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Teachers' Perspectives on Teacher Self-Efficacy and Principal Leadership Characteristics

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Abstract

The purpose of this study was to investigate how elementary teachers rate their level of self-efficacy and to examine the characteristics of school leaders influencing teacher self-efficacy, including when teachers worked from home during the COVID-19 school shutdown. On the Teachers' Sense of Efficacy Scale (TSES), all 287 participating teachers rated their self-efficacy in the high or moderate range. On the Principal Rating and Ranking Scale (PRRS), teachers reported that Communication, Inspiring Group Purpose, Consideration, and Empowering Staff were the most important characteristics of leaders related to teacher self-efficacy. The teachers interviewed reported that Communication and Flexibility were their principals' most supportive leadership characteristics during the COVID-19 school shutdown, and that areas for improvement were more Communication, Situational Awareness, and Modelling Instructional Expectations. This work gives district leaders a clearer understanding of practices, strategies, and behaviours they can implement to improve teacher self-efficacy, teacher practice, and student achievement.

Résumé

L'objectif de cette étude était de considérer comment les enseignants de l'élémentaire évaluaient leurs propres capacités personnelles et d'examiner quelles caractéristiques

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des dirigeants d'école influençaient cette auto-évaluation, y compris lorsque les enseignants ont dû travailler à domicile pendant la COVID-19. Sur l'Échelle du sentiment d'efficacité des enseignants, les 287 participants ont tous évalué leurs capacités personnelles comme étant hautes ou modérées. Sur l'Échelle d'évaluation et de classement des directeurs d'école, les enseignants ont indiqué que les qualités d'un directeur qui leur étaient les plus importantes pour leur sentiment d'efficacité étaient Communication, Capacité à motiver le groupe, Considération, et Autonomisation du personnel. Les enseignants consultés ont indiqué en outre que Communication et Flexibilité étaient les caractéristiques les plus désirables de leurs directeurs pendant la fermeture des écoles due à la COVID-19. En même temps, les enseignants consultés croyaient que leurs directeurs pouvaient s'améliorer en mettant davantage l'accent sur Communication, Conscience situationnelle, et Clarification des attentes pour l'enseignement. Cette étude peut donner aux chefs de secteur une meilleure compréhension des pratiques, stratégies et comportements à adopter afin d'améliorer le sentiment d'efficacité et les pratiques des enseignants et le rendement scolaire.

Keywords / Mots clés : teacher self-efficacy, COVID teaching, school leadership, student achievement / connaissance par l'enseignant de ses propres capacités, enseignement pendant la COVID-19, direction de l'école, rendement scolaire

Introduction

Bandura (1986) defines self-efficacy as "beliefs in one's capabilities to organize and execute courses of action required to manage prospective situations" (p. 6). Hoy (2000) defines teacher self-efficacy as "teachers' confidence in their ability to promote students' learning" (p. 2). As high-stakes testing, education legislation, and COVID-19 mandates have increased demands on educators, self-efficacy can be a factor in teacher effectiveness. Teachers with higher levels of self-efficacy have students who perform at higher levels (Goddard, Hoy, & Woolfolk, 2004; Goddard & Skrla, 2006; Hoy, Sweetland, & Smith, 2002; Tschannen-Moran & Barr, 2004).

Teacher self-efficacy

Bandura (1986, 1997) believes that self-efficacy is a multi-dimensional trait that includes performance accomplishments, vicarious experience, verbal persuasion, and emotional arousal. These expectations are differentiated between outcome and efficacy expectations. A person's belief that certain actions will produce certain results is an outcome expectation. However, if they do not feel as though they are capable, they will not start or persevere. This state is referred to as efficacy expectation. A result of low efficacy expectation is that many teachers leave the profession within the first five years, making teacher retention a serious problem in education (Talley, 2017).

The research on teacher self-efficacy and student achievement is rooted in a study by the RAND Corporation that evaluated Title III and the *Elementary and Secondary Education Act* of 1965 (Hipp, 1996). A study of 20 elementary schools found statistically significant increases in student reading achievement correlated with teachers who had high levels of self-efficacy (Amor et al., 1976, cited in Kang,

2017). Hoy and Woolfolk (1993) and Kelley and Finnigan (2003) similarly reported that teachers with high self-efficacy have students with high levels of achievement. Teachers with low self-efficacy believed that student success in the classroom was beyond the scope of their ability, especially when students posed behavioural problems or had academic difficulties (Lackey, 2019; Talley, 2017; Tschannen-Moran & Hoy, 2001). In contrast, teachers with high self-efficacy believed they could positively impact students (Lackey, 2019; Tschannen-Moran & Hoy, 2001).

Gonzalez, Peters, Orange, and Grigsby (2017) found that teachers reported time restraints, curriculum modifications, testing the Exceptional Student Education population, school leadership, and educational triage as negatively impacting their self-efficacy. Since the *No Child Left Behind Act* (2002) and the *Every Student Succeeds Act* (2015), all states require standardized testing to measure student achievement and teacher performance. This requirement continues to create angst among educators, not necessarily because of the measure, but because the measure is used to grade student achievement, teacher performance, and the quality of a school (Haberman, 2005; Hoy et al., 2002; Wahlstrom & Louis, 2008). Bandura (1994) found that high self-confidence minimizes stress levels and increases teachers' belief in their own ability. Fox and Peters (2013) and Christian (2010) found that standardized testing did not negatively impact teachers with high self-efficacy.

Walker and Slear (2011) found a positive correlation between years of experience and level of self-efficacy. Goddard and Skrla (2006) found "that experienced teachers (those with more than 10 years of teaching experience) had significantly higher collective efficacy beliefs than did their less experienced counterparts" (p. 228).

Although this study focuses on individual teacher self-efficacy, it is important to note that collective efficacy, defined by Goddard, Skrla, and Salloum (2017) as "the sense among group members that they have the capability to organize and execute the courses of action required to achieve their most important goals" (p. 220), is a factor when improving student achievement in schools (Goddard et al., 2004; Goddard & Skrla, 2006; Goddard et al., 2017). The theoretical connection between self- and collective efficacy was made by Bandura (2000), who states that self-efficacy "extends the conception of agent causality to people's beliefs in their collective efficacy to produce desired outcomes" (p. 51). The two concepts are measured differently, with self-efficacy measured individually and collective efficacy measured as the performance of a group. However, the group measure encompasses the individual measure and, therefore, has a dependence on the individual measure (Bandura, 2000). The importance of both individual and collective efficacy to student achievement is evident (Goddard et al., 2004; Goddard & Skrla, 2006; Goddard et al., 2017). Goddard et al. (2017) reported that collective efficacy was more predictive of student achievement in math and reading in elementary grades than gender, ethnicity, and socioeconomic status. Collective efficacy has a higher effect size on student achievement than prior achievement, socio-economic status, home environment, parental involvement, motivation, concentration/persistence/engagement, and homework (Donohoo, Hattie & Eells, 2018; Hattie, 2016). Therefore, building teacher self-efficacy and, from there, increasing collective efficacy in schools should be a priority for leaders.

