of the study done by Pedaste et al. (2015) was to “provide instructional designers and teachers with a synthesized inquiry-based learning framework from a learner’s perspective that can be used to ensure an effective inquiry-based learning process” (p. 57).

This study supports educator growth in the area of inquiry-based learning and development because the designation of these cycles could be used and followed in specific learning situations related to teacher growth.

The value of this research coincides with the possibility that it could shape the foundation for a widespread foundation of inquiry-based learning conditions for educators. By their practice of these cycles, educators will have a strengthened ability to model them for their students and ask leveled questions to provide critical thinking and analytic opportunities for their students to display their learning.

Professional Development Formats

Looking at what intrinsically motivates teachers to engage in professional development is a concept that provides insight for planning teams as they design opportunities for growth. “One of the most interesting and important reasons for scholars and school leaders to pay

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attention to teachers' self-efficacy is the role it plays in teachers' implementation of new teaching strategies presented through professional development" (Tschannen-Moran, & McMaster, 2009, p. 231).

There are many parallels between teachers' self-efficacy, their intellectual ability and skills to implement a new instructional strategy and practice. When given opportunities to acquire knowledge that aligns with learning how to teach content, implementing them, and thus seeing precipitous changes in student achievement, studies show that self-efficacy beliefs are intensified.

Though professional development is a complex phenomenon that evolves over time, formats matter. By providing opportunities for teachers to learn and grow through their own acquisition of information, inquiry, processing, and reflection, educational leaders look to enhance teachers' abilities to sustain deep conceptual change and lasting instructional changes while giving those teachers sense of strong self-efficacy.

In the article, "Professional Development Across the Teaching Career: Teachers' Uptake of Formal and Informal Learning Opportunities", Richter et al., (2010) developed a study to uncover what type of professional development opportunities made the most impact. Richter et al. defined professional development learning opportunities as "formal learning", which are "traditional, structured learning environments with a specified curriculum such as graduate courses or mandated staff development" (p. 117), and represent a main component of a training model. Teachers have defined this as a "sit and get" where they are presented with information that updates their knowledge and skills with workshops and courses germane to their craft.

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Richter et al.'s other definition of professional development is "informal learning opportunities". These do not follow a specific curriculum and are not restricted to the traditional environment. These may look like individual activities such as book reads, instructional coaching sessions, classroom observation, and collaborative activities.

Richter concluded the study with data that supported an interest in training and formal learning settings during teachers' mid-career. Teacher collaboration, however, was shown to dwindle toward mid to end of the career. This finding supports that those educators are more apt to collaborate and may ascribe to the fact that younger teachers still have a more malleable lens of learning which allows them to draw on the expertise of more experienced teachers.

Cognitive coaching is another form of professional development that is designed to "develop internal thought process and self-directedness" (Rogers et al., 2016). Coaching is outlined in a three-part process including planning, reflective, and problem-solving conversations as directed by the educator and coach. Through this process, the coach follows the educators' cues by listening and paraphrasing, following the signals of the coachee, and offering feedback in the form of inquiry.

Cognitive coaching has the capacity to increase critical thinking in educators which also supports critical thinking in students. This has a direct impact on student achievement. The use of coaching as tool to strengthen self-directed thinking among educators has the potential to transfer to their teaching. Cognitive coaching, when executed accurately, serves as a non-judgmental reflective practice of questioning, pausing, paraphrasing, and probing for specificity.

By engaging in the cognitive coaching process, educators are coming to their own conclusions based on the efforts of a coach. This avenue of self-directed learning lends itself to

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educators making changes and coming to new learnings in their classrooms and within the curriculum that they teach. There are many ways of engaging in the process, whether it be a basic observation with the coach as the observer, data driven dialogue, or even student interviews.

Studies have found that self-directed learning is evident as those being coached were able to recognize more clearly their strengths and weaknesses and then create solutions or modifications to their behavior based on their own thought processes. The impact of the undertaking in the particular study, "Using Cognitive Coaching to Build School Leadership Capacity: A Case Study in Alberta" (Rogers et al., 2016), found that those coached increased their self-efficacy and the school building was strengthened overall. The role of a cognitive coach is to ensure that the coachee is drawing conclusions and thinking for themselves.

