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INVESTIGATION OF THE CHANGES OF PRESERVICE TEACHERS' EFFICACY BELIEFS IN TEACHING STUDENTS WITH SPECIAL NEEDS

An Abstract of a Dissertation

Submitted

in Partial Fulfillment

of the Requirements for the Degree

Doctor of Education

Approved:

Dr. Susan Etscheidt, Committee Chair

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May 2019

ABSTRACT

This study was designed to examine preservice teachers' self-efficacy beliefs in teaching students with special needs during student teaching and to explore potential influential factors contributed to its change. The efficacy theory (Bandura, 1977) was applied as the theoretical frameworks of this study. This framework guided this study for a deeper understanding of how preservice teachers interpreted their experiences when teaching students with special needs.

The participants were preservice teachers in one of a university in the Midwest who enrolled in the student teaching program in Spring 2018 and taught students with special needs in their classroom(s). Collecting data, this study employed The Teaching Students with Disabilities Efficacy Survey (TSDES, Dawson & Scott, 2013) to gather information about preservice teachers' self-efficacy beliefs and how it changed over student teaching. The TSDES covers five areas, but this study only focuses on four areas: instruction, professionalism, providing support, and classroom management which consists of 16 questions with a 7-point scale. Structured interviews were conducted three to four times for four participants to explore how they perceived their teaching experiences. The first survey was distributed at the end of the first placement, and 76 participants completed the survey (33% response rate), while the second survey was distributed six weeks afterward at the end of the second placement with the completion of 41 participants. In order to examine the preservice teachers' self-efficacy in the first placement, descriptive statistics were employed. Followed by paired t-tests, the preservice teachers' self-efficacy change was examined, and independent t-tests were

conducted to determine factors that differentiate preservice teachers' self-efficacy beliefs.

The interview data was analyzed through systematic qualitative analysis to explore influential factors of preservice teachers' self-efficacy beliefs.

The results of this study indicate that at the end of the first placement, preservice teachers perceived high efficacy in all areas, more specifically they were higher in providing support (μ = 5.81) and professionalism (μ = 6.44) than classroom management (μ = 5.38) and instruction (μ = 5.81) in teaching students with special needs. Also, the four interview participants reported a lack of entry level knowledge and skills in teaching students with special needs and in collaborating with other teachers at the beginning of the first placement. At the end of the second placement, there was a significant improvement of preservice teachers' self-efficacy in the area of classroom management (t (40) = 2.245, p < 0.05, d = 0.35), whereas the qualitative data revealed improvement in the other areas. This change was influenced by six factors: successful experiences, quality of relationships with students with special needs and teachers, previous coursework primarily with special education content, previous experiences, and the availability of support based on qualitative findings. Implications for teacher preparation programs and future research are presented.

KEYWORDS: preservice teachers, self-efficacy, students with special needs

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Approved:
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Dr. Susan Etscheidt, Chair
Dr. Frank Kohler, Co-Chair
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University of Northern Iowa
May 2019

DEDICATION

To my past preservice teachers who are already passionate teachers and to my future preservice teachers who will be dedicated educators, you taught me and will always be a reason for me to learn how to support you better.

To Mas Anto, for working together to support students with special needs in your classroom. Since the first time we met until now, you have been sacrificing your career for our dreams to support more teachers in our country. I hope we can support more educators and future teachers to be able to assist diverse learners including students with special needs. I appreciate your dedication in education and love for all children, not only our kids.

To my parents, you raised me to never give up and do hard work. Thank you for doing that and always believing in me and sending prayers along the way wherever I go so I can feel His love and guidance in my steps.

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Completing this study means a new journey for me as a scholar, teacher, parent, and who I am as a woman, so I would like to reflect on people who have supported and helped me immensely throughout this period as they will always be coloring my next journey. Without opportunities and support from them, it's impossible for me to maintain my self-efficacy higher and to finish my doctoral program.

First, I would like to thank my colleagues at Special Education Department,
Yogyakarta State University who have been sending jokes, caring texts, and even music
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more practicing teachers and future teachers.

I am also thankful for all of the donors for my study: Dikti-Fubright scholarship, IPS PEO scholarship, and McNamara Education grant. Their generous funding allowed me to pursue my degree and focus on my research interest without neglecting my family. Thank you for believing what I am doing and sharing your wisdoms in supporting others and investing in education for better life in the entire universe.