Principal leadership

Building-level leadership is shifting from a focus on management of property, textbooks, and facilities and becoming more knowledge-based in the areas of teacher instruction, facilitation, and academic support (Hallinger, Hosseingholizadeh, Hashemi, & Kouhsari, 2017; Leithwood & Jantzi, 2006; McGuigan & Hoy, 2006). Strong instructional leaders model high expectations and communicate their beliefs to teachers and students. Woods and Martin (2016), in a narrative case study of a rural, high-poverty elementary school, found that leadership characteristics focused on vision, change, and providing necessary support and strategies, rather than educational programs and improved and sustained achievement. In a study of 800 teachers, using an open-ended questionnaire, Blase and Blase (2002) found that principals talking with teachers to promote reflection on practice and promoting professional growth for teachers were important attributes of effective leaders. Additionally, strong leaders have strong self-efficacy (Hattie, 2016; Leithwood & Jantzi, 2008; Nir & Kranot, 2006). Leaders are recognizing the connection between teacher self-efficacy and student achievement and are searching for a formula to build it within their buildings (Hallinger et al., 2017; Salazer, 2014).

Principal leadership has been identified as a significant factor contributing to teacher performance, job satisfaction, self-efficacy, and student achievement. Hattie (2016) asserts that schools with effective leadership generally perform better than those where effective leadership is absent. Lackey (2019) identifies a relationship between teacher self-efficacy and principal behaviours that are positive, respectful, and edifying of others. Sun and Xia (2018) conclude that leadership has both direct and indirect impacts on teachers' job satisfaction, with self-efficacy named as a mediating factor for the indirect effect. In a mixed-methods study of 104,358 teachers chosen through the Teaching and Learning International Survey (TALIS) conducted by the Organisation for Economic Co-operation and Development (Kastberg, Cummings, Lemanski, Ferraro, Perkins, Erberber, & Tsokodayi, 2021), Bellibas and Liu (2017) found a significant positive relationship between what principals perceive as their leadership behaviour and self-efficacy of teachers in the areas of classroom management, instruction, and student engagement. In a descriptive and correlational research study of 254 randomly sampled teachers, Mehdinezhad and Mansouri (2016) found a significant relationship between teacher self-efficacy and principal behaviours. Lambersky's (2016) qualitative study found that principal behaviours shape the emotions of teachers and influence teacher morale, burnout, stress, commitment, and self-efficacy. Such behaviours include professional respect shown for teacher capability, providing appropriate acknowledgement for teacher commitment, competence, and sacrifice, protecting teachers from damaging experiences like harassment, maintaining a visible presence in the school, allowing teachers' voices to be heard, and communicating a satisfying vision for their school. These findings are particularly important in light of the COVID-19 pandemic and the personal and professional circumstances it caused for teachers while they attempted to normalize the situation for their students.

Walker and Slear (2011) identify three concrete actions by leaders significantly related to teacher self-efficacy: modelling instructional expectations, communication, and providing contingent rewards. They also identify important leadership factors

specific to the length of teacher experience. For new teachers (1–3 years), modelling instructional expectations had the highest impact on self-efficacy. For experienced teachers (4–7 years), modelling instructional expectations and communication were significant. For very experienced teachers (>7 years), communication, consideration, and modelling instructional expectations were significant. For extensively experienced teachers (>15 years), inspiring group purpose was the single most significant leadership move.

Leadership styles are characterized using a variety of descriptors, including instructional, servant, transformational, and collective (Blanchard & Hodges, 2003; Blase & Blase, 2000; Brinkerhoff, Murrieta, & O'Neill, 2015; Bush & Glover, 2014; Dufour & Marzano, 2011; Hattie, 2016; Hipp, 1996; Leithwood & Jantzi, 2006). Hipp (1996) significantly linked two of what Leithwood and Jantzi (2006) would later identify as transformational leadership behaviours (models behaviour and provides contingent rewards) with personal teacher self-efficacy, and three (models behaviour, provides contingent rewards, and inspires group purpose) with general or collective teacher efficacy. Collective leadership, defined as "a group of people working together toward a shared goal" (Brinkerhoff et al., 2015, p. 51), shares elements of transformational leadership, including trust, shared power, transparent and effective communication, accountability, and shared learning. Collective leadership has many benefits that can positively affect teacher efficacy, identified by Brinkerhoff et al. as better decisions, increased effectiveness, increased self-direction and motivation, fewer barriers, shared responsibility, realized potential, increased engagement and investment, and sustainability.

Principal support during the COVID-19 pandemic

Schools in Florida initially closed on March 13, 2020, for two weeks. On March 17, the closure was extended through April 14. On March 30, the Florida Department of Education extended the closure until May 1. Finally, on April 18, Governor Ron DeSantis closed all schools in Florida for the remainder of the school year. The total number of students affected was 2,816,791 (Ballotpedia, n.d.). Schools made a rapid transition to remote learning, with students and teachers learning and working from home. Teachers provided instruction to students using online platforms such as Google Meets or Zoom. Many teachers had limited knowledge of the technology they were asked to use to reach their students. While attempting to guide teachers remotely, school leaders were still at school continuing school business and trying to support teachers, students, and families from afar. The Clay County, Florida school district provided a virtual in-service day to acclimate teachers to their new style of teaching.

During the school shutdown, teachers were responsible not only for teaching from home with little to no preparation, but also for navigating their own familial concerns regarding health and safety. During this time, teacher morale plummeted. Based on a survey conducted by the EDWeek Research Center, 56 percent of teachers surveyed nationally reported that their morale decreased after the pandemic began (Decker, Peele, & Riser-Kositsky, 2021). In a survey conducted during "crisis teaching" (so named by Schaffhauser, 2020), 1000 teachers nationwide reported that prior to the pandemic, more than 80 percent were satisfied with their professional accom-

plishments. However, only 54–55 percent reported the same regarding their performance during the school shutdown period (Schaffhauser, 2020). Jelińska and Paradowski (2021) surveyed 1500 teachers from 118 countries. Their findings suggest that "teachers were most engaged and coped best with the transition when they had prior experience with remote instruction, worked in the higher education sector, and used real-time synchronous modalities" (p. 303).

Purpose of the study

School administrators as instructional leaders are responsible for coaching, monitoring, and evaluating teacher practice. It is important for school leaders to know what specific leadership characteristics will directly impact teachers' belief in their ability, especially while navigating the uncertain territory of teaching through a pandemic. District leaders would benefit from a clearer, more precise understanding of high-impact strategies and behaviours that lead to improving teacher practice and student achievement.

Current research examines teacher self-efficacy and how school leaders can impact teachers' self-belief in their ability to increase student achievement (Hoy & Woolfolk, 1993; Lackey, 2019; Lambersky, 2016; Tschannen-Moran & Hoy, 2001). However, there is little research on teachers' perspectives on what leaders can do to build self-efficacy, especially during crisis teaching from home during the pandemic. For the purpose of this study, crisis teaching is defined as teachers moving from a face-to-face setting at school to a virtual platform at home with little or no preparation.

The purpose of this study was to examine the specific leadership characteristics that teachers feel influence their self-efficacy. Specifically, this study investigated how elementary teachers in Clay County rate their level of self-efficacy, how those same teachers rate and rank principals' leadership characteristics, the leadership characteristics teachers identify as important to their self-efficacy, and the leadership characteristics teachers identify as supportive while crisis teaching during the COVID-19 school shutdown.

Methodology

This study was approved by the University of North Florida Institutional Review Board and by the Clay County Superintendent of Schools.

To investigate how teachers rate their level of self-efficacy while identifying leadership characteristics that they believe impact their self-efficacy, an explanatory sequential mixed-methods design was employed. Quantitative measures included survey responses that ranked teacher self-efficacy and teachers' perceptions of principal behaviours. The Teachers' Sense of Efficacy Scale (TSES), adapted by Tschannen-Moran and Hoy (2001), was used to measure teacher efficacy. Principal behaviours were rated and ranked using the Principal Rating and Ranking Scale (PRRS), developed by Walker (2009). Permission to use the TSES and PRRS was obtained from their authors.

