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A Comparative Study of Teacher Efficacy Based on Their Years of Service

by

Aaron Robert Thomas

A Dissertation submitted to the Education Faculty of Lindenwood University

In partial fulfillment of the requirements for the

Degree of

Doctor of Education

School of Education

A Comparative Study of Teacher Efficacy Based on Their Years of Service

by

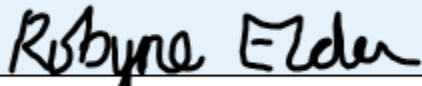
Aaron Robert Thomas

This dissertation has been approved in partial fulfillment of the requirements for the

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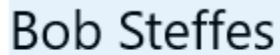
at Lindenwood University by the School of Education


Dr. Robynne Elder, Dissertation Chair


Date


Dr. Kevin Winslow, Committee Member


Date


Dr. Robert Steffes, Committee Member


Date

Declaration of Originality

I do hereby declare and attest to the fact that this is an original study based solely upon my own scholarly work here at Lindenwood University and that I have not submitted it for any other college or university course or degree here or elsewhere.

Full Legal Name: Aaron Robert Thomas

Signature:  Date: 6/25/2020

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Abstract

Efficacy is thought to be one of the most influential factors in student achievement however, there appears to be little research on how efficacy and years of service are related. Research which does investigate this area mainly focused on pre-service and teachers who are starting their careers. This mixed-methods study was designed to determine if there was a correlation between years of service and collective and self-efficacy as well as gain insights into teachers' perceptions of both collective and self-efficacy. Results of the study found self-efficacy followed an arc pattern, starting out low then rising to its peak for teachers in the middle of their careers, then dropping off again as teachers' neared retirement. Collective efficacy, alternatively, started out low, rose, then dipped, rose again, only to dip again near retirement. Although there was a relationship between collective and self-efficacy for teachers in stage one of their careers, a relationship was not found between collective and self-efficacy for other stages of a teacher's career. Results from a short-answer survey found barriers to efficacy included being closed minded and an unwillingness to try new teaching methods, where keeping an open mind and a willingness to learn and grow helped overcome those barriers. As districts continue to try to find ways to increase student achievement it would be beneficial for school leadership to determine the efficacy of their staff and find ways to increase both collective and self-efficacy.

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Chapter One: Introduction

Introduction

Collective teacher efficacy, or the belief that teachers as a group can overcome any obstacle in order to get students to achieve academically, is thought to be the number one influencer on student outcomes. Although efficacy has been studied since the 1960s it was not until Eells' 2011 dissertation "Meta-Analysis of the Relationship Between Collective Efficacy and Student Achievement," whose research showed that teacher collective efficacy had a high effect on student achievement did researchers begin to take a closer look on how influential collective efficacy was on student learning. Eells' research caused Hattie and Zierer (2018) to state that collective efficacy was the "new #1 in the list of influences" (p. 26). Hattie and Waack (2018) ranked Collective Efficacy as the number one influence on student achievement with an effect size of 1.57. Killian (2017) stated that collective teacher efficacy was one of six factors whose effect size was so large that graphing it would make the other 188 factors seem insignificant. Likewise, teacher self-efficacy also had a large effect size on student achievement at .92 according to Hattie and Waack's (2018) listing of 252 influences and effect sizes.

Rationale of the Study

This study filled an apparent gap in research as there appears to be little or no research into how individual teacher efficacy changes as instructors progress in their career. Although studies have shown that Collective Teacher Efficacy leads to student success there has been little research to show how teacher perceptions of self and the school they teach differ depending on the stage of their careers, leaving a gap in the literature. In 2010, Klassen and Chiu conducted a study to determine if there was a

relationship between teachers' years of service and their self-efficacy. The research found teacher self-efficacy increased from years 0 to 23 and then decreased from year 23 until retirement. Donohoo (2018) reviewed studies to determine what productive behaviors result from Collective Teacher Efficacy and if there are other consequences result from Collective Teacher Efficacy. The results showed that there were several positive links between behavior and Collective Teacher Efficacy including the setting of high expectations by teachers, teachers becoming more active in leadership roles, as well as greater job satisfaction. Ninković and Knežević Florić (2018) stated that "teacher collective efficacy continues to be a neglected construct in educational research" (abstract, p. 49). Their research examined the relationship between teacher self-efficacy and Collective Teacher Efficacy, finding that the two were strongly related. Voelkel and Chrispeels (2017) looked at the relationships between professional learning communities and Collective Teacher Efficacy. The research determined that districts that supported and encouraged engaging professional learning communities had an increased feeling of Collective Teacher Efficacy. Angelle and Teague (2014) conducted research to examine the relationships between Collective Teacher Efficacy and teacher leadership. The results showed there was a strong relationship between high collective efficacy and teachers taking leadership roles within their districts. Although the researcher found studies on teacher efficacy, few investigated if where a teacher was in their career affected their self and/or collective efficacies and those which did focused on the first years of a teacher's career or lumped experienced teachers into large groups (Blackburn & Robinson, 2008; Gholami, 2015; Robinson & Edwards, 2012; Swan, Wolf, & Cano, 2011). Furthermore,

no initial research was found on how a teacher's years of teaching affected Collective Teacher Efficacy within a school or district.

At the time of this study, the district the researcher was working in offered an incentive to encourage veteran teachers to retire. This incentive was taken advantage of by many veteran teachers; the building the researcher worked in alone lost seven teachers to retirement. Due to the large number of teachers leaving the district a crop of new teachers was hired, some of whom had little to no teaching experience. This potential change in overall staff experience may have changed the dynamics of efficacy within the building and district. The potential change in overall average teacher experience, along with the large effect size collective and self-efficacy had on student achievement, led the researcher to investigate how teacher efficacy changed depending on the stage of their career. The researcher's initial search for information which compared teacher efficacy and years of service resulted in few results; most of which only compared teachers in their first few years of service to all other teachers. Due to the apparent lack of research, the researcher believed any new data gathered comparing years of service to efficacy would be beneficial.

This study was designed to determine if teacher perceptions of self-efficacy, collective efficacy differ depending on the number of years spent teaching. The relationships between individual and collective efficacy depending on an instructor's year of teaching was also explored. If there is relationship between teachers' perceptions of individual self-efficacy and collective efficacy depending on year of teaching, what can school districts do to make sure teachers have high self-efficacy to ensure students achieve to their highest ability?

Purpose of Study

As stated in the previous section; the district where the researcher worked had a high-level of retirees due to an incentive for teachers to retire. Because of this there may be a high influx of teachers who are just starting their teaching careers. Hattie and Zierer (2018) stated that the most influential factor for student achievement was Collective Teacher Efficacy, a belief that teachers can overcome any obstacle allowing students to increase academic achievement from one year to another. This in turn led the researcher to ask, how will new teachers in the district affect the collective efficacy of the school and how will that in turn effect student achievement?

The researcher contacted 32 district superintendents requesting permission to conduct research within their districts via email. Originally the researcher only collected contact information for 20 districts within the greater St. Louis area and surrounding counties, as well as one district in the greater Kansas City area. The researcher believed that at least three of these districts would allow the research to be conducted. After the initial 21 districts were contacted and only two agreed to participate, the researcher sought contact information on an additional 11 districts within the greater St. Louis area and surrounding counties. Other than the researcher's own district, all districts were chosen at random with the researcher selecting neighboring districts within similar and differing economic and demographic areas. Since the researcher was interested in efficacy based on years of service, not efficacy based on school economics or demographics, no additional research was conducted on the chosen schools' economic or demographic data. The researcher's own district was chosen as a retirement incentive brought an influx of new teachers to the districts leaving what the researcher believed

would be a good balance of teachers in all stages of their career. The district from the greater Kansas City area was chosen as it was the only district in the state which was similar to one of the districts chosen from the greater St. Louis area.

This mixed-methods study was designed to determine if there was a significant difference in teachers' perceptions of themselves, their schools, and its students depending on the stage of their careers. Results from the study could help explain how perceptions differ, and what districts could do to ensure that no matter where the teacher is in their career, their self and collective efficacy remain high during their entire career.

Questions and Hypotheses

Do teacher perceptions of self-efficacy, collective efficacy differ depending on the number of years spent teaching? Is there a relationship between individual and collective efficacy depending on an instructor's year of teaching?

Research Question 1: What are teachers' perspectives of self and collective efficacy?

Hypothesis 1: There will be a significant difference in Collective Teacher Efficacy depending on the stage of the instructor's career.

Hypothesis 2: There will be a significant difference in individual teacher efficacy depending on the stage of the instructor's career.

Hypothesis 3: There will be a significant linear relationship between a teacher's self-efficacy and collective efficacy depending on the stage of the instructor's career.

Independent variable. The number of years the teacher has taught (years into career).

Dependent variable. Teachers' beliefs of collective and self-efficacy.

Study Limitations

Data from surveys were only collected from districts within the greater St. Louis area and its surrounding counties. A larger sample from multiple states could provide more extensive comparison of collective and self-efficacy beliefs.

This research was conducted near the beginning of the academic school year with all responses having been returned within the first three months of the beginning of the school year. The first survey was completed on September 5th with the last survey having been received on October 29. Although this may not have affected choice selection it is possible teacher perceptions of efficacy may change or be different at the beginning of the school year, when teachers may be considered “refreshed” and “excited” about the school year as compared to the end of the school year when many may be “burned out” or ready for summer break.

Four districts agreed to participate in the survey; of those four, one was the district the researcher worked in and survey participation was requested directly from the researcher. For this district the researcher created an introduction letter that was reviewed by the district’s superintendent prior to being sent to staff members. Although the researcher does not work directly or necessarily know a majority of the respondents and all questions regarding district and building information were not required to be answered, it is possible the answers from those respondents may have been influenced by the fact the survey was being conducted by a co-worker. Two of the four districts appeared to have provided more responses than the other two. The two districts from which more responses were received had the request for research participation and surveys sent directly to teachers from either the district’s superintendent or the

researcher. The other two districts the survey was disseminated indirectly to the staff. One district put the survey request in their weekly staff memo which is sent to the staff via email and the other the request was sent to the principals of each building then forwarded to the building staff. There is no direct evidence that anyone from the district, which embedded the request to participate in the weekly email memo, participated in the survey. The researcher believes more surveys would have been completed by the additional school's teachers if they were sent the request directly from the superintendent or researcher.

At least one respondent answered all "9s" for the collective teacher efficacy portion of the survey. Initially the researcher thought perhaps they just opened the survey and selected those values as they felt they needed to complete the survey however, the same respondent chose several different values when scoring the self-efficacy portion of the survey. This led the researcher to believe the respondent selected values they thought to be accurate for that portion of the survey. Since there was no way, without collecting personal/definable information, to limit the number of responses to one per person, there is a possibility that some respondents may have taken the survey more than once, or if they started a survey they did not finish they may have taken it again giving two sets of data from the same individual. Surveys were not monitored; therefore, it is possible that respondents could have taken surveys together (at the same time) and compared responses before completing, which may have influenced individual results.

A low number of responses for the focus group caused the researcher to modify the research by creating a short-answer survey which asked the same question as were planned for the focus group. In order to obtain qualitative data, the researcher sent this

new survey to those participants who had agreed to take part in and provided contact information for the focus group for the initial survey. One additional teacher, within his district, was also sent the survey as they stated they would answer short-answer questions but did not want to participate in a focus group. Due to an initial glitch in the short-answer survey, some questions were not displayed to two of the four participants. Although three of the questions were multiple choice and regarded years of service, tenure, and years to retirement two of the short answer questions were not displayed. This error caused the researcher to lose potentially valuable information to be analyzed. *Qualtrics* did have a way for respondents to edit their answers, however since no contact information was recorded from the short-answer survey it was impossible for the researcher to contact the two participants and ask them to complete the questions which were not displayed.

Definition of Terms

Collective Teacher Efficacy (CTE). The collective belief of a staff that they can have a positive influence on their students' success, no matter what obstacles stand in their way (Hattie, 2018). "A staff's shared belief that through their collective actions, they can positively influence student outcomes, including those who are disengaged and/or disadvantaged" (Donohoo, 2017, para. 1).

Creativity. "Teacher creativity is an interaction between aptitude, process and environment, by which an educator, through the accumulation of mini-insights of varying magnitudes, finds novel, contextually adapted ways to improve the teaching and/or learning experience" (Fischer & Golden, 2018, p. 102).

Curriculum. Educational materials that are taught within a school or classroom (Curriculum, 2015).

Direct instruction. Includes seven features including; clearly stating the learning intentions, what success will look like and are expected, student “commitment and engagement” (Hattie & Zierer, 2018, p. 109) in learning task, presentation of materials using modeling, student understanding checks, and providing work examples, guided practice with teacher feedback and remediation as needed, lesson closer to help ensure student understanding of the lesson, and independent practice (Hattie & Zierer, 2018).

Effect Size. “A statistical concept that measures the strength of the relationship between two variables on a numeric scale...the difference between the two variables is the effect size...the greater the effect size, the greater the difference between the two variable are” (Complete Disertation, 2019, para. 1)

John Hattie’s effect size. In his book *Visible Learning* Hattie ranked 138 influences that are related to learning outcomes from very positive effects to very negative effects. Hattie found that the average effect size of all the interventions he studied was 0.40. Therefore, he decided to judge the success of influences relative to this ‘hinge point’, in order to find an answer to the question “What works best in education?” (Hattie & Waack, 2018).

Non-Tenured teacher. Teachers who have not received tenure from their current district.

Professional Learning Community (PLC). A group of educators who meet regularly, work together, share their expertise and experiences in order to increase student achievement and improve their teaching skills (Professional Learning Community, 2014).

Public School Retirement System of Missouri (PSRS). “PSRS provides lifetime retirement benefits for Missouri public school teachers and other qualified individuals who work for covered school districts” (The Public School Retirement System of Missouri [PSRS], 2014, para. 1).

Rule of 80. “A benefit provision used to determine if you are eligible for normal (full) PSRS service retirement benefits. You have reached rule of 80 when the combination of your age and your years of PSRS service equal 80 or more” (Rule of 80, 2014, para. 1).

Stage-one of career. For the purpose of this study, teachers in stage-one of their career if they have 1 to 5 years of service; teachers in stage-one would be non-tenured teachers.

Stage-two of career. For the purpose of this study, teachers are in stage-two of their career if they have between 6 and 11 years of service; teachers in stage-two would likely be tenured teachers.

Stage-three of career. For the purpose of this study, teachers are in stage-three of their career if they have between 12 and 17 years of service; teachers in stage-three would likely be tenured teachers.

Stage-four of career. For the purpose of this study, teachers are in stage-three of their career if they have between 18 and 23 years of service; teachers in stage-four would likely be tenured teachers.

Stage-five of career. For the purpose of this study, teachers are in stage-five of their career if they have 24+ years of service; teachers in stage-five would likely be tenured teachers.

Student engagement. According to Dyer (2015), student engagement is students' time on task, how actively they participate in their learning and how focused the student is on the subject being taught.

Teacher Efficacy. A teacher's belief in their ability to promote student success (The SHARE Team, 2018).

Time on task. The amount of time students are actively engaged and challenged by their teacher's assigned tasks (Hattie & Zierer, 2018, pp. 15-16).

Tenure. A status granted after a trial period to a teacher that gives protection from summary dismissal (Tenure, 2019).

Tenured Teacher. Teachers who have been employed full time as teachers in the same school district for five consecutive years acquire tenure or permanent teacher status when they receive their sixth consecutive contract. The local school district has no discretion in whether to award or withhold tenure if these conditions are met. Nor can the district award tenure early, except as stated below (Bexton, 2018; Missouri National Education Association, 2012)

Summary

The purpose of this mixed-methods study was to determine if collective and self-efficacy differed depending on the stage of a teacher's career and explored if there was a relationship between years of service and efficacy using quantitative data. Qualitative data, through a focus group, would be used to get feedback on what "efficacy" meant to teachers at different points in their careers. Hattie and Zierer (2018) stated collective teacher efficacy was the most influential factor for student achievement with a 1.57 effect size. Although not as large as collective teacher efficacy, Hattie and Waack (2018) stated

that teacher self-efficacy also had a large influence on student achievement with an effect size of 0.93. That was more than double the average effect size of all influences of 0.40, which Hattie used as the critical point to determine which influences have the largest impact on student achievement. Much research has been conducted on both collective and self-efficacy however, the researcher found little information on how years of service affects efficacy or if there is a relationship between self-efficacy and collective efficacy based on years of service. This study was designed to determine if there were any relationships between these variables.

Chapter Two: The Literature Review

Introduction

In the 1960s Canadian theorist and Stanford Albert Bandura began to investigate how learned behaviors were impacted by one's surroundings and how watching others had a positive or negative impact on learners (Bandura, 1971; McLeod, 2016). In 1977 Bandura introduced the Social Learning Theory which later became known as the Social Cognitive Theory in 1986. These theories not only tried to explain how one's surroundings affected learned behavior, but also began investigating how self-efficacy impacted those behaviors (Bandura, 1977; LaMorte, 2019; Vinney, 2019). The idea of not only self-efficacy, but collective efficacy was introduced by Bandura in his 1997 book "Self-efficacy: The exercise of control" and may have been the beginnings of the study how collective teacher efficacy and self- efficacy impacted student learning.

Bandura influenced many researchers to investigate how efficacy, both self and collective impacted student achievement which initially had little research conducted on the topics (Goddard, Hoy, & Woolfolk Hoy, 2000).

Early researchers such as Goddard, Hoy, and Tschannen-Moran began developing surveys and conducting research to determine if and how collective teacher efficacy impacted student achievement. Eells' (2011) research in her dissertation "Meta-analysis of the relationship between collective efficacy and student achievement" showed collective teacher efficacy as having an effect size between 0.537 and 0.628 on student achievement. According to Hattie and Waack (2018) collective teacher efficacy is the number one influencer on student achievement with an effect size of 1.57. Kilian (2017)

said collective teacher efficacy was one of six factors whose effect size was so large that graphing it would make the other 188 factors appear insignificant.

Although not as large as collective teacher efficacy, teacher self-efficacy also had a high effect size on student achievement at .93 ranking eleventh on Hattie's 2018 rankings of 252 influences and effect sizes. Not only did self-efficacy have a high effect size it is believed it can be used to help determine a teacher's burnout and stress levels which in turn could be a cause for teachers to leave the profession. Cansoy, Parlar and Kılınç' (2017) stated self-efficacy "was the only variable that predicted all of the dimensions of burnout significantly" (p. 2). Skaalvik and Skaalvik (2016) believed low self-efficacy could be influenced by environmental obstacles which made a teaching more difficult, the more obstacles a teacher had to face the lower their self-efficacy would be. Likewise, Hong (2012) determined low self-efficacy influenced teachers who decided to leave the profession compared to those who continued their teaching careers.

In 2001 Tschannen-Moran and Woolfolk Hoy created the "Teachers' Sense of Efficacy Scale" which measured teacher-efficacy. In order to measure collective teacher efficacy Tschannen-Moran and Barr (2004) created The Collective Teacher Efficacy Scale. These two scales not only allowed one to measure overall collective and self-efficacy but also break down those results into two sub-sections for collective efficacy and three sub-categories for self-efficacy. The collective efficacy scale measured staff collective efficacy based on six questions designed to measure instructional strategies and six questions which measured student discipline. When these questions were combined, they measured overall teacher collective efficacy. Likewise, the self-efficacy scale measured overall self-efficacy by adding scores from respondents which could be broken

down into three areas: student engagement, instructional strategies, and classroom management. By breaking down these scales into subcategories the creators allowed for researchers to get a more in-depth look at staff efficacy and helped determine what, if any areas could be improved upon to increase efficacy amongst staff, even if overall efficacy was high.

Bandura: The Social Learning Theory

Although the idea of social learning dates back to the 1800s, Miller and Dollard published the first major investigation into social learning in 1941 in their published work; “Social Learning and Imitation” which was based on three tenants which included learning through rewards and consequences, by observing others, and the modeling of behavior of those they were familiar with or were perceived to be like them (Grusec, 1992; Stone, n.d.).

Bandura brought the theory to the forefront throughout the 1960s, 70s, and 80s when he, along with others, conducted research to understand how one’s behavior (learning) was affected by their surroundings. In 1961 Bandura, along with D. Ross and S. A. Ross, published “Transmission of Aggression Through Imitation of Aggressive Models” in which they conducted what might have been the first experiments which investigated social learning theory principles. The Bobo doll experiment exposed preschool children to both aggressive and non-aggressive behavior toward a blow-up clown. The results from this study showed the children who were exposed to the aggressive behavior displayed more aggressive behaviors than those who were exposed to non-aggressive behavior toward the doll (Bandura et al., 1961; Vinney, 2019). Bandura (1971) stated that positive attitudes, outlooks, and beliefs had positive results

whereas negative attitudes, outlooks and beliefs led to negative results. Eren (2019) found similar results with pre-service teachers. One example Bandura offered of negative attitudes that led to negative results was a “Dear Abby” letter where the writer described a bad date with a man who wore bowties as she was preconditioned to not trusting men who wore bowties after a previous relationship went poorly with a man who wore a bowtie. This previous experience caused her to believe that any man who wore a bow tie was untrustworthy.

