5-2019

# Impact of a Coaching Cycle on Teacher Self-Efficacy

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An Action Research Project Presented

in Partial Fulfillment of the Requirements

For the Degree of Master of Education

May 9, 2019

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**Abstract**

The purpose of this action research project was to determine the correlation between teacher self-efficacy and engaging in a student-centered coaching cycle with an instructional coach. Data was collected through qualitative responses via an electronic self-efficacy survey from a sample group of four middle school teachers. Analysis of the data collected suggested that engaging with an instructional coach in a coaching cycle increases a teacher's overall self-efficacy.

**Impact of a Coaching Cycle on Teacher's Self-Efficacy**

Instructional coaching is a leadership position in most schools and districts where individuals who were once classroom teachers are now in the role of teaching, mentoring, and collaborating with educators on a full time or part time basis. Roles of the instructional coach vary dependent upon building and district needs. Some common roles are mentoring teachers, planning and delivering professional development, researching and curating best practices and resources, empowering teachers to become leaders and learners, and serving as change agents (Wolpert-Gawron, 2016). The roles of an instructional coach are important to systemic change in a district, but little has been discovered on how that importance and impact is measured.

> Instructional coaches are unique stakeholders in today's schools. They do not abandon their role of teacher. On the contrary, they celebrate teachers by embracing all the elements of the profession and sharing their learning with others. Instructional coaches are a vital but underused resource in increasing student success. By supporting and empowering them, schools can jumpstart real improvement. (Wolpert-Gawron, 2016, p. 56)

Previous research studies conducted on the topic of teacher self-efficacy in association with coaching and/or peer collaboration offer evidence of a positive impact on a teacher's practice, confidence, and perceived beliefs of themselves. There is not a substantial research base to prove the hypothesis of increased teacher self-efficacy through engaging in a coaching cycle. Self-efficacy is the indicator that leads to the second largest effect size in Hattie's (2015) meta-analysis of influences related to student achievement which is collective efficacy. Research conducted on self-efficacy shows that to build collaborative efforts and collective efficacy, one must have self-efficacy first (Sweeney & Maushbach, 2018). Due to the importance of self-

efficacy in regards to positive outcomes for student learning and the need for a more solid research base, the proposed research is necessary to further explore connections between instructional coaching support for educators and increased self-efficacy. The purpose of this study will be to examine the impacts that working with an instructional coach has on a classroom teacher. Specifically, the impact that a student-centered coaching cycle with a teacher has on that teacher's self-efficacy. This study will explore the connection to a coaching cycle, led by an instructional coach, with middle school teachers. It is hypothesized that the data will show a correlation between coaching practices within the coaching cycle and the positive impacts on teacher self-efficacy. It is hypothesized that there will be an increase in a teacher's self-efficacy and will be noted in the posttest survey results. The research question posed and analyzed in this study is: Does engaging with an instructional coach in a student-centered coaching cycle increase a middle school teacher's self-efficacy?

## Review of the Literature

Efficacy is the belief, regardless of outside indicators, that teachers can make a positive impact on student learning and outcomes (Donohoo, 2017). Efficacy is the second highest factor on researcher John Hattie's (2015) List of Factors Influencing Student Achievement, with an effect size of 1.57. Through Hattie's meta-analysis of factors associated with student learning outcomes, it was determined that a .40 effect size in regards to student achievement equals a year's worth of growth. Collective efficacy has the potential to quadruple the rate of student learning (Donohoo, 2017; Hattie, 2015). In education, collective efficacy is seen through Professional Learning Communities where educators work together to determine essential standards, assess those standards with students, and intentionally plan next steps in instruction based off of the results of the assessments. Another means of collective efficacy is gaining

consensus on a school-wide initiative and working collaboratively to measure the impact of that work. Although collective efficacy is essential to reach sustained school improvement efforts it is almost impossible to attain without a teacher's self-efficacy as the foundation.

Hattie (2015) lists collective efficacy as a powerful factor in teaching and educational leadership but without teacher self-efficacy a group of teachers will never achieve collective efficacy. Getting to collective efficacy requires self-efficacy. When teachers believe they have the knowledge and skills to do the job, collaboration becomes more powerful (Sweeney & Mausbach, 2018). Beyond individualized professional learning plans that lack feedback and support, instructional coaches can provide in-action feedback and reflective prompts to increase a teacher's belief in their abilities. A means to assist educators in fostering their own self-efficacy and guiding the way for collective efforts can be done in working with an instructional coach.

Instructional coaches assist in creating collective efficacy by helping teachers develop their own self-efficacy and desire to share and collaborate with their colleagues (Sweeney & Mausbach, 2018). Building efficacy in teachers is impactful to their continued efforts to improve student learning and outcomes. The center of student-centered coaching is a teacher's learning goal for their students. Over the course of the coaching cycle, a teacher begins to see the connection to their abilities and the outcomes for their students' learning. "Coaching (student-centered) is designed to increase efficacy because it is built on the foundation of helping the teachers reach their goals for student learning" (Sweeney & Mausbach, 2018, p. 61).

The approach used in this study will be student-centered and focus on a specific teacher directed goal throughout the coaching cycle. Student learning and outcomes will not only be the focus of the coaching cycle, but this process also directly relates to an increase in student

outcomes through collaboration with an instructional coach. The collaborative work that the instructional coach and teacher will engage in will be connected to student learning and outcomes at every juncture. The student-centered coaching model was chosen for this specific research because of the direct correlation to student achievement and outcomes and the link to building a teacher's self-efficacy in hopes of improving those outcomes for students.

**Coaching Models**

There are a variety of coaching models. Each coaching model has its own specific purpose and produces slightly different outcomes. These coaching models usually fall into one of three types of coaching categories: relationship-driven coaching, teacher-driven coaching, and student-centered coaching. The model used in this study will be student-centered coaching which has proven to have the most impact on student learning (Sweeney & Maushbach, 2018). Student-centered coaching is a model that focuses on a teacher and coach partnership where both work together towards the goals they have established for student learning (Sweeney & Maushbach, 2018). The entire continuous cycle that the instructional coach and teacher engage in is rooted in student learning, instructor reflection, assessment and planning, and effective instructional steps aimed at increased student learning outcomes.