Correlation analyses were used to test the extent that teacher efficacy and principal behaviour variables were related (Creswell & Creswell, 2018). In order to gain a better understanding of the quantitative data, semi-structured virtual interviews

were conducted. Additionally, because of the unique circumstance of teaching from home during the COVID-19 pandemic, teachers were given an opportunity during the interviews to identify principal characteristics and actions that they considered important relating to their self-efficacy while teaching on a virtual platform.

Participants

Teachers from all 27 Clay County District elementary schools were invited to participate. These schools cover a range of demographics (data not shown), including 12 Title 1 schools that serve marginalized populations of students. The 27 schools range in school grade from A to D as designated by the Florida Department of Education based on the results of standardized tests. This investigation took place in a high-performing school district, with only one low-performing school of the 27 surveyed. The complete demographic picture of each elementary school is listed in Table 1.

Table 1. Clay County schools demographic data (2018–2019)

School	*Grade 18/19*	*Title 1*	*ED[a]*	*ESE[b]*	*ELL[c]*	*White*	*Black*	*Hisp.*	*Multi-racial*	*Other*	*Male*	*Female*
AES	A	No	42	20.5	3.7	37.5	27.2	23.2	8.8	2.8	50.4	49.6
CEB	D	Yes	100	24.2	3.8	60.8	19.9	14.2	4.8	0.3	50.7	49.3
CGE	B	Yes	81	20.5	2.4	60.3	14.7	17.7	5	2.3	54.2	45.8
CHE	B	Yes	81	26.6	N/A	93.4	N/A	3.3	N/A	3.3	51.4	48.6
DIS	A	No	66.8	25	3.3	65.5	10.6	14.8	6.1	3	51.4	48.6
DOE	A	No	25.3	15.1	2.8	41.5	33.3	13.9	6.8	4.5	53.9	46.1
FIE	A	No	22.5	29.8	1.7	71.1	6.2	12.9	6	3.8	50.8	49.2
GPE	C	Yes	99.2	16.8	7.8	26.4	48.1	18.3	5.2	0.2	55.6	44.4
KHE	A	Yes	79	27	N/A	89.3	3.1	4.9	2.6	0.1	54.2	45.8
LAE	B	No	37.4	27.4	N/A	75.2	9.3	8.5	5.6	1.4	50.4	49.6
LSE	A	No	64.3	19.4	2.9	59.8	12.1	16.3	9	2.6	52.5	47.5
MBE	A	Yes	77.7	22.5	N/A	86.4	N/A	6.4	3.7	3.5	53.3	46.7
MCE	C	Yes	76.7	21.8	6.3	52.2	17.5	19.6	7.3	3.4	56	44
MRE	A	Yes	83.3	30.6	N/A	89.3	N/A	5.8	3	1.9	52.5	47.5
OPE	A	No	22.7	15.5	N/A	70.7	4.7	14.4	7.6	2.5	51	49
OVE	A	No	32	23.7	4.4	38.3	27.8	20.7	8.1	4.6	51	49
PES	A	No	28.4	19.6	3.2	71.9	7.6	14.8	3.2	2.5	48.5	51.5
POE	B	No	36.1	22	6.8	28.4	38.4	18.6	9	5.6	55.1	44.9
ROE	A	No	37.2	26.4	N/A	67.6	8.8	14.4	8.1	1.1	54.7	45.3
RVE	A	Yes	70.8	27.8	2.3	59.8	14.2	17.3	6	2.5	54.6	45.4
SBJ	B	Yes	87.5	21.1	8.2	36.8	27.1	23	10.8	2.1	50.3	49.7
SLE	A	No	35	24.6	N/A	81.8	4.5	8.8	4.6	0.03	52.8	47.2
SPE	A	No	56.8	20.7	N/A	63.1	12.2	13.6	8.9	2.2	51.3	48.7
TBE	A	No	24.4	23	3.4	67.5	8.7	14.4	5.2	4.2	52.3	47.7
TES	A	No	38.4	24.2	N/A	67.6	13.6	10.1	7.5	1.2	52.4	47.6
WEC	A	Yes	84.2	28.9	2.7	45.1	26.2	17.9	17.9	3.1	53.4	46.6
WES	B	Yes	98.7	30.5	N/A	88.7	1.7	5.3	3.5	0.8	51.7	48.3

Notes: [a]ED = Economically disadvantaged; [b]ESE = Exceptional student education; [c]ELL = English language learner; *Source:* Florida Department of Education, n.d.

Survey invitations were sent via email using a school district email list to all teachers in the 27 Clay County elementary schools. The survey invitation described the study, guaranteed confidentiality, outlined the expectations, and invited the teachers to participate. Participation was entirely voluntary; no incentive to participate was offered, nor did participation or lack thereof impact the participants in any way. Anonymous online surveys protected the identity of the participants and ensured participation was voluntary.

Data collection

Phase 1 (quantitative) consisted of a survey sent via Survey Monkey to all elementary teachers in the district. To obtain the broadest possible perspective on leadership attributes and behaviours, the survey asked demographic information questions developed by the researcher concerning age, gender, years of experience, and number of principals under whom they had worked during their years of teaching.

Questions from the TSES (short form) adapted by Tschannen-Moran and Hoy (2001) were used to measure teacher efficacy. The TSES short form contains 12 "teacher beliefs" (TB) in which teachers identify beliefs about themselves, based on their ability, resources, and opportunities, on a scale of 1 ("not at all") to 9 ("a great deal").

Many school leadership measures have been utilized, including the Principal Leadership Questionnaire (Leithwood & Jantzi, 2006), the Inventory of Strategies Used by Principals to Influence Classroom Teaching (Hipp, 1996), Leadership Practices Inventory (Kouzes & Posner, 2001), and the PRRS (Walker, 2009). This study utilized Walker's PRRS (2009) because the characteristics measured fall into four commonly used leadership styles (instructional, servant, transformational, and collective), thus building connections with characteristics without limiting to one particular style. The PRRS uses a Likert scale wherein teachers rate 11 principal characteristics on a scale of 1 ("very low importance") to 9 ("very high importance"). Additionally, teachers are asked to rank the same principal characteristics in order of importance from 1 ("most important") to 9 ("least important").[1] Both the TSES and the PRRS are considered moderately to highly reliable. Cronbach's α score for the short form (used in this study) of the TSES is 0.90 (Tschannen-Moran & Hoy, 2001) and Cronbach's α for the PRRS is 0.89 (Walker, 2009). The survey as administered included questions from the TSES (Tschannen-Moran & Hoy, 2001) and the PRRS (Walker, 2009) as well as demographic questions and one additional question (How many principals have you worked for?).

For Phase 2 (qualitative), from the completed surveys, five teachers from different schools were randomly selected for interviews based on their response indicating they would be willing to participate, in which case they provided their email address and their identity was no longer hidden. Semi-structured interviews of those five teachers were conducted virtually using standardized questions prepared by the researcher. Teachers' perceptions of principal leadership characteristics provided question prompts, but, depending on teacher responses, the interview was not limited to these questions. The interview questions were:

- Which specific characteristics did your previous principals possess that contributed to your belief that you can do your job well?

- Which principal characteristics do you believe build efficacy in teachers?
- Thinking about the challenges of last year's crisis teaching period (March–April 2020), did you feel supported by your principal?
- What specific principal actions do you think would have helped your level of efficacy during crisis teaching?