According to Bandura’s Social Learning theory, one-way people were conditioned was through vicarious conditioning, where emotional responses were developed through direct experience. Vicarious reinforcement is the change of one’s behavior through observing consequences others received. Bandura cautioned that vicarious positive reinforcement would not work if used over long periods of time as if the same people continue to be praised or rewarded it could lead to others feeling they were treated unfairly or begin to resent those who were constantly praised resulting in resentment towards those coworkers (Bandura, 1971, 1977; Janse, 2018). Likewise, many conditions could vary when using vicarious reinforcement “such as the recipient, the reinforcing agents type and intensity of consequences, their justifiability, the situation in which the reinforcements are administered, and reactions of the participants” (Bandura, 1971, p. 26).

Modeling was another means of social learning according to Bandura, models were those who were being learned from, who the learner was modeling their behavior after. Models could include those around the learner such as parents, teachers, and friends. Media could also be seen as models for learners. These models could have a

positive or negative impact on the learner. Learners would pay attention to models and encoded their behaviors within themselves. Models responded to behavior change with either punishment or praise, a learner would likely continue the behavior if it was met with praise or rewards likewise, they would likely stop the behavior if it resulted in negative reactions, such as punishment. Models who were in positions of power or authority tended to have a greater influence on learning than those who were in lower standings (Bandura, 1971; McLeod, 2016).

Self-reinforcement and the way individuals view themselves can have a large impact on learned behaviors. Bandura stated that one's behaviors could not only be influenced by others but through self-reinforcement as well. Learners whose models demanded more of themselves and then were rewarded for their high standards tended to also set high standards and demanded more of themselves. Those whose models had low standards set lower standards and expected less from themselves (Bandura, 1971, 1977; Janse, 2018). Bandura (1986, 1993, 1999) wrote that self-efficacy played a role in how individuals perceived and dealt with potential threats and adverse situations. He stated that those with higher efficacy were more likely to face the threats and adverse situations than those whose self-efficacy was low, who would avoid those same types of situations.

In 1986 Bandura renamed the Social Learning Theory to the Social Cognitive Theory. He stated this change was made for several reasons including it helped to make it easier for literature searches and he felt the name change eased confusion between theories which essentially studied the same thing but were known by different names, such as Miller and Dollard's drive theory and Patterson's functionalist theory. Bandura

also felt the Social Learning Theory title was not broad enough to cover what was being studied (Bandura, 2006; Stone, n.d.).

Bandura described how self-efficacy and collective teacher efficacy impacted student success differently:

Teachers' beliefs in their personal efficacy to motivate and promote learning affect the types of learning environments they create and the level of academic progress their students achieve. Faculties' beliefs in their collective instructional efficacy contribute significantly to their schools' level of academic achievement. Student body characteristics influence school-level achievement more strongly by altering faculties beliefs in their collective efficacy than through direct affects on school achievement. (Bandura, 1993, p. 117)

Bandura (1999) asserted when a group of people worked together to achieve a shared set of goals, they created a "collective agency" (p. 21). This groups shared desired future outcomes, determine the actions they would take, the effort they put into the group's success, and how resources were used. Like self-efficacy the more the group believed they could overcome obstacles to achieve the group goals the more likely they would achieve those goals (Bandura, 1999). Groups with individuals who had talent and high self-efficacy did not necessarily mean the group had high collective efficacy. If groups could not work together to meet the common goals the groups collective efficacy would be low and achievement would be low (Bandura, 2000).

Since the early 1960's and the Bobo doll experiment, Bandura was a leader in educational psychology and influenced researchers around the world. He has been honored with several awards, recognitions, and Universities around the world have

bestowed him with honorary degrees (Artino, 2007). His research led to many additional studies including studies in how collective teacher efficacy and teacher self-efficacy impact student success.

Teacher Self-Efficacy

With an effect size of 0.93, teacher self-efficacy ranked ninth on Hattie's rankings of 252 influences and effect sizes, this was more than double average effect size of all influences. Hattie used the 0.40 average as the critical point of best influences on student achievement (Hattie, 2018). Teachers with low self-efficacy believed a learner's failure was beyond their control and exerted less effort than teachers with high self-efficacy who exerted greater effort to help students achieve (Ross & Bruce, 2007). Klassen and Chiu (2010) found teacher self-efficacy started out low gradually increasing until hitting a high mark around their 23rd year of teaching then gradually decreasing until retirement.

Self-efficacy not only had a large effect size on student learning but was thought to be an indicator of teacher burnout and stress levels, two causes thought to have led to teachers leaving the profession. E. Skaalvik and S. Skaalvic (2007) found teacher self-efficacy and teacher burnout were strongly related. According to Cansoy et al. (2016), self-efficacy was the only significant predictor of teacher burnout. E. Skaalvik and S. Skaalvik (2010) found job satisfaction and self-efficacy were positively related whereas teacher burnout was negatively related to self-efficacy. Low self-efficacy could be attributed to environmental obstacles which made teaching more difficult, the more obstacles teachers faced the lower their self-efficacy was (E. Skaalvik & S. Skaalvik, 2016). Hong (2012) found teachers who left the profession were influenced by low self-efficacy, whereas those who chose to stay had higher self-efficacy. Bandura (1999)

stated that those who had high self-confidence tended to also have a high sense of self-efficacy which in turn led people to face adversity more head on than those with a lower sense of self-efficacy who tended to avoid difficult situations and adversity. This might have explained why those with higher self-efficacy were more likely to stay in teaching when faced with adversity.

Bandura (1977) introduced four sources which helped determine one's level of self-efficacy. Originally these four sources were performance accomplishments, later known as mastery experience, vicarious experience, was not renamed, verbal persuasion, later called social persuasion, and emotional arousal now known as affective states.

Higher self-efficacy was built through mastery experience which was thought to be one of the most influential factors because it was based on personal experiences. When one had repeated successful outcomes efficacy grew, repeated unsuccessful outcomes led to lower efficacy. The difficulty level of the situation also played a role in efficacy as easily reached successes led to larger disappointment when one failed a task or challenge (Bandura, 1977; Ross & Bruce, 2007; Tenaw, 2013; Tiyuri et al., 2018). As more individuals succeeded through master experiences the higher self-efficacy grew (Njega, Njoka, & Ndung, 2019).

Although not as dependable as mastery experiences, when individuals saw others succeed self-efficacy could increase through vicarious experience as they believed they had at least some success if they exerted the same effort. By watching others succeed learners were encouraged to do similar activities in order to succeed themselves (Ross & Bruce 2007; Tenaw, 2013). Modeling behaviors of people who were similar to yourself made vicarious experiences more effective (Lunenborg, 2011).

Social persuasion, originally called verbal persuasion, was when people convinced others they could accomplish goals or overcome challenges. Although this was widely used, as it was readily available and easy to implement, social persuasion was not as effective in increasing efficacy as the experiences were not results of one's own experiences (Bandura, 1977).

Emotional arousal, also known as affective states, were those emotions, moods stress levels or physical reactions to events or challenges had an affect self-efficacy. When efficacy was high the ability to overcome stresses and obstacles were greater, where efficacy was low individuals failed to overcome the same types of stresses and obstacles (Goddard et al., 2000).

Collective Teacher Efficacy

Although Hattie's research, which showed collective teacher efficacy had the largest impact on student achievement, brought recent attention to collective teacher efficacy, the idea actually evolved from Bandura's Social Cognitive Theory which was developed, and introduced the idea of self-efficacy in the 1970's (Donohoo, Hattie, & Eells, 2018; Goddard, Hoy & Woolfolk Hoy, 2004).

The idea of self-efficacy later evolved to include efficacy of the group (collective efficacy). Bandura (1993) stated: "Faculties' beliefs in their collective instructional efficacy contribute significantly to their schools' level of academic achievement" (p. 117). Since collective efficacy was so closely related to self-efficacy many of the principles were easily converted to measure group efficacy. For example, the four sources of self-efficacy; mastery experience, vicarious experience, social persuasion, and affective states, were also applied as sources for collective efficacy. In order to assess

competence when teachers judged their peers two additional elements were applied: analysis of the teaching task and the assessment of teaching competence. Analysis of the teaching task was what it took to make teachers successful in their school. This included the availability of community resources, instructional materials, and the school facilities. The assessment of teaching competence included teacher training, a positive belief by staff that all students could succeed, teaching styles and methods, as well as subject expertise (Goddard et al., 2000).

Decades of research had shown a positive relationship between collective teacher efficacy and student achievement (Donohoo, 2017; Goddard et al., 2000; Goddard et al., 2004). In 2011 Eells' research applied an actual effect size to the relationship between student achievement and collective teacher efficacy, giving it an average effect size 0.617 (Eells, 2011). Her research led to Hattie conducting over 1,500 meta-analyses, which determined collective efficacy had 1.57 effect size and named collective teacher efficacy as the most influential factor for student achievement (Donohoo et al., 2018). Research found low collective efficacy led to teachers having had higher stress levels (Klassen & Chiu, 2010; Lim & Eo, 2014) and teachers excluding challenging students as well as blaming failure on student ability (Gibbs & Powell, 2011). In contrast, where collective efficacy was high, teachers believed it was what they did, not the students that led to student success or failure (Hattie & Zierer, 2018).

Donohoo (2018) stated one of three conditions that gave collective teacher efficacy a chance to flourish was to provide an increased leadership role for teachers. When teachers were offered the opportunity to be involved in meaningful ways collective efficacy increased. Schools whose teachers believed they had little power also had lower

collective efficacy which lowered the overall school's belief in its ability to achieve academically. Those schools in which teachers had a higher sense of power also had a higher collective efficacy and a belief they could overcome obstacles to increase academic performance (Bandura, 1993). Derrington and Angelle (2013) found there was a strong relationship between collective efficacy and teacher's leadership roles in school. When teachers felt they were able to take informal roles in school leadership and responsibilities, including sharing of ideas on everything from learning to managing classrooms, overall school efficacy was higher. Staff believed they also had a collective responsibility, which led the staff to believe that they not only could influence student achievement but had a shared responsibility to do so (Wahlstrom & Louis, 2008).

Efficacy Scales

Bandura (2006) described guidelines for creating self-efficacy scales. Since efficacy judged the capabilities of individuals questions were stated in "can do" terms. Scales also needed to be designed for the group being studied. Efficacy needed to be measured against perceived obstacles which would have led to successful completing the task. Bandura suggested the response scale had different levels of demand which ranged from 0 to 100 with no negative numbers. The scale had three levels of beliefs. On the low end was "Cannot do at all," "Moderately certain can do," was the mid-level of confidence and "Highly certain can do" was on the high-level of belief in ability (Bandura, 2006, p. 312). Finally, Bandura suggested the surveys remove identifiers, this ensured answers were true to beliefs, not what was thought to be sought.

Self-efficacy scale. In 2001 Tschannen-Moran and Woolfolk Hoy created the Teacher's Sense of Efficacy Scale, which was based on Bandura's teacher efficacy

measure. This scale asked twelve “can do” Likert Scale questions which ranged from 1 – 9 and included two additional levels of ability the Bandura survey did not include “Very little” and “Quite a bit” were added between “Some degree”, the middle ability level. This scale not only measured overall self-efficacy but also allowed researchers to break down the results into efficacy in student engagement, efficacy in instructional strategies, and efficacy in classroom management. These three sub-sections asked 4 questions each which allowed for even further investigations.

The ability to motivate students who showed low interest in schoolwork, help student’s value learning, get students to believe they can do well in school, and assist families in helping their children to do well in school feel under “efficacy in student engagement” portion of the scale.

Efficacy in instructional strategies asked questions to determine the teacher’s ability to craft good questions for their students, use of a variety of assessment strategies, provided alternative explanations or examples when students were confused, and implementation of alternative teaching strategies in their classroom.

Finally, classroom management efficacy was measured by asking teachers about their ability to control disruptive classroom behavior, calm students who were disruptive or noisy, the ability to get children to follow classroom rules, and the establishment of a classroom management system with each group of students.

Collective efficacy scale. As previously stated, Bandura (2006) described guidelines for creating self-efficacy scales which suggested tailoring the questions to those who were being studied, questions stated in “can do” terms, measures were against perceived obstacles that blocked success or caused failure, and had levels of beliefs from

“Cannot do at all” to “highly certain can do” (p. 312). Although these were designed for self-efficacy scales, they were easily altered to measure collective efficacy. Tschannen-Moran and Barr (2004) created the Collective Teacher Efficacy Scale, which was adapted from her and Woolfolk Hoy’s 2001 Teacher Sense of Efficacy Scale that measured self-efficacy. This new survey asked 12 “can do” questions. Unlike Bandura’s guide, Tschannen-Moran and Woolfolk Hoys’s Likert Scale ranged from 1 – 9 and included five levels of ability which ranged from “Not at all” on the low end, to “A great deal” on the high end of the scale. Two additional levels of ability were added, one between the lowest and mid-level and one between the highest and mid-level options. No identifiers were used on the survey.

The short version of Tschannen-Moran’s new survey asked 12 Likert Scale questions, six of these questions helped determine collective efficacy on instructional strategies and six determined how teachers viewed their ability to promote positive student behavior.

Instructional strategy questions asked teachers to reflect on how teachers in their school: produced “meaningful student learning”, got “students to believe they could do well in schoolwork”, helped “students master complex content”, helped “students think critically”, and “fostered student creativity.”

To measure beliefs about student discipline, the Collective Efficacy Scale asked questions which focused on how teachers and school personnel made “expectations clear about appropriate student behavior”, how “rules and procedures that facilitate learning” were established, how well teachers responded to “defiant students”, how school personnel could “control disruptive behavior”, how teachers got “students to follow

school rules”, and helped students feel safe at school” (Tschannen-Moran & Woolfolk Hoy, 2004).

The following section will review literature regarding student engagement, instructional strategies and, classroom management/ student discipline which were measured on the two efficacy scales.

Student Engagement. Blackburn and Robinson (2010), Klassen and Chiu (2010), Tschannen-Moran and Woolfolk Hoy (2005), Voris (2011), as well as Yoo (2016) found student engagement was the lowest scored section on self-efficacy surveys. Swan et al. (2011) found in their longitudinal study that self-efficacy in student engagement was at its highest during student teaching with a score of 6.38 on a nine-point scale. This dropped to 5.75 during the teachers first year of teaching, rose during their second year to 6.00 only to drop again in their third year to 5.75. Tschannen-Moran and Woolfolk Hoy (2007) found novice teachers, those with 3 or fewer years of experience, and experienced teachers, those with 4+ years of service, had similar self-efficacy scores for student engagement. Novice teachers scored an average of 6.57 and experienced teachers scored a 6.69 in self-efficacy in student engagement. Voris (2011) surveyed 222 teachers with zero to six years of service and found overall self-efficacy in student engagement to be 6.44 on a nine-point scale. Third year teachers scored the lowest with a 6.14 and 6th year teachers had the highest sense of self-efficacy in student engagement with an average score of 6.59.

Sazant (2014) found both students and teachers felt lessons that required critical thinking had a positive impact on student engagement. Lombardi (2007) stated students preferred getting involved in their learning rather than just listening to teachers

regurgitate the information to them. Coates (2008) stated students were more engaged when teachers used strategies that enhanced active learning, provided support and allowed for student input.

When project-based learning was used, teachers who added self-reflection of work allowed students to take charge of their learning. They assigned tasks for group members and self-regulated their work (Lombardi, 2007; Sailin & Mahmor, 2018). Teachers had to be mindful of students who were not participating in the group activities and intervened to ensure all members were contributing. Teachers who used ill-defined problems and activities, those which were open to multiple explanations, allowed for students to choose what steps were needed to solve the problem or complete the activities (Lombardi, 2007).

Motivate students to show interest in school and value learning. Zemelman, Daniels, and Hyde (2012) suggested the development of lessons to immerse students which in turn got students to take an active role in their learning. Effective teachers recognized students came from different backgrounds therefore various methods of motivation needed to be used to engage students (Anwar, 2019). Students who lacked interest in school needed encouragement to be socially engaged and reassured they were worthy of love and respect (Kayalar, 2016). Involved parents helped their children value learning. When parents were involved in their child's education, achievement and engagement increased (Kayalar, 2016). Engagement also increased when teachers got to know their students and learned what motivated them. When students became more relaxed with the teacher, they were likely to get more involved in the educational experience (Wlodkowski & Ginsberg, 2010).

Not only was student engagement important, making connections between the curriculum and students' lives was also important. Connections between students and curriculum were made when teachers used student-centered learning, which incorporated topics students were interested in, and in turn increased their desire to learn (Zemelman et al., 2012). Talking about a topic was not enough, students actively participated when teachers used similar real-life situations where the subject being taught would be used (Zemelman et al., 2012). When low achieving students wrote about how what they were learning was relevant to their lives positive learning gains were achieved (Ferlazzo, 2015).

Watt, Carmichael, and Callingham (2017) claimed that teacher enthusiasm, school climate, and how focused classroom learning was influenced student engagement or a lack thereof. When students were given the opportunity to actively engage in classroom activities students were more motivated to learn than when traditional lecture-based lessons were used (Yuniata, Yusof, Othman, & Octaviani, 2012). Teachers who created respectful classroom environments and built relationships with struggling students helped ensure all students achieved academically (Akram, 2019).

Academic achievement was also influenced by motivation, self-esteem and how learning was approached. Highly motivated students had greater academic success than those who were less motivated (Tella, 2007). Students who had low confidence in their academic ability also had low expectations of success. Therefore, teachers needed to develop positive relationships with their students in order to increase their academic confidence (Kayalar, 2016). When teachers were motivated and showed interest in the subject being taught student motivation and interest would increase (Schiefel, 2017).

Zemelman et al. (2012) stated classrooms needed to be interactive, places where students and teachers discussed their thoughts and feelings and debated topics. Students got a deeper understanding of the subject or topic in these interactive classes. When discussion and ideas were not allowed to be shared students shut down and stopped wanting to learn as they felt their thoughts and opinions did not matter or were not important enough to be heard. Teachers who showed students they cared about them and provided students with appropriate recognition for success student self-esteem, motivation, and efforts increased (Kayalar, 2016).

Curriculum expectations needed to be high yet achievable by all students. When classrooms had positive expectations for student achievement, students took control of their learning, whereas students in classrooms with negative expectations had low motivation (du Toit-Brits, 2019). Students were more engaged in classes with enthusiastic teachers, a positive school climate, and lessons focused on subject mastery than students whose classrooms had teachers with less enthusiasm, did not teach to subject mastery, and school climate had a “low sense of school caring” (Watt et al., p. 178, para. 2). Students wanted to participate when the activities were achievable and they had confidence the activities could be completed successfully (Renaud, Tannenbaum, & Stantial, 2007). When activities and problem difficulty in mathematics varied student, self-esteem improved as did their desire to learn (Tella, 2007).

Students believe in themselves and their ability to succeed in school. When teachers believed students could succeed, the students’ sense of self-efficacy also increased which in turn positively influenced academics and motivations. Akturk and Saka Ozturk (2019) stated “Academic self-efficacy is the most important variable that

influences students' general academic achievement averages" (p. 290) in five courses. When student self-efficacy increased, the increase was sustained over time and led to improved academic achievement (Mori & Uchida, 2009). The active learning method of teaching reduced negative emotions and increased positive emotions and higher self-efficacy in students (Jeong, González-Gómez, Cañada-Cañada, Gallego-Picó, Bravo, 2019; Prince, 2004). Although praise improved self-esteem, too much praise had a negative effect on learners. Brummelman, Thomaes, Orobio de Castro, Overbeek, and Bushman (2014) found, when over praised, not only did low achieving students' self-esteem go down but high-achieving students' behavior got worse and their achievement was lowered as well.

Zemelman et al. (2012) stated reflective practices gave students the time needed to reflect on what they have learned. Not only did this allow them to review what was taught but they were also able to monitor their learning and determine what their areas of strengths and weaknesses were. Identification of strengths and weaknesses allowed for requests of additional help for areas they struggled in. Teachers used this information to determine strengths and weaknesses of their lesson and what needed to be improved if many of the students struggled.