Reflection

The Merriam Webster Dictionary defines reflection as a means to understand, a process by a thought, idea, or opinion formed or a remark made as a result of meditation. experiences and ideologies. In her article, "Defining Reflection: Another Look at John Dewey and Reflective Thinking", Carol Rodgers (2002) stated that:

The function of reflection is to make meaning: to formulate the "relationships and continuities" among the elements of an experience, between that experience and other experiences, between that experience and the knowledge that one carries, and between that knowledge and the knowledge produced by thinkers other than oneself.
(p. 848)

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Rodgers went on to say that reflection is a mechanism to explore the intricacies of students and their learning, their content and teaching styles, as well as their frame of thought and reference. Reflection is not simply a trend that will go away; the introspective processes of reflecting increase student growth and learning and teacher self-efficacy. Reflection as it is cannot be a “be all, end all” approach, however, it is a tool that assists us in transfiguring an unrefined experience and turning it into a basis for extension and development.

Critical self-reflection not only improves critical thinking; it can also enhance our ability to develop further knowledge of our self and increase self-efficacy. In providing educators with opportunities to reflect, we can assist them to increase their relationship to self-efficacy and implementation of being reflective practitioners. In the article, “You Have to Absorb Yourself In It: Using Inquiry and Reflection to Promote Student Learning and Self-Knowledge”, Rusche and Jason (2011) wrote that “students must learn to get past asking questions that have definite answers and instead ask questions for the sake of inquiry” (p. 344).

There are multiple opportunities for reflection before, during, and after an activity that may be valuable. This cyclical process enables the reflector to make meaning and take action on their learning. Beginning the process again making further connections via experience, only strengthens desirable outcomes.

There are three ways to practice these reflective skills. While Rusche and Jason focused on teaching these to students, they apply to educators in their quest for growth and deeper development as well. These three reflective strategies include: free reflection, reflection by questioning, and structured reflection.

Any of these three critically designed strategies has the power to transform learning and growth by providing a final analytic reflection that can able to learner to reach one of these three outcomes:

1) to analyze and discover patterns in the data (2) to maintain critical engagement with course material; and (3) to examine students' growth as thinkers. Data from these studies show that students gain additional benefits from this final reflection, including how to gain and assess self-knowledge and how to use [teacher] comments as guides rather than criticism as well as some general lessons about the process of learning and about themselves. (Rusche et al, p. 347)

Reflection makes assimilations more meaningful for the learner. In being able to develop a connection (with content, experience, and thought), reflection serves as a tool that lends itself to stronger learning outcomes. By promoting opportunities for reflection and reflective feedback, educators are empowered by their own experiences; drawing upon them to inspire learning and growth based on experience and exposure to scaffolded understandings.

Theoretical Framework

Defined by parameters, free reflection, reflection by question, and structure reflection have high probabilities of increasing self-efficacy and professional development knowledge based on the topic at hand. Followed by critical thinking and reflective practice, a plan for implementation of this growth can assist educators in their aspirations and learning.

For educators, there is opportunity to delve into inquiry and reflection. Because reflective writing and practices assist us in drawing upon the information that is learned, we can strengthen our own self-efficacy through questioning *and* reflective practices. When there

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is opportunity to stop to examine the information, there is professional growth and professional development taking place in relation to both the context and to self. Additionally, there is higher likelihood of the ability to make connections to understand ideologies and personal places within them.

Through work in the cognitive coaching model of instructional coaching, the circumstances are set so that teachers have intentional time to use inquiry and reflection to assess their growth in the realm of professional development. Each educator has their own processes in relation to thinking critically about their internal locus of control, the impact of inquiry within their work, and the various opportunities there are to reflect - it is just within a cognitive coach's work to guide them in their thought. The goal is not to get educators to think as an instructional coach or administrator would, the intent is to assist them in thinking for themselves. There is a wealth of knowledge that comes from allowing educators to construct their own meaning from learned experience. They do this with their students in the classroom, closely aligning instruction with the constructivist learning theory which allows students to make meaning from their learning on their own.

The constructivist learning theory supports educators and students by focusing on student centered learning. In the case of cognitive coaching in Q-Comp, the educator is the learner who is driving the dialogue and outcomes. While the coach seeks to understand by questioning, pausing, paraphrasing, and probing for specificity, the educator is able to more readily articulate their construction of a lesson, data set, or observation.

Cognitive coaching strives to idealize strengths and challenges so that there can be forward movement. In many conversations, there is a "lightbulb moment" in which the

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coachee comes to a conclusion on their own accord. This can set up a coachee for success as they encounter situations and reflect on them.

Research Question

How does inquiry-based, reflective professional development impact educator self-efficacy?

Conclusions

After examining and reflecting on the current research that already relates to educators' sense of self-efficacy, inquiry-based learning, professional development, and reflection, it is clear that there are connections between each of these concepts. In a sense, the cognitive coaching framework as a means of inquiry based, reflection driven professional development, only serves as a means to increase teacher self-efficacy. However, there has not been significant research done to correlate all four of these focus areas. The next chapter will center around methods that will be used to assist in this research study. This will include a summary of educator participants, data collection, instrumentation, and a detailed analysis of method and study.

