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Systematic Review: Factors that Affect the Self-efficacy of Special Education Educators

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Abstract

The purpose of the study was to review studies that reveal the factors affecting the self-efficacy of teachers of students with autism between 2000-2019. This systematic review implemented three channels of research: electronic sources, reference lists, and browsing journals. As a result of the review, 18 reviewed articles that met the inclusion criteria. After synthesizing the included studies, 12 factors were identified that related to the direct correlation with the self-efficacy of teachers of students with Autism. The factors are job satisfaction burnout, students' inclusion, teachers of students with Autism, commitment, work conditions, curriculum, instructional strategies, classroom management, student involvement, level of self-efficacy, and attitudes to teaching students with Autism.

Keywords: Educators, Autism, synthesizing, attitudes.

Introduction

The concept of self-efficacy has been extensively investigated since it was first introduced in 1977 by American psychologist Bandura. Bandura (1994) stated that success factors increase opportunities for building personal efficacy and, moreover, that the opposite is also true, failures undermine any sense of efficacy (p. 2). Bandura's (1994) theory of self-efficacy establishes four main sources of self-efficacy. The first source of self-efficacy is "mastery experiences" or "experiences of mastery" (Bandura, 1986). In experiences of mastery, the most important is task mastery, which serves as an indicator of the teacher's performance in the classroom (Bandura, 1986). According to Bandura (1994), mastery experience refers to an experience of success or failure in which success increases the teacher's self-efficacy and failure restricts it. The second source of self-efficacy is "vicarious experience" (Bandura, 1994, p. 1). Bandura's (1994) work on vicarious experience suggests that a teacher's observation of other teachers performing their tasks can help the teacher perform similar tasks because they are likely to mimic other teachers, especially teachers they view as role models (Bandura, 1994). The third way to strengthen a teacher's self-efficacy is "social persuasion" (Bandura, 1994, p. 3). Social persuasion refers the way in which the people or things in a teacher's environment can reinforce the teacher's self-efficacy by persuading them that they have the capabilities to master the task (Bandura, 1994). Notably, encouraging other teachers while performing a task reinforces a teacher's self-efficacy in the performance of the task. The deeper point here is that "individuals who receive social support from those surrounding them feel cared for and secure" (Brackett et al., 2010) – positive feedback increases a teacher's ability to overcome self-doubts and failure (Bandura, 1994). The fourth approach to strengthening teacher self-efficacy is that which emerges in relation to "psychological traits" (Bandura, 1994, p. 3). This psychological source of self-efficacy refers to the ways in which educators with a sense of emotion heighten their expectations of success or failure (Pajares, 1996).

Educators with high self-efficacy are more likely to achieve positive outcomes with student performance and to demonstrate the ability to overcome negative influences in their environments (Coladarci & Breton, 1997). Ashton, Webb, and Doda (1983) state that teachers with a high sense of self-efficacy tend to be more organized and activated than other teachers. Therefore, a teacher with high self-efficacy may be more flexible, may theorize new approaches, and may demonstrate a strong inclination to apply such new methods to improve instruction (Gibson & Dembo, 1984). In general, teachers with strong self-efficacy are likely to be more engaging than teachers without it (Gibson & Dembo, 1984).

The purpose of the study

This systematic review focuses on identifying several significant factors that affect the self-efficacy of special education teachers. The review surveys internal factors (such as commitment and job satisfaction), demographic factors (such as age, experience, and gender), and burnout or external factors (such as curriculum, class management, and social support).

Definition of the Key Terms

Self-efficacy: According to Bandura (1986), self-efficacy beliefs refer to "people's judgments of their capabilities to organize and execute courses of action required to attain designated types of performances" (p. 391). Maddux (2002) described self-efficacy belief, " is the belief that I can perform the behavior that produces the outcome" (p.5).

Job satisfaction: Job satisfaction: Locke (1976) provided the definition of job satisfaction: “the pleasurable emotional state resulting from the appraisal of one’s job as achieving or facilitating one’s job values” (p. 316). Furthermore, Evans (1997) combined “job comfort” and “job fulfillment” together to define job satisfaction as “a state of mind determined by the extent to which the individual perceives her/his job-related needs to be being met” (p. 833). The recent definition of Job satisfaction was also described as “a positive or pleasant emotional state resulting from a person’s appreciation of his/her own job experience” (Demirtas, 2010, p. 1069).

Burnout: Freudenberger (1974) defined the term burnout as: ‘‘the state of physical and emotional depletion resulting from conditions of work’’ (p. 160). In another definition, burnout is “a type of psychological distress-a chronic negative psychological condition that results as day-to-day work stressors take their toll” on educators (Roloff & Brown, 2011, p. 453). furthermore, Burnout has been described as a ‘syndrome of emotional exhaustion, depersonalisation and reduced accomplishment which is a special risk for individuals who work with other people in some capacity’ (Leither & Maslach, 1988, p.347).

Method

Eligibility Criteria

Studies from the initial screening were selected if they: (a) focused on the relationship between self-efficacy, the key term, and one of the following terms: commitment, job satisfaction, burnout, demographics (age, experience, and gender), curriculum, class management, and social support; (b) clearly identified the scales or questionnaire used; (c) selected in-services special education teachers, including teachers of students with autism or in-service special education students as participants in the study; (d) were published in peer-reviewed journals in English or Arabic; and (e) were published between 2000-2019 (new century).

Studies from the initial screening were excluded if they: (a) did not focus on the relationship between self-efficacy and one of the terms listed above, (b) did not identify a scale or questionnaire to measure self-efficacy with other variables, (c) selected only pre-services special education teachers or all participants were general educators, (d) were not published in peer-reviewed journals in English or Arabic, and (e) were published earlier than 2000 (past century). Eighteen articles met the inclusion criteria.