Other models of coaching are discussed in the literature and reflect different types of coaching with distinctly different goals. Teacher-driven coaching focuses on teacher moves exclusively and may work best if a school or district is working on implementing specific practices and curriculum. Coaching models such as cognitive coaching would fall into the teacher-driven category as it focuses on teachers building their repertoire of instructional practices and skills through sharpening cognitive abilities. Teacher-driven coaching cycles around specific actions of the classroom teacher and may or may not address student learning or

student action throughout the cycle. This model may be effective in reaching an intended teacher centered goal. A third type of coaching focuses on the mentorship of teacher through the coaching relationship.

Relationship-driven coaching centers on the supports and resources that a coach provides to a teacher (Sweeney & Maushbach, 2018). This is often representative of mentor coaching. In mentor coaching, instructional coaches mentor new to profession educators on a variety of resource or management topics. Oftentimes in a relationship-driven coaching situation a coach may find themselves as an empathizer, emotional support, classroom management navigator, and/or a building resource. Although this type of relationship is essential for a new to profession educator, it is often the responsibility of a veteran teacher to take on this role. Rarely does relationship-driven coaching lead to continuous coaching cycles centered on student learning and outcomes. Sweeney & Maushbach (2018) stress that the closer the coaching model is to student-centered goal the more impact it will have on student learning and achievement.

Wolpert-Gawron (2016) mentions that the role of an instructional coach is vital in seeking real improvement and increasing student success. Self-efficacy is at the heart of coaching (student-centered) and directly leads to the foundation of collective efficacy (Sweeney & Mausbach, 2018). Collective teacher efficacy outranks many common factors in impacting student achievement, including prior achievement, socioeconomic status, home environment, and parental involvement (Sweeney & Mausbach, 2018; Hattie, 2015). Coaching is an effective avenue for professional learning that allows teachers job-embedded opportunities to continue to grow their practice in service of reaching high levels of success for their students. The connection between teacher ability as an instructor and their self-efficacy, along with specific coaching models, is explored in the following studies.

**Instructional and Cognitive Coaching Studies**

In a study conducted on the impacts of instructional coaching on teachers' abilities to implement instructional strategies to meet the needs of diverse learners and teachers' perceived viewpoints of those abilities, it was found that instructional coaching had a positive impact on teachers' self-efficacy (Simpson, 2017). The instructional coaching model used in this survey was teacher-driven as it focused on the teacher's growth in implementation of specific instructional strategies. The teachers who participated in this study were learning to implement specific district directed instructional practices with the goal of engaging all learners, specifically diverse learners in the classroom. All elementary staff in this district were tasked with mastering the implementation of those specific strategies. Teachers in this district were offered an instructional coach as a support in the implementation process. This study measured the impact that engaging with an instructional coach in implementation of instructional strategies to meet the needs of diverse learners had on a teacher's self-efficacy.

Although the coaching model used in this study was teacher-driven, each participant engaged in a full coaching cycle. The full coaching cycle consisted of a pre-conference, to set a specific teacher goal for implementation of the strategy he/she chose, a data collection phase that occurred during implementation, and a post-conference to reflect on the data collected. During the post-conference, the teacher and coach would determine if the teacher goal was meet or not and what next steps might be to address the outcomes. Some instructional coaching strategies used during the implementation phase were modeling, scripting, co-planning, and seating chart data analysis. Through the coaching interactions in this study it was found that there was a positive impact of teacher self-efficacy from the participants as a whole.

The teacher's self-efficacy, in regards to her perceived beliefs about her abilities to implement instructional strategies to meet the needs of diverse learners, was measured by a pretest-posttest design. Data gathered from this survey displayed a 64% increase in confidence in implementing instructional strategies to meet the needs of diverse learners after engaging in a coaching cycle with an instructional coach (Simpson, 2017). Participants engaged in a coaching cycle with an instructional coach during a four to six week period. The participants indicated that before the coaching cycle 36% felt efficacious in regards to their abilities to implement instructional strategies for diverse learners (Simpson, 2017). Simpson's (2017) study reported 90% of participants stated they felt very confident in their abilities after their work with an instructional coach.

This study was conducted with elementary teachers and participants taught in a grade level classroom in a K-4 elementary building. Implementation of district assigned instructional strategies to meet the needs of diverse learners were mandatory, working with an instructional coach was not. Teacher participants who engaged in a full coaching cycle to support implementation of district directed instructional strategies showed a positive impact on self-efficacious beliefs. A teacher-driven coaching model was used to guide the work of the instructional coach through the coaching cycle with participants. Simpson (2017) studied the impacts on a teacher's self-efficacy through general coaching practices. The following research investigated the connection to teacher self-efficacy after engaging in another teacher-driven model of coaching called cognitive coaching.

Cognitive coaching is a specific type of coaching model that focuses on the thinking and reflection of the practitioner through strategies and a three-step observation process that is teacher-driven (Killion & Harrison, 2017). A teacher-driven coaching model focuses on specific

teacher action and moves to work towards a teacher directed goal. Edwards and Newton (1995)

hypothesized that teachers, who engaged in cognitive coaching cycles, to hone the skills learned

in training, would increase their self-efficacy as a classroom teacher. This is similar to Simpson

(2017) who supported teachers through implementation of instructional strategies learned at the

district level. Edwards and Newton (1995) believed that supporting teachers through a specific

coaching model, cognitive coaching, during the implementation of skills learned in training

would raise a teacher's belief in his/her abilities.