CHAPTER 3

METHODOLOGY

Introduction

Educators commonly attend professional development as a means to increase student achievement through best practices. Forms of this practice are approaches that support new ways of teaching as well as content specific training. The ways that educators internalize these sessions is up to their interpretation. Using a mixed method approach, this study was designed to show how reflective and inquiry based professional development practices increase educator self-efficacy.

Retention of teachers in education is a hurdle. Due to demands of the job as well as outside circumstances (such as the COVID-19 pandemic), education as a whole is facing a battle in keeping educators in the profession. This forces the powers at be to look at ways to increase resilience and self-efficacy in educators so that they feel confident and more able to remain in the classroom.

For the purpose of this study, outcomes displayed how spending time on reflective, inquiry based professional development sessions increased educator self-efficacy. How can educators be provided with professional development that provides them with a deeper sense of self-efficacy? If educators are not getting anything out of the development offered to them, why are they spending valuable time attending (and facilitators providing) it?

This study shed light on which types of professional development assist educators in building self-efficacy and what impact inquiry based reflective practices also build upon their strong skills.

Research Question

How does inquiry-based, reflective professional development impact educator self-efficacy?

Research Design

A mixed method approach was utilized in this study featuring the New General Self-Efficacy Scale (Chen et al., 2001) and an interview process which was applied during the observation process. It also incorporated other professional development practices included in the fall semester. The mixed method approach best suited this study because it provided a holistic picture of growth of self-efficacy, or lack thereof, as well as the practices that best supported educators in their work. The mixed method approach gives voice to the participants in the study as well as a lens of their experiences with in the research. While surveying the participants provides data to support the findings, the research also encompassed how the educators interpreted their own experience. This allowed the researcher to determine the effectiveness of both the data and interview questions.

This study was grounded in uncovering how educators become more self-efficacious through professional development. To begin the study, the researcher gave the New General Self-Efficacy Scale to participants to understand where educator's initial thoughts lay regarding inquiry-based professional development (see Appendix A). Throughout the study, the researcher checked in with participants informally and marked educators who felt as if there were growth coming from their learnings through an interview (see Appendix B). These findings supported whether or not opinions of educators had changed based on their reflective

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inquiry-based practices. This comparison assisted the researcher at the end of the study on the survey that yielded final results.

Setting

This study took place in a midsized district on the outskirts of the metropolitan area in Minnesota among educators in continuing contract year one and two. There were educators in both the primary and secondary levels being researched. Grade level and content area educators were also included.

The district includes six elementary schools, one middle school, and two high schools which include the communities of Buffalo, Hanover, and Montrose. The district office is located in Buffalo, MN and the district serves approximately 5,700 students. Educators on a continuing contract (tenure) in the district range in age from 25-70 years of age. This rural district has a student body that is comprised of 90% white students, 1% black students, 4% Latino(a) students, 1% Asian students, and 1% American Indian students.

The district is designated as a Q-Comp (Quality Compensation) site and has been since 2015. This is a voluntary program that allows local districts to design and implement four components including career ladder/advancement options, job-embedded professional development, teacher evaluation, and performance pay combined with alternative salary schedule. There are 105 school districts currently involved, 77 charter schools, one intermediate district, and one education district that have implemented this program.

Educators meet bi-weekly with their professional learning community (PLC) and are coached by an instructional coach aligned with the program using the cognitive coaching

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model. Educators are assigned a coach who provides opportunities for pre-observation and post-observation conversations as well as an observation of the educators choosing.

The study took place during the fall observation cycle given by the district which began in September 2021 and ended in November 2021.

Participants

The participants of the study were educators who are employed in the BHM District on a continuing contract in years 1 or 2 on the Teacher Development and Evaluation (TDE) calendar. These educators have gone through the process of receiving tenure in the district thereby including them in the Q-Comp process on a three-year basis. Years one and two involve professional development in the form of cognitive coaching with an instructional coach, while year three is reserved for coaching by an administrator and a coach. The researcher surveyed 30 educators from both the primary and secondary levels. Educators at the primary level serve in one classroom with groups of 30-35 students. Educators at the secondary level serve three classes of students in a content area with groups of 30-35 students. Grade levels with secondary educators vary depending on content area. Some participants have been career educators, some just beginning, and some second career.

Sampling

Participants were selected by convenience sampling. Convenience sampling is used in this study because all of the participants were readily available to the researcher and therefore were part of non-random sampling. Participants were given the option to participate or not as noted in the informed consent letter. The participants of this study were part of the researcher's 2021--2022 cognitive coaching caseload.