Search *Procedures*

To comprehensively identify studies related to the purpose of this review, three channels of electronic sources, reference lists, and journals were used (Cooper, 2010). First, electronic sources were used, including PsycINFO, ERIC, and Google Scholar databases. The following key terms were applied: "job satisfaction," "work satisfaction," "employee satisfaction," "burnout," "burn-out," "burn out," "stress," "occupational stress," "compassionate fatigue," "inclusion," "inclusive education" or "commitment" and "special education teachers," "special educators," "special teachers" or "teachers of students with autism," "self-efficacy" or "self-efficacy," and "beliefs" or "belief."

The search was confined to studies published in peer-reviewed journals between 2000-2019. A total of 56 articles were identified, and the titles and abstracts of the 56 articles were briefly reviewed. Subsequently, 29 articles were selected for review. 15 of the 29 articles met the inclusion criteria. Second, the reference lists of the 14 articles reviewed were used, and an additional three studies that met the inclusion criteria were identified. Finally, the "browse journal" channel was used as a third search method. *Focus on Autism and Other Developmental Disabilities, Literacy Information and Computer Education Journal, International Journal of Disability,* and *Development & Education* were reviewed. One study met the inclusion criteria (see figure 1).

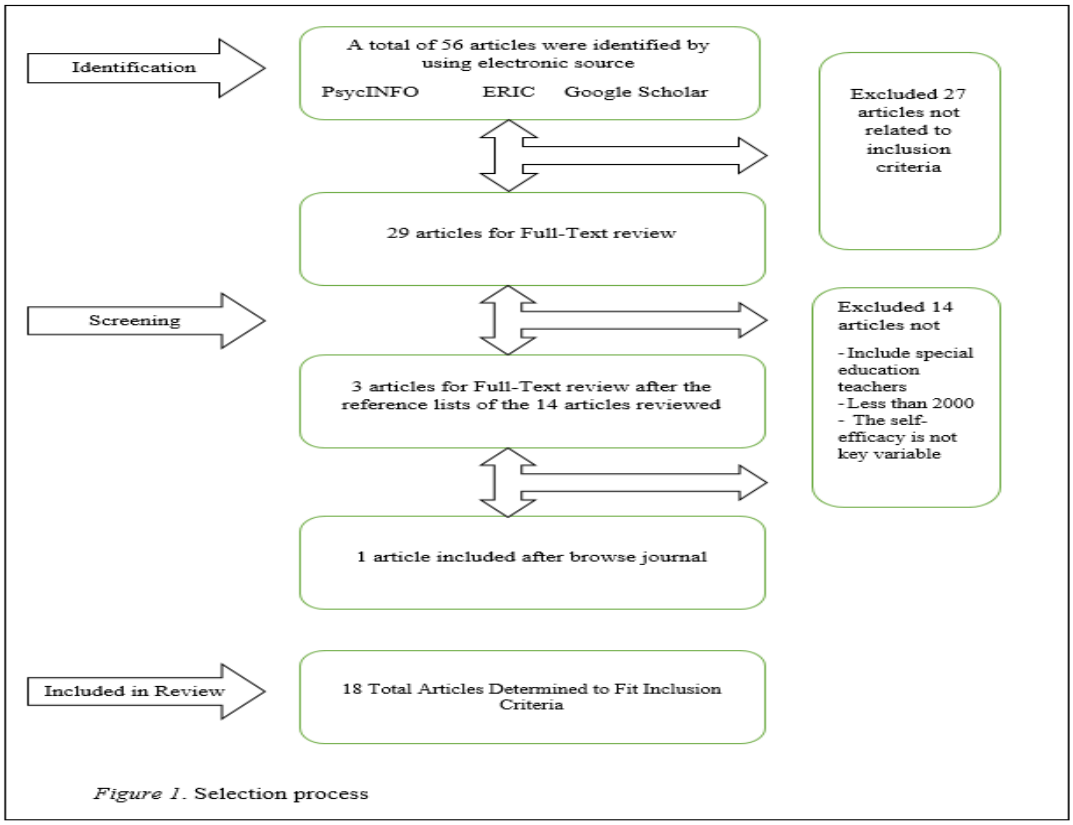

Figure 1. Selection process

Results

Of the 18 reviewed articles that met the inclusion criteria, two reviewed articles were associated with self-efficacy and job satisfaction, six reviewed articles were associated with self-efficacy and burnout, three reviewed articles were associated with self-efficacy and inclusion, one reviewed article associated with teachers of students with ASD, one reviewed article was associated with self-efficacy and commitment, one reviewed articles were associated with self-efficacy and work conditions, one reviewed articles were associated with self-efficacy and curriculum, one reviewed article was associated with the relation between self-efficacy and instruction strategies, classroom management, and student involvement, one reviewed article was associated with level of self-efficacy, and finally one reviewed article was associated with self-efficacy and attitudes to teaching students with Autism. The articles were synthesized according which ones included methodology, participants, and findings.