Edwards and Newton (1995) used a survey to measure the perceived self-efficacy of the

classroom teacher participants. A control group was used in the study that consisted of teachers

who received the training but without the cognitive coaching support (Edwards and Newton,

1995). The findings support Simpson's (2017) study with 11 of the 12 comparisons with the

control group indicating higher self-efficacy scores (Edwards and Newton, 1995). The results of

the study also point out that those who engaged in more than one coaching cycle scored higher

on teacher self-efficacy (Edwards & Newton, 1995). Edwards and Newton (1995) show the

connection between self-efficacy and cognitive coaching and the increase in self-efficacy with

the participation of multiple coaching cycles.

For those participants that engaged in more than one coaching cycle under the cognitive

coaching model, Edwards and Newton (1995) suggest that there are specific skills these

participants are gaining in addition to the increase in self-efficacy. The results discuss research

that defines a correlation between higher scores on the Teacher Self-Efficacy Scale and teacher

abilities. Edwards and Newton (1995) claim that specific participants that scored higher after

multiple coaching cycles have increased questioning abilities, problem solving techniques, and

develop a less critical and more optimistic outlook. These connections, their research states, can

lead to more self-directed coaching by teachers and a higher sense of empowerment and self-efficacy. In this study, cognitive coaching, has shown an increase in self-efficacy as well as other positive indicators in connection to multiple coaching cycles within this teacher-driven model.

**Teacher Self-Efficacy and Student Achievement**

Beyond coaching models, this study conducted by Eberle (2011) builds a connection between teacher self-efficacy and student achievement. This study indicates the impact on teacher self-efficacy in connection to student achievement beyond the classroom as it specially relates to standardized assessment. Eberle (2011) hypothesized that there was a link between teacher self-efficacy and student achievement, specifically on state assessments in math and reading. A student-centered coaching model also focuses on student achievement and building a teacher's sense of empowerment and self-efficacy. The type of student achievement that goals are centered on and coaching and instructional moves are planned around is specifically student learning that is connected to standards. This learning is measured in common formative assessments within the classroom on a continuous and ongoing cycle. The Eberle (2011) study measures the state assessment in math and reading which may or may not be linked to grade level standards and serves as a summative assessment. The measurement of teacher self-efficacy was measure similarly to other studies mentioned.

Eberle's (2011) study used a survey in a pretest-posttest design to determine teachers' feelings of self-efficacy. Participants were educators that taught third through eighth grade (Eberle, 2011). The results showed that there was no significant difference in state test results in teachers that score high or low on the self-efficacy survey (Eberle, 2011). In analysis of the data other trends were captured in relation to teacher self-efficacy but not in connection to student

achievement. The data analysis brought to light that female teachers tended to rate themselves higher than male teachers on the self-efficacy scale (Eberle, 2011).

With this finding, the study showed that female teachers with a high self-efficacy score reflected student scores that were lower than their male counterparts, who scored low on the self-efficacy survey. Another study, on the impact of cognitive coaching mentioned above, reported a link between teacher gender and self-efficacy. Edwards and Newton (1995) found that females scored higher than males overall when surveyed on self-efficacy. All participants in the Eberle (2011) survey, regardless of their self-efficacy score, scored above state average on both the math and reading assessment (Eberle, 2011). This brings to light the discussion of the role that self-efficacy plays in a teacher's performance and the role it plays in student outcomes as well as a curious connection between gender and self-efficacy.

Although the research surrounding the connection between self-efficacy and gender is intriguing, it does not produce enough of a finding to explore within the discussion of this research connecting teacher self-efficacy to instructional coaching. The analysis of student achievement data is worthy of exploration as it is the foundation of student-centered coaching which is the coaching model strategically used within this study. The work of a coach is to directly impact student learning every day and the way we can ensure that work done is by measuring student learning through formative assessment within a coaching cycle (Sweeney & Mausbach, 2018). Although standardized tests and progress monitoring play a key role in school improvement, those assessments do not guide the work of a teacher or coach (Sweeney & Mausbach, 2018). The reference to student achievement that is appropriate for measuring student growth within a coaching cycle is the formative assessment that is occurring naturally in the classroom to monitor student learning and progress.

Ross (1992) studied the types of support and resources offered to teachers who were implementing a new curriculum at the high school level. As implementation was underway, educators could choose from extended curriculum materials, a three-day workshop, or work with an instructional coach (Ross, 1992). Through these professional learning opportunities Ross (1992) hypothesized that there would be a higher positive affect on student achievement and teacher self-efficacy for those who engaged with a coach for their professional learning on implementing the new curriculum. The study explored the professional learning support provided to educators during new implementation, such as Simpson (2017) and Edwards and Newton (1995) who used coaching as a means to aid in implementation of new instructional strategies.

The participants in the study were seventh through eighth grade history teachers in a small rural school district. Ross (1992) found that student achievement was higher in classrooms where teachers had worked with their coach to implement the new curriculum. The coaching model this study used was loosely based off of the in-school resource coaching model. This model is a teacher-driven model that focuses on specific teacher action and adaptation of curriculum expectations. Some participants met once with their coach, while other participants meet more than twelve times. The assigned coach was tasked with modeling lesson components and giving specific curriculum practice and expectations feedback to the participating teachers in this study after brief conversations and observations (Ross, 1992). Regardless of the differences within this coaching model throughout the study, participants who engaged with a coach had gains in student achievement.

Teachers with a higher self-efficacy score had higher student achievement as well. This study shows that there was a positive impact between student achievement and work with an instructional coach and a correlation between increased teacher self-efficacy and coaching

support (Ross, 1992). This study uncovered that those who engaged with a coach to implement new curriculum not only benefitted from an increase in self-efficacy but also an increase in overall student achievement. This connection between self-efficacy growth and student learning growth notes the importance of the ability to produce both throughout a coaching cycle. The participants in this study noted that collaborating with a coach was empowering and allowed them an opportunity they were not always allotted throughout their school day.