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Finally, I am expressing my gratitude for my amazing doctoral committee.

Feedback, support, questions, and guidance allow me to learn how to be a better scholar, educator, and person. Dr. Kohler patiently guided me through the every single detail in data collection, writing in my research, and reminded me to the focus when I started getting lost. Having a basic statistic is scary, but Dr. Weiss gave me a great lesson through modelling to run all the analysis confidently and meaningfully with detailed feedback. Recruiting participants on-line and understanding my research context were challenging for me and Dr. Lasswell stepped in to make easier. Dr. Alborn-Yilek, I'll always remember her positivity when I am feeling down and remember to keep moving forward. Lastly, I am especially indebted to Dr. Etscheidt, my academic advisor who is also my committee chair, who has been supportive of all my efforts to deal with academic and non-academic challenges since I started my study. She and other committee members taught me about what efficacy is about and how to develop it through this journey by accessing support and taking opportunities.

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CHAPTER 1

INTRODUCTION

Introduction

The Individuals with Disabilities Education Act (Individuals with Disabilities Education Act (IDEA, 2004, 20 U.S.C. § 300.114) mandated full access to students with special needs in the least restrictive environment (LRE). Currently, more students with special needs receive early intervention, gain access to regular schools, graduate from high school, and obtain employment (U.S. Department of Education, 2017) than previous years. According to the National Center for Education Statistics (2017), the percentage of students (ages 6 - 21) served under IDEA in regular classrooms for more than 80 % of the day from 2006 through 2015, increased from 55.2 % to 62.5 %. Almost 95% of children with special needs receiving special education services under IDEA (i.e., 6.6 million children between ages 6-21 years) are enrolled in general education. Additionally, the emphasis to improve the quality of educational services for students with special needs in regular classrooms continues and is stated in current education policy in the U.S (Rosenzweig, 2009; Ryndak et al., 2014)

In 2015, the U.S government enacted the Every Student Succeeds Act (ESSA) and substituted the No Child Left Behind Act (NCLB) as a previous law in primary and secondary education. The ESSA ensures the progress of teaching and learning with the emphasis on flexibility in terms of assessment practices and literacy programs to support students with special needs in general school. However, the role and key components of

educational services in inclusive classrooms still rely on teachers' competences, beliefs about disability, and the teachers' roles to teach all students (De Boer, Pijl, & Minnaert, 2011; Jordan, Glenn, & McGhie-Richmond, 2010). Jordan et al. (2010) found that the more effective the teachers are in inclusive classrooms; the higher quality of learning for all students. This suggests that teacher preparation programs play a significant role in providing adequate learning experiences and knowledge for future teachers, with high teaching competencies to meet the needs of a myriad of diversities in students with different learning styles and abilities (R. W. Taylor & Ringlaben, 2012). Thus, this study investigated how teachers' self-efficacy in meeting the needs of students with special needs is influenced, including their pre-service programs.

Background of Study

A gap exists between current teacher education programs and teachers' perceived competences to deal with diverse learners (Rosenzweig, 2009). Since 1975, the U.S government has supported general teacher preparation programs with special education courses through "Dean Grants" (Pugach, Blanton, Correa, & Correa, 2011). However, nearly half of practicing teachers and new teachers in the U.S discussed challenges and inadequate preparation to meet the needs of students with different abilities (Linda Darling-Hammond & Youngs, 2002; DeSimone & Parmar, 2006; Markow & Cooper, 2008; Smith & Tyler, 2011). In addition, more teachers felt that they were not fully prepared to deploy evidence-based practices to work with students with special needs (Gable, Tonelson, Sheth, Wilson, & Park, 2012; Plotner, Mazzotti, Rose, Rose, & Carlson-Britting, 2016) and they reported insufficient knowledge and strategies to deal