Instrumentation

In using a mixed method approach for this study, the researcher used the New General Self-Efficacy Scale and an informal interview. In this survey, educators are asked to rate themselves on a scale of 1-5 (1 being strongly disagree and 5 being strongly agree) on their ability to be self-efficacious in general. Questions ranged from identifying their abilities as educators, their preferences for teaching and professional development, and their self-interpretations of efficacy as it relates to inquiry based, reflective professional development. Additionally, the researcher interviewed the educators based on the survey after the post-observation conversation. The questions asked of the educators pertained to their general feeling about professional development practices, their learnings and preferences for it, and their feeling of self-efficacy post cognitive coaching.

Data Collection and Analysis

A longitudinal approach was taken in both the collection of the New General Self Efficacy Scale answers and interview data in order to display the participant's reflections throughout the fall cycle (September – November 2021). Participants responded to both the scale at their pre-observation and again at their post-observation. The interview questions were conducted at the end of their observation cycle in the fall of 2021.

Data was be collected through the responses from the New General Self Efficacy Scale as it related to the educator's reflection on their craft. Discrete data was be derived from the answers to the scale questions. Discrete data was used to display the number of educators who answered each prompt on the scale prior to the observation process and after it. The aim of the statistics was to measure how the educator's reflection changed during the cycle.

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An edited transcription of the interviews was used to measure qualitative data. These interviews were edited to increase clarity in the interview process. After the transcriptions were derived, the researcher used inductive coding to group interview data into themes, and codes were developed from the data and themes. Steps for this included organizing codes into categories/subcodes, further rounds of coding, and then turning codes and categories into an edited transcription that was grouped into themes.

Research Question and System Alignment

Table 1 provides a description of the alignment between the study's Research Question and the methods used in this study to ensure that all the variables of this study have been accounted for adequately.

Table 1

Research Questions Alignmen

Research Question	Variables	Design	Instrument	Validity and Reliability	Technique	Source
How does inquiry-based, reflective professional development impact educator self-efficacy?	IV: Professional Development Sessions of multiple varieties DV: Educator's internalization of professional development and feelings of self-efficacy	Mixed Method Longitudinal Study containing a scale and interview to display the impact of inquiry-based reflective professional development on educator self-efficacy	New General Self-Efficacy Scale Interviews	New General Self-Efficacy Scale was used on two different occasions in the process that displayed the effect of inquiry based professional development provided.	Scale / Interviews	Primary and Secondary Educators

Procedure

The study lasted for the duration of the fall cycle in the 2021-2022 school year. This was approximately 12 weeks. The researcher worked to ensure that educators were able to provide voice to the study at the beginning of the school year and after the first marking period.

Prior to the observation cycle, participants responded to the scale. They also responded to interview questions in a one-on-one session. The data from both the scale and interview was taken but not analyzed at that time. The professional development sessions, including cognitive coaching, were provided to these educators for the duration of the fall term and into winter term (a quarter and a half), spanning from September to November 2021. Right before the break began, the participants once again responded to both scale and brief interview questions on a one-on-one basis at the conclusion of the fall cycle. From there, the data was assessed and calculated to find and analyze the result of various professional development, particularly of inquiry-based opportunities (cognitive coaching, culturally relevant teaching, etc.)

Ethical Considerations

The well-being and resilience of educators was the backbone of this study. An informed consent letter and brief synopsis (see Appendix C) of the study was provided to each educator prior to its beginning. Throughout the study, participants were checked in with and encouraged by the fact that their information was secure and not being used in their cognitive coaching work or professional development. They were also assured that their names would be withheld and instead, place holder names (Educator 1, Educator 2, etc.) would be used in the findings.

Conclusion

Educators need and deserve professional development opportunities that increase their self-efficacy in order to perform at their best for their students. However, how an educator internalizes these sessions makes an impact on the way that they operate within the walls of their classroom. This, in turn, affects student achievement. In order to increase their resiliency and ability to be self-efficacious, continuing to provide resources that are rich in practices that support their desire to teach is imperative. This study provides a better understanding of where educators stand prior to, during, and after professional development sessions that work to increase their collective efficacy and that of themselves. This study also strives to provide a lens into the work of educators and what they do beyond delivering instruction. Providing them with resources that increase their resilience and model inquiry for them supports students through their teachers' learning. This study also encourages educators to be accountable for their own growth, learning, and development while putting them at the helm to navigate their growth.

CHAPTER 4

DATA ANALYSIS AND INTERPRETATION

Introduction

The purpose of this research was to determine the effects that inquiry based, reflective professional development have on educator self-efficacy. In this study, 48 educators in years one and two on the professional development cycle took the New General Self-Efficacy Scale and participated in a five question open ended interview. The New General Self-Efficacy Scale was given at the end of the observation process with the interview questions posed in the midst of the cycle.