Increasing a teacher's self-efficacy leads to collective efficacy and a means to grow both types of efficacy is through colleague collaboration. Pollara (2012) conducted a study into outcomes of collaboration, one of them being coaching. The findings indicated that those educators who engaged in peer coaching had an increased confidence level and reduced sense of isolation (Pollara, 2012). Peer coaching is a confidential process where colleagues engage in coaching each other to hone instructional skills and practices (Killion & Harrison, 2017). The practice of peer coaching as addressed in this study is a teacher-driven practice. Building off of the collaborative relationship of peer coaching, teachers were able to walk away with an increased sense of confidence.

**Peer Coaching Studies**

Participants shared that peer coaching was an effective practice for professional development due to teacher self-directed goals, pace, and the authentic environment where coaching occurred (Pollara, 2012).  An increase of motivation for learning when the learning is self-directed or personalized, such as in coaching, was listed as a positive outcome for participants (Pollara, 2012). Participants felt that, due to their collaboration with a peer coach, they gained a repertoire of effective instructional practices and skills. In conclusion, Pollara (2012) stated that peer coaching had a positive outcome for participants. The study showed that

when new skills and strategies were learned, the confidence of participants grew. The collaborative efforts and professional learning outcomes in this study connected coaching (peer) to an increase in self-efficacy.

Jao (2013) conducted a study that involved peer coaching as a model for professional development in a similar fashion to Pollar's (2012) study on collaboration through peer coaching. The participants in this study were teachers in a first grade or third grade classroom at a private school. Within this peer coaching model, professionals used teacher-directed goals to determine the coaching cycle focus. Each peer coaching cycle consisted of a pre-conference, an observation, and a post-conference. Teachers were given a set list of specific questions they could choose from to frame the teacher directed goal for the observation and engage their teacher in reflection during the assigned conferences. The goal of peer coaching in this particular study was to use peer coaching as a means of professional development to assist teachers in reaching competence in specific instructional strategies and practices.

"It was the act of collaboration that had the most profound effect on the teachers" (Jao, 2013, p. 294). Participants stated that they were able to see beyond the observation and felt reciprocal ownership in the growth and improvement of each other (Jao, 2013). Through this research, Jao (2013) concluded that the study allowed teachers to improve specific pieces of their practice and benefit from engaging in a peer coaching model. Although this study highlights the positive impact of collaboration within peer coaching, the general findings lead to positive outcomes of teacher ownership in self-improvement but not specifically self-efficacy.

**Need for Further Research**

Throughout these studies it is clear that there is a correlation between coaching and self-efficacy. The previous studies examined cognitive coaching, peer coaching, and instructional

coaching for implementation purposes and the impact those specified practices had on a teacher's self-efficacy. The coaching models examined in these studies are all teacher-driven and center on specific teacher action and goals. The prior research does not provide substantial connections to instructional coaching specifically that is student-centered and a teacher's self-efficacy. Although Simpson (2017) highlights an increase in self-efficacy in regards to instructional practices to meet the needs of diverse learners, the study does not offer growth in self-efficacy beliefs in connection to other indicators. Simpson (2017) uses a teacher-driven coaching model to guide the work of the study and correlated results.

More research is needed to examine other indicators of a teacher's self-efficacy beliefs. These indicators should go beyond only one facet of the Teacher Self-Efficacy Scale to determine as many connections through data analysis as possible during the study. The Teacher Self-Efficacy Scale addresses a teacher's belief in motivating learners, student behavior, abilities around instructional practices and assessment, influence on student values and beliefs about their education, and the ability to collaborate with families to support student outcomes. There is a need for a more focused study on the impacts that instructional coaching through a student-centered model and the impact that specific model has on all components of a teacher self-efficacy.

There has been little research around instructional coaching and self-efficacy at the middle school level specifically. The studies listed above focus on elementary (K-4), high school, junior high (7-8), and classrooms throughout a district (3-8). There is a need for more studies to include the specific needs of middle school teachers and instructional coaches in connection to self-efficacy beliefs. These factors bring to the surface the need for continued research not only on direct correlations to instructional coaching and self-efficacy and numerous

self-efficacy indicator beliefs, but also the impact they have in a middle school setting. In this action research project it is hypothesized that, through the work with an instructional coach within a coaching cycle that is student-centered, there will be an increase in a teacher's self-efficacy.

## Methods

### Participants

This study focused on the growth in self-efficacy for teachers at the middle school level. Participants were sixth grade teachers at the Fort Dodge Middle School in Fort Dodge, Iowa during the 2018-2019 school year. The Fort Dodge Middle School totals 1,100 students with 250 students represented per grade level. The sixth grade is split into two teams of teachers and students. Each participant in the study was responsible for the learning of 125 students. Students in this middle school moved into different core and elective classes throughout the day in an eight period schedule. Each teacher participant taught five 40 minute periods of their core subject, one study hall, and one intervention period throughout their day. The special education instructor involved in this study co-taught two 40 minute periods of English Language Arts, supported her students in three other core subject classes, had her rostered students for one period, and taught one intervention period throughout her day.

Of the four teacher participants in this study, two teachers were second year teachers both teaching sixth grade Social Studies on opposite grade level teams. One teacher was a first year teacher who taught English Language Arts at the sixth grade level. One teacher was in her first year teaching as a middle school special education instructor and co-taught two class periods with the English Language Arts teacher. The special education instructor had spent time as a preschool teacher before finishing her schooling in special education and although she was

technically in her first year, she had experience as a preschool educator for ten years prior. The

Fort Dodge Middle School does not require coaching for all teachers in the building. Coaching is

a voluntary event in this school. The teacher participants in this study are all required to work

with a coach as a mentor in their first two years in the district. This model is more specific to a

relationship-driven coaching interaction that is noted to have less of an impact on student

learning (Sweeney & Maushbach, 2018).  Although the participants are required to work with a

coach that work is directed by individual teachers and does not always result in a coaching cycle.

The participants in this study committed to engaging in a full coaching cycle that centered on a

student learning goal with an instructional coach during the research period. Participants were

prepared for the study by explaining the steps in the student-centered coaching cycle, scheduling

a period of time to conduct the coaching cycle, and taking a pretest of the teacher self-efficacy

survey.