Tesfaye and Berhanu's (2015) found that students with lower levels of achievement preferred group discussions as it gave them more opportunity "to participate more freely compared to presentation and demonstrations" (p. 31). Teachers limited learning by providing help too soon when faced with challenging work instead of allowing students to solve the problem themselves (Duke, 2012). Burke and Williams

(2012) found thinking skills interventions led to improved students' beliefs about their intelligence, group interventions provided the largest improvements

Good, Aronson, and Inzlight (2003) found when students were encouraged to overlook stereo types as indicators of intelligence and viewed intelligence as expandable rather than static student achievement increased. When students described peer success, they focused on what the students did to succeed and were task specific characteristics and comparison between peers were not used when success was explained (Mykkänen, Määttä, & Järvelä, 2016). Democratic classroom practices gave all students an equal voice and fair treatment of all helped students understand and recognize that all voices were important and should be heard. This practice also helped students recognize that not everyone learned the same or believed the same things they did. Different beliefs did not make their voices or thoughts less important, when alternative methods for learning or thinking were observed new insights and knowledge could be gained (Zemelman et al., 2012).

Assist Families in helping their children do well in school. E. Skaalvik and S. Skaalvik (2010) found parent and teacher relationships had a strong effect on teacher self-efficacy, teachers who felt they had positive relationships with parents had higher self-efficacy than those who had negative relationships with parents. Teachers who felt they were “not trusted by the parents, that parents are critical, or that cooperating with parents is difficult reduces the teachers’ beliefs in their ability to plan, organize, and carry out activities that is required to attain given educational goals.” (E. Skaalvik & S. Skaalvik, 2010, p. 1065). Tschannen-Moran and Woolfolk Hoy (2005) found novice and career teachers had a medium sense of self-efficacy when it came to getting support

from parents. Novice teachers scored 4.84 and career teachers only scored 5.18 on a 9-point scale. Support from the community was only slightly higher for both groups with a 4.98 for novice teachers and 5.33 for career teachers (Tschannen-Moran & Woolfolk Hoy, 2007).

Teachers needed to involve families in the learning process as more parent involvement was associated with higher student achievement (Kayalar, 2016). Tschannen-Moran and Woolfolk Hoy (2007) found novice teachers had more professional satisfaction when they felt supported by parents and the community. School, parents, and community involvement overlapped, and their collective efforts not only helped students academically but also helped create healthier living conditions for all members of the district. Likewise, communities and schools created relationships through student volunteers, purchased services and goods from local businesses, and offered their buildings for community events and local organizations (Casto, 2016; Lewallen, Hunt, Potts-Datema, Zaza, & Giles, 2015).

Blank, Jacobson, and Melaville (2012) pointed out that community schools were those in which the school and community combined resources to help all students no matter their income level. Although all students were eligible for services provided by these partnerships, those most in need got first consideration for resources (Roche & Strobach, 2016). Children from low-income families were less prepared for school, had poorer attendance and performance, and were less likely to graduate. Shared resources allowed for schools and communities to level the playing field and increased the success of students from low income households (Blank et al., 2012). All stakeholders within the community benefited when schools, parents, and community leaders formed partnerships,

which promoted children's education, the welfare of families, and community growth (Casto, 2016; Educational Resources Information Center, 1999). With all the demands on schools, educating children was not able to be done single-handedly.

The Community Collaboration Model was one where all members of the community worked together, improved students' educational achievement, and promoted "youth development, health and social services parent-family engagement and support, and community partnerships" (Anderson-Butcher et al., 2010, p. 161). With reduced resources, schools had to find alternate ways to ensure students social, mental, physical, and academic growth not only within its schools but outside the buildings as well. Leaders were able to share this burden with the cooperation/participation of the local businesses and community leaders who provided additional resources. The Community Collaboration model brought a greater sense of community responsibility as everyone had a stake in the development of children and their educational achievement (Anderson-Butcher et al., 2010).

Chiang, Meagher, and Slade (2015), as well as Lewallen et al. (2015), explained the Whole School, Whole Community, Whole Child model was developed by the Association for Supervision and Curriculum Development and the U.S. Centers for Disease Control and promoted positive results for students' health and education. Like the Community Collaboration model, the Whole School, Whole Community, Whole Child model (WSCC) emphasized the need for the community to help school districts create healthy, productive, and high-achieving students (Lewallen et al., 2015; Morse & Allensworth, 2015). WSCC emphasized students' health, safe and welcoming school cultures, active engagement in both school and community, qualified teachers, modified

lessons for individual students, and rigorous curriculum which prepared them for college and/or to become productive members of society (Association for Supervision and Curriculum Development, 2007; Lewallen et al., 2015). Leaders in districts which implemented the WSCC model were key players who got teachers parents, students, and community leaders to commit to using best practices to ensure students' academic, social, physical, and mental welfare (Chiang et al., 2015; Moyer, Foley, Hodges, & Pace, 2016). Greene and Tichenor (2003) as well as Park, Stone, and Holloway (2017) wrote students whose parents were involved with their children's education had improved achievement. Stronger relationships with teachers and principals were also evident when parents were involved with their child's education. This involvement helped overcome potential barriers such as race and social status between parents and school as well as helped create a stronger school culture. Parent involvement not only helped their own children but was thought to have benefited other families within the school as well (Park, et al., 2017). Parents took control of their involvement by choosing activities which best met their schedules, were interesting to them, and best helped with their child's educational needs. Parents who communicated school and community needs with local businesses, promoted school and community partnerships, and shared positive school activities with local and social media helped promote positive relationships between school and community (Greene & Tichenor, 2003).

Instructional strategies. Teacher efficacy in instructional strategies appeared to be in the middle of the pack when compared to student engagement and classroom management efficacy. Blackburn and Robinson's (2010) research showed teachers with one to six years of experience had an average sense of self-efficacy in instructional

strategies of 6.96 on a nine-point scale. Klassen and Chiu (2010) sampled 1,430 teachers and found teachers sense of self-efficacy in instructional strategies started out low, gradually increased to a high point in about their 23rd year, then tapered off as they neared retirement. Overall, they found teacher self-efficacy in instructional strategies to be 7.55 on a nine-point scale, slightly higher than Blackburn and Robinson's score of 6.96. Tschannen-Moran and Woolfolk Hoy (2007) had similar findings with novice teachers, those with three or fewer years of service, having scored an average of 6.99 on instructional strategies, whereas experienced teachers scored 7.58 on a nine-point scale. Self-efficacy in instructional strategies followed a similar path as self-efficacy in student engagement in Swan, Wolf, and Cano's 2011 study with student teachers having the highest sense of self-efficacy at 6.25. The surveyed teachers' sense of self-efficacy dropped in their first year of teaching to 5.88, falling even lower in their second year of teaching to 5.62, then rebounded in their third year of teaching when they scored 6.12.

Efficacy in instructional practices played a key role in whether teachers believed their teaching practices were affective. This was illustrated by Printy (2008) when she stated: "Teachers' pedagogical competence to affect student learning through their instructional practices is closely tied to their assumptions about whether students can learn and to their ability to modify their instructional practice" (p. 198). Instructional strategies were thought to change as teachers gain experience. Torff (2003) conducted research which supported theories that novice teachers tended to have lessons which were centered on curriculum, whereas experienced teachers tended to have lessons which were centered on the student.

Teaching strategies, lessons, and good crafted questions. “Teachers need to be adaptive learning experts, to know multiple ways of teaching and learning, to be able to coach and model different ways of learning, and to be the best error detectors in the business” (Hattie, 2012, p. 185). Tesfaye and Berhanu (2015) conducted a focus group in which “students emphasized that a variety of training evaluations methods should be used in each course to ensure that those who felt uncomfortable or unable to learn from one teaching/learning style . . . would benefit from other styles” (p. 31).

Kumaraswamy (2019) found that use of the group activity strategy increased average scores by more than two-and-half times over non-group activity strategies. Students were also more engaged in learning and found materials more interesting after the group activity strategies were introduced. Group work improved critical thinking and communications skills, student acceptance of alternate thoughts and views of their peers and promoted active learning. Math students who worked in groups improved scores on integration-related questions by about 109% compared to students who did not work in groups (Sofroniou & Poutos, 2016).

Students were motivated and achievement was positively impacted when teachers interacted with their students. These interaction teaching methods helped expand student thinking (Anwar, 2019). Content knowledge and knowing what motivated their students helped teachers create interrelated lessons which built upon each other and continuously assessed student understanding. When this occurred, there was a shift responsibility for learning from teacher to student which led to enhanced learning (Fisher & Frey, 2014). This knowledge also allowed for teachers to address all learning levels within the classroom. Assignments and activities needed to be created so low-level students did not

get frustrated because they were too difficult, but high-level students were not bored because they were too easy (Renaud et al., 2007).

Students learned best when challenging, real-world questions were presented, questions of this type prepared students for the real world (Moss, Brookhart, & Long, 2015). On the other hand, teachers' lessons, where high stakes testing was present, emphasized drill activities and test preparation over lessons that fostered critical learning skills (Amerein & Berliner, 2003). Integrating critical thinking activities into the curriculum allowed teachers to "better meet the needs of all types of learners" (Sazant, 2014, p. 25).

Use a variety of assessment strategies. Types of assessments were not as important as how the results were interpreted and used in the classroom (Hattie, 2003). Students needed to know how they were progressing in order to understand what they learned. When assessment criteria were clearly stated students were able to gauge their knowledge of content easier (Broadbear, 2012). Creation of scales, to measure learning, both teachers and students were able to track their progress to determine what they had learned and what needed to be revisited to ensure understanding (Hattie, 2003; Haystead & Marzano, 2009). However, when assessing authentic assignments, teachers needed to allow for differing correct answers as answers were dependent on how the question was interpreted (Kumari, 2014; Lombardi, 2007).

Formative testing led to discovery of "poor school performance, result in fiscal, intellectual, and social reforms that will make a difference for the students in those schools" (Amerein & Berliner, 2003, p. 37). Successful teachers used everything students did in the classroom as a form of assessment in order to ensure students had a

deep understanding of instructions and concepts in order to succeed academically (Leahy, Lyon, Thompson, & Wiliam, 2005). Review of all student work led to a continuous assessment of content understanding which in turn allowed for the creation of structured lessons, interrelated lesson planning and transfer of the responsibility of learning from the teacher to the student (Fisher & Frey, 2014).

Teachers were not the only source of assessing student work, student self-assessments could be a power learning tool. However, student self-assessments were only beneficial if they were held accountable for their assessments this could be done by feedback from both the teacher and the student (Broadbear, 2012).

Teachers were more accepting and had higher confidence in assessment strategies if they felt the strategies were well planned, organized, efficient, and meaningful to their curriculum. Whereas if they did not believe the strategies were well planned, organized, or meaningful to their curriculum confidence in the assessments was low (Anderson, 2004). Assessments needed to have multiple purposes, designed to be meaningful, and mastery of the topic/lesson should be focused on individual self-improvement (Martin, Kulinna, & Cothran, 2002). High stakes assessments had an adverse effect on student achievement. Amerein and Berliner (2003) found of the states with high school graduation tests 88% of them had a higher dropout rate than states without the tests. Dropout rates increased in 62% of the states that implemented high school graduation tests where there were not tests before (Amerein & Berliner, 2003).

Provide alternative explanations, examples, and teaching strategies. “Teachers need to be adaptive learning experts, to know multiple ways of teaching and learning, to be able to coach and model different ways of learning, and to be the best error detectors

in the business” (Hattie, 2012, p. 185). Tesfaye and Berhanu (2015) conducted a focus group in which “students emphasized that a variety of training evaluations methods should be used in each course to ensure that those who felt uncomfortable or unable to learn from one teaching/learning style... would benefit from other styles” (p. 31). Therefore, assignments and activities needed to be created so low-level students did not get frustrated because they were too difficult, but high-level students were not bored because they were too easy (Renaud et al., 2007).

Students were motivated and achievement was positively impacted when teachers interacted with their students. These interaction teaching methods helped expand student thinking (Anwar, 2019). Likewise, students learned best when challenging, real-world questions were presented. Questions of this type not only increased critical thinking but also prepared students for the real world (Moss et al., 2015). Sazant (2014) stated integrating critical thinking activities into the curriculum allowed teachers to “better meet the needs of all types of learners” (p. 25).

Kumaraswamy (2019) found that use of the group activity strategy increased average scores by more than two and half times over non-group activity strategies. Students were also more engaged in learning and found materials more interesting after the group activity strategies were introduced. Group work improved critical thinking and communications skills, student acceptance of alternate thoughts and views of their peers and promoted active learning. Math students who worked in groups improved scores on integration-related questions by about 109% compared to students who did not work in groups (Sofroniou & Poutos, 2016).

Produce meaningful student learning. Lessons designed to foster meaningful learning consisted of five characteristics; active student participation, knowledge was constructed from student knowledge and understanding, authentic tasks were transferable to real-life situations, were goal focused, and created tasks which required cooperation with other learners to solve problems (Yunianta et al., 2012). Sailin and Mahmor (2018) found these five attributes overlapped and were evident in most learning activities.

Meaningful lessons were those where students were active participants in the learning process (Yunianta et al., 2012). When students actively participated in learning achievement and time on task increased (Pratton & Loyde, 1986). Tesfaye and Berhanu (2015) found group work was an effective way to get students to participate in class whereas demonstrations and presentations lowered their participation. Mehrpour, Bijari, and Javadinia (2014) found students were satisfied with their class when they were actively engaged in the lessons and learning. Research found both vocal and students who stayed silent in class were both engaged in classes where active learning was used (Obenland, Munson, & Hutchinson, 2012). Different strategies were used to increase students to actively participate. Ketterer Berrong, Schuster, Morse, and Collins (2007) found students with mild to severe disabilities actively participated in class when they were given response cards compared to the traditional response of raising one's hand.

Constructivist promoted learner engagement and emphasized team learning and the learning environment (Kantar, 2013). Webster (2011) stated constructivist teaching consisted of four principles which built on each other. Knowledge was constructed in part from the learner's interactions with their environments, constructed through their

actions, gave meaning to what was learned through social interactions. Students needed to be able to relate what was learned to their prior knowledge (Yunianta et al., 2012).

Lessons that were able to be applied to real-life situations and experiences produced meaningful learning (Yunianta et al., 2012). When materials were created with content students were concerned with, authentic learning was present and student confidence improved (Oblinger, 2007). De Jager (2013) conducted research to determine if offering class incentives would improve active learning. The research showed that offering something of value was not enough to improve active learning, lessons needed to incorporate various methods and applicable to real-life situations.

Meaningful learning took place when students lessons were goal driven, when those goals were reached students felt a sense of accomplishment (Yunianta et al., 2012). Group processing ensured members goals were achieved as well as clarified members roles and improved the effectiveness of the group (Tran, 2013). Johnson and Johnson (2009) stated for groups to achieve mutual goals participants knew and trusted each other, communicated well with members, supported and accepted other member's differences, and constructively resolved conflicts.

Sailin and Mahmor (2018) wrote "exploration and peer learning have emerged as the main learning activities that supported the active learning attribute" (p.14) and found students were able to learn as they observed their peers. When students worked together, they were able to use each other's knowledge to solve problems and achieve common goals (Kumari, 2014; Yunianta et al., 2012; Zemelman et al., 2012). Project based learning allowed for authentic and cooperative learning to take place as well as helped generate ideas amongst group members (Sailin & Mahmor, 2018). Students found

presenting materials to peers and peer evaluation increased student knowledge as well as built group identity (to their peers helped increase their knowledge (Tesfaye & Berhanu, 2015). Carrasco, Behling and Lopez (2018) found students who participated in active learning groups scored in the top 33% on a final exam where scores of those who had not participated grades were in the lower 33 percentile. Fielding (2011) wrote students took an active role in their learning and gained a deeper understanding when they participated in discussion with the teacher and other students within the class.

Help students think critically. Although Americans were more educated than ever, a large portion of that knowledge was only content matter, facts that could be regurgitated in order to pass a test. High-order reasoning skills, such as critical thinking, were not emphasized as much. Moving learners from content knowledge to critical thinking allowed students to take what they learned in the classroom and apply it throughout their lives in real life situations (Abrami et al., 2008; Case, 2008; Snyder & Snyder, 2008; Tsui, 2002). The ability to apply what was learned in a variety of situations both in school and outside of school was the goal of instruction (McTighe & Wiggins, 2012; Tishman, 2008). Critical thinking skills were found to have positively impacted student learning and increased higher-order thinking (Sazant, 2014).

In order to increase critical thinking, lessons needed to include: “ill structured problems, criteria for assessing thinking, student assessment of thinking, and improvement of thinking” (Broadbear, 2012, p. 3). Two of these were discussed in this section, student assessment of thinking, was covered in the Efficacy of Instructional Strategies – use a variety of assessment strategies section of this paper. The first strategy was to create reasoning questions and ill-structured problems, ones that did not have one

wrong or right answer rather questions which learners based their conclusions on the best evidence available and left their decisions open to change as new evidence was introduced. Teachers who asked questions that forced students to search for answers increased their critical thinking levels. On the other hand, teachers who gave longer explanations and feedback led to lower levels of critical thinking (Yiqi, 2012). Likewise, higher-level critical thinking skills were evident when students were able to make arguments for or against claims by using pertinent information. Likewise, the ability to assess the credibility of the source, and use of good judgments and deductive reasoning were also signs of students' use of higher-level critical thinking skills (Chaijaroen, Kanjug, & Samat, 2012; Ennis, 1991; Resnick, Michaels, & O'Connor, 2010).

Broadbear (2003) stated teachers needed to create lessons that promoted critical thinking skills. Teachers who engaged students with instructional activities specifically designed to improve critical thinking skills not only improved critical thinking but also led student achievement (Abrami et al., 2008; Tiruneh, De Cock, & Elen, 2018). Students who scored low on critical thinking skills had trouble making inferences whereas those with high critical thinking skills were strong in making inferences and assumptions (Hanum, Noorhidawati, & Haghparast, 2014). Students who asked questions, identified issues, used claims and arguments, and collaborated within groups increased their critical thinking (Sarawan, Yuenyong, & Eames, 2019).

Applying activities and strategies to increase critical thinking in the classroom was not enough. Sazant (2014) wrote teachers had to overcome internal and external barriers which prevented higher-order thinking lessons. One of the barriers teachers had to overcome was the idea of getting through the curriculum before the end of the school

year. This thought often led to the teacher creating lessons which introduced the material faster, and allowed for faster grading of assessments and assignments. Nold (2017) found eight weeks of lessons was enough time to increase critical thinking. Teachers, especially experienced teachers, needed to overcome their belief that their methods were the best way to teach their materials (Sazant, 2014). Teachers had to embrace new strategies which included lessons to increase critical thinking skills.

Foster student creativity. The creative approach to teaching improved student achievement in four areas: items created from the learning activities, increased student motivation, fostered relationships between students, and increase personal development (Bramwell, Reilly, Lilly, Kronish, & Chennabathni, 2011; Fischer & Golden, 2018). Rudienė, Volkovickienė, and Butvilas (2016) stated young children learned about the world and their surroundings through their senses. Preschool teachers used exploration through play to increase student creativity (Stylianidou et al., 2018). However, Fischer and Golden (2018) stated fostering creativity in lesson planning was often more of a policy than a practice, creativity was thought to be the byproduct not the focus lessons.

Creativity was “the ability to generate new ideas and solutions, develop new things and concepts which can be useful to others” (Rudienė et al., 2016, p. 154). It was more important for educators to gain knowledge about what activities fostered creativity than the use of specific types of lessons designed specifically for teaching students how to be creative. Lessons and activities that promoted creativity could be used in all subjects of all grades (Kampylis & Berki, 2014). After school programs and clubs that focused on research fostered creative thinking (Kuhar & Sabljic, 2016).

Creative learning, as well as teaching for creativity, were interrelated and affected each other, therefore they should not be viewed separately (Jeffrey & Craft, 2005; Fischer & Golden, 2018). Wong and Siu (2012) stated since teaching for creativity and learning to be creative were “obscure and intangible,” (p. 448) teaching methods varied and evolved. Teachers needed to develop assessments which moved away from measuring learned facts to ones that provided feedback on student progress based on individual learning goals (Kampylis & Berki, 2014).

Teachers who believed student creativity was important were more likely to believe they were able to promote student creativity (Beghetto, 2006). Children’s creativity was engaged when teachers’ lessons built upon each other and allowed students to develop their own questions and ideas (Stylianidou et al., 2018). Fostering creativity required students to take more risks and be more innovative and teachers to be able to solve problems creatively (Fischer & Golden, 2018; Rejskind, 2000).