with students with challenging behaviors (Westling, 2010). This lack of perceived preparation might be related to how preservice programs are delivered. After evaluating teacher education programs, Crowe (2010) found that current programs are not structured to prepare future teachers effectively. Teacher preparation programs struggle with the issue of diversity in the classroom in regards to race, ethnicity, student with special needs, and English as a Second Language (ESL) students. Moreover, time constraints (Jennings, 2007) and limited credits for completion of general education (Forlin, Loreman, Sharma, & Earle, 2009) cause dilemmatic situations to prioritize the course content of diversity in their programs. Based on a survey of 142 public universities with elementary and secondary teacher preparation programs in the U.S, issues of students with special needs are neglected compared to other diversity issues, such as race/ethnicity, language diversity, economic/social class, gender and sexual orientations (Jennings, 2007). The majority of preparation programs in six Southeast region states provide one course in disability (Holland, Detgen, & Gutekunst, 2008). On one hand, more special education courses are required because the general education courses cannot adequately prepare teachers to address diversity (Lombardi & Hunka, 2001), but on the other hand, there is no agreement of how teacher preparation programs integrate necessary special education courses (Frey, Andres, McKeeman, & Lane, 2012; Voltz, 2003).

If teacher preparation programs provided the opportunities to improve teacher candidates' knowledge and attitude toward including students with special needs (Forlin et al., 2009), to adapt teaching strategies (R. W. Taylor & Ringlaben, 2012) and to

differentiate lessons to meet the needs of a variety of disabilities (Kozleski, Pugach, & Yinger, 2002) then self-efficacy would have been reported as adequate during the first year of teaching (Aydin & Hoy, 2005). Friedman (2000) stated the inadequacy of preservice programs yield higher levels of stress for teachers who are amateurs.

Students with special needs may have poor task engagement in earlier grades (P. L. Morgan, Farkas, Tufis, & Sperling, 2008), less motivation and less curiosity (Cho et al., 2015; Zentall & Beike, 2012), have social and behavior concerns, such as high number of suspensions and absences (Bentley-Williams & Morgan, 2013; Gage, Lierheimer, & Goran, 2012; Lane, Carter, Pierson, & Glaeser, 2006), which demand behavioral strategies and supports. Furthermore, teachers need to be able to provide specific interventions for both academic and behavior issues (Riggs, Greenberg, Kusché, & Pentz, 2006).

Preservice teachers must acquire numerous competencies to address the needs of diverse students, including students with disabilities. National standards in teacher preparation programs explicitly represent the need to strengthen future teachers' capacities to deal with all learners (The National Council for Accreditation of Teacher Education [NCATE], 2008; Interstate Teacher Assessment and Support Consortium [InTASC], 2013; National Board for Professional Teaching Standards [NBPTS], n.d.), including students with disabilities. In general, all standards define good teaching to consist of teachers' dispositions, knowledge and skills to understand learning needs, to create meaningful learning experiences, to employ various teaching and evaluation strategies, and to collaborate among professionals to ensure that all learners, including

students with disabilities, are provided learning environments which enhance academic growth.

Teacher preparation programs must include several dimensions to ensure candidates have the knowledge, skills, and dispositions to meet the needs of teaching students with special needs. These include high quality standards of the learning process for coursework and fieldwork, the interconnection between coursework and fieldwork, and strong collaboration between universities and schools (Linda Darling-Hammond et al., 2000; Forlin & Chambers, 2011; Kozleski et al., 2002). Previous studies also found specific content in coursework and field experience design that will enhance future teachers' competencies to deal with students with special needs and disabilities. Specific content, such as variety of assessment approaches (B.G. Cook, 2002), best practices in instructional approaches (Bain, Lancaster, Zundans, & Parkes, 2009; B.G. Cook, 2002; Gehrke & Cocchiarella, 2013; Van Laarhoven, Munk, Lynch, Bosma, & Rouse, 2007) and content related to policy and law related to providing educational services for students with special needs (Forlin, Sharma, & Loreman, 2007) were found to positively relate to positive attitudes and effective teaching skills for students with special needs. The use of case study (Arndt & Liles, 2010; Moje & Wade, 1997) and simulation (Henning & Mitchell, 2002) were found as effective pedagogical approaches to preparing future teachers in meeting the needs of students with special needs. In addition, careful selection of field experience placement contributes to the preparation of future teachers (e.g., Brownell, Griffin, Leko, & Stephens, 2011; Forlin et al., 2007; Silverman, 2007). Furthermore, constructive feedback from university supervisors and mentor teachers

which lead to critical reflections is suggested to support preservice teachers to gain insight for future improvement (Linda Darling-Hammond & Bransford, 2005; Hutchinson & Martin, 1999; Kozleski et al., 2002).