Data Collection

This research was conducted using a mixed methods approach through the use of a survey and interview. The scale and survey can be found in appendix A and B. After the survey and interviews were completed, the researcher examined the results and grouped similar answers together to create a table. The study began on September 13th, 2021 which was the first day of the fall cycle and ended November 23rd, 2021 during the last week of the fall cycle.

Results

Q1: How does inquiry-based, reflective professional development impact educator self-efficacy?

Quantitative analysis is a research method that is numbers based. After analyzing the data collected from the New General Self-Efficacy Scale from both the pre-observation and post-observation, the researcher noted that most often, educator self-efficacy remained consistent as shown in Table 2.

Table 2:

New General Self-Efficacy Scale Responses

Question	Decrease	Consistent	Increase
I will be able to achieve the goals that I set for myself.	0	39	9
When facing difficult tasks, I am certain that I will accomplish them [in my teaching position].	0	41	9
In general, I think I can obtain outcomes that are important to me.	0	46	2
I believe I can succeed at most any endeavor to which I set my mind.	0	44	4
I will be able to successfully overcome many challenges.	0	34	14
I am confident that I can perform effectively on many different tasks.	0	38	10
Compared to other people, I can do most tasks very well.	0	41	7
Even when things are tough, I can Perform quite well.	0	33	15

Note: N = 48

Providing the New General Self-Efficacy Scale as it pertained to cognitive coaching sessions both before and after conversations took place, displayed a consistent level of self-efficacy among the educators surveyed. After the post observation conversation, there was a 31% increase in educators noting that they self-efficacy was enhanced after the post-

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observation conversation. None of the educators surveyed noted a decrease in their self-efficacy after the cognitive coaching process.

Qualitative analysis is defined as a research method for the subjective interpretation of the content of text data through the systematic classification process of coding and identifying themes or patterns (Hsieh & Shannon, 2005). After analyzing responses from educator interviews by interpreting the content of the data through the systematic classification process of coding and identifying themes and patterns, the following three major themes emerged: reflection, “sit and get”, and questioning.

The first theme, reflection, coincided with the first interview question and was therefore brought up a significant amount and revisited. Because of the nature of cognitive coaching, it could be inferred that reflective practice was discussed due to the observation cycle. The second theme, “sit and get”, refers to professional development sessions in which interactive engagement is low and educators are provided with a tool or strategy meant to be used in the classroom immediately. The researcher noted that this was noted as a positive in primary level interviews and a negative in secondary level interviews. The third theme, questioning, had participants thinking about the ways that they were asked questions in relation to professional development and the way that those questions then transferred back to their student achievement.

Figure 1 provides a visual representation of the frequency that each theme was noted in the qualitative data presented in the survey responses

Figure 1
Frequency of Themes

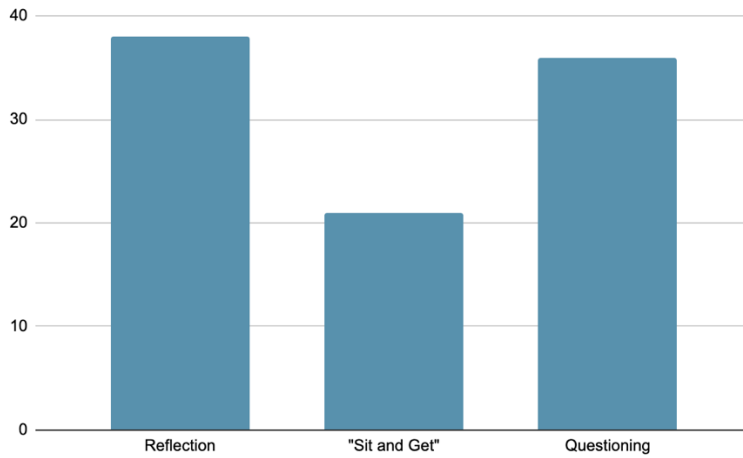


Table 3 provides direct quotes from the interviews themselves for each of the three themes. These three themes were most identified by educators as those that were most important to them in their professional development practices and those that also directly impacted student achievement.

Table 3
Three Themes of Interview Questions

Theme	Quote(s)
Reflection	<ol style="list-style-type: none"> 1. "Reflection is really a natural conduit to retention of thinking which assists in PD." 2. "A reflective lens is extremely beneficial to maintain focus in PD sessions." 3. "Reflection in constant – in professional development sometimes it can feel like a stretch, but daily reflection on professional development

happens every hour. Cognitive coaching, done right, fosters reflective practice.”