Each interview lasted approximately 10–15 minutes. Verbatim responses from each participant were recorded via Google Meets. A researcher's notebook was used for note-taking during each interview as well as video recording with transcription to ensure accuracy. Notes were taken on non-verbal cues such as body language, affect, and engagement.

Data analysis

Quantitative data analysis was conducted using Intellectus Statistic[2] to identify common themes throughout both surveys (TSES and PRRS). Descriptive statistics included mean, median, and mode, as well as the ranking of 11 leadership behaviours. Correlation analyses were used to examine relationships between variables.

A two-tailed independent samples *t*-test to examine whether the mean of the TB/self-efficacy total was significantly different between Title I and Non-Title I categories of school was rejected because the data was not normally distributed. Therefore, a two-tailed Mann-Whitney two-sample rank-sum test was conducted to examine whether there were significant differences in TB/self-efficacy totals between Title I and Non-Title I schools (Conover & Iman, 1981).

Qualitative data analysis began with the transcription of each interview. Using thematic analysis (Braun & Clarke, 2006, 2013), the data were coded to isolate and label by theme phrases, sentences, and paragraphs that mentioned leadership characteristics deemed important and relating to teachers' self-efficacy. Next, codes with similar meanings or a relationship to one another were clustered. The clusters were examined for additional relationships between the clusters themselves. Lastly, the themes were defined according to the content and meaning of the codes.

Results

Frequencies and percentages were calculated for each nominal variable, indicating the number of responses from each school and the contribution of each school to total survey responses. The sample consisted of 287 elementary teachers representing all 27 elementary schools in Clay County (data not shown). The overall survey completion rate was 16 percent. The most frequently observed gender was female; of race was white, non-Hispanic; and of Context was Non-Title I (Table 2).

Table 2. Frequencies of nominal variables

Variable	*n*	%
Gender		
Female	206	71.8
Male	8	2.8
Missing[a]	73	25.4
Race		
White, non-Hispanic	191	66.6
Other	12	4.2
African American	10	3.5
Missing[a]	74	25.8
Context		
Title I	94	32.8
Non-Title I	122	42.5
Missing[a]	71	24.7

Note: [a]Missing = question not answered

Frequencies and percentages were calculated for age, years taught, and number of principals for each teacher surveyed. The sample was diverse, with teacher ages ranging from 24 to 66, years taught from 1 to 39, and number of principals from 1 to 20 (Table 3).

Table 3. Interval and ratio variables for age, years taught, and number of principals

Variable	M	SD	Min	Max
Age	43.4	10.4	24	66
Years taught	14.9	9.2	1	39
Number of principals	5.0	2.9	1	20

Teachers' sense of efficacy scale

On the TSES, teachers rated their beliefs about their ability as teachers on a nine-point Likert scale from 1 ("none at all") to 9 ("a great deal"). Summary statistics for TBs 1–12 were calculated (Table 4). Teachers rated their ability on Classroom Management the highest, and their ability to Assist Families the lowest. The areas of Classroom Management and Offer Alternative Explanation had the smallest standard deviations, and Assist Families had the largest standard deviation.

Table 4. TSES questions and TB summary statistics

TSES question #	Short version of question	Survey question	TB responses summary statistics			
			M	SD	Min	Max
TB1	Control disruptive behaviour	How much can you control disruptive behaviour in your classroom?	7.38	1.36	2	9
TB2	Motivate students	How much can you do to motivate students who show low interest in school work?	7.05	1.39	3	9
TB3	Calm student	How much can you do to calm a student who is disruptive or noisy?	6.98	1.36	2	9
TB4	Help value learning	How much can you do to help your students value learning?	7.33	1.42	3	9
TB5	Craft good questions	To what extent can you craft good questions for your students?	7.69	1.22	3	9
TB6	Follow rules	How much can you do to get children to follow classroom rules?	7.62	1.16	3	9
TB7	Believe can do well	How much can you do to get students to believe they can do well in school?	7.61	1.18	4	9
TB8	Classroom management	How well can you establish a classroom management system with each group of students?	7.93	1.09	4	9
TB9	Variety assessment strategies	To what extent can you use a variety of assessment strategies?	7.57	1.34	3	9
TB10	Offer alternative explanation	To what extent can you provide an alternative explanation or example when students are confused?	7.92	1.09	4	9
TB11	Assist families	How much can you assist families in helping their children do well in school?	6.87	1.44	2	9
TB12	Offer alternative strategies	How well can you implement alternative teaching strategies in your classroom?	7.45	1.30	3	9
	TB/self-efficacy total		**7.45**	**0.89**	**4.1**	**9.0**

The frequency distribution of TB/self-efficacy totals for individual teachers is positively skewed with only a few negative outliers (data not shown). Most of the teachers surveyed believed they have a high level of self-efficacy (7–9, Group 1) based on their TB rating (n = 209, 72.8%). The rest fell into the moderate range of self-efficacy (4–6, Group 2) (n = 78, 27.2%), with none rating themselves in the low range of self-efficacy (1–3).

A TB/self-efficacy total was computed for each school by averaging its teachers' self-efficacy scores (Table 5). Taking into account the standard deviations, all of the schools had mean TB/self-efficacy values in or near the high (7–9) range.

Table 5. TB/self-efficacy total by school in descending order (N = 287)

TB/self-efficacy total	M	SD	Min	Max
GPE	8.47	0.44	7.9	9.0
MRE	8.02	0.67	7.3	8.8
OPE	7.95	0.88	6.2	8.8
SLE	7.88	0.88	7.1	9.0
SBJ	7.82	1.03	5.8	9.0
CHE	7.78	1.03	6.0	8.7
WES	7.65	0.77	6.1	8.8
TES	7.65	0.47	7.1	8.7
MBE	7.64	0.77	6.8	8.2
KHE	7.61	0.90	6.2	9.0
CGE	7.60	0.87	5.8	8.1
SPC	7.50	0.44	6.9	7.9
PES	7.46	0.85	6.1	8.9
WEC	7.45	0.64	6.5	8.3
DIS	7.44	0.29	7.1	7.9
AES	7.38	0.89	6.6	8.8
DOE	7.37	0.60	6.4	8.3
OVE	7.35	0.87	5.7	8.3
MCE	7.32	1.09	6.5	8.9
LSE	7.26	1.22	4.8	8.5
LAE	7.20	1.13	5.4	8.8
TBE	7.17	0.80	5.8	8.3
RVE	7.15	0.54	6.4	7.7
FIE	7.14	0.55	6.3	7.8
ROE	6.94	1.40	4.3	8.1
POE	6.81	0.36	6.4	7.6
CEB	6.79	0.28	6.6	7.0

Principal rating and ranking scale

Summary statistics were calculated for the principal characteristic (PC) ratings from the PRRS (Table 6). Teachers were asked to rate each PC as with respect to its impor-

tance relating to their self-efficacy on a nine-point Likert scale (min. = 1, max. = 9), and to rank the PCs from 1 to 11 with 1 being most important and 11 being least important.[1] The highest-rated principal characteristics were Communication, Inspiring, and Consideration. Empowering, Situational Awareness, and Discipline were close behind. Contingent Reward was rated the lowest. Although the gap between the highest and lowest ratings was relatively small (1.22) and the standard deviations are relatively high, the authors surmise that participants in this study are not as motivated by rewards and accolades as they are by other leadership characteristics.