Effective teacher preparation programs build the competencies necessary for successful preservice and in-service teaching experiences. When provided with the knowledge, skills, and dispositions to acquire these competences, the self-efficacy of the preservice teachers is enhanced (Atiles, Jones, & Kim, 2012; Banks et al., 2005).

Theoretical Framework

Understanding Self-Efficacy

In classrooms, teachers always find diverse learners with a variety of needs. In order to create effective instruction for all learners, teachers are required to accommodate for different needs of learning. For this reason, preservice teacher education programs must prepare educators with the knowledge, skills, and dispositions that will enable them to meet the needs of diverse students, including students with special needs.

The sufficiency of the provision of knowledge, skills, and dispositions enhances the development of the teachers' self- efficacy. The mastery experiences in teaching tasks during pre-service programs predicts teaching performance in the future when preservice teachers start their career (Bandura, 1977). Schunk (1991) states that teachers with higher efficacy might have greater effort and persistence to help students achieve success regardless of the learning problems of students. Furthermore, attention to develop greater

self-efficacy during preservice programs will increase the quality of teaching performances in both in-service and preservice settings.

According to Bandura (1997), self-efficacy is "the beliefs in one's capabilities to organize and execute the course of action required to produce given attainments" (p.3). Hoy and Spero (2005) define teachers' efficacy based on Bandura's theory as teachers' beliefs about their abilities to support students' learning. If pre-service teachers have more experiences working with students with special needs during preservice program, then once they transition to full time teaching positions, new teachers should feel more self-efficacious in meeting the need of all students including students with special needs.

The Integrated Model Based on Bandura's Theory

Tschannen-Moran, Hoy, and Hoy (1998) presented the integrated model of teachers' self-efficacy based on Bandura's theory which explains how teacher efficacy is developed and maintained. According to the integrated model, teachers' efficacy is developed based on teacher's perceptions of teaching tasks in their context and how teachers assess their personal teaching competencies. These two sources of efficacy are based on descriptions provided by Bandura (1986, 1997) and current studies on different sources of self-efficacy (Dickstein, 2013; Oh, 2011; Poulou, 2007). The processing of information from different sources of self-efficacy influences how teachers' analyze their teaching task and teaching ability. Tschannen-Moran et al. (1998) states that contextual factors, such as students' abilities, school climate, managerial issues, and access to

technology might impact teachers' self-efficacy beliefs. Students with special needs might have different abilities for learning that require more support from teachers, such as flexibility in teaching approaches, evaluations, participation and interaction with peers (Gresham & MacMillan, 1997; Henley, Ramsey, & Algozzine, 2006; Zentall & Beike, 2012). Differentiating instruction by pre-service teachers to ensure all student learning including, students with special needs, might lead to an increased perception of self-efficacy. Preservice teachers' self-efficacy beliefs lead to different personal goals to achieve during their career, efforts in daily teaching practices, and persistence in difficult situations (Tschannen-Moran et al., 1998). As a result, preservice teachers' efficacy beliefs during student teaching will influence future performance of preservice teachers. This model can be seen in *Figure 1*.

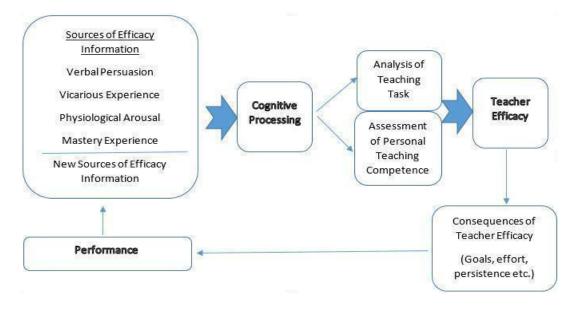


Figure 1. The model of Teacher Efficacy

Source: Tschannen-Moran et al., (1998, p. 228)