**Materials**

        This research outcome required measurement of the dependent variable of the study,

which was the impact that engaging with an instructional coach had on a teacher's self-efficacy.

The outcome was measured with an electronic survey given to the participating teachers. The

survey was developed based on Bandura's (1996) Self-Efficacy Scale centered around the theory

of self-regulation and motivation in an academic setting (Pajares, 1996). The 12 item survey was

composed of restricted items only. The dependent variable was measured using the responses to

all 12 items presented in a Likert scale format in which teachers indicated their tiered level of

agreement on a five-point scale about their confidence level and self-efficacy in regards to

student outcomes before engaging with a coach and after engaging with an instructional coach.

**Procedures**

This research consisted of a one-group pretest-posttest design. The independent variable in this study was the collaboration that took place between the coach and educator while engaging in a coaching cycle. Due to the fact that engaging in a coaching cycle in the proposed district is a voluntary event, randomization could not be fully attained. The dependent variable in this study was the teacher's perceived ability of her impact on improving student achievement and student outcomes as a whole. The teachers, who elected to participate in a coaching cycle with an instructional coach, engaged in a student-centered coaching cycle. This included a four week cycle, in which the instructional coach and teacher engaged in a coaching activity one-three times a week. The activities included a mini-modeled lesson by the instructional coach, co-planning, co-teaching, the coach and teacher observing lessons and taking data in relation to the cycle goal, analyzing student work to determine student learning, and/or researching new instructional strategies. These activities varied by each cycle, depending on the needs of the individual teacher. The research period for this study lasted approximately six weeks.

The collaboration that occurred between the coach and the teacher involved the coach using a variety of coaching tools, which included coaching conversation stems and questions, as well as guided templates and questions to lead to a cycle of inquiry around a teacher's given focus. This cycle included a pre-conference to determine a focus area and student-centered goal, as well as planning and data collection methods. During the observation the coach either collected data as an observer or co-collected data with the teacher during a co-teaching interaction. Other strategies were used throughout the observation and co-teaching interactions to collect data on specific student learning. The cycle ended with a post-conference to analyze the data and determine next steps in instruction and further work between coach and teacher.

**Data Collection**

The nonrandomized quasi-experimental design was composed of a group of middle school educators who had chosen to engage in a formal coaching cycle with an instructional coach. This sample group consisted of four teacher participants. They were given an electronic survey that included questions that asked the participants to identify their confidence level on 12 student and learning centered indicators to determine self-efficacy scores. The pretest survey was given the week before the teacher's coaching cycle began and the posttest survey at the conclusion of the coaching cycle. Data was collected for each teacher's survey results in an electronic spreadsheet generated from the electronic self-efficacy survey form. A dependent sample t-test was used to analyze the data. The data was analyzed as a whole sample group as well as individually. In analysis it was essential to examine the change in self-efficacy scores from the pretest to the posttest. This was done for each question for each teacher participant and for the group of participants as a whole. There were calculations made to determine the mean and standard deviation as well as the effect size to analyze the data from multiple lenses. These findings were represented in a table to easily analyze and examine correlations and outliers. Graphs were also created for the variance in pretest and posttest scores as well as to allow for a visual representation of the data for clear analysis of results.

## Results

**Data Analysis**

This study evaluated the impact that engaging in a coaching cycle with an instructional coach had on a teacher's self-efficacy. Results indicated an increase in participant's self-efficacy beliefs after engaging with an instructional coach *(M=51.75, SD=5.619, t(4)=3.665, p=.011)*. In the analysis of responses to the pretest and posttest self-efficacy surveys the researcher identified

an increase in overall self-efficacy scores amongst all four participants. Figure 1 represents the overall growth of the sample group. The questions along with the correlated total score of the group, mean, and standard deviation are represented as well in further data discussed. Figure 1 shows the growth in participant scores from the pretest to the posttest total. There is an eight point percentage growth of participants' self-efficacy score totals as measured by the difference in the pretest and posttest averages.