Self-efficacy and Job Satisfaction. Job satisfaction and special education teacher self-efficacy have a strong positive relationship (Shaukat, Vishnumolakala, & Al Bustami, 2019; Viel-Ruma, Houchins, Jolivette, & Benson, 2010). A higher sense of self-efficacy increases a teacher's sense of job satisfaction, while the opposite is also true (Shaukat et al., 2019). In a study that confirms the positive relationship between self-efficacy and job satisfaction. In Pakistan, Shaukat et al. (2019) surveyed 118 special education teachers to study the impact of demographic factors such as gender, level of education, and experience teaching on job satisfaction and self-efficacy. The authors indicated that female teachers demonstrated higher rates of self-efficacy and job satisfaction than male special education teachers, and, moreover, that teachers with high self-efficacy demonstrate high job satisfaction. The authors also stated that teachers with a high level of education demonstrated high job satisfaction and self-efficacy, and that teachers with ample experience tended to demonstrate job satisfaction and self-efficacy. In another important study examining the relationship between job satisfaction, collective efficacy, and self-efficacy, Viel-Ruma et al (2010) surveyed 100 special education teachers. Their results revealed that teachers with high self-efficacy had high job satisfaction and that collective efficacy directly impacts teacher self-efficacy. Moreover, they found that collective efficacy did not impact job satisfaction.

Synthesis. Two studies (Shaukat et al., 2019; Viel-Ruma et al., 2010) were identified that related to the direct correlation between self-efficacy and job satisfaction. The authors selected special education teachers as the participants (n= 222) and all participants held a Bachelor of Education. Both studies employed quantitative (survey) methods in their data collection and analysis. Shaukat et al. (2019) used the Teacher Sense of Efficacy (TES) scale developed by Tschannen-Moran and Hoy (2001) to measure self-efficacy and the job satisfaction scale established by Warner (1973) to examine the job satisfaction level. Meanwhile, Viel-Ruma et al. used the Teacher Efficacy Scale developed by Gibson and Dembo (1984) to examine self-efficacy and the Brayfield-Rothe Index of Job Satisfaction (Brayfield & Rothe, 1951) to measure job satisfaction.

Self-Efficacy and Burnout. Another factor that affects self-efficacy in special education teachers is job burnout. Six studies found a statistically significant negative relationship between teacher self-efficacy and job burnout (Boujut et al., 2017; Capri & Guler, 2018; Nuri et al., 2017; Sarıçam and Sakız, 2014; Yassin & Ali, 2014; Yulianti et al., 2018). Yulianti et al. (2018) conducted a study that aimed to explain the relationship between self-efficacy, burnout, and work satisfaction among special education teachers. They surveyed 98 special education teachers. Their findings revealed that the teachers with high

self-efficacy experienced less burnout. In addition, their results showed that teachers with high self-efficacy had high work satisfaction, while an increase in burnout among teachers led to a decrease in work satisfaction.

In France, Boujut et al. (2017) studied the techniques that teachers of students with Autism Spectrum Disorder (ASD) may use while experiencing burnout and linked them with the degree of teacher self-efficacy. They surveyed 203 teachers of students with ASD. They found that teachers with low self-efficacy demonstrated emotion-focused coping strategies (e.g., wishing for a miracle) when experiencing higher burnout. The authors added that teachers of ASD students with low self-efficacy experience more stress in situations that generate threats or losses.

Using another approach to study self-efficacy and to link it with burnout based on demographic variables, Nuri et al. (2017) conducted studies that aimed to investigate self-efficacy and burnout based on demographic variables such as age, level of education, work hours, and the number of students in the classroom. They surveyed 70 special education teachers. They found that teachers with fewer work hours demonstrated lower self-efficacy than teachers with more working hours. In addition, teachers who worked for more than 16 years with students with disabilities showed a higher degree of burnout than beginner teachers who worked for less than five years, while teachers with more training and more experience had more self-efficacy. The authors also indicate that self-efficacy increases when teachers have more students.

Yassin and Ali (2014) conducted a similar study in Saudi Arabia that aimed to reveal the relationship between self-efficacy and burnout among special education teachers and explored the differences in burnout based on demographic variables (e.g., gender, age, and years of experience). They surveyed 100 special education teachers. Their results indicate that a negative correlation exists between self-efficacy and burnout among special education teachers. In addition, the authors reported a difference in burnout between genders. More specifically, Yassin and Ali (2014) detailed that the women in their study experienced burnout more frequently than the men in their study. Meanwhile, teachers in the study with more experience teaching students with ASD experienced burnout less frequently than those with less experience.

Working out of a similar context, Capri and Guler (2018) conducted a study that aimed to identify the level of job burnout based on socio-demographic variables, job satisfaction, and teacher self-efficacy. They surveyed 452 special education teachers. Their findings indicated that teachers with high self-efficacy experienced less burnout and, moreover, that the degree of burnout decreased when the teacher's length of experience and age increased. Additionally, the authors noted that no relationship emerged between burnout and marital status.

Another important study on teacher self-efficacy and burnout was conducted by Sarıçam and Sakız (2014), who investigated the relationship between self-efficacy and burnout based on demographic variables in Turkey. They surveyed 118 special education teachers. Their results indicated that female teachers experienced higher burnout than male teachers. No difference in self-efficacy among male and female teachers was apparent in this sample. In addition, Sarıçam and Sakız reported that special education teachers demonstrated higher rates of self-efficacy than other teachers (e.g., music, art, and primary teachers) and, moreover, that special education teachers experienced lower burnout.