Table 6. PRRS questions and PC summary statistics

PRRS question #	Short version of question	Survey question	PC responses summary statistics			
			M	SD	Min	Max
PC1	Communication	The principal establishes strong lines of communication with and among students and teachers.	8.53	1.07	1	9
PC2	Consideration	The principal expresses genuine concern for the welfare of teachers and makes efforts to get to know each individual.	8.24	1.22	3	9
PC3	Discipline	The principal protects teachers from intrusion into their instructional time. This includes limiting announcements and preventing disruptions to class time.	7.98	1.38	1	9
PC4	Empowering (Staff)	The principal provides opportunities for teachers to make decisions about their work and to be involved in schoolwide decisions.	8.04	1.29	2	9
PC5	Flexibility	The principal utilizes varied leadership behaviours as necessary based on specific situations and circumstances in the school.	7.90	1.37	1	9
PC6	Influence (with Supervisors)	The principal effectively garners support from supervisors and district level administrative offices to assist in meeting the needs of the school.	7.67	1.46	1	9
PC7	Inspiring (Group Purpose)	The principal creates an environment where all teachers are part of a team and work together toward shared goals that result in student and teacher success.	8.27	1.20	2	9
PC8	Modelling (Instructional Expectations)	The principal models their belief in the instructional process and emphasizes the importance of the instruction that takes place in each classroom.	7.74	1.46	2	9
PC9	Monitoring (and Evaluating Instruction)	The principal "keeps an eye" on what is happening in the school and provides feedback to teachers regarding the instructional impact of classroom strategies.	7.70	1.48	1	9
PC10	(Providing) Contingent Reward	The principal formally and informally recognizes outstanding work inside and outside of the classroom and shares this recognition in tangible and visible ways.	7.31	1.68	2	9
PC11	Situational Awareness	The principal is aware of the details and concerns regarding the functioning of the school and uses this information to address current and potential problems.	8.01	1.35	1	9

Summary statistics were calculated for the rankings of the same PCs (Table 7). Teachers' rankings of leadership characteristics were consistent with their ratings, with

Communication, Consideration, and Empowering ranked as the top three, and Influence and Contingent Reward ranked lowest.

Table 7. ***PRRS rankings***

PC ranking variable	M	SD	Min	Max
Communication	2.63	2.61	1	11
Consideration	4.23	2.82	1	11
Discipline	5.21	2.64	1	11
Empowering	4.25	2.44	1	11
Flexibility	6.36	2.45	1	11
Influence	8.10	2.55	1	11
Inspiring	5.33	2.61	1	11
Modelling	7.30	2.61	1	11
Monitoring	7.18	2.56	1	11
Contingent reward	8.60	2.65	1	11
Situational awareness	6.81	3.06	1	11

Note: For the PC rankings, the lowest numbers denote the highest rankings.

Relationship between teacher beliefs/self-efficacy and principal characteristic ratings/rankings

Summary statistics were calculated for the PC ratings from the PRRS by TB/self-efficacy level (Table 8). Groups 1 (high self-efficacy) and 2 (moderate self-efficacy) rated the top three characteristics in the same order: Communication, Consideration, and Inspiring. The lowest rated characteristic was the same for both groups: Contingent Reward. Therefore, the teachers' level of self-efficacy (high or moderate) did not change the highest- and lowest-rated characteristics. However, there were slight differences between Groups 1 and 2 in the rankings of the other characteristics.

Table 8. TB/Self-Efficacy Total by PC Rating Variables

PC ranking variable	Self-efficacy group[a]	M[a]	SD	Min	Max
Communication	1	8.65	1.05	1	9
	2	8.15	1.05	5	9
Consideration	1	8.32	1.19	3	9
	2	7.98	1.30	3	9
Discipline	1	8.16	1.21	3	9
	2	7.41	1.71	1	9
Empowering	1	8.17	1.26	2	9
	2	7.63	1.31	4	9
Flexibility	1	8.06	1.34	1	9
	2	7.39	1.35	4	9
Influence	1	7.82	1.37	1	9
	2	7.22	1.64	2	9

Table 8 (continued)

PC ranking variable	Self-efficacy group[a]	M[a]	SD	Min	Max
Inspiring	1	8.37	1.15	2	9
	2	7.98	1.31	4	9
Modelling	1	7.89	1.43	2	9
	2	7.26	1.47	4	9
Monitoring	1	7.93	1.36	2	9
	2	7.00	1.64	1	9
Contingent reward	1	7.57	1.64	2	9
	2	6.48	1.54	3	9
Situational awareness	1	8.18	1.26	1	9
	2	7.50	1.50	3	9

Notes: [a] Group 1 = high self-efficacy (7–9 on the TSES); Group 2 = moderate self efficacy (4–6)

Summary statistics were calculated for the PC rankings from the PRRS by TB/self-efficacy level (Table 9). Groups 1 (high self-efficacy) and 2 (moderate self-efficacy) gave the same relative rankings to the top three characteristics: Communication, Empowering, and Consideration. Similarly, the lowest-ranked characteristics were ranked relatively the same for both groups: Influence and Contingent Reward. Therefore, it appears that the teachers' level of self-efficacy (high or moderate) did not change their rankings of the highest- and lowest-ranked characteristics. There were slight differences in the ranking order of the other characteristics.

Table 9. TB/self-efficacy total by PC ranking variables

PC ranking variable	Self-efficacy group[a]	Mb	SD	Min	Max
Communication	1	2.54	2.68	1	11
	2	2.89	2.40	1	11
Consideration	1	4.28	2.86	1	11
	2	4.07	2.71	1	11
Discipline	1	5.19	2.64	1	11
	2	5.26	2.66	1	11
Empowering	1	4.13	2.40	1	10
	2	4.63	2.56	1	11
Flexibility	1	6.40	2.30	1	11
	2	6.26	2.90	1	11
Influence	1	8.04	2.55	1	11
	2	8.30	2.59	1	11
Inspiring	1	5.32	2.52	1	11
	2	5.35	2.89	1	11
Modelling	1	7.35	2.57	1	11
	2	7.15	2.67	1	11
Monitoring	1	7.12	2.53	1	11
	2	7.15	2.67	1	11

Table 9 (continued).

PC ranking variable	Self-efficacy group[a]	Mb	SD	Min	Max
Monitoring	1	7.12	2.53	1	11
	2	7.15	2.67	1	11
Contingent reward	1	8.60	2.64	1	11
	2	8.59	2.70	1	11
Situational awareness	1	7.03	3.10	1	11
	2	6.13	2.86	1	11

Notes: [a] Group 1 = high self-efficacy (7–9 on the TSES); Group 2 = moderate self efficacy (4-6); [b] For the PC rankings, the lowest numbers denote the highest rankings.

School context

A two-tailed Mann-Whitney two-sample rank-sum test was conducted to examine whether there were significant differences in TB/self-efficacy totals between the levels of school context. There were 94 observations in the Title I group and 122 observations in the Non-Title I group. The result of the test was not significant based on an alpha value of 0.05, $U = 6419$, $z = -1.50$, $p = .132$. The mean rank for the Title I group was 115.79 and the mean rank for the Non-Title I group was 102.89. This suggests that the distribution of TB/self-efficacy total for Title I (Mdn = 7.67) was not significantly different from the distribution of TB total for the Non-Title I (Mdn = 7.42) category.

Relationships among independent variables

Pearson correlation analyses were conducted among TB total, age, years taught, and number of principals. Cohen's standard was used to evaluate the strength of the relationships, where coefficients (r_p) between .10 and .29 represent a small effect size, coefficients between .30 and .49 a moderate effect size, and coefficients above .50 a large effect size (Cohen, 1988). The results of the correlations were examined based on an alpha value of 0.05.