Key “elements within the creative environment were safety, respectfulness, naturalistic approach, activity, simplicity, openness, mobility, and being social are the key elements within the creative environment, and also these elements foster creativity as the phenomenon in every child’s action” (Rudienè et al., 2016, p. 154). Teachers needed to make sure learning spaces were conducive to creative thinking lessons and activities, this included but were not limited to the materials used, placement of furniture, use of technology, and lighting (Kampylis & Berki, 2014). To increase creative thinking teachers needed to make environments feel safe and welcoming, these spaces allowed students to take risks and make mistakes when trying to solve problems or answer questions (Kampylis & Berki, 2014).

Original activities that were meaningful engaged and fostered student creativity (Kampylis & Berki, 2014). Teacher could learn what students were interested in or motivated them in order to create lessons students could relate to. Konstantinidou and Zisi (2017) found the most common ways teachers fostered creativity was by asking open-ended questions that required students to find the answers for themselves. Open-ended questions could promote creativity as they required student to seek answers instead of just remembering facts (Kampylis & Berki, 2014).

Other teacher behaviors designed to foster student creativity put responsibility of learning on the students and encouraged group work (Konstantinidou & Zisi, 2017). Creative learning was present when groups worked together to solve problems, overcame obstacles to achieve goals and completed tasks as a team (de Villiers Scheepers & Maree, 2015; Stylianidou et al. 2018). When students worked together to achieve common goals creativity was enhanced (Kampylis & Berki, 2014). Students had to create relationships with each other and discover strengths and weaknesses of the team members in order to achieve common goals.

Classroom management & student discipline. Several research studies found teacher self-efficacy in classroom management had a higher average score than instructional strategies and student engagement. Voris (2011) found the average self-efficacy score in classroom management was 7.23 for 222 teachers who were in their first six years of teaching. Wolters and Daugherty (2007) had slightly lower results with teachers in their first five years, scoring an average self-efficacy in classroom management of 7.05. Blackburn and Robinson (2010) found similar results to those of Wolters and Daugherty having found average self-efficacy in classroom management for

teachers in their first six years of teaching to be at 7.09. Self-efficacy in classroom management, although scoring the highest, still started out low, gradually increased hitting a high score at year 23, then falling off as teachers' careers came to an end (Klassen & Chiu, 2010). Self-efficacy in classroom management needed to be kept high for teachers in order to lower classroom stress, improve student behavior, and increase student achievement.

With a 0.52 effect size, classroom management was one of the “most influential factors” (p. 44) that effected student achievement (Hattie & Ziere, 2018). Angus et al. (2009) found students who did not follow classroom rules or were uncooperative performed at the lowest levels. Klassen and Chiu (2010) concluded teachers with higher classroom stress caused by classroom misbehavior had lower self-efficacy in classroom management which may have been a result of previous unsuccessful experiences in controlling poor classroom behavior. Gholami (2015) stated teachers with low self-efficacy tended to become less tolerant of students who misbehaved in the classroom. Accumulation of small infractions, such as talking during instructional time or disrespect for teachers, harmed the achievement of all students (Blank & Shavit, 2016). Poor classroom management skills led to disruptive classroom behavior (Johansen, Little, & Akin-Little, 2011). Teachers who had good classroom management skills and engaged students spent more time teaching and less time correcting improper behavior (McGhie-Richmond & Jordan, 2007). Bray-Clark and Bates (2003) suggested adding self-efficacy activities into professional development to increase teacher competence and enhance teacher training which in turn would improve student achievement. This idea was reinforced by research of Yoo (2016), who found when teachers were provided on-line

professional development training their self-efficacy in classroom management was raised from 7.64 before the training to 8.15 after the training. Anwar (2019) stated “The role of a teacher is to incorporate a variety of teaching methodologies and techniques to capture the attention and interest of difficult students as well” (p. 157). Renaud et al. (2007) stated “boredom or alienation” (p. 13) were the main causes of discipline issues in the classroom. Sullivan, Johnson, Owens, and Conway (2014) found the most frequent types of unproductive classroom behavior were low-level disruptions and unengaged students, whereas anti-social and aggressive behaviors were less prevalent. Angus et al. (2009) stated that only about 5% of student misbehavior was reported as being aggressive with inattentiveness making up about 20% of poor classroom behavior. Students who were not motivated made up about 10% in primary classes this percentage doubled for math and tripled for English classes for grades 10 and above. Powers and Bierman (2013) found aggressive behaviors increased in classrooms where aggressive student behavior was present, especially for children who were disliked by their peers

Creating classroom management systems and clear rules and procedures.

Parsonson (2012) stated each classroom had its own unique aspects which influenced behavior. These unique aspects included teachers, students, materials, technology, and activities. Teachers who created a well-organized learning environment, including a management plan that addressed the handling of student misbehavior, disruptions decreased, and achievement increased (Blank & Shavit, 2016).

External influences brought into the classroom also effected classroom behaviors. External influences included peer relationships, family issues or problems for both students and teachers, and other social issues (Parsonson, 2012). To emphasize that point

research by Maguire, Ball, and Braun (2010) found discipline policies that appeared to have failed were not the cause of poor behavior, instead the poor behavior had more to do with course offerings, poor lessons, and students feeling unimportant.

Blank and Shavit (2016) found the type of classroom environment students were in affected their achievement. Children learned to behave differently in different settings if they were conditioned to what behaviors were acceptable and unacceptable within that specific environment (Parsonson, 2012). Students' scores were four percentage points lower in class where classroom disruptions were higher as compared to classes where classroom disruptions were low. Controlling noise levels in the classroom was important as high levels of noise negatively impacted students' academic performance and test scores (Shield & Dockrell, 2008). The establishment of routines, such as a daily agenda and signals to silence students or indicate group work time had ended helped maintain student discipline (Renaud et al., 2007). However, teachers needed to be cautious when creating rules and consequences for breaking of classroom rules. Student behavior was adversely affected when students felt the rules were too strict and punishments were too harsh (Way, 2011).

One of the most used classroom management techniques was to punish the group for the misbehavior of the few (Simonsen, Fairbanks, Briesch, Myers, & Sugai, 2008). A reward or punishment given to a group of students was an effective strategy for changing class behavior. Not only were the use of class rewards effective they were also viewed positively by teachers and students to improve student behavior (Collins et al., 2016; Cook, 2005).

Teachers had to be proactive with classroom management. Rules and procedures needed constant review with students complied with the rules and ensured disruptive behavior was minimized (Seidman, 2005). When districts and teachers implemented classroom check-ups and provided visual performance feedback teachers increased the use of classroom management strategies and resulted in a decrease in disruptive behavior within the classroom. Strategies included the increased use of praise for specific types of behaviors, and less reprimands of the students (Reinke, Lewis-Palmer, & Merrell, 2008).

Control and calm disruptive behavior in the classroom. How schools and teachers addressed discipline issues varied greatly including school-wide discipline policies being put in place to try to decrease misbehavior. Blank and Shavit (2016) found schools that had fewer discipline issues did not necessarily have higher test scores. This indicated higher achievement due to behavior had more to do with individual classroom management skills than it did with school-wide discipline policies (Blank & Shavit, 2016). Not only did disruptive behaviors disrupt the learning environment and the flow of information, they also increased student and teacher stress levels (Parsonson, 2012).

Effective practices needed to be implemented by teachers to decrease misbehavior before the undesired behavior occurred. Anwar (2019) found strategies that prevented misbehavior were more effective than practices that dealt with behavior after it occurred such as reprimands and punishments. Student attitudes toward the teacher had significant correlation with classroom disruptions. When students felt disobeying teachers was accepted, they were more likely to misbehave (Way, 2011).

Students who misbehaved not only affected their own learning but had implications for learning on the entire class. When focus switched from teaching and

learning to behavior control, the dynamics of the class changed (Parsonson, 2012). Class rules and punishments which were perceived as being fair by students were more likely to be obeyed than were rules and punishments they felt were unfair (Way, 2011). When students took an active role in creating class rules, consequences, and rewards, they were more likely to believe the rules were fair and would follow the rules they had created (Renaud et al., 2007). Positive reinforcements promoted and helped maintain appropriate behavior within the classroom (Parsonson, 2012). Lannie and McCurdy (2007) found poor behavior decreased amongst young children when a game that emphasized good behavior was played in the classroom. These findings were supported by Radley, Dart, and O'Handley (2016) who found the Quiet Classroom Game increased academic engagement and decreased disruptive behavior in first grade students.

Students misbehaved for many reasons. Hawken, Vincent, and Schumann (2008) stated most students misbehaved in order to avoid tasks they do not want to do or feel they cannot complete or to gain attention from peers. Teachers had more control over student behavior than students did. Lessons that engaged students were more likely to produce desired behavior than those that did not interest or engage students (Maguire et al., 2010; Sullivan et al., 2014). Prospective teachers found problem-based learning would be useful as a classroom management tool as it kept students engaged, promoted active participation, was student centered, and motivated students (Avci, Akinci, & Bakioğlu, 2012). Students paid more attention and were more involved in the learning process when activities and materials interested them, which in turn led to limited disruptive behavior (Renaud et al., 2007; Zemelman et al., 2012).

In order to decrease unwanted behavior, teachers needed to find strategies that engaged students and avoided punishments designed to control them which were ineffective (Sullivan et al., 2014). Maguire et al. (2010) wrote classroom behavior improved when teachers moved from trying to control student behavior to lessons that engaged them. When lessons peaked student interests or kept them actively engaged in the lesson, students were more likely to regulate other student behavior within the class (Renaud et al., 2007). The use of several types of activities, students learned skills which not only improved achievement but also improved behavior as well (Alburaidi & Ambusaidi, 2019). Ketterer Berrong et al. (2007) found using alternative teaching strategies and response cards improved behavior with students with moderate to severe disabilities.

Students feel safe at school. Teachers had to make all students feel welcomed, safe, and comfortable in the classroom. Safe, welcoming environments allowed students to open-up more easily, they overcame fear to communicate thoughts and ideas, took an active role in their learning and wanted to come to school each day. Creating hostile environments through speech and actions or seeming to like one group of students over another alienated students and caused them to shut down or not want to come to class and learn (Zemelman et al., 2012).

Salmon (2008) wrote that not only was the societal culture important and influential, a thinking culture was just as important in student development and successful learning. A thinking culture was one that valued and promoted the thoughts of not only the individuals, but the group as well. Although Salmon's research on thinking culture was based on results at the elementary level, the same concepts could be applied

by leaders and teachers. Bendermacher, oude Egbrink, Wolfhagen, and Dolmans (2017) as well as Salmon (2008) believed that by promoting this thinking culture, leaders were able to promote participation and develop a responsibility in creating this culture by all stakeholders within the learning community, including staff and students. Although Gomez and Ang (2007) described positive school cultures as “promoting Positive Youth Development,” (p. 97) the concepts were ultimately the same as creating a positive culture.

Gomez and Ang (2007) identified the importance of creating and promoting a positive, welcoming environment where students felt safe and welcome. By creating these environments, learning communities reduced negative behaviors, such as physical and verbal abuse by and of students (Gomez & Ang, 2007). Likewise, Markham’s (2015) research suggested that students who took on their school’s high-valued culture or identity were less likely to use illegal substances as those who rejected those same cultures and identities.

Although one may have believed the creation of rules worked as a way to promote positive school culture, this was not true. Rules needed to be developed not to punish those who break them, but to promote positive behavior. Teachers often reflected on the results of breaking rules, not on the positive results of having followed the rules (Hardman & Smith, 1999). Leaders and teachers needed to continue this positive culture which seemed like a daunting task; however, through continuous training and modeling of what the culture should have looked like, this helped to ensure buy-in from the stakeholders of the learning community. Positive test result data is not the only measure of a school’s

success. Creating a positive culture to ensure student success, is another key component to creating a successful school (Day, Gu, & Sammons, 2016).

Summary

Collective efficacy's effect on student achievement was brought to the forefront in educational research after Eells (2014) found it had an effect size between 0.537 and 0.628 on student achievement. This in turn resulted in educational researcher John Hattie (2018) to rate collective efficacy as being the number one influencer on student achievement with an effect size of 1.57. Although there has been a great deal of research conducted on teacher efficacy, there appears to be a lack of research dedicated solely to how years of service effect collective and self-efficacy. Klassen and Chiu (2010) found teacher efficacy went through cycle where it started low, reached a high point in the teachers' middle years, and then dipped again near retirement. This study sought to investigate if collective teacher efficacy and teacher self-efficacy were dependent on the stage the teacher was in their career. The study also was designed to determine if the subsections of the two efficacy scales were dependent on what stage the teacher was in their career. The methodology used for this study will be discussed in the next chapter.

Chapter Three: Research Method and Design

Purpose

This mixed-methods research study was designed to determine if there was a significant difference in teacher efficacy and collective efficacy, based on the teacher's year of service. According to Hattie and Zierer (2018) collective teacher efficacy was the most influential factor for student achievement. This study was designed to determine if a teacher's years of service affected their beliefs on collective and self-efficacy.

In Eells' 2011 dissertation "Meta-Analysis of the Relationship Between Collective Efficacy and Student Achievement," research showed that teacher collective efficacy had a high effect on student achievement. After this research, Hattie and Zierer (2018) dubbed collective efficacy was the "new #1 in the list of influence from Visible Learning" (p. 26). Collective Efficacy was ranked the number one influence on student achievement with an effect size of 1.57 (Hattie & Waack, 2018). This effect size was so large that Killian (2017) believed that graphing it would make the other 188 factors seem insignificant.

Independent variable. The independent variable for this research was the number of years the participant had taught.

Dependent variable. The dependent variables were the teachers' self-efficacy and collective efficacy beliefs.

Null Hypotheses

Null Hypothesis 1: There will be no significant difference in collective teacher efficacy depending on the stage of the instructor's career.

Null Hypothesis 2: There will be no significant difference in individual teacher efficacy depending on the stage of the instructor's career.

Null Hypothesis 3: There will be no significant linear relationship between a teacher's self-efficacy and collective efficacy depending on the stage of the instructor's career.

Research Question

Research Question 1: What are teachers' perspectives of self and collective efficacy?

Methodology

Once the researcher received approval from Lindenwood University's Institutional Review Board, 32 district superintendents were contacted with an introduction letter for permission to conduct research within their districts via email. The researcher originally collected contact information for 20 districts within the greater St. Louis area and surrounding counties, as well as one district in the greater Kansas City area. The researcher believed that at least three of these districts would allow the research to be conducted. After the initial 21 districts were contacted, only two agreed to participate, the researcher sought contact information on an additional 11 districts within the greater St. Louis area and surrounding counties. Other than the researcher's own district, all districts were chosen at random, with the researcher selecting neighboring districts within similar and differing economic and demographic areas. Since the researcher was interested in efficacy based on years of service, not efficacy based on school economics or demographics, no additional research was conducted on the chosen schools' economic or demographic data. The researcher's own district was chosen as a

retirement incentive brought an influx of new teachers to the districts, leaving what the researcher believed would be a good balance of teachers in all stages of their careers. The district from the greater Kansas City area was chosen, as it was the only district in the state which was similar to one of the districts chosen from the greater St. Louis area.

The researcher expected three districts to give permission to conduct research within their districts. Of the 32 superintendents contacted, two gave permission immediately, five requested additional information on the study or needed additional forms to be completed, three declined to participate, and 22 did not respond to the request. Of the five districts which asked for additional information, two agreed to offer their staff the opportunity to participate in the study, one declined, and one did not respond, once additional information was submitted.

Teachers at participating districts were asked to complete an online survey with approximately 30 questions with an additional question asking if participants would like to take part in a focus group. The survey was adapted from two surveys created by Tschannen-Moran who gave permission for the researcher to use the surveys. One survey measured teacher self-efficacy and one measured collective teacher efficacy. Lindenwood University Research Informed Consent information was embedded within the survey. Participants had to agree to consent before they could take the survey; if a participant did not consent, the survey ended.

The researcher expected an average of 40 teachers, per participating district, to complete the survey and anticipated 10 teachers would agree to participate in the focus group. One-hundred and forty-six surveys were started by teachers from the four districts which agreed to participate in the research study. At least 122 of the 146 surveys were

started by teachers in the first two districts to give permission, one of which was the district where the researcher worked at the time of the study. Surveys in the initial two districts were sent directly to teachers, whereas the other two districts shared the survey link indirectly. The superintendent of the district where the researcher worked had the researcher send the surveys directly to employees with an introduction letter stating that the survey was voluntary. The other district, which gave initial permission, requested a link to the survey, after which the superintendent sent the survey directly to staff. The researcher was not asked for a letter of introduction for participants nor was a staff letter of introduction provided by the superintendent to the researcher. While the initial two districts' teachers received requests to complete the study directly, the other two districts' teachers received the surveys indirectly (not from the researcher nor their superintendent directly). One district disseminated the survey via a weekly memo while the other district's superintendent sent the survey link and introduction letter to the building principals who in turn passed it on to their staff via email.

Surveys. An online survey was created and deployed using *Qualtrics.com*. An electronic consent statement was included within the survey (see Appendix A). After gaining permission to use two efficacy surveys from their creators, the researcher combined Tschannen-Moran and Woolfolk Hoy's (2001) "Teacher Sense of Efficacy Scale" and Tschannen-Moran and Barr's (2004) "Collective Teacher Efficacy Scale" to create the research instrument.

Minor changes were made to the original instruments to better fit this research study. The researcher removed questions 13 through 20 from the "Teacher Sense of Efficacy Scale" survey as they did not pertain to the research conducted and realigned the

questions, so questions were grouped together based on the Directions for Scoring the Teachers' Sense of Efficacy Scale. The collective efficacy questions were placed in one of two groups based on the Directions for Scoring the Collective Teacher Efficacy Scale guide: one for questions focusing on "Instructional Strategies" and one for questions that focused on "Student Discipline." For the self-efficacy portion of the survey all questions which focused on "Student Engagement" were grouped together, all questions focused on "Instructional Strategies" were grouped together, and all questions relevant to "Classroom Management" were grouped together. Five additional questions were added to determine teachers' years of service, tenure, and years to retirement. Participants were offered the opportunity to participate in a focus group to gain teachers' perspectives of self- and collective efficacy. Additional contact information was required for those who choose to participate in the focus group.

When teacher groups' collective efficacy and self-efficacy were compared -- Null Hypothesis 3 -- only data from respondents who answered both sets of questions on those topics were compared. When comparing years of service concerning collective efficacy, all surveys which had answers through the collective efficacy portion of the survey were used. Therefore, there were some data used from teachers who technically did not complete the survey through the focus group question.

Responses from participants were combined and sorted by years of service for analysis. Teacher self-efficacy responses were coded as "S+#" depending on the "stage" of their career. For example, teachers in "Stage 1" of their careers were coded as S1, teachers in "Stage 2" of their careers were coded as S2, etc. Likewise, Collective Teacher Efficacy responses were coded with as "C+#" depending on the "stage" of their

careers. Teachers in Stage 1 of their careers were coded as C1; Stage 2 would be coded as C2, etc.

One-hundred forty-six surveys were started; of those, 96 were completed. A “completed” survey was one where the subject answered all question through the focus group question or had answered “No” to the certified teacher question as answering “No” to this question ended the survey. Since answering “No” to the certification question ended the survey and marked it as being completed, 10 of the 96 surveys were marked as 100% completed but contained no data for collection. Of the total surveys started or completed, 101 provided data for collective teacher efficacy, whereas only 86 of those surveys provided data for self-efficacy. The difference was due to participants only completing the collective teacher efficacy portion of the survey. Sixteen stage-one teachers completed the collective teacher efficacy portion of the survey; only eight of those 16 also completed the self-efficacy portion of the survey. Thirteen teachers within stage-two of their careers completed the collective teacher efficacy portion of the survey, and only three failed to complete the teacher self-efficacy portion of the survey. Twenty-nine teachers in stage-three of their careers completed the survey through the collective efficacy portion; of those 29, four failed to complete the self-efficacy portion of the survey. Only one teacher from each of the groups with the most experience failed to complete both the collective efficacy and self-efficacy portions of the survey. Nineteen surveys had recorded data for both collective and self-efficacy from stage-four teachers. Stage-five teachers completed 22 surveys with recordable data for both collective and self-efficacy.

Twelve participants answered “yes” to take part in the focus group, however four of the 12 did not consent to participate, two consented but did not leave contact information, and three were from the researcher’s district. One of the three from the researcher’s district stated they really did not want to participate in the focus group and only chose “yes” because they thought it would “help me out.” Accordingly, the researcher decided to exclude any focus group participants from his district. This left only three responses from teachers who worked outside the researcher’s district and left contact information. Because of this small number of responses, the researcher decided not to conduct a focus group.