Synthesis. Six studies that examined the relationship between self-efficacy and job satisfaction were identified (namely: Boujut et al., 2017; Capri & Guler, 2018; Nuri et al., 2017; Sarıçam & Sakız, 2014; Yassin & Ali, 2014; and Yulianti et al., 2018). These studies were conducted in different countries (Saudi Arabia, France, Turkey, and Indonesia) and employed a quantitative approach (survey or scale) for data collection and analysis. Their participants were special education teachers (n=1,041). The participants consisted of two groups: (a) special education teachers (n= 838) and (b) teachers of students with autism (n =203). To measure self-efficacy, Sarıçam and Sakız (2014) used the Teachers' Sense of Efficacy Scale (TSES) developed by Tschannen-Moran and Hoy (1998). More specifically, Boujut et al. (2017) used the General Self-Efficacy Scale (GSE) developed by Walliser, Schwarzer, and Jerusalem (1993) to examine teacher self-efficacy. Meanwhile, Nuri et al. (2017) used the TSES developed by Tschannen-Moran and Hoy (1998). Only two studies (Yassin & Ali, 2014; Yulianti et al., 2018) used original surveys to measure self-efficacy. Three studies (Boujut et al., 2017; Sarıçam & Sakız, 2014; Nuri et al., 2017) used the Maslach Burnout Inventory (MBI) developed by Maslach & Jackson (1981) to measure burnout. Capri and Guler (2018) used the Burnout Scale-Short Form created by Pines (2005) to measure burnout. Only two studies (Yassin & Ali, 2014; Yulianti et al., 2018) used original surveys to measure burnout.

Self-Efficacy and Inclusion. Special education teachers' attitudes to integration were affected by several factors such as demographics (e.g., age, gender, experience, etc.), student factors (e.g., disability), environmental factors (e.g., educational materials), and internal factors (e.g., self-efficacy) (Avramidis & Norwich, 2002; Sharma et al., 2012). Several studies (Malinen, Savolainen & Xu, 2012; Malinen, Savolainen, Engelbrecht, et al. 2013; and Özokcu, 2018) examined the relationship between self-efficacy and inclusion. More specifically, Özokcu (2018) examined the relationship between teacher attitudes to inclusive education and teacher self-efficacy. Özokcu surveyed 1163 special education teachers. Özokcu's findings indicated that teacher attitude is positively associated with teacher self-efficacy. Furthermore, the authors confirmed that self-efficacy is a strong indicator of teacher attitudes to inclusive education. Malinen, Savolainen, Engelbrecht, et al

In another interesting study, Malinen, Savolainen, Engelbrecht, et al. (2013) surveyed 1911 in-service teachers, including special education teachers, to study teacher self-efficacy in inclusive practices from three different countries: China, Finland, and South Africa. The authors found that the best indicator for self-efficacy was experience in teaching. They explained that teachers with more experience teaching students with disabilities demonstrated more self-efficacy. Meanwhile, Malinen et al. (2012) studied the relationship between the self-efficacy of in-service teachers and attitudes to inclusive education based on demographic variables. They surveyed 436 teachers in their study. Their findings indicated that teachers with high self-efficacy demonstrated more positive attitudes to inclusive education. This study therefore confirmed that teachers with more experience in teaching students with disabilities demonstrate more self-efficacy and more positive attitudes to inclusive education.

Synthesis. Three studies were identified that explored the relationship between self-efficacy and special education teachers' attitudes to inclusive education (Malinen et al., 2012; Malinen, Savolainen, Engelbrecht, et al. 2013; Özokcu, 2018). These studies were conducted in different countries (China, Turkey, Finland, and South Africa) and employed a quantitative approach (survey or scale) for data collection and analysis. Their participants were both general and special education teachers (n=3,525). Malinen et al.'s 2012 studied 112 special education teachers and 324 general teachers. Meanwhile, in their 2013 study, Malinen,

Savolainen, Engelbrecht, et al.'s 2013 worked with 1911 teachers, of which special education teachers made up 54.7%. On the other hand, Özokcu's (2018) participants consisted of 8.5 % special education teachers, 4% preschool teachers, 25.1% subject-matter teachers, and 38% general teachers. Malinen et al., (2012) and Malinen, Savolainen, Engelbrecht, et al. (2013) used The Teacher Efficacy for Inclusive Practice Scale (TEIP) was developed by Sharma et al. (2011) to measure self-efficacy and the Sentiments Attitudes and Concerns about Inclusive Education (SACIE) scale developed by Loreman et al. (2007) to examine teacher attitudes to inclusive education. Özokcu (2018) also used the TEIP scale developed by Sharma et al. (2012) to measure self-efficacy and The Sentiments, Attitudes, and Concerns about Inclusive Education Revised (SACIER-R) Scale developed by Forlin, Earla, Loreman, and Sharma (2011) to examine teacher attitudes to inclusive education

Self-Efficacy and Teachers of Students with ASD. One study examined the relationship between the sources of self-efficacy and their effects on teachers of students with autism. More specifically, Ruble, Usher, and McGrew (2011) studied the relationship between the three sources of self-efficacy -- a sense of mastery, collective self-efficacy, and physiological responses – and their impacts on the self-efficacy of teachers of students with autism. Ruble et al. (2011) proposed that a positive relationship exists between mastery experience, measured by the number of years for which a teacher has taught, and teacher self-efficacy. The authors further hypothesized that social persuasion has a direct link with the self-efficacy of teachers of students with ASD, which they examined based on perceived principal leadership. In addition, the authors hypothesized that physiological responses (interpreted based on the level of burnout) have a negative relationship with teacher self-efficacy. In this study, Ruble et al. selected 35 teachers of students with autism between three to nine years old. The authors used three types of scales to measure teacher self-efficacy and the three sources of self-efficacy. More specifically, they used the Teacher Interpersonal Self-Efficacy Scale developed by Brouwers and Tomic (2001) to examine teacher self-efficacy and applied the Multifactor Leadership Questionnaire developed by Avolio, Bass, and Jung (1999) to measure teacher attitudes to support from school administrators. The authors also used The Maslach Burnout Inventory developed by Maslach Jackson and Leiter (1997) to assess physiological responses. Ruble et al. (2011) reported that their results show no relationship between self-efficacy and years of experience among teachers of students with ASD, and, moreover, no correlation between collective self-efficacy and teacher self-efficacy. Additionally, the authors reported a negative relationship between the level of self-efficacy and teacher burnout. They indicated that teachers with experience managing their classroom successfully demonstrated lower levels of burnout and note that teachers found support from colleagues to be more effective than support from school principals.