Bandura (1977) suggested four sources of information to develop personal selfefficacy: a) performance accomplishments, b) vicarious experiences, c) verbal persuasion, and d) emotional arousal. Performance accomplishment could be achieved through sequential activities from simple tasks to a real classroom teaching activity with gradual transition. For example, this sequence might start from modeling as the first step, so preservice teachers observe mentor teachers leading the instruction. When pre-service teachers become familiar with the class routines, then they might conduct a joint performance with mentor teacher. The joint performance can be started from a simple task for a short duration, and gradually increase to longer period of classroom instruction. In this sequential learning, the pre-service teachers receive aids to reduce the risk of failures, so this will improve success. Furthermore, the more mastery experiences, the higher self-efficacy of preservice teachers. Similarly, Yeung and Watkins (2000) concluded that the development of teaching efficacy can be seen as part of professional maturity when the improvement of teaching skills support the success of teaching practices.

Bandura (1997) stated that when individuals experience failures repeatedly, self-efficacy is reduced, which suggests the greater opportunity to achieve success, then the stronger self-efficacy. Wyatt (2016) argued that either positive or negative experience will affect preservice teachers' efficacy beliefs depending on how the preservice teachers interpret the concrete experiences as part of learning process. In addition to this, Wang, Tan, Li, Tan, and Lim (2017) suggest that previous experiences in a positive atmosphere supported higher teachers' self-efficacy. Bandura (1997) argues that various aspects of

the cognitive process of previous experiences impact people differently depending on how they reflect on failures. For people with higher self-efficacy based on success in the past, the occasional failure is not likely to change self-efficacy. However, easy successes do not build self-efficacy because the easy task will not challenge preservice teachers. When pre-service teachers accomplish a more difficult task, they obtain direct information about skills, and this increases self-efficacy. Wang et al. (2017) suggests that mastery experiences during the teaching process occur in different forms of activities, such as teachers helping students to improve academically and personally and creating flexibility in learning tasks and environment.

Vicarious (observational) experiences provide the essence of mastery skills based on observations of other people performing targeted behaviors with clear outcomes (Bandura, 1977). Vicarious experience, such as modelling and verbal persuasion, embedded in university preparation were found as important elements for establishing self-efficacy beliefs in teachers (Tschannen-Moran & Johnson, 2011). When pre-service teachers observe the learning the process in an inclusive classroom with positive results, this experience might increase a sense of self-efficacy to incorporate the same processes in their own classrooms. The more successful events they observe, then the greater sense of self-efficacy developed. Even though the effect of observing others is not as influential as self-experiences, observational learning may motivate people to initiate similar actions. However, Bandura (1997) notes that observational experiences need to be retained as symbolic information, so the students can reconstruct the experience to make a connection with previous knowledge. The way students connect their vicarious

experiences to their self-efficacy remains questionable. Wang et al. (2017) did not find differences for the type of vicarious experiences for teachers with high and low efficacy. They revealed that both teachers who have high and low efficacy in teaching have almost similar vicarious experiences, such as gaining insight from movies, inspiring classroom observations, and having dialogues with colleagues. Therefore, it is reasonable that preservice teachers might perceive similar vicarious experiences differently.

Verbal persuasion as a part of the learning process may provide feedback for corrective performance to improve pre-service teachers' teaching skills. Preservice teachers may have an increase in motivation through verbal persuasion, but they may not be able to perform the teaching task if they lack teaching skills. In line with this, Bandura (1997) suggested that the verbal persuasion is most effective if they are stated based on careful assessment of individual strength and weaknesses as part of selfimprovement. Providing positive appraisals is not adequate to improve self-efficacy development because individuals need to experience success through structured activities and with adequate skills and knowledge (Bandura, 1997). Bandura (1977) added that the type of feedback may also influence actions of pre-service teachers. If teachers obtain less motivating feedback of their lack of capabilities, then their sense of self-efficacy may be effected. Wyatt (2016) suggested interactive experience instead of verbal persuasion because the feedback that preservice teachers receive is devoted to support reflection rather than to persuade the preservice teachers to do something. The interactive experience will enhance the quality of verbal persuasion (Tschannen-Moran & McMaster, 2009; Wyatt, 2016). According to Wyatt (2016), verbal persuasion influences

a higher self-efficacy change of pre-service teachers if the feedback guides the preservice teachers to do more reflection, so they are actively involved in searching for
solutions rather than only prescribing the solutions. Tschannen-Moran and McMaster
(2009) revealed that teachers who enroll in professional development and receive
coaching gain the greatest improvement in self-efficacy of teaching in reading
instruction. In addition, Wang et al. (2017) revealed that teachers with higher levels of
self-efficacy received feedback from school administrators, colleagues, and students in a
positive way compared to teachers with lower levels of self-efficacy in teaching.
Therefore, verbal persuasion influences the development and maintenance of selfefficacy.