In order to obtain qualitative data, the researcher requested a modification of the initial research proposal to Lindenwood University’s Institutional Review Board. Once approval for the modification was granted, the researcher constructed a 14-question multiple choice and short answer questionnaire (see Appendix B) through *Qualtrics.com* which included an electronic consent statement. The survey was comprised of three multiple-choice questions regarding years of service, tenure, and years to retirement, as well as the 11 short-answer questions which were originally to be used in the focus group. This survey was sent to the six participants who left contact information for the focus group as well as one teacher who worked within the researchers building who stated they did not want to participate in a focus group but would not mind answering short answer questions with a new letter of introduction. Since the new survey gave participants an anonymous way to participate or decline, the researcher included the teacher who stated they only chose the focus group option because they thought it would help the researcher as well as all teachers from the researcher’s district. Four of the seven

participants completed the new survey. Due to an error in the survey, two of the four were unable to answer the multiple-choice questions and the first two short answer questions regarding what collective efficacy and self-efficacy meant to them. Once the anomaly was corrected, all additional responders were able to see and answer all questions.

Data Analysis. Once data was collected and sorted into the five different stages of teachers' careers, the researcher compared the means of each group's Collective efficacy using an Analysis of Variance (ANOVA) at alpha .05. This same method was used to compare each group's average self-efficacy. All "completed" surveys were used when comparing collective and self-efficacy. The researcher calculated the Pearson Product Moment Correlation (PPMC) coefficient to determine if there was a relationship between the teachers' collective efficacy and their self-efficacy, and conducted a *t*-Test to determine its significance. Again, the researcher used the $\alpha = .05$ level of significance. The researcher only used responses which had answers for both the collective teacher efficacy and self-efficacy portions of the survey completed when comparing self-efficacy to collective efficacy.

Responses from the short-answer survey were sorted into three main groups; one with all questions regarding both collective and self-efficacy, one group with questions regarding self-efficacy, and one group with questions referring to collective efficacy. Sub-groups of questions with similar themes were also created for analysis. For example, questions regarding barriers to collective efficacy (Questions 10, 11, & 12) were grouped and analyzed. Once responses were sorted and grouped, they were analyzed and reviewed for common themes, thoughts, and ideas.

Limitations

Data from surveys were only collected from districts within the greater St. Louis area and its surrounding counties. A larger sample from multiple states could provide more extensive comparison of collective and self-efficacy beliefs.

Ellis (2011) found collective efficacy appeared to be stable, however she also stated that the issue of timing needed more investigation. This research was conducted near the beginning of the academic school year with all responses having been returned within the first three months of the beginning of the school year. The first survey was completed on September 5 with the last survey having been received on October 29. Although the timing of the survey may not have affected responses, it is possible teacher perceptions of efficacy may change or be different at the beginning of the school year, when teachers may be considered “refreshed” and “excited” about the school year, as compared to the end of the school year when many may be “burned out” or ready for summer break.

Four districts agreed to participate in the survey. Of those four, one was the district the researcher worked in and survey participation was requested directly from the researcher. For this district, the researcher created an introduction letter reviewed by the district’s superintendent prior to being sent to staff members. Although the researcher did not work directly or necessarily know a majority of the respondents, and all questions regarding district and building information were not required to be answered, it is possible the answers from those respondents may have been influenced by the fact the survey was being conducted by a co-worker. Two of the four districts appeared to have provided more responses than the other two. The two districts from which more

responses were received had the request for research participation and surveys sent directly to teachers from either the district's superintendent or the researcher. In the other two districts, the survey was disseminated indirectly to the staff. One district put the survey request in the weekly staff memo which is sent to the staff via email, and the other the request was sent to the principals of each building then forwarded to the building staff. There was no direct evidence that anyone from the district, which embedded the request to participate in the weekly email memo, participated in the survey. The researcher believes more surveys would have been completed by the additional school's teachers if they were sent the request directly from the superintendent or researcher.

At least one respondent answered all "9s" for the collective teacher efficacy portion of the survey. Initially the researcher thought perhaps they just opened the survey and selected those values as they felt they needed to complete the survey. However, the same respondent chose several different values when scoring the self-efficacy portion of the survey. This led the researcher to believe the respondent selected values they thought to be accurate for that portion of the survey. Since there was no way, without collecting personal/definable information, to limit the number of responses to one per person, there is a possibility that some respondents may have taken the survey more than once, or if they started a survey they did not finish they may have taken it again giving two sets of data from the same individual. Surveys were not monitored therefore it is possible that respondents could have taken surveys together (at the same time) and compared responses before completing, which may have influenced individual results.

As discussed earlier, due to an initial glitch in the short-answer survey, some questions were not displayed to two of the four participants. Although three of the

questions were multiple choice and regarded years of service, tenure, and years to retirement, two of the short answer questions were not displayed. This error caused the researcher to lose potentially valuable information to be analyzed. *Qualtrics* did have a way for respondents to edit their answers, however since no contact information was recorded from the short-answer survey it was impossible for the researcher to contact the two participants and ask them to complete the questions which were not displayed.

Summary

Hattie and Zierer (2018) stated collective teacher efficacy was the most influential factor for student achievement. However, there is little information on how years of service affects efficacy or if there is a relationship between self-efficacy and collective efficacy based on years of service. The researcher investigated if collective efficacy and self-efficacy differed based on the stage of the teacher's career. A mixed-methods approach was used to help determine if there was a relationship between years of service and efficacy, as well as get feedback on what "efficacy" meant to teachers at different points in their career. The next chapter analyzes and explains the results attained from the research.

Chapter Four: Analysis

Overview

Teachers completed an online survey which was made available through a link which was either emailed directly to them or via a district memo. Teachers were not required by their district to participate in the survey and all questions with identifiers--districts and buildings in which they worked--were clearly marked as optional. Teachers who wanted to participate in the focus group were asked for additional identifiable information including contact name and email address. All identifiers were removed prior to analysis to protect participants' anonymity. After all data was collected and identifiers removed, the researcher separated results into a separate spreadsheet by the stage of the teacher's career, then separated collective teacher efficacy data from self-efficacy data for analysis. Short-answer responses were sorted, grouped, and analyzed for common themes, thoughts, and ideas.

Null Hypotheses

Null Hypothesis 1: There will be no significant difference in collective teacher efficacy depending on the stage of the instructor's career

Null Hypothesis 1a: There will be no significant difference in overall Collective Teacher Efficacy depending on the stage of the instructor's career.

Null Hypothesis 1b: There will be no significant difference in Collective Efficacy in Instructional Strategies based on the stage of the instructor's career.

Null Hypothesis 1c: There will be no significant difference in Collective Efficacy in Student Discipline based on the stage of the instructor's career.

Null Hypothesis 2: There will be no significant difference in individual teacher efficacy depending on the stage of the instructor's career.

Null Hypothesis 2a: There will be no significant difference in teacher self-efficacy depending on the stage of the instructor's career.

Null Hypothesis 2b: There will be no significant difference in teacher self-efficacy in Student Engagement depending on the stage of the instructor's career.

Null Hypothesis 2c: There will be no significant difference in teacher self-efficacy in Instructional Strategies depending on the stage of the instructor's career.

Null Hypothesis 2d: There will be no significant difference in teacher self-efficacy in Classroom Management depending on the stage of the instructor's career.

Null Hypothesis 3: There will be no significant linear relationship between a teacher's self-efficacy and collective efficacy depending on the stage of the instructor's career.

Null Hypothesis 3a: There will be no significant linear relationship between collective efficacy and self-efficacy for surveyed teachers.

Null Hypothesis 3b: There will be no significant linear relationship between collective efficacy and self-efficacy for teachers who were in stage 1 of their career.

Null Hypothesis 3c: There will be no significant linear relationship between collective efficacy and self-efficacy for teachers who were in stage 2 of their career.

Null Hypothesis 3d: There will be no significant linear relationship between collective efficacy and self-efficacy for teachers who were in stage 3 of their career.

Null Hypothesis 3e: There will be no significant linear relationship between collective efficacy and self-efficacy for teachers who were in stage 4 of their career.

Null Hypothesis 3f: There will be no significant linear relationship between collective efficacy and self-efficacy for teachers who were in stage 5 of their career.

Research Question 1: What were teachers' perspectives of self and collective efficacy?

Results

Null Hypotheses 1. Teacher responses were analyzed to investigate if there was a significant difference in collective teacher efficacy depending on the stage of the instructor's career. As mentioned in Chapter Three, Tschannen-Moran and Barr's (2004) "Collective Teachers Efficacy Scale" was used to determine overall collective teacher efficacy as well as collective efficacy in "Instructional Strategies" and in "Student Discipline". The highest rating a teacher could score was 9, with the lowest a 0. A series of "ANOVA" tests were run to determine if there was a significant difference in collective efficacy in these areas based on years of service.

Null Hypothesis 1a: There will be no significant difference in overall Collective Teacher Efficacy depending on the stage of the instructor's career.

To begin examination of collective teacher efficacy's relationship to the stage of the instructors career the researcher used the Tschannen-Moran and Barr's (2004) "Directions for Scoring the Collective Teachers Efficacy Scale" for an overall Collective Teacher Efficacy by separating the results by stage of career then taking the means of all 12 items on the survey.

Table 1 displays the results for overall Collective Teacher Efficacy for each of the five stages of a teacher's career followed by the ANOVA results.

Table 1

Results of Scores for Overall Collective Teacher Efficacy

Groups	Count	Sum	Mean	Variance
Stage 1	16	116.75	7.30	1.18
Stage 2	13	101.50	7.81	.79
Stage 3	27	204.75	7.58	.87
Stage 4	20	158.58	7.93	.35
Stage 5	23	176.08	7.66	.96

Table 2

ANOVA Table Comparing overall Collective Teacher Efficacy of Teachers at Five Different Stages of Their Careers

Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	4.00	4	1.00	1.21	.311	2.47
Within Groups	77.53	94	.82			
Total	81.52	98				

The ANOVA analysis displayed in Table 2 revealed no significant difference between the means of the five groups. The researcher failed to reject the null hypothesis and concluded overall Collective Teacher Efficacy was the same regardless of the stage of the teachers' careers.

Null Hypothesis 1b: There will be no significant difference in Collective Efficacy in Instructional Strategies based on the stage of the instructor's career.

The researcher separated the six questions regarding Instructional Strategies then ran the ANOVA test to determine if there was significant difference in Collective Teacher Efficacy in Instructional Strategies based on the stage of the teacher's career.

Table 3 displays the results for Collective Teacher Efficacy in “Instructional Strategies” for each of the five stages of a teacher’s career followed by the ANOVA results. The results only show results for the six questions which measure efficacy in “Instructional Strategies” as laid out by Tschannen-Moran and Barr’s (2004) “Directions for Scoring the Collective Teacher Efficacy Scale.”

Table 3

Results of Scores for Collective Teacher Efficacy in Instructional Strategies

Groups	Count	Sum	Mean	Variance
Stage 1	16	123.67	7.73	1.19
Stage 2	13	106.67	8.21	.51
Stage 3	27	214.33	7.94	.97
Stage 4	20	168	8.40	.41
Stage 5	23	185.67	8.07	.92

Table 4

ANOVA Table Comparing Collective Teacher Efficacy in Instructional Strategies of Teachers at Five Different Stages of Their Careers

Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	4.74	4	1.18	1.45	.225	2.47
Within Groups	77.02	94	.82			
Total	81.76	98				

The ANOVA analysis displayed in Table 4 revealed no significant difference between the means of the five groups. The researcher failed to reject the null hypothesis and concluded Collective Teacher Efficacy in Instructional Strategies was the same regardless of the stage of the teachers’ careers.

Null Hypothesis 1c: There will be no significant difference in Collective Efficacy in Student Discipline based on the stage of the instructor's career.

In order to determine if there was a significant difference in Collective Efficacy in Student Discipline, the researcher ran the ANOVA test with the results from questions regarding student discipline using the same guidelines in the "Directions for Scoring the Collective Teacher Efficacy Scale".

Table 5 displays the results for Collective Teacher Efficacy in Student Discipline for each of the five stages of a teacher's career and is followed by the ANOVA results.

Table 5

Results of Scores for Collective Teacher Efficacy in Student Discipline

Groups	Count	Sum	Mean	Variance
Stage 1	16	109.83	6.86	1.48
Stage 2	13	96.33	7.41	1.41
Stage 3	27	195.17	7.22	.99
Stage 4	20	149.17	7.46	.81
Stage 5	23	166.5	7.24	1.19

Table 6

ANOVA Table Comparing Collective Teacher Efficacy in Student Discipline of Teachers at Five Different Stages of Their Careers

Source of Variation	SS	Df	MS	F	P-value	F crit
Between Groups	3.59	4	.90	.79	.53	2.47
Within Groups	106.43	94	1.13			
Total	110.02	98				

The ANOVA analysis displayed in table 6 revealed no significant difference between the means of the five groups. The researcher failed to reject the null hypothesis and concluded Collective Teacher Efficacy in Student Discipline was the same regardless of the stage of the teachers' careers.

Null Hypotheses 2.

Teacher responses were analyzed to investigate if there was a significant difference in self-efficacy depending on the stage of the instructor's career. Chapter Three stated the Tschannen-Moran and Woolfolk Hoy's 2001 "Teacher Sense of Efficacy Scale" was used to determine overall self-efficacy as well as self-efficacy in "Student Engagement", "Instructional Strategies", and "Classroom Management". The researcher used the "Directions for Scoring the Collective Teacher Efficacy Scale" created by Tschannen-Moran, and Woolfolk Hoy (2001). After sorting data as needed, a series of "ANOVA" tests were run to determine if there was a significant difference in teacher-efficacy in these areas based on years of service.

Null Hypothesis 2a: There will be no significant difference in teacher self-efficacy depending on the stage of the instructor's career.

In order to determine if there was a significant difference in overall teacher self-efficacy, the researcher ran the ANOVA test using respondents' results from all 12 questions on the survey which focused on teacher self-efficacy.

Table 7 displays the results for teacher overall self-efficacy for each of the five stages of a teacher's career and is followed by the ANOVA results.

Table 7

Results of Scores for Overall Teacher Self-Efficacy

Groups	Count	Sum	Mean	Variance
Stage 1	8	55.08	6.89	.18
Stage 2	10	75.58	7.56	.87
Stage 3	25	188.5	7.54	.60
Stage 4	19	147	7.74	.73
Stage 5	22	162.6	7.39	1.42

Note: The number of responses (count) differ from Collective Efficacy count as some respondents only completed the survey through the “Collective Efficacy” portion of the survey.

Table 8

ANOVA Table Comparing Overall Teacher Self-Efficacy of Teachers at Five Different Stages of Their Careers

Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	4.41	4	1.10	1.32	.27	2.49
Within Groups	66.23	79	1.13			
Total	70.64	83				

The ANOVA analysis displayed in Table 8 revealed no significant difference between the means of the five groups. The researcher failed to reject the null hypothesis and concluded overall Teacher Self-Efficacy was the same regardless of the stage of the teachers’ careers.

Null Hypothesis 2b: There will be no significant difference in teacher self-efficacy in Student Engagement depending on the stage of the instructor’s career.

As with Collective Teacher Efficacy, the self-efficacy survey can measure different areas of self-efficacy. The researcher inserted the responses for the questions

regarding “Student Engagement” then ran the ANOVA test to determine if there was a significant difference in teacher self-efficacy in student engagement depending on the stage of the instructor’s career.

Table 9 displays the results for teacher self-efficacy in student engagement for each of the five stages of a teacher’s career and is followed by the ANOVA results.

Table 9

Results of Scores for Teacher Self-Efficacy in Student Engagement

Groups	Count	Sum	Mean	Variance
Stage 1	8	54.25	6.78	.15
Stage 2	10	70	7	1.35
Stage 3	25	174	6.96	1.33
Stage 4	19	143.25	7.54	1.18
Stage 5	22	154	7	1.63

Note: The number of responses (count) differ from Collective Efficacy count as some respondents only completed the survey through the “Collective Efficacy” portion of the survey.

Table 10

ANOVA Table Comparing Teacher Self-Efficacy in Student Engagement of Teachers at Five Different Stages of Their Careers

Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	5.28	4	1.32	1.04	.39	2.49
Within Groups	100.42	79	1.27			
Total	105.71	83				

Table 10 displays the ANOVA analysis and revealed no significant difference between the means of the five groups. The researcher failed to reject the null hypothesis

and concluded Teacher Self-Efficacy in Instructional Strategies was the same regardless of the stage of the teachers' careers.

Null Hypothesis 2c: There will be no significant difference in teacher self-efficacy in Instructional Strategies depending on the stage of the instructor's career.

To determine if there was a significant difference in teacher self-efficacy in Instructional Strategies depending on the stage of the instructor's career, the researcher ran the ANOVA test, imputing only data from questions concerning instructional strategies.

Table 11 displays the results for teacher self-efficacy in instructional strategies for each of the five stages of a teacher's career and is followed by the ANOVA results.

Table 11

Results of Scores for Teacher Self-Efficacy in Instructional Strategies

Groups	Count	Sum	Mean	Variance
Stage 1	8	55	6.88	1.02
Stage 2	10	78.25	7.83	0.85
Stage 3	25	196.75	7.87	0.62
Stage 4	19	149	7.84	1.21
Stage 5	22	171.75	7.81	1.20

Note: The number of responses (count) differ from Collective Efficacy count as some respondents only completed the survey through the "Collective Efficacy" portion of the survey.

Table 12

ANOVA Table Comparing Teacher Self-Efficacy in Instructional Strategies of Teachers at Five Different Stages of Their Careers

Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	6.77	4	1.69	1.75	.15	2.49
Within Groups	76.41	79	.97			
Total	83.19	83				

As revealed by the ANOVA results in Table 12 the researcher found no significant difference between the means of the five groups. The researcher failed to reject the null hypothesis and concluded Teacher Self-Efficacy in Instructional Strategies was the same regardless of the stage of the teachers' careers.

Null Hypothesis 2d: There will be no significant difference in teacher self-efficacy in Classroom Management depending on the stage of the instructor's career.

The researcher separated the four questions regarding classroom management then ran the ANOVA test to determine if there was a significant difference in teacher self-efficacy in classroom management.

Table 13 displays the results for teacher self-efficacy in classroom management for each of the five stages of a teacher's career and is followed by the ANOVA results.

Table 13

Results of Scores for Teacher Self-Efficacy in Classroom Management

Groups	Count	Sum	Mean	Variance
Stage 1	8	56	7	.30
Stage 2	10	78.5	7.85	1.82
Stage 3	25	194.75	7.79	.76
Stage 4	19	148.75	7.83	.83
Stage 5	22	162	7.36	2.28

Note: The number of responses (count) differ from Collective Efficacy as some respondents only completed the survey through the “Collective Efficacy” portion of the survey.

Table 14

ANOVA Table Comparing Teacher Self-Efficacy in Classroom Management of Teachers at Five Different Stages of Their Careers

Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	6.6	4	1.65	1.31	.28	2.49
Within Groups	99.83	79	1.26			
Total	106.43	83				

The ANOVA analysis displayed in Table 14 revealed no significant difference between the means of the five groups. The researcher failed to reject the null hypothesis and concluded Teacher Self-Efficacy in Classroom Management was the same regardless of the stage of the teachers’ careers.

Null Hypotheses 3.

There will be a significant linear relationship between a teacher’s self-efficacy and collective efficacy depending on the stage of the instructor’s career.

Null Hypothesis 3a: There will be no significant linear relationship between collective efficacy and self-efficacy for surveyed teachers.