Self-Efficacy and Commitment. One study that met the inclusion criteria described the relationship between job commitment and teacher efficacy. More specifically, Jennett, Harris, and Mesibov (2003) explored the relationship of the commitment that teachers of students with autism have to their job using the Applied Behavior Analysis (ABA) approach and the Treatment and Education of Autistic and Related Communication Handicapped Children (TEACCH) approach. The scholars also investigated the relationship between self-efficacy and burnout for teachers of students with autism. For our purposes, it is important to note that Jennett et al. (2003) divided 64 teachers of students with autism into two groups: 34 participants representing the ABA approach and 30 teachers representing the TEACCH approach. The authors used a correlation research design with an online survey. More specifically, they used the Autism Treatment Philosophy Questionnaire developed by the authors and the Teacher Efficacy Scale developed by Gibson and Dembo (1984). Their

results demonstrated that while both groups of teachers showed a positive commitment to both approaches, teachers with a high commitment to the theoretical orientation of their teaching approach showed less burnout and a higher sense of self-efficacy. In addition, their findings revealed that both groups had greater self-efficacy in terms of general and personal self-efficacy and, moreover, that teachers of students with autism demonstrated low rates of burnout and tended to exhibit self-efficacy (Jennett et al., 2003). Lu Minghui et al. (2018).

Self-Efficacy and Work Conditions. Only one study was identified that examined the relationship between special education teacher self-efficacy and socio-demographic, social support, and work engagement factors. More specifically, Lu Minghui, Chen Xiaomeng, and Potmesilc (2018) surveyed 1,027 special education teachers in China to examine the relationships between self-efficacy, socio-demographic (e.g., gender, years of experience, and monthly salary), social support, and work engagement factors for special education teachers. The researchers employed the Teachers' Sense of Efficacy Scale developed by Tschannen-Moran and Hoy (2001) to measure teacher self-efficacy, used the Multi-Dimensional Scale of Perceived Social Support (MSPSS) developed by Zimet et al. (1988) to examine social support variables, and applied the Utrecht Work Engagement Scale (UWES) developed by Schaufeli et al. (2002) to investigated work engagement. Their results strongly indicated that socio-demographic variables have a predictor relationship with teacher self-efficacy: the study made clear that salary, years of experience, and gender strongly impact teacher self-efficacy. In addition, the results made clear that work engagement plays an indirect role in mediating the relationship between self-efficacy and social support and thus that social support may increase teacher self-efficacy by reinforcing work engagement.

Teacher Self-Efficacy and Curriculum. One study examines the relationship between self-efficacy and curriculum for special education teachers. In the northern part of Cyprus, Ozcan and Uzunboylu (2017) conducted a study that aimed to determine the educational needs of special education educators for curriculum development based on various demographic variables and, moreover, to determine their perceptions of self-efficacy. In this study, Ozcan and Uzunboylu used a quantitative research approach and surveyed 84 teachers of students with special needs using the Teachers Sense of Efficacy Scale (TSES) developed by Tschannen-Moran and Hoy (1998). Additionally, Ozcan and Uzunboylu also developed and employed a Needs Analysis Survey. The authors reported that special education teachers stated that education objectives, teaching methods, and evaluations were crucial and, moreover, that the self-efficacy of special education teachers for general teaching was at an intermediate level on the self-efficacy scale.

Self-Efficacy and Instruction Strategies, Classroom Management, and Student Involvement. Antoniou, Geralexis, and Charitaki (2017) conducted a study that aimed to examine the relationship between the level of self-efficacy of special education teachers and teaching strategies, class management, and student engagement. The authors selected 200 special education teachers and measured their self-efficacy using the TSES developed by Tschannen-Moran and Hoy (2001). Antoniou at al. reported a high level of self-efficacy among special education teachers in strategies, class management, and student engagement and, moreover, make clear that the results evidence that no significant difference regarding

demographics (e.g., ages, gender, and experience) emerged in the study. The researchers argued that special education teachers with a high sense of self-efficacy provided an enriched learning environment for students with special needs and, in addition, that these teachers applied new strategies and methods of learning. Furthermore, Antoniou et al. reported that teachers with high self-efficacy had more successful classroom management techniques.

Self-Efficacy and Attitudes to Teaching Students with Autism. Othman (2013) conducted a study that aimed to identify the relationship between the self-efficacy of teachers of students with Autism and their attitudes to teaching students with autism based on demographic variables. The author's sample consisted of 60 teachers of students with ASD. The author developed the Self-Efficacy Scale and the Attitudes of Teachers of Students with Autism Scale. Othman (2013) reported that teachers of ASD students with more teaching experience demonstrated more self-efficacy. Moreover, teachers with high levels of education also showed more self-efficacy than those with low levels of education. Furthermore, Othman (2013) reported a relationship between professional training and self-efficacy: teachers who attended more training had higher rates of self-efficacy than those who did not attend any training. For our purposes, it is helpful to note that Othman (2013) argued that a high level of self-efficacy in a teacher suggests that the teacher will demonstrate a positive attitude to ASD students.