Table 10. Pearson correlation results among TB total, age, years taught, and number of principals

Combination of variables	r_p	95% CI	*n*	*p*
TB/self-efficacy total/age	0.22	[0.09, 0.35]	201	.001
TB/self-efficacy total/years taught	0.11	[-0.02, 0.24]	214	.106
TB/self-efficacy total/number of principals	0.16	[0.03, 0.29]	216	.020
Age/years taught	0.68	[0.59, 0.74]	201	< .001
Age/number of principals	0.48	[0.37, 0.58]	201	< .001
Years taught/number of principals	0.67	[0.58, 0.73]	214	< .001

Significant positive correlations with small effect sizes were observed between TB/self-efficacy total and age, TB/self-efficacy total and number of principals, and TB/self-efficacy total and years taught. In general, these observations suggest that the more experienced teachers had high levels of self-efficacy. Other correlations were expected, because they were indicators of experience. Significant positive correlations, with moderate to large effect sizes, were observed between age and years

taught, age and number of principals, and years taught and number of principals. Table 10 presents the results of the correlations.

Qualitative results

Five participants were interviewed about leadership during crisis teaching. Their challenges during this time included teaching in isolation from home without professional support and teaching with limited student participation. Many were overwhelmed by concern for the health and wellbeing of their own family members, yet still put on happy faces for their students. Many endured financial hardships because of a spouse not working due to the mass shutdown. Analysis of these five interviews led to the creation of two themes: Principals Demonstrate Investment in Teachers and Principals Communicate Effectively during Crisis Teaching. Figure 1 represents the thematic map and coding process used to analyze the qualitative data.

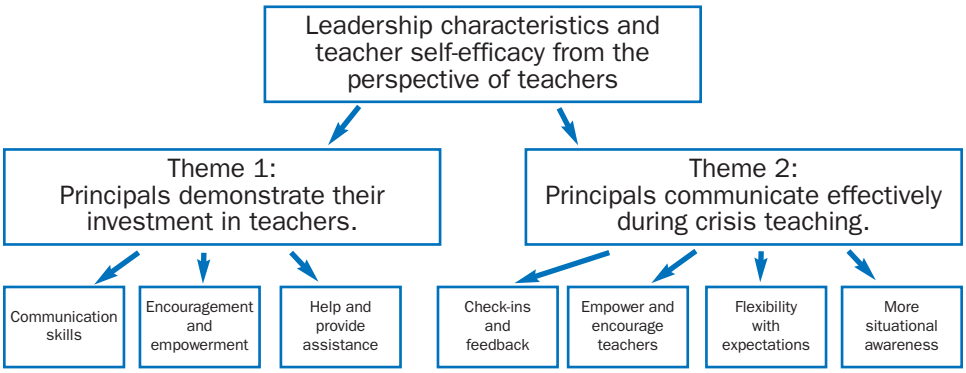

Figure 1. Thematic Map of Qualitative Data

Theme 1. Principals demonstrate their investment in teachers. Participants described feeling confident when their principals demonstrated that they were invested in their teachers. Four participants described principals who made them feel confident in their job by instilling a feeling of empowerment. As one participant explained:

> Principals that I've had in the past did a great job of letting us know … that they wanted to hear from us, they wanted us to make decisions, they wanted to hear what our decisions were, and they wanted our input.

To this participant, being empowered meant being included in decision-making. This was slightly different from how another participant conceptualized being empowered, which included when principals had "meetings, and just being really positive and having them continue in that work," referring to their teachers. Another participant said, "Empowering staff … having those mini sidebar conversations, or the whole group conversations" was important. In addition to this empowerment, the participant also found it helpful when principals showed genuine consideration and concern for teachers by checking in with them frequently and on a regular schedule, asking about their family, and by offering personal and professional assistance, which also served to build self-efficacy.

Two participants described help and assistance they received from principals that made them feel their principals were invested in them. One of these participants said, "Early on, I had a principal that was dedicated to training young teachers …

He poured into professional development like you have never seen before." This participant appreciated the principal's emphasis on "ongoing learning." For another teacher, the help came in the form of assistance with discipline: "When they're able to pull kids out and calm them down after you've tried all of your strategies — I feel like [they've] been super helpful."

Another participant said their principal seemed to understand that teachers were frustrated during crisis teaching and allowed teachers to be flexible with their methods and approach: "I felt like they understood what everybody was going through and that they allowed us the flexibility." Teachers appreciated this flexibility; another participant said, "She let us teach in a way we were comfortable with at this time … So, she kinda let us have that control, as long as we were still doing something and engaging with the kids." One participant, who had two of their own children at home during the pandemic, said they "felt, as a parent, supported by [my principal]," in addition to feeling supported as a teacher. Another participant said, "When our principals allow us to have that flexibility and then empower us into the flexibility, makes a huge difference, I feel like, in believing [in] ourselves."

Being a team player was another way principals instilled self-efficacy in teachers. "That willingness to be a team player and to be a part [of something] and to be visible definitely keeps them accountable, and it keeps you accountable as a teacher," one participant explained, and compared it to being in the trenches together, which demonstrates their investment. In order to demonstrate investment in teachers, principals also had to communicate effectively, as addressed in the next theme.

Theme 2. Principals communicate effectively during crisis teaching. In crisis teaching, principals used many of the same skills they used pre-pandemic to build self-efficacy and confidence in teachers to support teachers. In particular, when principals communicated frequently with teachers, participants felt supported: "I think communication is one of the most important [characteristics]." Another participant appreciated helpful critique from principals: "They were very helpful with critiques and feedback when they came and observed me." Another participant said that principals who communicated effectively helped teachers build self-efficacy: "Communicating clearly what my objective is so that I have that goal (relating to the objective) to reach, that definitely helps me." For another participant, the listening component of communication was important: "Listening to your concerns and providing good feedback and help, instead of just blowing it off." Communications also included home visits the principal made during crisis teaching. One participant said, "I felt like communication was really high; we could not have done what we did without that communication."

Suggestions for improvement. While most participants believed their principals were supportive and helpful during crisis teaching, this was not always the case. Although principals demonstrated consideration and concern for participants through communication and other practices, some participants desired more communication and check-ins from their principals. Participants described what would have helped them to be more effective during the challenges and stressors of crisis teaching, which included isolation from peers, technology deficits, the many distractions of teaching small children virtually, simultaneously monitoring their own chil-

dren's educations, and dealing with the physical impact of the pandemic on their own families. Though many participants appreciated the level of communication they had with their principals, more communication would have been better. "Touching base more often, as far as maybe as a team, at least once a week," was one suggestion a participant had for how the principal could have helped better during crisis teaching. Another participant, who appreciated the flexibility their principal provided during crisis teaching, said that lowering expectations of teachers a bit would have helped: "If we have to cut back a little bit, then we cut back. Not expect so much." Yet another participant suggested that principals could model expectations, which would have benefitted teachers: "Modelling instructional expectations because we were all doing different things, in a way."

One participant described the sense that the principal was lacking in situational awareness, which was a frustration during crisis teaching:

> I think the biggest one for me would have been that consideration where the principal expressed like a genuine concern for me, personally, for my welfare, making that effort to get to know me personally. That was a principal that I felt didn't really know me on a personal level at all, and it had been two-and-a half years.