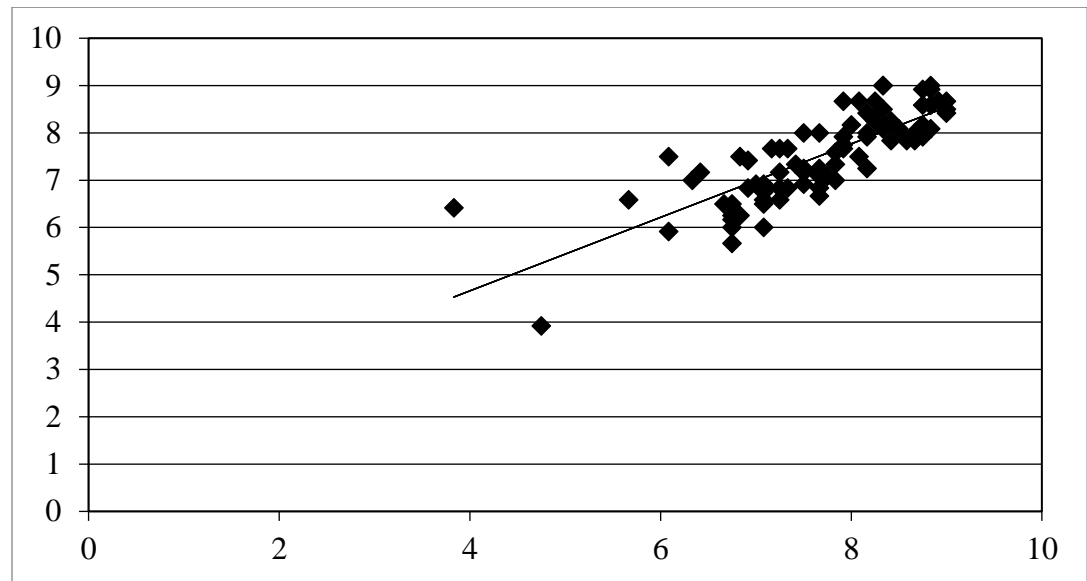


Figure 1. Linear relationship for all teachers surveyed. Pearson ρ correlation coefficient for inter-rater reliability. $N=84$; $r=11.95$; $p < 0.001$

In order to test whether or not there was a significant linear relationship between Collective Teacher Efficacy and Teacher Self-efficacy for all teachers surveyed, the researcher calculated the Pearson Product Moment Correlation (PPMC) coefficient and ran a t -Test. The analysis showed that the coefficient of correlation ($r = .797$) was significant; $t(84) = 11.95$, $p < .001$. The researcher rejected the null hypothesis and concluded that collective efficacy and self-efficacy, of all teachers surveyed, were related.

Null Hypothesis 3b: There will be no significant linear relationship between collective efficacy and self-efficacy for teachers who were in stage 1 of their career.

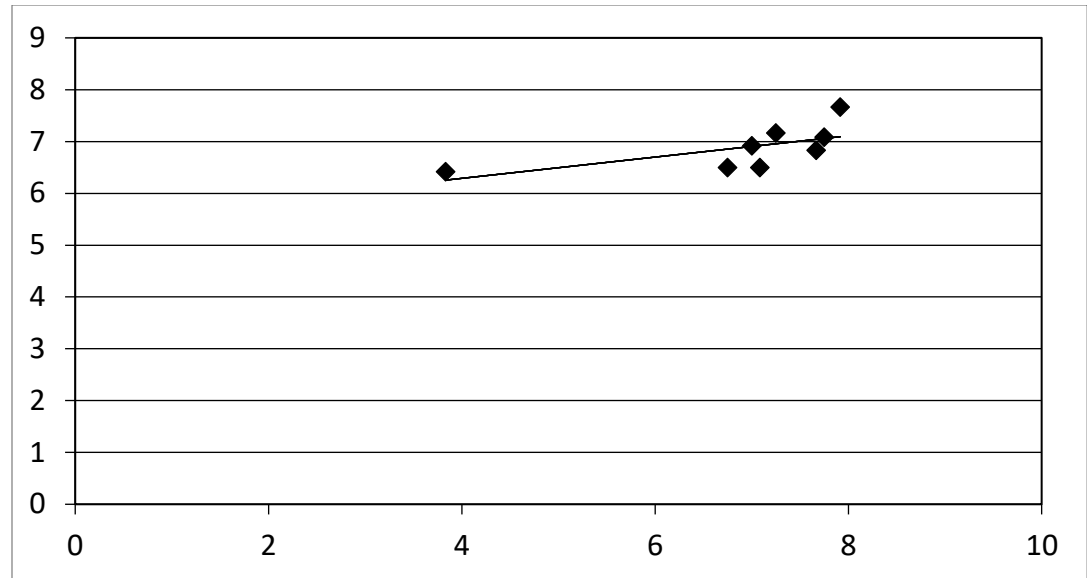


Figure 2. Linear relationship for Stage 1. Pearson ρ correlation coefficient for inter-rater reliability. $N=8$; $r=0.634$; $p=0.091$

In order to test whether or not there was a significant linear relationship between Collective Teacher Efficacy and Teacher Self-efficacy for teachers in stage 1 of their career, the researcher calculated the Pearson Product Moment Correlation (PPMC) coefficient and ran a t -test. The analysis showed that the coefficient of correlation ($r = .634$) was insignificant; $t(6) = 2.01$, $p = .091$. The researcher failed to reject the null hypothesis and concluded that collective efficacy and self-efficacy of teachers in stage 1 of their career were not related.

Null Hypothesis 3c: There will be no significant linear relationship between collective efficacy and self-efficacy for teachers who were in stage 2 of their career.

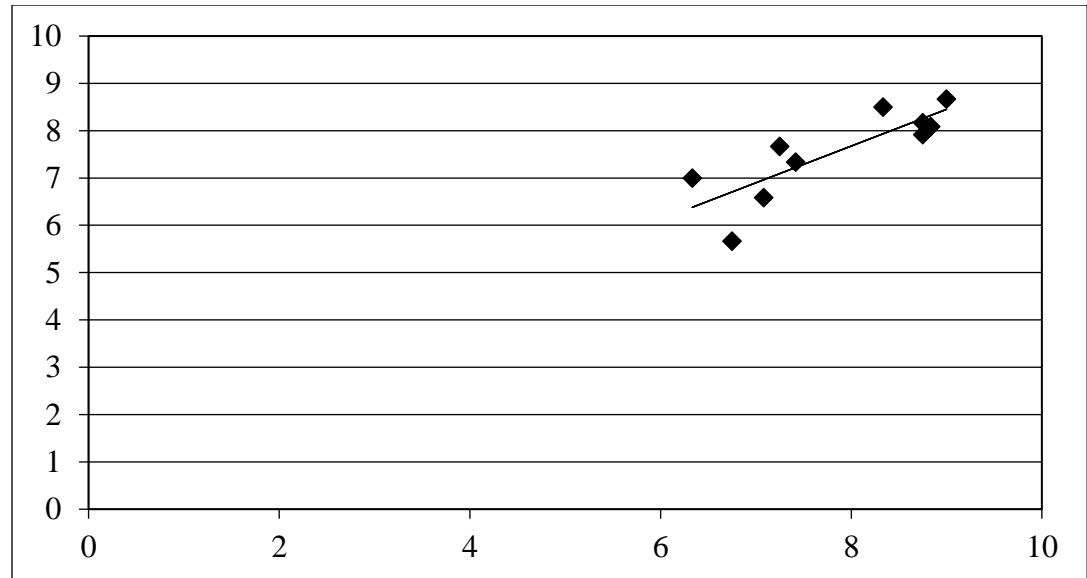


Figure 3. Linear relationship for Stage 2. Pearson ρ correlation coefficient for inter-rater reliability. $N=10$; $r=0.825$; $p=0.003$

In order to test whether or not there was a relationship between Collective Teacher Efficacy and Teacher Self-efficacy for teachers in stage 2 of their career, the researcher calculated the Pearson Product Moment Correlation (PPMC) coefficient and ran a t -test. The analysis showed that the coefficient of correlation ($r = .825$) was significant; $t(8) = 4.13$, $p = .003$. The researcher rejected the null hypothesis and concluded that collective efficacy and self-efficacy of teachers in stage 2 of their career were related.

Null Hypothesis 3d: There will be no significant linear relationship between collective efficacy and self-efficacy for teachers who were in stage 3 of their career.

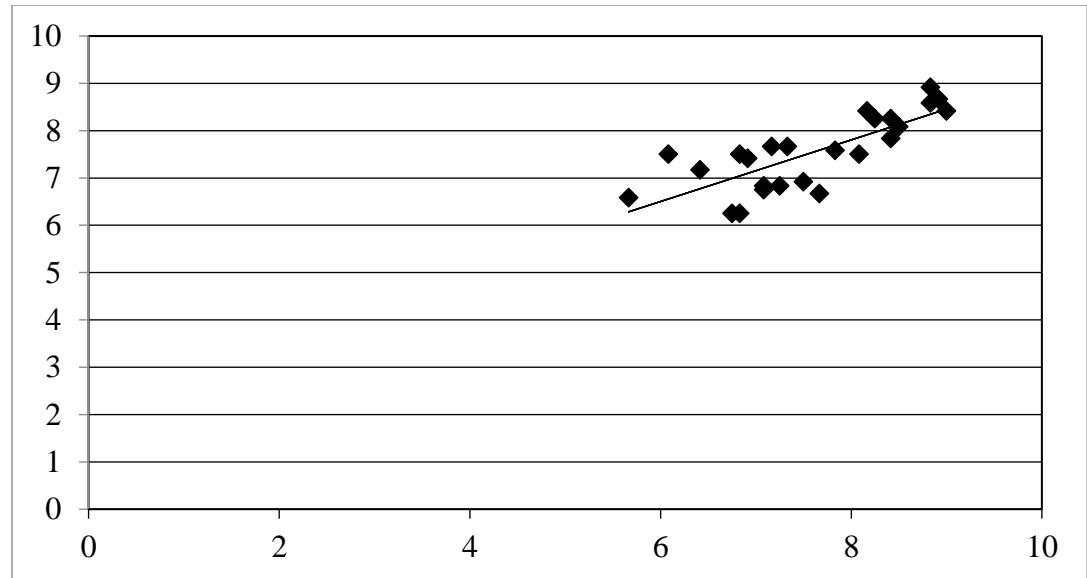


Figure 4. Linear relationship for Stage 3. Pearson ρ correlation coefficient for inter-rater reliability. $N=25$; $r=0.780$; $p<0.001$

In order to test whether or not there was a relationship between Collective Teacher Efficacy and Teacher Self-efficacy for teachers in stage 3 of their career, the researcher calculated the Pearson Product Moment Correlation (PPMC) coefficient and ran a t -test. The analysis showed that the coefficient of correlation ($r = .780$) was significant; $t(23) = 5.98$, $p < .001$. The researcher rejected the null hypothesis and concluded that collective efficacy and self-efficacy of teachers in stage 3 of their career were related.

Null Hypothesis 3e: There will be no significant linear relationship between collective efficacy and self-efficacy for teachers who were in stage 4 of their career.

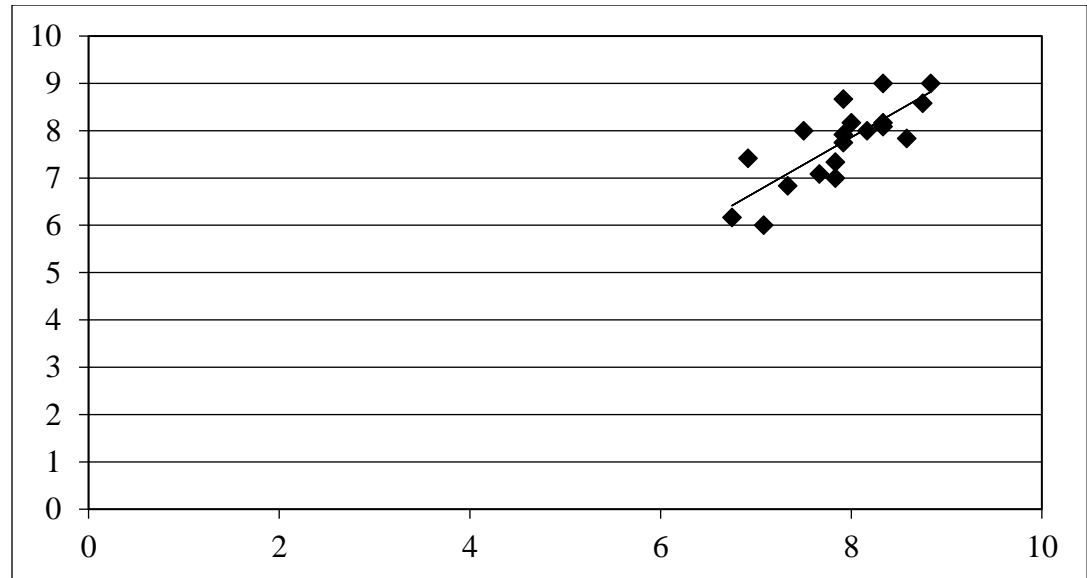


Figure 5. Linear relationship for Stage 4. Pearson ρ correlation coefficient for inter-rater reliability. $N=19$; $r=0.797$; $p<0.001$

In order to test whether there was a significant linear relationship between Collective Teacher Efficacy and Teacher Self-efficacy for teachers in stage 4 of their career, the researcher calculated the Pearson Product Moment Correlation (PPMC) coefficient and ran a t -test. The analysis showed that the coefficient of correlation ($r = .797$) was significant; $t(17) = 5.44$, $p < .001$. The researcher rejected the null hypothesis and concluded that collective efficacy and self-efficacy of teachers in stage 4 of their career were related.

Null Hypothesis 3f: There will be no significant linear relationship between collective efficacy and self-efficacy for teachers who were in stage 5 of their career.

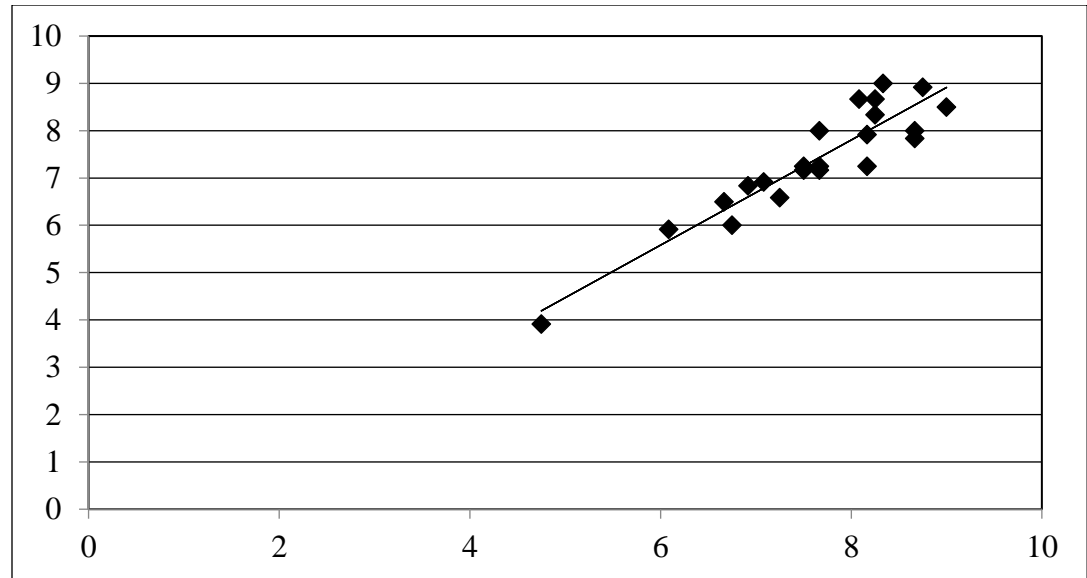


Figure 6. Linear relationship for Stage 5. Pearson ρ correlation coefficient for inter-rater reliability. $N=22$; $r=0.926$; $p<0.001$

In order to test whether there was a significant linear relationship between Collective Teacher Efficacy and Teacher Self-efficacy for teachers in stage 5 of their career, the researcher calculated the Pearson Product Moment Correlation (PPMC) coefficient and ran a t -test. The analysis showed that the coefficient of correlation ($r = .926$) was significant; $t(20) = 10.97$, $p < .001$. The researcher rejected the null hypothesis and concluded that collective efficacy and self-efficacy of teachers in stage 5 of their career were related.

Research Question 1.

What were teachers' perspectives of self and collective efficacy?

The researcher analyzed the answers to determine teachers' thoughts collective and self-efficacy, what the barriers to efficacy were, and how teachers individually and as a group overcame those barriers. Common themes for barriers to efficacy included teachers having an unwillingness to try new things, grow, or change for the betterment of

one's self, the collective and students, and having a fixed or closed mindset. The teachers felt keeping an open mind, listening to others and a willingness to learn and grow were ways to overcome those barriers and increase efficacy. The first three questions dealt with years of service, tenure, and years to retirement, these questions were not used for data analysis. Questions four through 14 and responses will be discussed in detail below.

Question 4: What does self-efficacy mean to you?

Only two of the four teachers were able to answer this question as there was an error in the survey when it was initially sent. The two responses had different answers with one teacher stating self-efficacy was 'producing outcome(s) that you want.' Where the other stated self-efficacy was 'being responsible to the curriculum.' Although two of the teachers did not answer this question, when Question 5 was analyzed it appeared their thoughts on self-efficacy were the similar as they both mention the belief in one's own ability as influencing collective efficacy. Both teachers used almost identical wording when discussing belief in themselves. One stated; 'you would have to believe in your own abilities' the other stated; 'believing in my own abilities' when discussing how self-efficacy effected collective efficacy.

Question 5: What does collective efficacy mean to you?

Only two of the four teachers were able to answer this question as there was an error in the survey when it was initially sent. Unlike self-efficacy the two teachers appeared to be share similar ideas on what collective efficacy was. One teacher believed collective efficacy was when 'a group comes together for one goal' whereas the other teacher felt it was 'Being responsible to your team'. Both these responses show the idea of multiple teachers working together to achieve a common goal. Although the other two

teachers were unable to answer this question again one could look to their answers for question six to see they too felt collective efficacy was an idea of multiple teachers working together to achieve common goals. One teacher used the word 'team' whereas the other used the term 'collective'

Question 6: Do you think self-efficacy affects collective efficacy? Please explain why you feel that way.

All four teachers felt that self-efficacy had an effect on collective efficacy. Two teachers felt the belief in one's own ability impacted the abilities of the collective. One of these two teachers felt if self-efficacy was low it would be hard to have high collective efficacy or a belief in the abilities of the collective. The other stated: 'Yes, believing in my own abilities and having respect in the talents and abilities of others to help students. This makes us a better team to help "our" students, not just the ones in our own classroom.' One of the other teachers felt self-efficacy impacted collective efficacy because of the results desired by the individuals of the group. If one or more individuals had differing desired results then the collective would suffer. The final teacher believed 'fidelity' was owed to the group. The Cambridge online dictionary defined fidelity as "honest or lasting support, or loyalty" ("Fidelity", n.d.). This statement may have implied that if one did not have faith in one's own ability then they would likely be unable to have faith in the collective.

Question 7: What can you do to increase collective efficacy within the school?

All four teachers felt that an effective way to increase collective efficacy was to engage with other members of the group in order to develop common goals. Two teachers believed that it was important to be given opportunities to reflect on the results

of their collaborative efforts. One teacher felt it was not only important to engage with other teachers but it was also important to support each other, recognize different skill sets within the group, and be willing to ask for help in areas of weakness ‘without fear of judgement.’

Question 8: What can others do to increase collective efficacy within the school?

One teacher felt a good way to increase collective efficacy was to have team leader meetings, these meeting would allow for thoughts, ideas, and discussions to be compared in order to determine effective strategies to improve collective efficacy. Two teachers felt it was important for the group to have a shared set of goals they believed in, one stated it was important to ‘be a part of a team pulling in the same direction.’ When groups had common goals, they tended to believe they could overcome obstacles and worked harder to achieve those goals (Bandura, 1999). Finally, another teacher reiterated the importance to ‘offer help without judgement.’ The ability for teachers to share ideas, knowledge, and offer help, made could increase collective efficacy as well as build relationships of trust and respect amongst group members.

Question 9: What factors positively impact collective efficacy within your school?

Two teachers felt administration were factors that positively impacted collective efficacy. One teacher believed follow-up from administration played a key role while the other believed support from administration had a positive impact on collective efficacy. Support from the team, cooperation, professionalism, and the willingness to grow and listen were thought to be other positive influencers on collective efficacy.

Question 10: What are barriers to collective efficacy within your school?

Responses to barriers to collective efficacy varied amongst the respondents. Only two teachers gave answers with a similar theme. One stating avoidance as being a barrier and the other saying ‘fear of judgement or action against our jobs if we ask for help or support.’ This second response showed the importance of leadership and staff having a strong, positive working relationship. The fear of being viewed in a negative way by peers or the fear of repercussions from administration for asking questions or seeking help could erode trust and increase self-doubt which in turn could lead to lower collective efficacy. One teacher felt the lack of common plan time was a key barrier to collective efficacy. If teams are unable to find common times to plan to set goals and collaborate efforts to increase student achievement building high collective efficacy became harder to achieve and maintain. The other teacher felt a ‘fixed mindset’ was a barrier to collective efficacy. If group members were inflexible in their thoughts and ideas, they would not allow others thoughts and ideas be heard or try new teaching strategies and methods.

Question 11: How do you overcome those barriers individually?