Physiological arousal of the individual plays a significant role in achieving self-efficacy (Bandura, 1977). Some people experience physical arousal when dealing with difficult situations. Pre-service teachers may stop performing quality teaching because they tend to associate emotional arousal, such as anxiety or fear, as signs of personal incapability (Bandura, 1997). Bandura (1977) states that fear of doing something based on previous situations is a condition where people may limit teaching performance. Wang et al., (2017) revealed that teachers with higher self-efficacy tend to feel enjoyment and relaxation in classroom interactions, while teachers with lower self-efficacy level felt nervous and anxious. Poulou (2007) agreed that personal attributes of pre-service teachers influence the perception of the learning experiences. Self-perceptions of teaching competence, personal characteristics, motivation for teaching, and rapport with students contribute to teaching efficacy (Oh, 2011; Poulou, 2007; Wang et al., 2017).

Bandura (1977) mentions that "expectation alone will not produce desired performance if the component capabilities are lacking" (p. 194). Similarly, Wang et al. (2017) found that teachers' knowledge was an important source for higher levels of teacher's' efficacy belief to teach low achieving students. Furthermore, preservice teachers with higher competency in teaching skills could meet their own expectancies to work with students who struggle in learning because they perceived themselves as capable to provide adequate educational services for the students with learning problems. Thus, their self-efficacy was higher than those who did not have highly competent teaching skills.

However, the changes of self-efficacy might not occur if an individual believes that the outcome of certain behaviors will have an undesired result (Bandura, 1984). For example, preservice teachers might not provide specific instruction for students with special needs when they feel less optimist about the impact of the strategy, or have had failure experiences when applying that strategy, or less motivation to devote more time to create learning adaptations for students with special needs. These personal characteristics, abilities, and motivation were found as another sources of preservice teachers' self-efficacy beliefs (Oh, 2011; Poulou, 2007; Yeung & Watkins, 2000). Wang et al. (2017) suggest that teachers' knowledge, rapport with students, and previous working experiences also lead to higher self-efficacy in teaching.

Criticism of Tschannen-Moran et al. (1998) integrated model have been offered. Wheatley (2002) states a different view of higher teachers' efficacy beliefs as a threat to competence and confidence instead of a positive approach to teaching. Higher teaching

efficacy beliefs cause overconfidence that might hinder changes when needed. Additionally, Wheatley (2002) argues the positive side of 'teacher efficacy doubts' will direct teachers to conduct reflections, improve motivation for learning, and initiate change. However, Bandura (1997) mentioned that people who doubt their capability struggle when motivating themselves to pursue goals and give up quickly when they face challenges.

Assessing Self-Efficacy Belief

Bandura (1986) states that self-efficacy judgement represents individual's belief about what they can do in certain circumstances regardless of skill. This individual judgement will inform individual efficacy based on wide range of tasks within a specific domain. Pajares (1996) stated that judgement of efficacy belief will be more informative if related to specific tasks, such as individual belief in doing math or reading compared to general efficacy. Additionally, Bandura (1986) proposed that self-efficacy judgment will predict and explain the behavior outcomes if the specific task represents the need to achieve success in the specific domain. A general efficacy to teach students in general classroom might not represent the efficacy in teaching students with special needs in the same classroom.

Bandura (1997) added that the self-efficacy judgment process involves varied sources of information including perceptions of task difficulties, amount of effort, circumstances, external supports, physical and emotional states, and pattern of previous successes and failures. Bias in self-monitoring and interpreting previous successes or failures will affect the way an individual will judges their efficacy belief. Self-efficacy

beliefs often exceed and sometimes remains below past performance achievements (Bandura, 1986), depending on how the individual perceives their attainments based on multiple sources of efficacy. Some individuals believe that success is because of capabilities, thus one occasional of failure will not reduce self-efficacy levels. Other people may believe that their current failure is because of a lack of ability due to numerous previous failures. The reason for this is the way individuals cognitively process the information of current attainments and how this relates to their previous experiences affect how they judge their efficacy.