A null hypothesis for this study is rejected and an alternative hypothesis is embraced as the findings show a significant increase in teacher self-efficacy. The observed standardized effect size is substantial (1.15) and this indicated that the magnitude of the difference between the pretest average and the posttest average is large. This is supported through the data visually presented through the T- distribution chart in Figure 2. Figure 2 represents the two sample t-tests (pooled variance) using T-distribution. The hypothesis that a teacher's self-efficacy will increase (.05) after engaging in a student-centered coaching cycle with an instructional coach is supported and the increase indicates a statistical significance in this study.
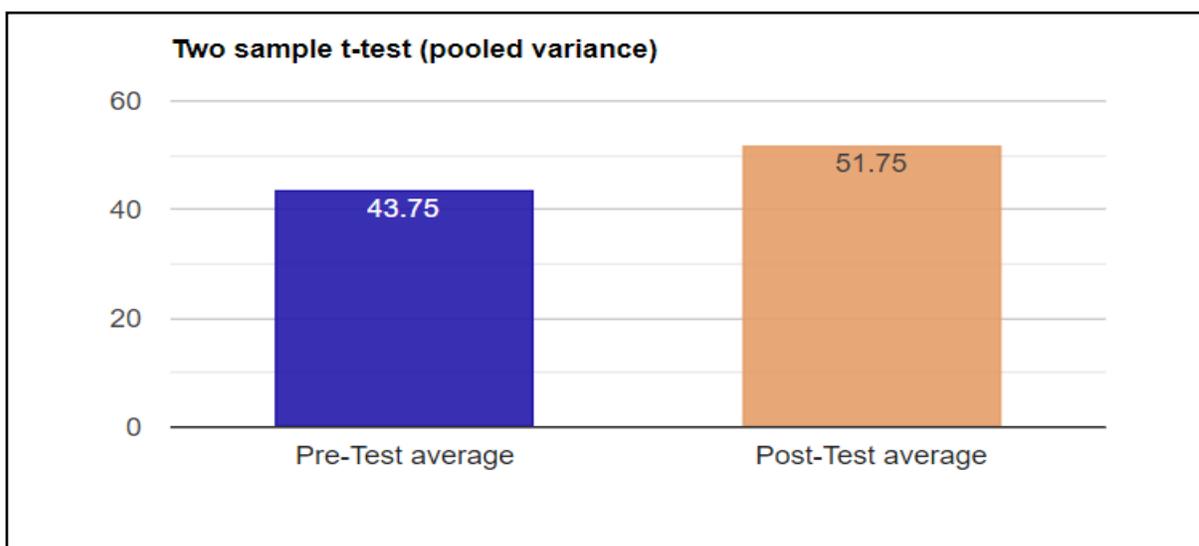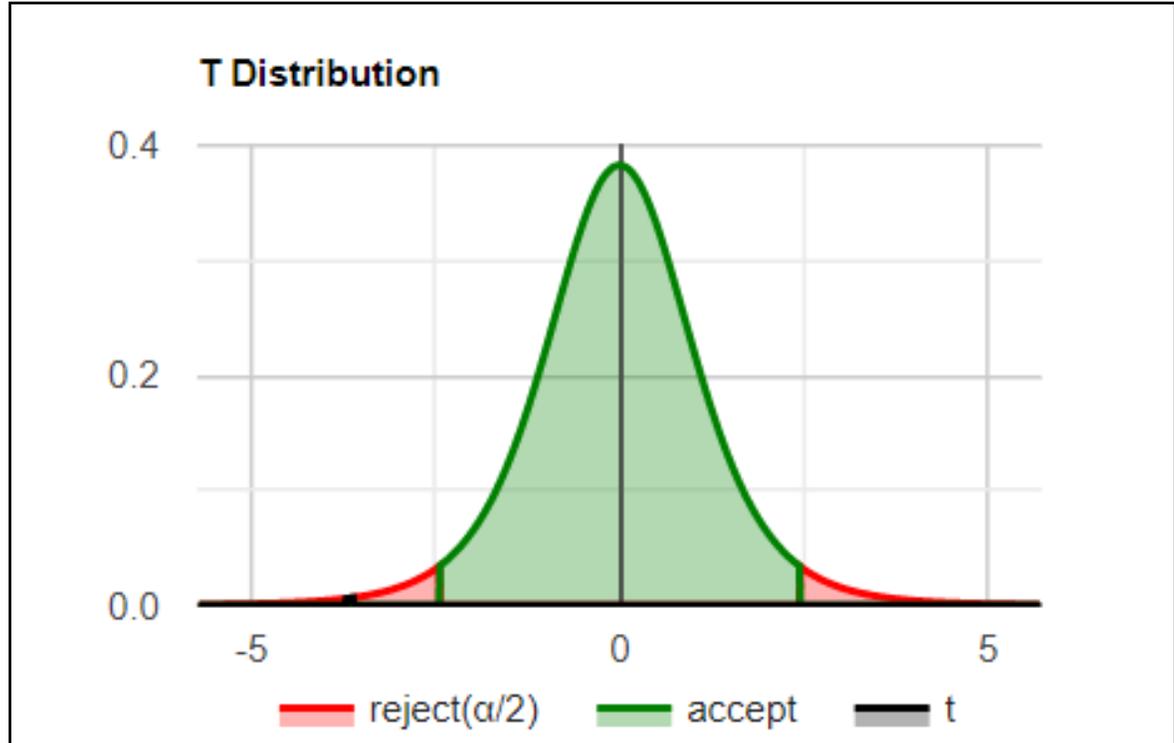
Figure 1

Figure 2



In the analysis of individual questions for the participant groups as a whole in regards to total growth, mean, and standard deviation more specific trends on indicators are able to be drawn in Table 1. It is noted that the three questions with the lowest standard deviation (.50) are questions 4, 5, and 8 on the Teacher Self-Efficacy Survey which connect to the beliefs on classroom management abilities, teacher abilities to ask good questions, and teacher abilities to help a student value learning. Questions 1, 2, 3, and 9 have the highest average growth (1). These questions represent the ideas of a teacher's beliefs on the following indicators: controlling disruptive behavior, motivating student learning, affecting a student's self-efficacy, and the ability to use assessments for student learning. The lowest average (.25) was connected to the question about a teacher's ability to calm a disruptive student.

Table 1

*Sample Group Teacher Self-Efficacy Survey Results*

| | 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|
| Q: | How much can I do to control disruptive behavior in my classroom? | How much can I do to motivate students who show low interest in learning? | How much can I do to get students to believe they can do well in school? | How much can I do to help students value learning? | To what extent can I create good questions for my students? | How much can I do to get students to follow classroom expectations? |
| Growth Total | 4 | 4 | 4 | 3 | 3 | 2 |
| M | 1 | 1 | 1 | .75 | .75 | .50 |
| SD | .82 | .82 | .82 | .50 | .50 | .58 |

| | 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|
| Q: | How much can I do to calm a student who is disruptive? | How well can I establish a classroom management system? | How much can I use a variety of assessment strategies? | To what extent can I provide an alternative explanation or example when students are confused? | How much can I assist families in helping their children do well in school? | How well can I implement alternative strategies in my classroom? |
| Growth Total | 1 | 3 | 4 | 2 | 0 | 2 |
| M | .25 | .75 | 1 | .50 | 0 | .50 |
| SD | .96 | .50 | .82 | .58 | .82 | .58 |

Analysis of individual teacher results (N=4) yielded specific attention as outliers rose to the surface. Teacher A had an increase of one to two points in eight of the twelve questions. Four of the questions Teacher A answered the same as the pretest and no change was recorded. Teacher B had an increase on all twelve questions. Teacher C had an increase on five questions,

no change on five questions, and decreased by one point in two questions. Teacher D had an

increase in only four questions, but had the highest self-efficacy score on the pretest survey.