In order to overcome the barriers to collective efficacy as individuals, two teachers surveyed felt setting aside time for team meetings was important. One of those two teachers also mentioned the need to be supported by administration. One teacher felt it was important to ‘be the positive voice whenever possible.’. Bringing a positive voice to the group would help keep moral high and helped build trust between team members. The other teacher had a similar response stating teachers needed to rely ‘... on your strong character beliefs.’ Like being a positive voice, relying on character beliefs could help team members build trust and confidence in each other. This allowed for teachers to

feel more comfortable and therefore more likely to share their strengths and weaknesses with others and be willing to give and accept help when needed.

Question 12: How do your fellow teachers and leadership overcome those barriers?

Teacher responses to how fellow teachers and leadership overcame barriers to collective efficacy, no teacher gave an answer as to what leadership did to overcome those barriers. One teacher felt professional development days could be used to overcome those barriers. Yoo (2016) found professional development could help increase efficacy, however it was also found it could lower efficacy as teachers could feel they were not as skilled as they thought before the training. Therefore, it is important for teachers and leadership to follow-up after training to ensure the goal of the training was achieved and no unintentional adverse effects were caused by the training. One teacher felt having a ‘shared belief in a common goal’ helped overcome barriers. If groups worked together to meet the common goals the groups collective efficacy would be high as would student achievement (Bandura, 2000).

Another teacher gave the same answer as they had for the previous question; they believed other teachers had to rely on their ‘strong character beliefs.’ As stated previously, relying on character beliefs could help team members build trust and confidence in each other. This allowed teachers to feel comfortable sharing their strengths and weaknesses with others and increased the readiness to give and accept help when needed. Similarly, one teacher stated: ‘We look for ways to offer help to each other. We view the entire grade level as “our” students and we work to help all student.’ This answer not only tied in with building trust but also tied in with the final teacher’s

response who believed having a ‘shared belief in a common goal’ was a means other teachers overcame barriers to collective efficacy.

Question 13: What are some barriers to self-efficacy?

Teachers felt barriers to self-efficacy were similar to those of collective efficacy. Two teachers felt teachers being closed minded were a barrier to self-efficacy. One of those two also stated having a ‘fixed mindset’ was a barrier to collective efficacy. Another teacher stated ‘self-promotion’ was a barrier to self-efficacy, they also gave ‘self-promotion’ as a barrier to collective efficacy. This teacher also stated ‘avoidance’ and having ‘different viewpoint (goals), were also barriers. The term ‘avoidance’ was also given as a barrier to collective efficacy for this teacher. The final teacher stated ‘personnel turnover’ as a barrier to self-efficacy. When turnover is high teachers’ chances of seeing others succeed were limited. When individuals saw others succeed self-efficacy could be increased through vicarious experience as they believed they were able to have at least some success if they exerted the same effort. By watching others succeed learners were encouraged to do similar activities in order to succeed themselves (Ross & Bruce, 2007; Tenaw, 2013).

Question 14: How can you overcome those barriers?

Three of the teachers felt keeping a positive mindset and self-reflection were keys to overcoming barriers to self-efficacy. Bandura (1971) stated that positive attitudes, outlooks, and beliefs had positive results whereas negative attitudes, outlooks and beliefs led to negative results. The other teacher felt ‘asking for summer work hours as a team’ would help overcome barriers to self-efficacy. This teacher felt turnover was a barrier to

self-efficacy, by having summer hours new teachers could get acquainted with the group and build relationships of trust which would carry over to the school year.

Summary

This comparative study did not show a significant difference in overall collective teacher efficacy or teacher self-efficacy based on the stage the teacher was in their career. The results showed no significant difference in any of the four sub-categories for collective teacher efficacy nor the three sub-categories for self-efficacy based on where the teacher was in their career. This data suggests both collective efficacy and self-efficacy were independent of the stage of the teacher's career. Although there was a significant relationship between collective teacher efficacy and self-efficacy for teachers in stages 2, 3, 4 and 5 of their careers, there was not a significant relationship between collective teacher efficacy and self-efficacy for those teachers in stage 1 of their career. Results show all teachers had a higher sense of collective teacher efficacy than self-efficacy with the exception of one teacher.

Qualitative data was collected through a fifteen-question survey sent to seven teachers, four of whom completed it. Common themes for barriers to efficacy were having a closed or fixed mindset, an unwillingness to try to grow or change for the betterment of one's self, the collective, and the students. When teachers witnessed their coworkers have an unwillingness to change in order to increase achievement, they would likely have lower efficacy and be unwilling to change themselves. However, when one saw other's actions and behaviors lead to success, they were more likely to imitate those behaviors in order to achieve themselves (Ross & Bruce, 2007; Tenaw, 2013). Common themes for overcoming those barriers and increase efficacy included the willingness to

grow, listen to others, and keep an open mind. This supported findings by Bandura (1971) and Eren (2019) who stated when individuals and groups had positive attitudes, outlooks, and beliefs positive results were achieved.

The next chapter provides recommendations to help districts measure and monitor self and collective efficacy as well as suggestions for superintendents, principals, and teachers to ensure efficacy is high to ensure student success.

Chapter Five: Discussion

Introduction

Where Chapter Four interpreted the collected data; Chapter Five focused on conclusions reached from the analyzed data. Chapter Five summarized the study and results for each hypothesis and research question. In addition, limitations of the study were reviewed, conclusions were clarified, and recommendations school leadership and future research was suggested.

Summary of Study

In order to determine if there was a relationship between teacher perceptions of self and collective efficacy and the number of years they had taught, the researcher conducted a mix-methods study using the Teacher's Sense of Efficacy Scale (Tschannen-Moran, 2001) to measure teacher self-efficacy and The Collective Teacher Efficacy Scale (Tschannen-Moran & Woolfolk Hoy, 2004) to measure collective teacher efficacy. The researcher used these to scales to compare self-efficacy and collective efficacy for each of the five stages of a teacher's career as defined by the researcher. In order to gather more detailed information about teachers' perceptions and thoughts on collective and self-efficacy the researcher distributed a questionnaire to teachers who initially agreed to participate in the focus group.

Teacher's Sense of Efficacy Scale created by Tschannen-Moran and Woolfolk Hoy in 2001 was not only designed to measure overall self-efficacy but could be broken down into three subcategories which measured efficacy in student engagement, instructional strategies, and classroom management. This allowed the researcher to not

only investigate overall self-efficacy, it also allowed the researcher to get a more in-depth look at teacher self-efficacy in these three areas.

Likewise, The Collective Teacher Efficacy Scale (Tschannen-Moran & Woolfolk Hoy, 2004) not only measured overall collective teacher efficacy, but also allowed for the researcher to measure the relationship between the stage of a teacher's career and collective teacher efficacy in instructional strategies and student discipline.

Summary of Findings

Null Hypothesis 1. The following is applicable to null hypothesis 1a, 1b, and 1c. The researcher investigated whether or not there would be a significant difference in collective teacher efficacy depending on the stage of the instructor's career. A voluntary online survey was sent to four school districts between August and October via various means depending on the district agreeing to participate in the research. Ninety-nine teachers responded to the survey for collective teacher efficacy, of the 99, 16 were in stage 1 of their career, 13 were in stage 2, stage 3 had 27 responses, with stage 4 and 5 having 20 and 23 respondents respectively.

Null Hypothesis 1a. The researcher looked at overall collective efficacy for each of the five stages of a teacher's career as defined by the researcher to determine if there was a significant difference in average collective efficacy amongst the groups. Although there was not a significant difference in average collective efficacy depending on the stage the teacher was in their career there were differences. The data showed that teachers in stage 4 of their careers had the highest overall sense of collective efficacy with an average score of 7.93 out of 9. Stage 2 teachers had the second largest average overall sense of collective efficacy scoring an average of 7.81. At 7.66 teachers near the

end of their careers (stage 5) ranked third in average overall collective efficacy. Teachers in stage 3 of their careers who had an average collective efficacy of 7.58. Finally, teachers in stage 1 of their career had the lowest sense of overall collective efficacy with an average score 7.30 out of 9. Although not a significant difference the results appeared to show that teachers had the lowest overall sense of collective efficacy at the beginning of their careers hitting a high mark in stage 4 of their careers. After statistical review, the researcher failed to reject the null hypothesis and concluded overall collective teacher efficacy was the same no matter where the teacher was in their career.

Null Hypothesis 1b. The researcher looked at collective efficacy in instructional strategies for each of the five stages of a teacher's career as defined by the researcher to determine if there was a significant difference in average collective efficacy in instructional strategies amongst the groups. Although there was not a significant difference in average collective efficacy in instructional strategies depending on the stage the teacher was in their career, there were differences. The data showed that teachers in stage 4 of their careers had the highest sense of collective efficacy in instructional strategies with an average score of 8.40 out of 9. Stage 2 teachers had the second largest average sense of collective efficacy in instructional strategies scoring an average of 8.21. At 8.07 teachers near the end of their careers (stage 5) ranked third in average collective efficacy in instructional strategies. Teachers in stage 3 of their careers who had an average collective efficacy in instructional strategies of 7.94. Finally, teachers in stage 1 of their career had the lowest sense of collective efficacy in instructional strategies with an average score 7.73 out of 9. Although not a significant difference the results appeared to show that teachers had the lowest sense of collective efficacy in instructional strategies

at the beginning of their careers hitting a high mark in stage 4 of their careers. After statistical review, the researcher failed to reject the null hypothesis and concluded collective teacher efficacy in instructional strategies was the same no matter where the teacher was in their career.

Null Hypothesis 1c. The researcher looked at collective efficacy in student discipline for each of the five stages of a teacher's career as defined by the researcher to determine if there was a significant difference in average collective efficacy in student discipline amongst the groups. Although there was not a significant difference in average collective efficacy in student discipline depending on the stage the teacher was in their career there were differences. The data showed that teachers in stage 4 of their careers had the highest sense of collective efficacy in student discipline with an average score of 7.46 out of 9. Stage 2 teachers had the second largest average sense of collective efficacy in student discipline scoring an average of 7.41. At 7.24 teachers near the end of their careers (stage 5) ranked third for average collective efficacy in student discipline. Teachers in stage 3 of their careers who had an average collective efficacy in student discipline of 7.22, only 0.02 points behind those teachers in stage 5 of their careers. Finally, teachers in stage 1 of their career had the lowest sense of collective efficacy in student discipline with an average score 6.86 out of 9. Although not a significant difference the results appeared to show that teachers had the lowest sense of collective efficacy in student discipline at the beginning of their careers hitting a high mark in stage 4 of their careers. After statistical review, the researcher failed to reject the null hypothesis and concluded collective teacher efficacy was the same no matter where the teacher was in their career.

Null Hypothesis 2. The following is applicable to null hypothesis 2a, 2b, 2c, and 2d. The researcher investigated whether or not there would be a significant difference in teacher self-efficacy teacher efficacy depending on the stage of the instructor's career. A voluntary online survey was sent to four school districts between August and October via various means depending on the district agreeing to participate in the research. Eighty-four teachers responded to the survey for teacher self-efficacy, this number was different from the number of responses to the collective teacher efficacy portion of the survey as fewer participants completed the survey through the self-efficacy portion. Of the 84 responses, eight were in stage 1 of their career, 10 were in stage 2, stage 3 had 25 responses, with stage 4 and 5 having 19 and 22 respondents respectively.

Null Hypothesis 2a. The researcher looked at overall teacher self-efficacy for each of the five stages of a teacher's career as defined by the researcher to determine if there was a significant difference in average overall teacher self-efficacy amongst the groups. Although there was not a significant difference in average overall teacher self-efficacy depending on the stage the teacher was in their career, there were differences. The data showed that teachers in stage 4 of their careers had the highest overall sense of self-efficacy with an average score of 7.74 out of 9. Stage 2 teachers had the second largest average overall sense of self-efficacy scoring an average of 7.56. Teachers in stage 3 of their careers who had an average overall sense of self-efficacy at 7.54 only 0.02 points behind those teachers in stage 2 of their careers. Teachers near the end of their careers, stage 5, ranked fourth in overall self-efficacy with an average of 7.39. Finally, teachers in stage 1 of their career had the lowest sense of overall self-efficacy with an average score 6.89 out of 9. Although not a significant difference the results

appeared to show that teachers had the lowest overall sense of self-efficacy at the beginning of their careers hitting a high mark in stage 4 of their careers. After statistical review, the researcher failed to reject the null hypothesis and concluded overall teacher self-efficacy was the same no matter where the teacher was in their career.

Null Hypothesis 2b. The researcher looked at teacher self-efficacy in student engagement for each of the five stages of a teacher's career as defined by the researcher to determine if there was a significant difference in average teacher self-efficacy in student engagement amongst the groups. Although there was not a significant difference in average teacher self-efficacy in student engagement depending on the stage the teacher was in their career, there were differences. The data showed that teachers in stage 4 of their careers had the highest sense of self-efficacy in student engagement with an average score of 7.54 out of 9. Stage 3 teachers had the second largest average sense of self-efficacy in student engagement scoring an average of 6.96. Teachers in stage 2 and stage 5 of their careers who each had an average sense of self-efficacy in student engagement of 7.00. Finally, teachers in stage 1 of their career had the lowest sense of self-efficacy in student engagement with an average score 6.78 out of 9. Although not a significant difference the results appeared to show that teachers had the lowest sense of self-efficacy in student engagement at the beginning of their careers hitting a high mark in stage 4 of their careers. After statistical review, the researcher failed to reject the null hypothesis and concluded teacher self-efficacy in student engagement was the same no matter where the teacher was in their career.

Null Hypothesis 2c. The researcher looked at teacher self-efficacy in instructional strategies for each of the five stages of a teacher's career as defined by the

researcher to determine if there was a significant difference in average teacher self-efficacy in instructional strategies amongst the groups. Although there was not a significant difference in average teacher self-efficacy in instructional strategies depending on the stage the teacher was in their career, there were differences. The data showed that teachers in stage 3 of their careers had the highest sense of self-efficacy in instructional strategies with an average score of 7.87 out of 9. Stage 4 teachers had the second largest average sense of self-efficacy in instructional strategies scoring an average of 7.84. Teachers in stage 2 of their careers who had an average sense of self-efficacy in instructional strategies at 7.83 only 0.01 points behind those teachers in stage 4 of their careers. Teachers near the end of their careers, stage 5, ranked fourth in self-efficacy in instructional strategies with an average of 7.81, only 0.02 points behind teachers in stage 2 of their careers. Finally, teachers in stage 1 of their career had the lowest sense of self-efficacy in instructional strategies with an average score 6.88 out of 9. Although not a significant difference the results appeared to show that teachers had the lowest sense of self-efficacy in instructional strategies at the beginning of their careers hitting a high mark in stage 3 of their careers. After statistical review, the researcher failed to reject the null hypothesis and concluded teacher self-efficacy in instructional strategies was the same no matter where the teacher was in their career.

Null Hypothesis 2d. The researcher looked at teacher self-efficacy in classroom management for each of the five stages of a teacher's career as defined by the researcher to determine if there was a significant difference in average teacher self-efficacy in classroom management amongst the groups. Although there was not a significant difference in average teacher self-efficacy in classroom management depending on the

stage the teacher was in their career there were differences. The data showed that teachers in stage 2 of their careers had the highest sense of self-efficacy in classroom management with an average score of 7.85 out of 9. Stage 4 teachers had the second largest average sense of self-efficacy in classroom management scoring an average of 7.83, only 0.02 points behind teachers in stage 2 of their careers. Teachers in stage 3 of their careers who had an average sense of self-efficacy in classroom management at 7.79. Teachers near the end of their careers, stage 5, ranked fourth in self-efficacy in classroom management with an average of 7.36. Finally, teachers in stage 1 of their career had the lowest sense of self-efficacy in classroom management with an average score 7.00 out of 9. Although not a significant difference the results appeared to show that teachers had the lowest sense of self-efficacy in classroom management at the beginning of their careers hitting a high mark in stage 2 of their careers. After statistical review, the researcher failed to reject the null hypothesis and concluded teacher self-efficacy in classroom management was the same no matter where the teacher was in their career.

Null Hypothesis 3. The following is applicable to null hypothesis 3a, 3b, 3c, 3d, and 3d. The researcher investigated whether there would be a linear relationship between a teacher's sense of self-efficacy and collective efficacy depending on the stage of the instructor's career. A voluntary online survey was sent to 4 school districts between August and October via various means depending on the district agreeing to participate in the research. Eighty-four teachers responded to the survey for teacher self-efficacy, this number was different from the number of responses to the collective teacher efficacy portion of the survey as fewer participants completed the survey through the self-efficacy portion. Those teachers who only answered the collective efficacy portion of the survey

were not included in these results. Of the 84 responses, eight were in stage 1 of their career, 10 were in stage 2, stage 3 had 25 responses, with stage 4 and 5 having 19 and 22 respondents respectively.

Null Hypothesis 3a. In order to determine if there was a significant linear relationship between collective teacher efficacy and teacher self-efficacy for all teachers no matter what stage of their careers they were in, the researcher conducted a Pearson Product Moment Correlation (PPMC) coefficient. Through examining the results of surveys returned, the researcher determined there was a relationship between collective teacher efficacy and teacher self-efficacy for teachers no matter what stage of their career they were in. The results of the Pearson ρ correlation coefficient showed the need for leadership to not only measure collective teacher efficacy within their district or building but to measure teacher self-efficacy as well.

Null Hypothesis 3b. In order to determine if there was a significant linear relationship between collective teacher efficacy and teacher self-efficacy for teachers in stage 1 of their careers, the researcher conducted a (PPMC) coefficient. Through examining the results of surveys returned, the researcher determined there was not a relationship between collective teacher efficacy and teacher self-efficacy for teachers who were in stage one of their career. The results of the Pearson ρ correlation coefficient could help district leadership develop strategies to increase collective and self-efficacy for teachers who were in stage 1 of their careers.

Null Hypothesis 3c. In order to determine if there was a significant linear relationship between collective teacher efficacy and teacher self-efficacy for teachers in stage two of their careers, the researcher conducted a (PPMC) coefficient. Through

examining the results of surveys returned, the researcher determined there was a relationship between collective teacher efficacy and teacher self-efficacy for teachers who were in stage one of their career. The results of the Pearson ρ correlation coefficient showed the need for leadership to not only measure collective teacher efficacy within their district or building but to measure teacher self-efficacy as well.

Null Hypothesis 3d. In order to determine if there was a significant linear relationship between collective teacher efficacy and teacher self-efficacy for teachers in stage 3 of their careers, the researcher conducted a (PPMC) coefficient. Through examining the results of surveys returned, the researcher determined there was not a relationship between collective teacher efficacy and teacher self-efficacy for teachers who were in stage 3 of their career. The results of the Pearson ρ correlation coefficient showed the need for leadership to not only measure collective teacher efficacy within their district or building but to measure teacher self-efficacy as well.

Null Hypothesis 3e. In order to determine if there was a significant linear relationship between collective teacher efficacy and teacher self-efficacy for teachers in stage 4 of their careers, the researcher conducted a (PPMC) coefficient. Through examining the results of surveys returned, the researcher determined there was not a relationship between collective teacher efficacy and teacher self-efficacy for teachers who were in stage 4 of their career. The results of the Pearson ρ correlation coefficient showed the need for leadership to not only measure collective teacher efficacy within their district or building but to measure teacher self-efficacy as well.

Null Hypothesis 3f. In order to determine if there was a significant linear relationship between collective teacher efficacy and teacher self-efficacy for teachers in

stage 5 of their careers, the researcher conducted a (PPMC) coefficient. Through examining the results of surveys returned, the researcher determined there was not a relationship between collective teacher efficacy and teacher self-efficacy for teachers who were in stage 5 of their career. The results of the Pearson ρ correlation coefficient showed the need for leadership to not only measure collective teacher efficacy within their district or building but to measure teacher self-efficacy as well.

Research Question

Research Question 1.

The researcher conducted a short-answer survey in order to obtain quantitative data on what were teachers' perspectives of self and collective efficacy? A voluntary online survey was sent to seven teachers who had originally provided contact information for a focus group designed to answer the same question. The survey consisted of 14 questions, 3 multiple choice questions which dealt with years of service, tenure, and years to retirement and 11 short-answer questions designed to gain more insight into viewpoints of self and collective efficacy. Four of the seven teachers provided feedback for the survey. Of the four teachers who responded the first two were unable to answer the first two short-answer questions as well as the three multiple-choice questions. All four teachers answered all other short answer questions within the survey. Through one response to questions three and four, the researcher was able to deduce the probable response to the two questions the respondent was unable to answer.