The availability of external supports and positive circumstances also affect efficacy judgement. Dickstein (2013) revealed that teacher candidates' beliefs of self-efficacy were shaped by the organizational expectations of effective educational practices and how the institutions provided various systemic supports to achieve those expectations. Thus, exploring the contextual variables, such as school level and setting, the quality of school facilities, the availability of teaching resources, and interpersonal support needs to be considered to understand the development of self-efficacy comprehensively.

In addition, Bandura (1997) states that an individual evaluates information based on their attention and interpretation. Internal and external factors might affect how preservice teachers perceive information as they might pay more attention and direct critical reflection to different sources of information through interactive coaching and positive feedback (Wyatt, 2016). The interpretation process of different sources of information can lead to future action leading to different paths of self-efficacy development.

Individuals who have different efficacy levels may have a different pattern of how they perceive their learning experiences (Bandura, 1997). For this reason, understanding how an individual with either high or low level of self-efficacy attributes learning experiences to different sources might provide a better understanding of the specific influence from all sources. The exploration of different level of efficacy and how individuals attribute their experiences also explains why Dweck, Walton, and Cohen (2011) criticized the adequacy of high self-efficacy in facing challenges, because the ability to face challenges may depend on multiple factors.

What is the reported self-efficacy for preservice teachers teaching students with special needs? Which aspects of teaching do they feel most efficacious? For which teaching competencies do they feel less efficacious? Do they report changes in that perceived self-efficacy at the end of the student teaching experience?

For this study, self-efficacy theory was the lens through which the research questions, data analysis, and interpretation of results were conceptualized. The theory was useful in exploring self-efficacy of preservice teachers and in changes in that self-efficacy across the student teaching experience.

Statement of the Problem

Teachers with high self-efficacy demonstrate effective teaching performance (Jordan et al., 2010). Different teaching practices are found between teachers who have higher efficacy compared to lower (Chan, 2008; Gibson & Dembo, 1984; M. Tschannen-Moran et al., 1998) because higher self-efficacy teachers are willing to apply innovative

and new teaching strategies (Guskey, 1988; Nie, Tan, Liau, Lau, & Chua, 2013; Tschannen-Moran & McMaster, 2009), and use appropriate behavioral strategies to deal with behavioral problems (Almog & Shechtman, 2007). These positive behaviors lead to improvement of student academic outcomes (Goddard, Hoy, & Hoy, 2000; Klassen & Durksen, 2014). Teachers with higher self-efficacy also exhibit higher job satisfaction (Caprara, Barbaranelli, Steca, & Malone, 2006), less job stress (Betoret, 2006), and better persistence on challenges in teaching (Grant, 2006).

Previous studies connect teachers' sense of efficacy with performance that leads to higher quality of learning, which then influences students' learning outcomes (Caprara et al., 2006). Zee, Koomen, Jellesma, Geerlings, and de Jong (2016) conducted a synthesis of 40 years of research on self-efficacy, and revealed the positive links between teacher efficacies with a positive atmosphere of classroom environments, students' academic adjustment, and teachers' wellbeing

However, having higher teaching efficacy does not extend to teachers dealing with students with special needs (Sharma, Loreman, & Forlin, 2012). Perceived self-efficacy for teaching students with special needs is influenced by a variety of factors, including the adequacy of teacher preparation programs to promote the skills, knowledge, and dispositions for meeting the needs of students with special needs, including coursework specific to special education. Second factor influencing perceived self-efficacy was the structure of the student teaching experience within those preparation programs.

Skills, Knowledge, and Dispositions

Teacher preparation programs must address the skills, competencies, and dispositions necessary for teaching students with special needs. Four teaching skills that are required for effective inclusive classroom include collaboration skills with paraprofessional and parents, teaching skills with various approaches (such as: peer tutor, differentiated instruction, and various grouping strategies) to accommodate different needs of learning, and assessment skills with various approaches (Sharma et al., 2012; UNESCO, 2009).