Table 2

*Individual Teacher Self-Efficacy Survey Results*

| Nothing/ Not at All | Very Little | Some Influence | Quite a Bit | A Great Deal |
|---|---|---|---|---|
|  |  |  |  |  |

| Teacher A | Q: | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Pretest | 41 | Very little | Some influence | Some influence | Quite a bit | Quite a bit | Some influence | Some influence | Some influence | Quite a bit | Quite a bit | Quite a bit | Quite a bit |
| Posttest | 53 | Quite a bit | A great deal | A great deal | Quite a bit | A great deal | A great deal | Quite a bit | Quite a bit | A great deal | Quite a bit | Quite a bit | Quite a bit |
| Difference | 12 total | 2 | 2 | 2 | 0 | 1 | 1 | 1 | 1 | 2 | 0 | 0 | 0 |

| Teacher B | Q: | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Pretest | 36 | Some influence | Some influence | Some influence | Some influence | Some influence | Some influence | Some influence | Some influence | Some influence | Some influence | Some influence | Some influence |
| Posttest | 49 | Quite a bit | Quite a bit | Quite a bit | Quite a bit | Quite a bit | Quite a bit | Quite a bit | Quite a bit | Quite a bit | A great deal | Quite a bit | Quite a bit |
| Difference | 13 total | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 1 |

| Teacher C | Q: | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Pretest | 43 | Some influence | Some influence | Quite a bit | Some influence | Quite a bit | Quite a bit | Quite a bit | Some influence | Quite a bit | Quite a bit | Quite a bit | Some influence |
| Posttest | 46 | Quite a bit | Quite a bit | Quite a bit | Quite a bit | Quite a bit | Quite a bit | Some influence | Quite a bit | Quite a bit | Quite a bit | Some influence | Quite a bit |
| Difference | 3 total | 1 | 1 | 0 | 1 | 0 | 0 | -1 | 1 | 0 | 0 | -1 | 1 |

| Teacher D | Q: | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Pretest | 55 | A great deal | A great deal | Quite a bit | Quite a bit | Quite a bit | A great deal | A great deal | A great deal | Quite a bit | Quite a bit | A great deal | A great deal |
| Posttest | 59 | A great deal | A great deal | A great deal | A great deal | A great deal | A great deal | A great deal | A great deal | A great deal | Quite a bit | A great deal | A great deal |

| Difference | 4 total | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
|------------|---------|---|---|---|---|---|---|---|---|---|---|---|---|

Table 3

*Teacher C Teacher Self-Efficacy Survey Results Highlighting Decrease in Score*

| Question | How much can I do to calm a student who is disruptive? | How much can I assist families in helping their children do well in school? |
|----------|--------------------------------------------------------|----------------------------------------------------------------------------|
| Decrease in score | - 1 | -1 |

## Discussion

### Summary of Major Findings

The purpose of this research study was to determine a positive link between a teacher's self-efficacy and working with an instructional coach by engaging in a coaching cycle. The tested hypothesis is shown in the dependent t-test results in Figure 1. The hypothesis was supported and an increase of self-efficacy in the participants was determined by a 1.15 effect size. The data supports a significant gain in self-efficacy beliefs from the participants overall. Teacher C poses questions that cannot be answered through this study alone as this participant was the only one who reported a decrease in self-efficacious beliefs in the posttest survey. Overall, Teacher C had an increase in her self-efficacy survey total and contributes to the gain discussed in the sample group's results. This study accurately confirms the hypothesis of self-efficacious growth in educators who engage in a coaching cycle with an instructional coach.

The findings from this study are supported in previous studies conducted on this topic as they also show a positive correlation between engagement with a coach and increased self-efficacy on the part of participants. This research was consistent with Simpson (2017) in that the

participants in this study also had an increase in self-efficacy after engaging in a coaching cycle

with an instructional coach. The study showed a 64% increase as well as an effect size of .80

which is comparable to this study as well (1.15).  Another correlation to previous studies indicate

that a teacher's self-efficacy can grow and improve by engaging in a coaching cycle such as

Edwards & Newton (1995) show the connection between self-efficacy and the increase in that

self-efficacy with the participation of cognitive coaching cycles. The research findings supported

Pollara (2012) who concluded that peer coaching had a positive outcome for participants as the

confidence of participants grew. The collaborative efforts and professional learning outcomes in

this study connected coaching (peer) to an increase in self-efficacy. The participants in this study

showed significant growth in their perceived abilities and self-efficacy.

**Limitations of the Study**

There are a few factors that contributed to possible limitations to this study. The small

number of teachers participating in this study was a limitation due to the fact that data analysis

was limited to only the four teacher sub group. A larger sample size would allow for more in-

depth analysis on possible trends and would allow for a higher level of validity in the study. The

sample group of teachers only included new to the profession educators. Teacher D was a former

preschool instructor before taking her role as a middle school special education teacher. Teacher

A and C are both in their second year of teaching. The nuances of a new to profession educator

are many and this may have caused some possible limitations in comparison to veteran teachers.

Another threat to the validity of this study may have been the timing of the research

period. The survey was given before the research period began and again after as a post

assessment of teacher self-efficacy. The timing was at the end of January and throughout the

month of February during the 2018-2019 school year. The timing for this work may be a factor

in the responses gathered from teachers as it correlates with specific phases in a new teacher's attitudes towards teaching. According to Moir (2016) new teachers experience six phases in regards to attitudes towards teaching in their first year. The months of November through January are referred to as the disillusionment phase. This phase is the lowest dip in a teacher's first year in the classroom. Moir (2016) explains that in this phase new teachers often question their commitment and their abilities which directly connects with a teacher's self-efficacy beliefs. The next phase is called rejuvenation and brings the new teacher on an upswing. This happens around the end of January and early February for some teachers. In this phase it is common for teachers to feel a sense of renewed hope and accomplishment according to Moir (2016). The connection between these phases and the timing of the survey and research period show possible limitations to the responses collected.