Level of self-efficacy. Lamture and Gathoo (2017) conducted a study in India that aimed to highlight the level of self-efficacy of general and resource teachers who work with students with special needs. Of the study's 120 teacher participants, 60 were general teachers and 60 were resource teachers. The researchers used a quantitative research approach for their study and employed Bandura's TSES to compare the two groups. Lamture and his colleague (2017) argued that their results showed that the self-efficacy of resource teachers was significantly higher than that of general teachers because the resource teachers had more experience and professional training. This suggests that training for special education teachers can increase their self-efficacy as well as their degree of comfort. Moreover, this study also made visible the role of the school climate as a factor in increasing the self-efficacy of teachers.

Discussion And Conclusion

This review sought to identify several significant factors affecting special education teacher self-efficacy. As stated above, these factors included internal factors (e.g., commitment and job satisfaction), demographic factors (e.g., age, experience, and gender), and burnout and external factors (e.g., curriculum, class management, and social support). The review revealed a positive relationship between self-efficacy and job satisfaction, suggesting that self-efficacy may improve levels of job satisfaction among special education teachers. However, this review found that a significant gap exists in research in this area regarding inclusion criteria. While this review found six studies on self-efficacy and burnout, it was unable to find more than three studies related to the special education field. The results of this review were therefore restricted by the fact that existing research does not cover all the

factors that influence special education teachers in the school setting. Furthermore, although methodological improvements were observed (e.g., the use of multiple scales and comparison groups and the development of surveys), a number of problems persisted. First, issues emerged with the validity of the research design instruments used to assess the self-efficacy of special education teachers in the majority of the studies reviewed. For example, Yassin and Ali (2014) and Yulianti et al. (2018) used their own surveys to measure self-efficacy but did not mention whether or not they had adapted their scale for teachers of students with disabilities. Meanwhile, several studies (e.g., Nuri et al., 2017; Shaukat et al., 2019; and Viel-Ruma et al., 2010) used the TES scale developed by Tschannen-Moran and Hoy (2001) to measure self-efficacy, while others (Sarıçam & Sakız, 2014; Boujut et al., 2017; Nuri et al., 2017) used the MBI developed by Maslach and Jackson (1981) to measure burnout and, moreover, these studies used these scales for general educators, not special education teachers. Second, there was an issue with participants. In the majority of studies, the participants were special education teachers without specializations. The unique experiences of specialized teachers, i.e., teachers of students with specific disabilities, were therefore not well represented in these studies. More specifically, while all the studies reviewed engaged a total of 2,671 special education teachers, these samples only included 298 teachers of students with ASD. This made it difficult to determine for which specializations the researchers had selected.

The implications of this review concern the nature of the relationship between self-efficacy and other variables, including both internal and external factors, that could improve levels of self-efficacy among special education teachers. Because self-efficacy appears to be related to internal and external factors, educational leaders would do well to consider how to best encourage teacher self-efficacy. This study makes evident that school leadership might amplify teacher self-efficacy by improving administrative support and creating more opportunities for professional workshops and induction programs. The research surveyed in this study also suggests that in-service teachers may improve their self-efficacy by improving their collaboration skills – collaborative work more specifically helps teachers gain a sense of belonging in the school (Youngs & Frank, 2013). Overall, institutional improvements in student curriculum, workload, discipline, and administrative support may enhance teacher self-efficacy. To be sure, such improvements stretch beyond the teacher, also enhancing student engagement and school environment. Finally, this study makes clear that professional development increases teacher self-efficacy. Therefore, to improve teacher self-efficacy, teachers should be encouraged to improve their knowledge through higher education or by attending more training workshops.

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Matrix

Table 1 *Special Education teachers' Self-efficacy*

Author(s)	*Purpose of study*	*Participant(s) age/gender/ experiences*	*Methodology*	*Instrument(s)*	*Dependent variable*	*Independent variable*	*Finding(s)*
Shaukat et al., (2019)	To exam the relationship between job satisfaction and self-efficacy.	N= 118 Age= NV Experiences= more than 5 years (n=64) less than 5 years (n=65)	Quantitative research approach	For self-efficacy (the teacher sense of efficacy (TES) scale developed by Tschannen-Moran and Hoy (2001). For job satisfaction (the job satisfaction scale established by Warner (1973).	Self-efficacy	Job satisfaction	- Female teachers had higher self-efficacy and job satisfaction than male special education teachers. - Teachers with high self-efficacy also had high job satisfaction. - a high level of education had high job satisfaction and self-efficacy. - Teachers with ample experience tended to have job satisfaction and self-efficacy.
Viel-Ruma et al., (2010)	To exam the relationship between job satisfaction, collective efficacy, and self-efficacy	N= 100 Age= NV Gender= NV Experiences= NV	Quantitative research approach	For self-efficacy (Teacher Efficacy Scale developed by Gibson and Dembo (1984). For job satisfaction (the Brayfield-Rothe Index of Job Satisfaction (Brayfield & Rothe, 1951)	Self-efficacy	Job satisfaction collective efficacy	-Teachers with high self-efficacy had high job satisfaction. -Collective efficacy directly impacted teachers' self-efficacy. -Collective efficacy did not impact job satisfaction.
Yulianti et al. (2018)	To explain the relationship between self-efficacy, burnout, and work satisfaction among special education teachers.	N= 98 Age= NV Gender= males/female Experiences= 1-10 years	Quantitative research approach	Authors bullied own self-efficacy and burnout used	Self-efficacy	work satisfaction Burnout	Teachers with high self-efficacy experienced less burnout. Teachers with high self-efficacy had high work satisfaction. An increase in burnout among teachers led to a decrease in work satisfaction.
Boujut et al. (2017)	To exam the techniques that teachers of students with ASD may use while experiencing burnout and linked them with the degree of teachers' self-efficacy	N= 203 teachers of students with ASD. Age= 1-42 Gender= males/female Experiences= 1-33 years	Quantitative research approach	For self-efficacy (the Teachers Sense of Efficacy Scale (TSES) developed by Tschannen-Moran and Hoy (1998) For burnout (The Maslach Burnout Inventory (MBI, Maslach & Jackson, 1981)	Self-efficacy	Burnout	When teachers had low self-efficacy, they used emotion-focused coping strategies (e.g., wishing for a miracle) as an indicator of higher burnout. -when teachers of students with ASD have low self-efficacy, they experience more stress in a situation that generates a threat or loss.
Nuri et al. (2017)	To investigate the self-efficacy and burnout based on demographic variables	N= 70 teachers Age= NV Gender= males/female Experiences= NA	Quantitative research approach	For self-efficacy (the Teachers Sense of Efficacy Scale (TSES) developed by Tschannen-	Self-efficacy	Burnout	-Teachers who had lower work hours had lower self-efficacy than teachers with more working hours. Teachers who worked for more than 16 years with students with disabilities showed a higher degree of