Discussion

Teacher self-efficacy is an important factor influencing student achievement (Goddard et al., 2004; Goddard & Skrla, 2007; Hoy et al., 2002; Tschannen-Moran & Barr, 2004). Teachers' belief in their ability to teach students can individually and collectively impact the academic success of a school (Goddard et al., 2004; Goddard & Skrla, 2007; Hoy et al., 2002; Protheroe, 2008; Tschannen-Moran & Barr, 2004). For this study, the data was obtained from teachers in a high-performing district who thought highly of their self-efficacy. The quantitative phase of this investigation explored the level of self-efficacy of each participant and what they believe to be important principal leadership characteristics that impact their self-efficacy. The qualitative phase incorporated interviews with five participants, providing insight and a deeper understanding of leadership characteristics they deem important factors in building their self-efficacy, including during remote teaching during the COVID-19 pandemic. The results can be summarized as follows.

Of the elementary teachers in Clay County who completed the TSES, 78.8 percent rated their self-efficacy in the high range (7–9), and the remaining 27.2 percent rated their self-efficacy in the moderate range (4–6). None rated themselves in the low self-efficacy range. Of the 27 elementary schools in the district, the highest average teacher self-efficacy rating was 8.5 and the lowest was 6.8. There was no significant difference in average teacher self-efficacy between Title 1 and Non-Title 1 schools. Both the highest and lowest average self-efficacy ratings occurred at Title 1 schools.

With respect to principals' leadership characteristics, as rated on the PRRS, elementary teachers rated Communication, Inspiring, and Consideration as the most important to their self-efficacy, with Contingent Reward lowest. Communication, Consideration, and Empowering were ranked the highest in order of importance

with Contingent Rewards the lowest. The ratings and rankings of the high self-efficacy and moderate self-efficacy teachers were statistically the same.

The interview data largely supported the findings from the PRRS. The five teachers interviewed identified Communication, Consideration, Empowering, Flexibility, and Discipline as the most important principal leadership characteristics in relation to their self-efficacy. Four of these five (Communication, Consideration, Empowering, and Discipline) were rated in the top six leadership characteristics on the PRRS.

The teachers interviewed reported that Communication and Flexibility were the most supportive leadership characteristics while crisis teaching during the COVID-19 nationwide school shutdown. Areas of opportunity for leaders were Communication, Situational Awareness, and Modelling.

Several commonalities emerged between the quantitative and qualitative data. Both sets of data emphasized the importance of five leadership characteristics: Communication, Consideration, Flexibility, Discipline, and Empowering. Although Inspiring and Situational Awareness were high in the ratings they were not as high in the rankings or mentioned in the qualitative data. The PRRS ranking identified Communication, Consideration, Empowering, Discipline, and Flexibility as most important, in that order. In the qualitative interviews, Flexibility and Empowering were identified as important leadership characteristics that supported teaching from home during the pandemic. The PRRS ratings identified Communication as highest, Empowering as fourth highest, and Flexibility as seventh, so Flexibility was an outlier. In the overall rankings from the PRRS, Communication was the highest, Empowering was third, and Flexibility was sixth. The differences indicate that during the pandemic there was a slight shift in what teachers felt they needed from leaders. Table 11 represents the commonalities between the quantitative and qualitative phases of the study.

Table 11. PC quantitative rating and ranking data integrated with teacher perspective

PC	Rating[a]	Ranking[b]	Teacher qualitative perspective
Communication	8.53	2.6	Some participants identified communication as a strength, and some desired more communication and check-ins.
Consideration	8.24	4.2	Participants found it helpful when principals showed genuine consideration and concern for teachers, which also served to build self-efficacy.
Empowering	8.04	4.4	Being empowered meant being included in the decision making. Empowering showed the leaders' investment in the teachers.
Discipline	8.04	5.2	Help came in the form of assistance with student discipline.
Flexibility	7.98	6.4	The leaders allowed for flexibility, especially during the pandemic.

Notes: [a]Rating values are on a scale of 1 = lowest and 11 = highest; [b]Ranking values are on an inverse scale, where 1 = most important and 11 = least important

The salient findings in this investigation can be organized into seven major conclusions regarding the self-efficacy of elementary teachers in Clay County and the leadership characteristics they believed to impact self-efficacy:

The elementary teachers surveyed have an overall high level of self-efficacy. Of the 287 elementary teachers who completed the survey, there was an average self-efficacy rating score of 7.5 on a Likert scale of 1–9. The lowest rating was 4.1 and the maximum rating was 9.0. The majority of teachers rated themselves between 6.0 and 9.0. The findings indicate the majority of teachers surveyed believed they have a high level of self-efficacy (7–9) based on their TB rating (n = 209, 72.8%). The rest surveyed fell into the moderate range (4–6) (n = 78, 27.2%), with none rating themselves in the low range (1–3). These results are consistent with a study by Horton (2013), who surveyed 87 teachers in high-poverty schools with a self-efficacy range of 4.7–9.0 (M = 7.3, SD = 1.01). In this study, the average teacher self-efficacy by school ranged from 6.8 to 8.5, and each school's average teacher self-efficacy was rated high or at the high end of the moderate range. This is important because, based on the previous literature (Amor et al., 1976, cited in Kang, 2017; Goddard et al., 2004; Goddard & Skrla, 2007; Hipp, 1996; Hoy & Woolfolk, 1993; Hoy et al., 2002; Kang, 2017; Kelley & Finnigan, 2003; Tschannen-Moran & Barr, 2004), high teacher self-efficacy is related to higher student achievement, and the school district in this study is a high-performing district.

Communication is the most important leadership characteristic. This investigation revealed that teachers believe Communication is the most important leadership attribute contributing to their self-efficacy. It was rated and ranked the highest characteristic on the PRRS with a rating of 8.5 on a 1–9 Likert scale and 2.6 ranking on a 1–11 ranking scale. Both teacher groups (high and moderate self-efficacy) rated and ranked Communication as the most important leadership characteristic. Additionally, all five participants in the qualitative interviews mentioned Communication as important to their self-efficacy. They referenced feedback and listening as important attributes of leadership communication. Research by Walker and Slear (2011) and Hipp (1996) affirms communication as one of three actionable moves by school leaders significantly relating to the self-efficacy of teachers; the other two are modelling instructional moves and contingent rewards, which did not rate or rank in the top three in this study. Dialogue that encourages teacher reflection and coaching are ways of communicating that are important to leadership (Blanchard & Hodges, 2003; Blase & Blase, 2000; Dufour & Marzano, 2011). Bambrick-Santoyo (2012) assert that "by receiving bi-weekly observations and feedback, a teacher gets as much development in one year as most receive in twenty" (p.131).

The level of teacher self-efficacy does not have a significant effect on the ratings and rankings of leadership characteristics. Teachers' levels of self-efficacy fell into two groups (high and moderate), with no teachers falling into the low range of self-efficacy. The order of importance for each leader characteristic was not significantly different between groups. Both groups identified the same top five leadership characteristics (Communication, Inspiring, Consideration, Empowering, and Situational Awareness) as important to their self-efficacy. This finding contradicts the conclusions of Hipp and Bredeson (1995) and Walker and Slear (2011), who found Models Behaviour, Inspires Group Purpose, and Provides Contingent Rewards to be the most significant; however, in their studies, the level of self-efficacy of the participants was not measured. Another possible reason for the discrepancy is that the mentioned studies

were of teachers in high-poverty schools. However, this study is consistent with the work of Brinkerhoff et al. (2015) that identified transparent and effective communication as one leadership characteristic positively affecting teacher self-efficacy.