4. “Reflection on teaching, not strategy is where a lot of the magic happens.”

5. Professional development sessions that I have led have provided me with the most reflection. Designing relevant, engaging, and worthwhile sessions has shifted my lens.”

Sit and Get

1. “Having tangible strategies and ideas to bring back to the classroom is helpful in a professional development setting.”

2. “A reflection on the learned strategies in a sit and get professional development session is most valuable in implementing which impacts student achievement.”

3. “[In primary levels], sit and get professional development is an action plan to turn and around and immediately implement.”

Questioning

1. “Questions like ‘Why do you think things went that way?’, ‘Why?’, ‘How might it look different?’, really foster thinking for me in my practice.”

2. “Questions that are succinct and brief and get to the point are most helpful and assist me in my reflections in cognitive coaching.”

3. “Fostering questions in my own practice through a coach’s questions brings me the most growth and reflection to make changes within my classroom.”

4. “Having a coach ask questions that are specific to one of my lessons and/or my work assists me in building upon what is going well and what I’m struggling with in my practice.”

Data Analysis

In analyzing the data, educators involved in the process remained consistent in their level of self-efficacy through the cognitive coaching process. Educators feel most efficacious when they are able to reflect, receive, and use inquiry in their professional development. There were those who reflected that they had an increase in self-efficacy through the processes of cognitive coaching and professional development practices.

Analyzing educator survey data was very beneficial to see how their thoughts align with district professional development or in some cases do not. The lens of their self-efficacy remained consistent in most cases and increased in some. This allowed the researcher to deepen their thinking about which observation tools (traditional observation, portfolio, in person, distant learning, etc.) may be most useful in working to increase those who remained the same.

In retrospect, the development of an efficacy scale that is specific to cognitive coaching and education as a whole would be beneficial in working to have educators draw upon their experiences in the classroom and within professional development sessions. Because of the aforementioned constraints, the frontloading necessary to explain the survey and its purpose was perhaps unclear.

Bandura et al (1990) stated that:

Self-beliefs of efficacy affect thought patterns that can enhance or undermine performance. These cognitive effects take various forms. ...personal goal setting is influenced by self-appraisal of capabilities. The stronger the perceived self-

efficacy, the higher the goals people set for themselves and the firmer their commitment to them. (p. 403)

Reflection and questioning are key in producing self-directed learners and enhancing self-belief. Through the experiences of professional development, leaders have an opportunity to assist educators in their own inquiry, asking them questions while providing them with tangible strategies and opportunities for their own reflection to meet the needs of their students.

Recommendations for future research

The researcher understands that the results of this study are relative to the education setting and that is a limitation of the generalizability of this study.

While the hope was that more educators would experience an increase in their self-efficacy through these observations and conversations, the researcher noted that lack of time and resources at this time in the world of education are limited. Multiple discussions had to be rescheduled due to lack of substitutes, time, and scheduling conflicts. Educators are at a point where they are working to survive day to day challenges and responsibilities due to the COVID – 19 pandemic and its educational/social-emotional ramifications. This created a sense of inadequacy among some educators and may have skewed their responses.

If there were an opportunity to conduct this research again, improvements could be made in the questions regarding educator efficacy to include current school climate. It would be interesting to track efficacy throughout the school year, especially as it ebbs and flows with distance learning, hybrid, and in person learning situations. Another idea would be to survey

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educators and provide them with some choice professional development opportunities to see which are most impactful in building efficaciousness.

Though it was positive that no educator noted that professional development practices related to inquiry and reflection decreased their self-efficacy, a higher number of educators identifying growth in self-efficacy would be desired. Meeting educators where they are and asking what they need, listening and responding to those needs, and then carrying out professional development opportunities may be a next step.

Conclusion

After reviewing the survey results and coding the interviews that were completed throughout the research period, it can be concluded that the educators' level of self-efficacy either remained consistent or increased throughout the fall cycle that data was collected. The efficacy scale showed growth of efficacy from the pre-observation conversation to the post-observation conversation indicating that inquiry based reflective practices works to increase educator self-efficacy among 29% of the surveyed educators. With more attention and responsiveness placed on educator voice, the researcher believes that educators' level of ownership would continue to increase as it relates to professional development. Personalized learning is a pathway that educators can encounter which might give them an autonomous option to deepen their reflections.

CHAPTER 5

IMPLICATIONS FOR PRACTICE

Action Plan

After observing and discussing professional development practices with educators, the plan is to continue this process loosely for the rest of the school year. By asking educators what is most beneficial for them, they are provided a voice in their professional development practice and thus more likely to be impacted by it. Educator autonomy, agency, and voice is very powerful. There will be valuable growth among these educators by asking questions directly related to where educators are and how to reach them to get them to reflect and grow.