Author(s)	*Purpose of study*	*Participant(s) age/gender/ experiences*	*Methodology*	*Instrument(s)*	*Dependent variable*	*Independent variable*	*Finding(s)*
				Moran and Hoy (1998) For burnout (The Maslach Burnout Inventory (MBI, Maslach & Jackson, 1981)			burnout than beginner. -Teachers who worked for less than five years. Teachers with more training and more experience had more self-efficacy. -Self-efficacy increases when teachers have more students.
Yassin and Ali (2014)	to reveal the relationship between self-efficacy and burnout among special education teachers and explored the differences in burnout based on demographic variables	N= 100 teachers Age= NV Gender= males Experiences= NA	Quantitative research approach	Authors bullied own self-efficacy and burnout used	Self-efficacy	Burnout	-There was a negative correlation between self-efficacy and burnout among special education teachers. -Females experienced more burnout than men, while teachers with more experience in teaching students with ASD experienced less burnout.
Capri and Guler (2018)	to identify the level of job burnout based on socio-demographic variables, job satisfaction, and teachers' self-efficacy.	N= 452 teachers Age= 20-50 Gender= males/female Experiences= NA	Quantitative research approach	For self-efficacy (General Competence Belief Scale (GCBS) developed by Jerusalem and Schwarzer (1981) For burnout (The Burnout Scale-Short Form was created by Pines (2005)	Burnout	job satisfaction teachers' self-efficacy	-Teachers with high self-efficacy experienced less burnout. -The degree of burnout decreased when the length of experience and the age of teachers increased. -There was no relationship between burnout and marital status.
Sarıçam and Sakız (2014)	To investigate the relationship between self-efficacy and burnout based on demographic variables.	N= 118 teachers Age= 24-49 Gender= males/female Experiences= NA	Quantitative research approach	For self-efficacy (the Teachers Sense of Efficacy Scale (TSES) developed by Tschannen-Moran and Hoy (1998) For burnout (The Maslach Burnout Inventory (MBI, Maslach & Jackson, 1981)	Self-efficacy	Burnout	-Female teachers experienced higher burnout than male teachers. -No difference in self-efficacy among male and female teachers was apparent. -Special education teachers demonstrated higher rates of self-efficacy than other teachers (e.g., music, art, and primary teachers) and, moreover, that special education teachers experienced lower burnout.
Özokcu (2018)	examined the relationship between teacher attitudes to inclusive education and teacher self-efficacy.	N= 1163 teachers Age= NA Gender= males/female Experiences= NA	Quantitative research approach	For self-efficacy The Teacher Efficacy for Inclusive Practice Scale (TEIP) was developed by Sharma et al. (2011). For attitudes (The Sentiments, Attitudes, and Concerns about Inclusive Education Revised (SACIER-R) Scale developed by Forlin, Earla, Loreman, and Sharma (2011)	Self-efficacy	Attitudes to inclusive education	-Teacher attitude is positively associated with teacher self-efficacy. self-efficacy is a strong indicator of teacher attitudes to inclusive education.
Malinen, Savolainen, Engelbrecht, et al. (2013)	To study teacher self-efficacy in inclusive practices from three different countries: China, Finland, and South Africa.	N= 1911 teachers Age= NA Gender= males/female Experiences= NA	Quantitative research approach	For self-efficacy The Teacher Efficacy for Inclusive Practice Scale (TEIP) was developed by Sharma et al. (2011). For attitudes(the Sentiments Attitudes and	Self-efficacy	Attitudes to inclusive education	-The best indicator for self-efficacy was experience in teaching. -Teachers with more experience teaching students with disabilities demonstrated more self-efficacy.