Some extenuating factors affect self-efficacy. Extenuating factors considered in this study were the age of the teacher, years taught, the number of principals they have had in their teaching career, and if they taught at a Title 1 or Non-Title 1 school. Correlation analysis revealed that as teacher age increases so does teacher self-efficacy. The same was true for years taught and for number of principals, suggesting that teachers with more experience and who have worked for more principals had higher levels of self-efficacy. These correlations confirm those of Walker and Slear (2011), who found a direct correlation between experience and level of self-efficacy. There was no significant difference in the level of teacher self-efficacy based on the context of the school (Title 1 or Non-Title 1): The average teacher self-efficacy at a Title 1 school was 7.67 and at a Non-Title 1 school was 7.42. Some may believe that since a high-poverty or Title 1 school has underperforming students, the teachers may also be underperforming and hence have a low level of self-efficacy. The findings of this study contradict this assumption.

Some leadership characteristics were identified as supportive when teaching from home during the pandemic. Being included in decision making, having a voice, and feeling cared for were identified by teachers who were interviewed as important supports by leadership during the pandemic. Communication, including listening and providing feedback, was both hailed as a positive factor relating to self-efficacy during this time, and also identified as an area of opportunity for leaders to improve. Flexibility and Empowering were also identified by interview participants as important leadership characteristics that supported teaching from home during the pandemic. The fact that Flexibility was identified as an important characteristic during crisis teaching but not in normal times suggests that, during the pandemic, there was a slight shift in what teachers felt they needed from leaders.

Implications for school leader preparation. The findings in this study have important implications for practice. By identifying the leadership characteristics that teachers believe increase their level of self-efficacy, building administrators can be more intentional in their day-to-day practice, especially in the area of communication. Leaders can survey their teachers to explore the methods of communication that are important to them. Additionally, districts can apply the findings from this study when planning and implementing leadership preparation programs. When leaders are made aware of the significance of communication from a teachers' perspective, they can be more deliberate in their methods of communication. Additionally, this study shows that teachers needed more communication during a national school closure when they were teaching in isolation from home.

Although it is clear from this study that Communication was the most important leadership characteristic relating to teacher self-efficacy, it was certainly not the only one. Consideration, Inspiring, and Empowering followed Communication in importance. These characteristics are not concrete concepts that are easily taught, but rather ambiguous attributes that require intentional leadership instruction, including different methods of communication, coaching, feedback, and messaging and deliv-

ery relating to situational awareness. Additionally, leaders should explore the reality of communication as a double-edged sword, meaning that information can be communicated perfectly, but the listeners' perception of what was said may not be what the leader intended. It is reasonable to assume that referencing this work would benefit districts in their preparation of leaders.

Implications for the professional learning of school leaders. As districts look to develop professional development opportunities for school leaders, the findings from this study can equip leaders to leverage leadership characteristics as a means of building teacher self-efficacy that impacts student achievement. Many districts have developed or contracted out aspiring leader programs[3] for teacher leaders and assistant principals who are developing their leadership potential in order to be promoted to school- and district-based administrators. Findings from this study, including the teacher interviews, offer insight when reflecting on the need for training of specific leadership attributes that are related to building teacher self-efficacy. Aspiring leaders and current school leaders would benefit from understanding how leadership characteristics affect teachers' self-efficacy.

Limitations

Several limitations of this study require mention. The PRRS contains only one question relating to each leadership characteristic, which limits the participants' interpretation of what exactly is being asked. In contrast, the TSES asks 12 questions relating to teacher self-efficacy, which results in a mean score for self-efficacy. The PRRS survey questions did not ask about the participants' current principal, although this researcher understands the data could be skewed based on participants' feelings and perceptions about their current principal, especially if they had strong feelings, positive or negative, about that working relationship.

Second, this investigation took place in a high-performing school district, with only one low-performing school of the 27 surveyed. One may assume that because the district has a high level of student achievement, the teachers are high performing as indicated by the average level of self-efficacy. No teachers who participated reported a low level of self-efficacy, which may reflect self-selection on the part of survey respondents. Therefore, the findings and themes can only be generalized to the context of high and moderate self-efficacy teachers in this school district. Additionally, only elementary teachers were surveyed, excluding any secondary teachers who may have a different perspective.

Lastly, the interview protocol for the qualitative portion was limited in scope, thus garnering limited data for analysis. In retrospect, the author would have asked more questions to gain a clearer understanding and more specifics relating to the connection between leadership characteristics and their own self-efficacy. Additionally, the number of participants in the qualitative interviews was not large enough to disaggregate the data, therefore giving a limited perspective.

This investigation suggests areas of opportunity for future research. First, including all levels (elementary, junior high, and high school) and disaggregating the data across levels may offer insight into level-specific needs for leader training and could provide rich detail about leadership characteristics relating to self-efficacy from three different

perspectives. Additionally, including teachers from a low-performing district could provide more context to important leadership characteristics relating to teacher self-efficacy. Other areas for future research include investigation of specific methods of communication that teachers feel would positively impact their self-efficacy, and comparing perceptions of teachers and leaders with respect to both self-efficacy and specific leadership strategies. Lastly, longitudinal studies of how self-efficacy changes from one circumstance to another or whether it increases with experience regardless of school moves, school closures, et cetera, would provide additional context to the topic.

Conclusion

The current demands placed upon school leaders to transform schools into high-performing institutions with positive school culture, high teacher morale, low attrition rate, and high student achievement begs the question "How?" Collectively contributing to this culture of learning are teacher self-efficacy and the leader characteristics that support and build high levels of teacher self-efficacy (Goddard et al., 2004; Goddard & Skrla, 2007; Hoy et al., 2002; Protheroe, 2008; Tschannen-Moran & Barr, 2004).

Principals influence teacher efficacy and teachers influence student achievement (DuFour & Marzano, 2011; Goddard et al., 2004; Hoy et al., 2002; Tschannen-Moran & Barr, 2004). The importance of this research is to answer the question of what specific behaviours or strategies a principal can employ to raise teachers' level of self-efficacy, with an ancillary outcome of improving student achievement. Therefore, it makes sense for school leaders to be able to identify the factors that contribute to an increased level of self-efficacy for individual teachers and thereby improving collective efficacy.

This study extends the body of research literature with respect to the relationship between teacher self-efficacy and leadership characteristics. The findings from this study support the importance of building teacher capacity by building teacher self-efficacy using leadership characteristics deemed important by teachers. This research suggests areas in which practitioners and researchers can craft professional development for leaders in building teacher self-efficacy, thus positively impacting student achievement. Data specific to crisis teaching during the pandemic and the characteristics of principals deemed by teachers as supportive during that period are additional components of this work. This study is part of newly emerging research regarding the COVID-19 pandemic. This research sheds light on leadership support during this period of crisis and will help school leaders navigate future crisis periods.

By examining self-efficacy from teachers' perspectives and what contributing factors they identify, leaders will be able to pinpoint areas of opportunity. As teachers re-acclimated to the brick and mortar setting since being at home and online during COVID-19 crisis teaching, many of the teachers interviewed for this study craved the collegial interaction and support provided by school leaders. Moving forward, data collected regarding leadership support during the pandemic and whether teachers feel their sense of self-efficacy suffered during this time will offer guidance in the event of future crises.

Notes

1. Note that the PRRS ranking uses an inverse scale, wherein "1" is the highest ranking.
2. Software available at https://analyze.intellectusstatistics.com/.
3. For example, New Leaders (https://www.newleaders.org/) and NEFEC (https://www.nefec.org/).

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