Through analyzing the data, the researcher found the teachers overwhelming agreed that self-efficacy and collective efficacy were interconnected. All four teachers answered 'yes' to the question. Two thought self-belief lead to the ability to have

confidence in in others. 'Yes, believing in my own abilities and having respect in the talents and abilities of others to help students. This makes us a better team to help 'our' students, not just the ones in our own classroom.' Whereas one teacher believed they affected each other due to the desired outcomes being different between two individual teachers. This thought directly related to their answers for what self-efficacy and collective efficacy meant to them, as they believed self-efficacy was 'producing outcome that you want.' Whereas collective efficacy was 'A group comes together for one goal'. Common themes for barriers to efficacy included teachers having an unwillingness to try new things, grow, or change for the betterment of one's self, the collective and students, and having a fixed or closed mindset. The teachers felt keeping an open mind, listening to others and a willingness to learn and grow were ways to overcome those barriers and increase efficacy.

Discussion

Although no previous research was found which was exact to this study, there were similar research whose findings could be compared. For example results of this study showed overall self-efficacy started low then gradually increased as teachers progressed in their careers hitting the highest score with teachers in stage 4 of their careers then dropping off again as they neared retirement, these findings were similar to Klassen and Chiu's (2010). This study however found collective teacher efficacy did not follow the same arc as self-efficacy did. Teachers in stage one of their careers scored lowest, with average efficacy increasing in stage 2 of teachers' careers, only to dip again for those teachers in stage 3, peaking in stage 4, only to drop again in stage 5, the final stage in the teacher's career.

Results of this study found efficacy in student engagement average scores were lower than efficacy in instructional strategies and classroom management. This coincided with other researchers who found similar results (Klassen & Chiu, 2010; Robinson & Edwards, 2012; Swan, Wolf & Cano, 2011; Tschannen-Moran & Woolfolk Hoy, 2007; Voris, 2011; Wolters & Daugherty, 2007; Yoo, 2016). Although these researchers studied teachers in various stages of their careers the overall findings showed teacher self-efficacy in student engagement had the lowest scores.

Efficacy in instructional strategies and classroom management aligned with previous research for teachers within their first five to six years of service. With the exception of Wolters and Daugherty (2007), who found average self-efficacy in instructional strategies to be higher than self-efficacy in classroom management, results from this study found self-efficacy in classroom management had a higher average self-efficacy score than self-efficacy in instructional strategies had (Robinson & Edwards, 2012; Voris, 2011).

Results were also similar to previous studies falling within .38 points for overall self-efficacy when all teachers survived were included (Klassen & Chiu, 2010; Tschannen-Moran & Woolfolk Hoy, 2007; Wolters & Daugherty, 2007; Yoo, 2016). Results were even closer (within .16 points) compared to studies which only included teachers with zero to six years of service (Tschannen-Moran & Woolfolk Hoy, 2007; Robinson & Edwards, 2012; Voris, 2011; Wolters & Daugherty, 2007). Blackburn & Robinson (2010) found overall collective teacher efficacy of teachers within their first six years of teaching to be 6.81 whereas the results of this research found teachers with one

to five years of service to have an overall sense of collective efficacy to be 7.30, .51 points higher than Blackburn and Robinson.

Qualitative data for ways to increase efficacy coincided with research from Ross and Bruce (2007) and Tenaw (2013) who found when others saw behavior that led to success, they would try to imitate those behaviors in order to be successful. Likewise, when individuals and groups had positive attitudes, outlooks, and beliefs positive results were achieved, whereas negative attitudes, outlooks and beliefs led to negative results and lower efficacy (Bandura, 1971; Eren, 2019).

Recommendations

Hattie and Waack (2018) ranked Collective Efficacy as the number one influence on student achievement with an effect size of 1.57. Killian (2017) stated that collective teacher efficacy was one of six factors whose effect size was so large that graphing it would make the other 188 factors seem insignificant. Likewise, teacher self-efficacy also had a large effect size on student achievement at .92 according to Hattie and Waack's (2018) listing of 252 influences and effect sizes.

One way to increase efficacy for new teachers is to put in place support systems for those teachers. One way to do this may be to pair teachers in the early stages of their careers with teachers who are in later stages of their careers. Low efficacy can also lead to teachers leaving the profession, by pairing novice teachers with experienced teachers, turnover could be lowered. Wolters and Daugherty (2007) stated a reason teachers with more experience have higher efficacy was due to those teachers staying in the profession whereas teachers who had lower self-efficacy tended to leave the teaching profession.

Raising the efficacy of novice teachers could lead to them staying in the profession, which in turn could increase efficacy as they gain experience.

Yoo (2016) found professional development increased self-efficacy in instructional strategies, classroom management and student engagement. The study found in gaining new knowledge through professional development generally improved self-efficacy. Implementation of professional development activities which focused on increasing efficacy could also improve overall efficacy. District leadership could develop strategies which focused on increasing either collective or self-efficacy with the belief by increasing one the other would also increase, yet not overload teachers with too much information or setting too ambitious goals by trying to increase both collective and self-efficacy at the same time through training and/or professional development activities. Although professional development could increase efficacy it was found it could also “negatively affect their teacher efficacy” (Yoo, 2016, p. 91) as learning new strategies or content knowledge left feelings of doubt about what they actually knew, therefore it is important to follow-up after professional development activities to ensure all teachers had positive experiences.

Principals should interact with teachers, provide support and set achievable goals to help increase collective and self-efficacy. Leaders need to ensure teachers have the necessary tools to do their jobs effectively as well as have an awareness of what is going on within the school and community. Leaders should set high yet attainable expectations and encourage a sense of trust not only between staff and leadership, but with student, staff and all members of the learning community.

With such a large potential to effect student achievement as well as teacher satisfaction, district leadership need to ensure all staff members not only have a high sense of collective efficacy but self-efficacy as well. Districts should develop a schedule to measure both collective and self-efficacy within their districts. The results of these surveys should be used to drive staff placement, professional development, and interactions with staff, students and leadership and make changes when and as necessary to ensure all staff are successful and students achieve both academically and personally.

Recommendations for Future Research

This research was designed to fill an apparent gap in the literature and determine if there was if teacher perceptions of self-efficacy, collective efficacy differ depending on the number of years spent teaching. The relationships between individual and collective efficacy depending on an instructor's year of teaching was also explored. As well as get a deeper insight into teacher thoughts on what collective and self-efficacy were and what they could do to increase both. In order to gain this information, the researcher used a slightly modified version of the Tschannen-Moran and Woolfolk Hoy's (2001) Teacher Sense of Efficacy Scale, and the Tschannen-Moran and Barr (2004) Collective Teacher Efficacy Scale.

Since this research was focused on the relationship between years of service and efficacy the researcher removed the age question from both surveys. Future researchers could leave these items on their surveys to determine if age also influenced efficacy along with years of service as some teacher, myself included, enter the teaching profession later in life a second career, so a first year teacher might be older than the typical first year

teacher. This additional data could help determine if years of service a main cause for differences in efficacy was or if the teacher's age had a larger influence.

Time of year may also have an influence on teacher responses. The research was conducted near the beginning of the school year, with the first surveys being returned in early September, just a few weeks after most schools started and the last survey was received in late October. With the survey's being sent early in the school year it is possible for staff to have different feelings toward efficacy as the school year had just begun. Future research may consider sending multiple surveys out during different times of the school year to see if feelings change as the school year progressed. If possible, researchers could survey the same participants at both the beginning of the school year and near the end to see if or how thoughts and feelings may have changed.

How teachers received the surveys appeared to play a role in how many completed the surveys. Of the four districts which agreed to participate 122 came from the first two districts with up to 44 coming from the additional two districts who participated. The first two districts received the survey either directly from the superintendent of the district or the researcher himself whereas the other two districts had building principals send the surveys out or it was placed in a weekly memo which was emailed to staff. With more results being returned from districts where the survey was sent directly to teachers, it is recommended that when possible surveys be directly sent to staff as it appears more teachers responded when directly contacted over those who were not.

In order to gain more insight into teachers' thoughts on efficacy the researcher offered a focus group. Of the 146 respondents only four agreed to participate. Because

of the low number of responses, the researcher was not able to gain potentially valuable information on efficacy. In an attempt to obtain teacher feedback, the researcher requested those who asked to participate in the focus group to answer 11 short-answer questions which would have made up the focus group questions, no responses were returned. Future research may add an option for teachers to who did not want to participate in a focus group but still wanted to provide more in-depth information. This section would only appear if teachers choose not to participate in the focus group, teachers would have an option to opt out of the short answer portion as well.

Conclusion

Student achievement continues to be one of the most important aspects of the educational system. In order to ensure that achievement teachers and districts must continue to investigate and implement strategies in order to ensure all students reach their potential. Hattie and Ziere (2018) found one of the most effective ways to increase student achievement had nothing to do with the curriculum, but with efficacy, or the belief teachers can overcome any obstacles to ensure students succeed.

One of the great things about increasing efficacy is it could be done at any district with any budget through professional development or simple changes in how and when teachers are able to collaborate. One way to measure efficacy within one's district might be the creation a survey to be completed annually or every couple of years. By looking at the results districts, leaders, and teachers could look to the areas of weakness and try to implement strategies to strengthen those areas. Simple actions like always having a positive outlook or using positive words could also improve efficacy within one's building or district. Likewise, it would behoove teachers and leadership to try to increase

efficacy as by increasing both collective and self-efficacy not only would achievement likely increase, but teacher stress and the turnover rate could go down as well, keeping high-qualified teachers in the classroom.

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Appendix A

Efficacy Survey with Informed Consent

English ▾

Informed Consent

SCF:
Survey Research Information Sheet*

You are being asked to participate in a survey conducted by Aaron Robert Thomas under the guidance of Dr. Robyne Elder at Lindenwood University. We are doing this study to compare teacher self-efficacy and collective teacher efficacy to the stage of their career. Collective teacher efficacy has, according to Hattie, the largest effect size on student achievement. Teacher surveys will help determine if there is a difference in self and collective efficacy depending on the stage of the instructor's career. We will be asking every teacher within your district as well as teachers from several other districts within and around the Greater St. Louis area to answer these same questions. It will take about 5 to 15 minutes to complete this survey.

Your participation is voluntary. You may choose not to participate or withdraw at any time by simply not completing the survey or closing the browser window.

There are no risks from participating in this project. We will not collect any information that may identify you. There are no direct benefits for you participating in this study.

WHO CAN I CONTACT WITH QUESTIONS?

If you have concerns or complaints about this project, please use the following contact information:

Aaron Robert Thomas at AT774@lindenwood.edu

Dr. Robyne Elder at RElder@Lindenwood.edu.

If you have questions about your rights as a participant or concerns about the project and wish to talk to someone outside the research team, you can contact Michael Leary (Director - Institutional Review Board) at 636-949-4730 or mleary@lindenwood.edu.

By clicking the link below, I confirm that I have read this form and decided that I will participate in the project described above. I understand the purpose of the study, what I will be required to do, and the risks involved. I understand that I can discontinue participation at any time by closing the survey browser. My consent also indicates that I am at least 18 years of age.

You can withdraw from this study at any time by simply closing the browser window. Please feel free to print a copy of this information sheet.

I consent, begin the study

I do not consent, I do not wish to participate (Ends survey)

Certification

Q1. Are you a certified classroom teacher?*

Yes

No

The Following questions regard years of service.

Q2. How many years have you taught?*

1 - 5 years

6 - 11 years

12 - 17 years

18 - 23 years

24 + years

Q3. Are you tenured?*

Yes

No

Q4. Approximately how many years before you are eligible for retirement?*

I am eligible to retire at anytime

1 - 6 years until eligible

7 - 12 years until eligible

13 - 18 years until eligible

19 - 24 years until eligible

25 + years until eligible

Q5. What district do you work in? (This is not a required question)

Q6. What building do you work in within your district? (This is not a required question)

Collective - Efficacy

CTB.

Collective Teacher Beliefs

Directions: Please indicate your opinion about each of the questions below by marking any one of the nine responses in the columns on the right side, ranging from (1) "None At All" to (9) "A Great Deal" as each represents a degree on the continuum.

	None At All		Very Little		Some Degree	Quite A Bit		A Great Deal	
	1	2	3	4	5	6	7	8	9
understanding of academic concepts?									

Q8.

Collective Teacher Beliefs - Student Discipline*

	None At All		Very Little		Some Degree	Quite A Bit		A Great Deal	
	1	2	3	4	5	6	7	8	9
How well can teachers in your school respond to defiant students?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
How much can school personnel in your school do to control disruptive behavior?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
How much can teachers in your school do to help students think critically?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
How well can adults in your school get students to follow school rules?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
How much can your school do to foster student creativity?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
How much can you your school do to help students feel safe while they are at school?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	1	2	3	4	5	6	7	8	9

You are asked to participate in a research study being conducted by Aaron Robert Thomas under the guidance of Dr. Robyne Elder at Lindenwood University. Being in a research study is voluntary, and you are free to stop at any time. Before you choose to participate, you are free to discuss this research study with family, friends, or a physician. Do not feel like you must join this study until all of your questions or concerns are answered. If you decide to participate, you will be asked to sign this form.

Why is this research being conducted?

We are doing this study to compare teacher self-efficacy and collective teacher efficacy to the stage of their career. Collective teacher efficacy has, according to Hattie, the largest effect size on student achievement. A focus group of approximately 5 – 10 teachers will be asked to discuss the research question: "What are teachers' perspectives of self and collective efficacy?" Teacher responses will help create a deeper understanding of why the stage of a teacher's career does or does not differ depending on years of service. We will be asking every teacher within your district as well as teachers from several other districts within and around the Greater St. Louis area to participate in the focus group. Agreeing to participate in a focus group does not guarantee you will be chosen to participate.

What am I being asked to do?

Participate in a focus group with approximately 5 – 10 other teachers from various schools and districts. Approximately 10 questions will be asked to promote discussion among the participants. Questions may be provided ahead of time to help participants organize their thoughts and ideas. Additional questions may be asked to help clarify responses.

How long will I be in this study?

The study participation will last as long as it takes to complete the focus group. Amount of time to complete the focus group will depend on participants thoughts, reflections, and responses to the questions. The researcher anticipates the average time to complete the focus group to be between 30 – 45 minutes.

Who is supporting this study? *There is no funding for this study.*

What are the risks of this study?

- *Privacy and Confidentiality:*

We are collecting data that could identify you, such as; total number of years you have taught, number of years at current district, if you are tenured, and approximately how many years until you are eligible for retirement. Only members of the research team will be able to see any data that may identify you.

We will be collecting data from you using the internet chat rooms/programs which may be recorded to ensure accuracy of responses. We take every reasonable effort to maintain security. Responses and recordings will be stored on password protected online database. It is always possible that information during this research study may be captured and used by others not associated with this study.

What are the benefits of this study?

You will receive no direct benefits for completing this survey. We hope what we learn may benefit other people in the future.

What if I do not choose to participate in this research?

It is always your choice to participate in this study. You may withdraw at any time. You may choose not to answer any questions or perform tasks that make you uncomfortable. If you decide to withdraw, you will not receive any penalty or loss of benefits. If you would like to withdraw from a study, please use the contact information found at the end of this form.

What if new information becomes available about the study?

During the course of this study, we may find information that could be important to you and your decision to participate in this research. We will notify you as soon as possible if such information becomes available.

How will you keep my information private?

We will do everything we can to protect your privacy. We do not intend to include information that could identify you in any publication or presentation. Any information we collect will be stored by the researcher in a secure location. The only people who will be able to see your data are: members of the research team, qualified staff of Lindenwood University, representatives of state or federal agencies.

How can I withdraw from this study?

Notify the research team immediately if you would like to withdraw from this research study.

Who can I contact with questions or concerns?

If you have any questions about your rights as a participant in this research or concerns about the study, or if you feel under any pressure to enroll or to continue to participate in this study, you may contact the Lindenwood University Institutional Review Board Director, Michael Leary, at (636) 949-4730 or mleary@lindenwood.edu. You can contact the researcher, Aaron Robert

Thomas directly at 314-440-8068 or AT774@Lindenwood.edu. You may also contact Dr. Robyne Elder at RElder@Lindenwood.edu.

By clicking the link below, I confirm that I have read this form and decided that I will participate in the project described above. I understand the purpose of the study, what I will be required to do, and the risks involved. I understand that I can discontinue participation at any time by closing the survey browser. My consent also indicates that I am at least 18 years of age.

You can withdraw from this study at any time by simply closing the browser window. Please feel free to print a copy of this consent form.

I consent, begin the study

I do not consent, I do not wish to participate (Ends survey)

Q13.

Contact name:*

Q14.

Contact email address:*

Q15. What would be the best time for your participation:*

Weekday late afternoon (3pm - 6pm)

Saturday PM (12pm - 5 pm)

Weekday early evening (6pm - 9pm)

Sunday anytime (9am - 5pm)

Saturday anytime (9am - 5pm)

Sunday AM (9am - 12pm)

Saturday AM (9am - 12pm)

Sunday PM (12pm - 5 pm)

Appendix B**Teacher Efficacy - Short Answer Questions**

English

Block 1

SCF

Survey Research Information Sheet*

You are being asked to participate in a survey conducted by Aaron Robert Thomas under the guidance of Dr. Robyne Elder at Lindenwood University. We are doing this study to compare teacher self-efficacy and collective teacher efficacy to the stage of their career. Collective teacher efficacy has, according to Hattie, the largest effect size on student achievement. A fourteen question, multiple choice and short-answer survey will be used to help answer the research question: "What are teachers' perspectives of self and collective efficacy?" Teacher responses will help create a deeper understanding of why the stage of a teacher's career does or does not differ depending on years of service. We will be asking every teacher who agreed to participate in the original focus group to participate in this survey.

The study participation will last as long as it takes to complete the short-answer questions. Amount of time to complete the survey will depend on participant's thoughts, reflections, and responses to the questions. The researcher anticipates the average time to complete the survey to take between 20 – 25 minutes.

Your participation is voluntary. You may choose not to participate or withdraw at any time by simply not completing the survey or closing the browser window.

There are no risks from participating in this project. We will not collect any information that may identify you. There are no direct benefits for you participating in this study.

WHO CAN I CONTACT WITH QUESTIONS?

If you have concerns or complaints about this project, please use the following contact information:

Aaron Robert Thomas at AT774@lindenwood.edu
Dr. Robyne Elder at RElder@Lindenwood.edu.

If you have questions about your rights as a participant or concerns about the project and wish to talk to someone outside the research team, you can contact Michael Leary (Director - Institutional Review Board) at 636-949-4730 or mleary@lindenwood.edu.

By clicking the link below, I confirm that I have read this form and decided that I will participate in the project described above. I understand the purpose of the study, what I will be required to do, and the risks involved. I understand that I can discontinue participation at any time by closing the survey browser. My consent also indicates that I am at least 18 years of age.

You can withdraw from this study at any time by simply closing the browser window. Please feel free to print a copy of this information sheet.

I consent, begin the study

I do not consent, I do not wish to participate (Ends survey)

Block 2

Q1. How many years have you taught?

- 1 - 5 years
- 6 - 11 years
- 12 - 17 years
- 18 - 23 years
- 24 + years

Q2. Are you tenured?

Yes

No

Q3. Approximately how many years before you are eligible for retirement?

I am eligible to retire at anytime

- 1 - 6 years until eligible
- 7 - 12 years until eligible
- 13 - 18 years until eligible
- 19 - 24 years until eligible
- 25 + years until eligible

Q4.

What does self-efficacy mean to you?

Q5.

What does collective efficacy mean to you?

Q6.

Do you think self-efficacy affects collective efficacy? Please explain why you feel that way.

Q7.

What can you do to increase collective efficacy within the school?

Q8.

What can others do to increase collective efficacy within the school?

Q9.

What factors positively impact collective efficacy within your school?

Q10.

What are barriers to collective efficacy within your school?

Q11.

How do you overcome those barriers individually?

Q12.

How do your fellow teachers and leadership overcome those barriers?

Q13.

What are some barriers to self-efficacy?

Q14.

How can you overcome those barriers?

Vitae**Colleges and Universities**

1992-1994: Associate in Arts, emphasis in Communications Arts – Broadcasting from St. Louis Community College at Meramec; 1996-1998: Bachelor of Arts; emphasis in Mass Communications from Lindenwood University; 2001-2004: Master of Arts; emphasis in Media Communications from Webster University; 2005-2009: Master of Arts; emphasis in Teaching from Lindenwood University; 2009-2010 Master of Arts; emphasis in Educational Administration from Lindenwood University; 2017-2018: Educational Specialist emphasis in Educational Administration from Lindenwood University; 2018-present: pursuing Doctorate of Education in Educational Administration (expected graduation date in May of 2020) from Lindenwood University