Because of where we are as a society in the midst of a world-wide pandemic, I believe that this work is even more important than ever. To truly meet the needs of our educators, it is clear that there needs to be a shift in what is most beneficial for them as it relates to their professional practices. There are those that educators could take or leave, and then there are those that are vital to the growth and development of those trusting adults that are educating our kids.

It continues to be vital as a cognitive coach to truly meet educators where they are, listen thoughtfully, and ask questions to mediate states of mind to move educators through the different levels of thought, reflection, and even trauma while we continue to navigate through a challenging time. Through the data that was collected, a sense of survival encompasses educators as they juggle responsibilities that continue to grow. By asking them what types of professional development might most benefit them while still maintaining high expectations, we are offering them a way for them to have a voice in their growth.

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School climate and culture are at a crossroads. There are many challenges that have been around for decades and new ones that have been unearthed in the past few years. The goal remains the same: to support educators through their growth and development so that they can work to meet the needs of the students that they encounter.

Plan for Sharing

With the knowledge that I have gained throughout the research that I have conducted; the natural next step is to share it with my team. I am a part of a five-person Program for Professional Development (PPD) team who works with educators within the Q-Comp model. Through this model, we work with educators through the cognitive coaching model, asking them to reflect on their practice and be self-directed learners. The outcome of this research could greatly benefit the educators with whom we work and lay the groundwork for starting conversations on how to provide personalized learning paths for those that we coach.

Through my research I also discovered that there are those who struggle with the coaching process and need an alternate outlet to receive professional development. The next step for those educators would be to tailor our approach and questions to meet the individual needs of educators who are a part of the process. While staying true to the fidelity of cognitive coaching, facilitating conversations that assist educators in directing their own learning will in turn provide growth for our students.

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APPENDIX A

New General Self-Efficacy Scale

This survey accompanies a measure in the SPARQTools.org [Measuring Mobility toolkit](#), which provides practitioners curated instruments for assessing mobility from poverty and tools for selecting the most appropriate measures for their programs. To get a copy of this document in your preferred format, go to "File" and then "Download as" in the toolbar menu.

Age: Adult

Duration: < 3 minutes

Number of items: 8

Answer Format: 1 = strongly disagree; 2 = disagree; 3 = neither agree nor disagree; 4 = agree; 5 = strongly agree.

Scoring:

To calculate the total score for each participant, take the average rating of the items by adding respondents' answers to each item and dividing this sum by the total number of items (8).

Sources:

Chen, G., Gully, S. M., & Eden, D. (2001). Validation of a new general self-efficacy scale. *Organizational research methods*, 4(1), 62-83.

Instructions: Participants are told that (a) general self-efficacy relates to "one's estimate of one's overall ability to perform successfully in a wide variety of achievement situations, or to how confident one is that she or he can perform effectively across different tasks and situations," and (b) self-esteem relates to "the overall affective evaluation of one's own worth, value, or importance, or to how one feels about oneself as a person."

Note: Prior to completing the scale, participants will be asked to think about the questions in relation to their teaching position and practice.

Instructions: Please circle your answer below.

1. I will be able to achieve most of the goals that I set for myself.

Strongly disagree Disagree Neither agree nor disagree Agree Strongly agree

2. When facing difficult tasks, I am certain that I will accomplish them [in my teaching position].

Strongly disagree Disagree Neither agree nor disagree Agree Strongly agree

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3. In general, I think that I can obtain outcomes that are important to me.

Strongly disagree Disagree Neither agree nor disagree Agree Strongly agree

4. I believe I can succeed at most any endeavor to which I set my mind.

Strongly disagree Disagree Neither agree nor disagree Agree Strongly agree

5. I will be able to successfully overcome many challenges.

Strongly disagree Disagree Neither agree nor disagree Agree Strongly agree

6. I am confident that I can perform effectively on many different tasks.

Strongly disagree Disagree Neither agree nor disagree Agree Strongly agree

7. Compared to other people, I can do most tasks very well.

Strongly disagree Disagree Neither agree nor disagree Agree Strongly agree

8. Even when things are tough, I can perform quite well.

Strongly disagree Disagree Neither agree nor disagree Agree Strongly agree

APPENDIX B

Interview Questions

Note: Educators were asked to reflect on their own thoughts particular to their own experience and practice.

1. What, if any, professional development experiences most affect teachers perceived self-efficacy?
2. What types of professional development experiences are considered to be most worthwhile for improving self-efficacy from teachers' perspectives?
3. How does reflection impact professional development?
4. What questions are developed during professional development sessions that are most worthwhile?
5. Is there a direct correlation between learned strategies from professional development and student achievement?