Author(s)	*Purpose of study*	*Participant(s) age/gender/ experiences*	*Methodology*	*Instrument(s)*	*Dependent variable*	*Independent variable*	*Finding(s)*
				Concerns about Inclusive Education (SACIE) scale developed by Loreman et al. (2007)			
Malinen et al. (2012)	To the relationship between the self-efficacy of in-service teachers and attitudes to inclusive education based on demographic variables.	N= 436 teachers Age= NA Gender= males/female Experiences= NA	Quantitative research approach	For self-efficacy The Teacher Efficacy for Inclusive Practice Scale (TEIP) was developed by Sharma et al. (2011). For attitudes (the Sentiments Attitudes and Concerns about Inclusive Education (SACIE) scale developed by Loreman et al. (2007)	Self-efficacy	Attitudes to inclusive education	-Teachers with high self-efficacy demonstrated more positive attitudes to inclusive education. -Teachers with more experience in teaching students with disabilities demonstrate more self-efficacy and more positive attitudes to inclusive education.
Ruble et al. (2011)	To exam the relationship between the three sources of self-efficacy -- a sense of mastery, collective self-efficacy, and physiological responses – and their impacts on the self-efficacy of teachers of students with autism.	N= 35 teachers Age= NA Gender= males/female Experiences= NA	Quantitative research approach	For self efficacy (the Teacher Interpersonal Self-Efficacy Scale developed by Brouwers and Tomic (2001). For attitudes (the Multifactor Leadership Questionnaire developed by Avolio, Bass, and Jung (1999). For burnout (The Maslach Burnout Inventory (MBI, Maslach Jackson and Leiter (1997).	Self-efficacy	Teachers attitudes Burnout	-No relationship between self-efficacy and years of experience among teachers of students with ASD. -No correlation between collective self-efficacy and teacher self-efficacy. -A negative relationship between the level of self-efficacy and teacher burnout. -Teachers with experience managing their classroom successfully demonstrated lower levels of burnout and note that teachers found support from colleagues to be more effective than support from school principals.
Jennett et al. (2003)	To exam the relationship of the commitment that teachers of students with autism have to their job using the Applied Behavior Analysis (ABA) approach and the Treatment and Education of Autistic and Related Communication Handicapped Children (TEACCH) approach.	N= 64 teachers Age= NA Gender= males/female Experiences= NA	Quantitative research approach	The Autism Treatment Philosophy Questionnaire developed by the authors For self-efficacy (Teacher Efficacy Scale developed by Gibson and Dembo (1984).	Self-efficacy	Commitment	-A positive commitment to both approaches, teachers with a high commitment to the theoretical orientation of their teaching approach showed less burnout and a higher sense of self-efficacy. -Both groups had greater self-efficacy in terms of general and personal self-efficacy and, moreover, that teachers of students with autism demonstrated low rates of burnout and tended to exhibit self-efficacy.
Lu Minghui et al. (2018)	to examine the relationships between self-efficacy, socio-demographic, social support, and work engagement factors for special education teachers.	N= 1027 teachers Age= NA Gender= males/female Experiences= NA	Quantitative research approach	For self-efficacy (the Teachers Sense of Efficacy Scale (TSES) developed by Tschannen-Moran and Hoy (1998). the Multi-Dimensional Scale of Perceived Social Support (MSPSS) developed by Zimet et al. (1988). The Utrecht Work Engagement Scale (UWES) developed by	Self-efficacy	socio-demographic. social support work engagement	-Socio-demographic variables have a predictor relationship with teacher self-efficacy. -The study made clear that salary, years of experience, and gender strongly impact teacher self-efficacy. -Work engagement plays an indirect role in mediating the relationship between self-efficacy and social support and thus that social support may increase teacher self-efficacy by reinforcing work engagement.

Author(s)	*Purpose of study*	*Participant(s) age/gender/ experiences*	*Methodology*	*Instrument(s)*	*Dependent variable*	*Independent variable*	*Finding(s)*
				Schaufeli et al. (2002)			
Ozcan and Uzunboylu (2017)	To determine the educational needs of special education educators for curriculum development based on various demographic variables and, moreover, to determine their perceptions of self-efficacy.	N= 84 teachers Age= NA Gender= males/female Experiences= NA	Quantitative research approach	For self-efficacy (the Teachers Sense of Efficacy Scale (TSES) developed by Tschannen-Moran and Hoy (1998). Ozcan and Uzunboylu also developed and employed a Needs Analysis Survey.	Self-efficacy	Curriculum	-Special education teachers stated that education objectives, teaching methods, and evaluations were crucial. -The self-efficacy of special education teachers for general teaching was at an intermediate level on the self-efficacy scale.
Antoniou at al. (2017)	To examine the relationship between the level of self-efficacy of special education teachers and teaching strategies, class management, and student engagement.	N= 200 teachers Age= NA Gender= males/female Experiences= NA	Quantitative research approach	For self-efficacy (the Teachers Sense of Efficacy Scale (TSES) developed by Tschannen-Moran and Hoy (1998).	Self-efficacy	Teaching strategies, Class management, Student engagement	-A high level of self-efficacy among special education teachers in strategies, class management, and student engagement. -No significant difference regarding demographics (e.g., ages, gender, and experience) emerged in the study. -Special education teachers with a high sense of self-efficacy provided an enriched learning environment for students with special needs. -Teachers applied new strategies and methods of learning. -Teachers with high self-efficacy had more successful classroom management techniques.
Othman (2013)	To identify the relationship between the self-efficacy of teachers of students with autism and their attitudes to teaching students with autism based on demographic variables.	N= 60 teachers Age= 24-60 Gender= males Experiences= NA	Quantitative research approach	The author developed the Self-Efficacy Scale and the Attitudes of Teachers of Students with Autism Scale.	Self-efficacy	Demographic variables	-Teachers of ASD students with more teaching experience demonstrated more self-efficacy. -Teachers with high levels of education also showed more self-efficacy than those with low levels of education. -A relationship between professional training and self-efficacy: teachers who attended more training had higher rates of self-efficacy than those who did not attend any training. -A high level of self-efficacy in a teacher suggests that the teacher will demonstrate a positive attitude to ASD students.
Lamture and Gathoo (2017)	To highlight the level of self-efficacy of general and resource teachers who work with students with special needs.	N= 120 teachers Age= 24-60 Gender= males/female Experiences= NA	Quantitative research approach	Bandura's the Teachers Sense of Efficacy Scale	Self-efficacy	mastery experiences vicarious experience social persuasion	-The self-efficacy of resource teachers was significantly higher than that of general teachers because the resource teachers had more experience and professional training.