**Further Study**

Further study on this topic may be explored in the following areas to address limitations and also add a level of support through coach and administration collaboration. If further studies were to happen on this topic, it would be beneficial to account for the limitation of a small sample size, new teacher phases and attitudes attributing to self-efficacy beliefs, timing of the period of research and other factors centered on veteran educators. These pieces could be done through more intentional planning and conducting the study during two periods of the school year. This addition would explore the limitation presented in regards to the time of year impacting results and responses of participants. Comparing the two data points would give more substantial information for analysis into the self-efficacious beliefs of teachers during a school year.

Another suggestion would be to address the limitation of sample size and the demographics of teacher participants in the study. The original sample size included only four participants and of those four one teacher taught English Language Arts, one Special Education teacher who co-taught English Language Arts, and two were Social Studies educators. The four participants were also new to the profession educators in their first or second year of teaching. The suggestion would be to include two grade level teams that consist of veteran teachers, new to profession educators, and included all five subject areas along with special education. This would result in twelve total participants and would provide more of a cross representation on the building demographics in a typical middle school. Engaging twelve instead of four participants in this study would add to the validity of the research and the results.

Intentionally planning the study to be conducted at two separate times during the school year would give insight into the limitation that linked new to profession educators to the projected time of year phases they encounter in their first year of teaching. Future research would be substantially more valid if participants were surveyed and engaged in at least two coaching cycles at different points of the year. This addition would provide valuable information that may unlock and highlight trends throughout a school year in regards to teacher self-efficacy beliefs. A connection to a teacher's goal area and coaching cycle focus and to the specific questions and indicators listed in the Teacher Self-Efficacy Survey could also be explored. A teacher may have had an increase on a set of specific questions that were related to classroom management and in-turn her goal for the coaching cycle was just that. Drawing connections and conclusions to this factor, especially with a larger sample size, could pose new links and trends as well.

A final suggestion for future research on the connection to engaging in a coaching cycle and the impact on a teacher's self-efficacy could be implemented as another layer of support

after the above additions were added and accounted for within the study. This suggestion would require two test groups composed of two separate teams of grade level teacher participants. The implemented strategy would be the collaboration of administration and instructional coaches using the Hall and Simeral (2008) model of instructional coaching and the administration collaborative process. One grade level team of teachers would engage in a coaching cycle with an instructional coach and the other grade level team would engage in a coaching cycle with an instructional coach in conjunction with instructional support from administration. The coaching and administration team would work collaboratively in the model to best support the needs of teachers together (Hall and Simeral, 2008). This strategy would add another layer of support and depth to the research study as a whole and would include a control group that would add a comparative factor and validity to the findings. This control group would serve a specific purpose for this collaborative support between coach and administrator but other control groups could be used to measure against the study participants in any of the suggested changes to the research methodology. This would add comparison data especially if differing coaching models were tested through a similar hypothesis in connection to self-efficacy.

**Conclusion**

The findings from this study show that an increase in teacher self-efficacy can be obtained by engaging in a student-centered coaching cycle with an instructional coach. Self-efficacy is the belief one holds about themselves and their perceived abilities and the impact those abilities have, regardless of outside factors, on student outcomes. Analysis of the results from this study clearly indicate that a teacher's self-efficacy is likely to increase by working with an instructional coach within a coaching cycle. The connection to self-efficacy and collective efficacy is sequential in nature. A teacher must build confidence in her own abilities as a

foundation to build on collaborative efforts to gain collective efficacy which Hattie (2015) names as the second leading factor to improve outcome for students. This study indicated that engaging in a coaching cycle around a student learning goal can build a teacher's self-efficacy with an effect size of 1.15. These findings are substantial and a foundational link to collective efficacy.

Advancements in this study could attest to limitation and add more depth and opportunities to uncover connections to self-efficacy and collective efficacy. In future studies, the researcher would expand the sample size, demographics, and collaborative strategies to build a more valid study. The research would focus on more than once coaching cycle and ensure that a mix of new to profession and veteran teachers of all content and specialty areas were represented. Specific collaborative strategies of support amongst instructional coach and administration would garner a deeper level of self-efficacy and bring the study closer to components of collective efficacy. Collective efficacy is an impactful factor in increasing student achievement and without self-efficacy educators will not achieve collective efficacy. Educators strive daily to increase their practice and belief in their abilities in service of high levels of learning for all students. Building a teacher's self-efficacy through a student-centered coaching cycle with an instructional coach is an effective mean to positively impact outcomes for student learning.

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**Appendix A**

Teacher Self-Efficacy Scale

**1. Please indicate your opinion about each of the statements below. ***

*Mark only one oval per row.*

|  | Nothing/Not at all | Very little | Some influence | Quite a bit | A great deal |
|---|---|---|---|---|---|
| How much can I do to control disruptive behavior in my classroom? | ◯ | ◯ | ◯ | ◯ | ◯ |
| How much can I do to motivate students who show low interest in learning? | ◯ | ◯ | ◯ | ◯ | ◯ |
| How much can I do to get students to believe they can do well in school? | ◯ | ◯ | ◯ | ◯ | ◯ |
| How much can I do to help students value learning? | ◯ | ◯ | ◯ | ◯ | ◯ |
| To what extent can I create good questions for my students? | ◯ | ◯ | ◯ | ◯ | ◯ |
| How much can I do to get students to follow classroom expectations? | ◯ | ◯ | ◯ | ◯ | ◯ |
| How much can I do to calm a student who is disruptive? | ◯ | ◯ | ◯ | ◯ | ◯ |
| How well can I establish a classroom management system? | ◯ | ◯ | ◯ | ◯ | ◯ |
| How much can I use a variety of assessment strategies? | ◯ | ◯ | ◯ | ◯ | ◯ |
| To what extent can I provide an alternative explanation or example when students are confused? | ◯ | ◯ | ◯ | ◯ | ◯ |
| How much can I assist families in helping their children do well in school? | ◯ | ◯ | ◯ | ◯ | ◯ |
| How well can I implement alternative strategies in my classroom? | ◯ | ◯ | ◯ | ◯ | ◯ |