APPENDIX C



218.477.2217 T
218.477.2561 F

September 1st, 2021

877 Bison Blvd. Buffalo, MN

Dear colleagues,

You are invited to participate in a study to determine the impacts of inquiry-based professional development in relation to educator self-efficacy.

You were selected as you are a part of my coaching cohort. If you decide to participate, please understand that you will be asked to do the following – which are typical professional development related activities that involve no risk to you.

1. You will be going through the cognitive coaching process as designed by your teacher development evaluation year. We will do this as the school and your calendar permits as we do each cycle – focusing on year 1 and 2's fall cycle.
2. Attendance and learning at other professional development opportunities throughout the fall semester will also be discussed as a way to reflect on growth and practices throughout the school year.
3. Participate in a brief reflection of the process in the form of verbal or written communication / interview. This will not affect the process of cognitive coaching or Q-Comp.

Although I have been granted permission to conduct this study by building administration, since this is information being used to help me complete my master's degree at Minnesota State University Moorhead, consent to use this information in my final paper is required as a part of my degree. If I didn't need this type of information to complete my master's degree, I would not conduct this type of research in my everyday interactions and I would not need informed consent. If you sign this form, you are giving me consent to use the information that I gather. All information that is used will be confidential; no names will be used. Please also note, you can choose not to participate at any time without consequences.

Please feel free to ask any questions you have regarding this study. You may contact me at school (763-682-8031) or at kgrant@bhmschools.org. Feel free to connect with me in my office at Buffalo High School or Montrose Elementary School of Innovation as well. You may also contact my principal Investigator, Dr. Tiffany Bockelmann (218-780-0757) or by email at tiffany.bockelmann@minnstate.edu. Any questions about your rights may be directed to Dr.

Inquiry Based Professional Development and Educator Self-Efficacy

Lisa Karsch, chair of the MSUM Institutional Review Board, (218-477-2699) or by email at irb@minnstate.edu.

You will be offered a copy of this form to keep. You are free to make a decision as to whether or not you choose to participate. Your signature indicates that you have read the information provided above and have decided to move forward with participation. You may withdraw at any time without prejudice or penalty after signing this form should you choose to discontinue participation in this study.

Signature of Participant

Date

Signature of Investigator

Date

APPENDIX D

Institutional Review Board



DATE: September 27, 2021

TO: Tiffany Bockelman , Ed. D
Kaia Grant

FROM: Lisa Karch, Chair
Minnesota State University Moorhead IRB *Lisa J. Karch*

ACTION: APPROVED

PROJECT TITLE: [1809132-1] The Impact of Inquiry-Based Professional Development on Educator Self-Efficacy

SUBMISSION TYPE: New Project

APPROVAL DATE: September 27, 2021

EXPIRATION DATE: September 27, 2022

REVIEW TYPE: Exempt Review

Thank you for your submission of New Project materials for this project. The Minnesota State University Moorhead IRB has APPROVED your submission. This approval is based on an appropriate risk/benefit ratio and a project design wherein the risks have been minimized. All research must be conducted in accordance with this approved submission.

This submission has received Exempt Review based on the applicable federal regulation.

Please remember that informed consent is a process beginning with a description of the project and insurance of participant understanding followed by a signed consent form. Informed consent must continue throughout the project via a dialogue between the researcher and research participant. Federal regulations require that each participant receives a copy of the consent document.

Please note that any revision to previously approved materials must be approved by this committee prior to initiation. Please use the appropriate revision forms for this procedure.

All UNANTICIPATED PROBLEMS involving risks to subjects or others and SERIOUS and UNEXPECTED adverse events must be reported promptly to the Minnesota State University Moorhead IRB. Please use the appropriate reporting forms for this procedure. All FDA and sponsor reporting requirements should also be followed.

All NON-COMPLIANCE issues or COMPLAINTS regarding this project must be reported promptly to the Minnesota State University Moorhead IRB.

This project has been determined to be a project. Based on the risks, this project requires continuing review by this committee on an annual basis. Please use the appropriate forms for this procedure. Your documentation for continuing review must be received with sufficient time for review and continued approval before the expiration date of .

Inquiry Based Professional Development and Educator Self-Efficacy

Please note that all research records must be retained for a minimum of three years after the completion of the project.

If you have any questions, please contact the [Minnesota State University Moorhead IRB](#). Please include your project title and reference number in all correspondence with this committee.

This letter has been issued in accordance with all applicable regulations, and a copy is retained within Minnesota State University Moorhead's records.