Teachers who have the skills, knowledge and dispositions to address the needs of special needs students report higher perceptions of self-efficacy. Şahin and Atay (2010) found that preservice teachers with higher self-efficacy in innovative teaching experienced difficulties in dealing with students with special needs. One possible reason for this difference in self-efficacy may be the unique teaching demands to ensure learning for all students, including students with special needs. These unique teaching requirements might yield different self-efficacy for general education and special education teachers, as well as for both practicing teachers and preservice teachers.

Coursework Specific to Special Education

Previous studies exploring teacher preparation programs investigated the specific strategies needed to improve preservice teachers' self-efficacy levels in various program designs: a mandatory course in special education (Lancaster & Bain, 2010; Peebles & Mendaglio, 2014), a dual certification program (Gao & Mager, 2011), a student-teaching

program (Huber, 2009), and an after-school program (Jobling & Moni, 2004) during preservice programs. However, conflicting results were found. Both improvement (Gao & Mager, 2011; Huber, 2009; Jobling & Moni, 2004; Lancaster & Bain, 2010; Peebles & Mendaglio, 2014) and reduction or no change (Ahsan, Deppeler, & Sharma, 2013; R. K. Kim, 2016; Leyser, Zeiger, & Romi, 2011; Pendergast, Garvis, & Keogh, 2011; Sharma, Shaukat, & Furlonger, 2015; Woodcock, Hemmings, & Kay, 2012) of preservice teachers' levels of self-efficacy to teach in inclusive education were found. In addition, limited information about how and why those changes occurred in relation to some sources of self-efficacy result in a dilemmatic for teacher educators to apply these findings to improve and maintain efficacy levels of preservice teachers in preservice programs.

The Structure of the Student Teaching Experience

Boyd, Grossman, Lankford, Loeb, and Wyckoff (2009) found that the student teaching process during a pre-service program is a pertinent aspect in teacher preparation programs that impact the effectiveness of novice teachers. Student teaching programs provide direct experience to engage in real situations of teaching practices at school, so preservice teachers develop teaching skills as the main focus of their teaching profession. However, few studies have investigated how teacher preparation programs with structured student teaching experiences influence the development of teacher self-efficacy, particularly for preservice teachers who teach students with disabilities in their classroom (Gao & Mager, 2011; Huber, 2009).

Limitations of the Current Research

Previous studies focused on self-efficacy beliefs of preservice teachers revealed influential factors that contribute to the self-efficacy levels of preservice teachers to teach students with special needs (Ahsan et al., 2013; Burton & Pace, 2009; Forlin, Cedillo, Romero-Contreras, Fletcher, & Rodriguez Hernández, 2010; Gao & Mager, 2011; Huber, 2009; Jobling & Moni, 2004; Lancaster & Bain, 2010; Leyser et al., 2011; Lifshitz & Glaubman, 2002; Loreman, Sharma, & Forlin, 2013; Peebles & Mendaglio, 2014; Pendergast et al., 2011; Romi & Leyser, 2006; Scheer, Scholz, Rank, & Donie, 2015; Sharma, Shaukat, & Furlonger, 2015; Sharma, Simi, & Forlin, 2015; Specht et al., 2016) The majority of these studies employed self-report data that might not include how the environment in the education setting builds a sense of self-efficacy of pre-service teachers. Some exceptions utilized additional methods other than self-report (see Ahsan et al., 2013; Burton & Pace, 2009; Huber, 2009; and Jobling & Moni, 2004), including interviews, observations, preservice teacher's reflections, and preservice teachers' journals. Deemer and Minke (1999) argue that the items in an efficacy scale do not consider the external factors that might have a positive influence on teaching and learning. In-depth qualitative data could provide information about the role of mentor teachers, peers, and other support in education institutions in influencing a teacher's sense of self-efficacy. For this reason, the missing focus on the context of study where support is provided might mislead the result of pre-service teachers' self-efficacy in previous studies.

Bandura (1997) proposed that self-efficacy as context-specific rather than generalized expectancy, so understanding the progress of self-efficacy research needs to consider the context of the student teaching site, such as school structures (Dickstein, 2013). Dickstein (2013) revealed that teacher candidates' belief of self-efficacy was shaped by the organizational expectations of effective practices and how the institutions provided various systemic support to achieve the expectations. The changes in preservice teachers' efficacy levels during student teaching can be useful for pre-service programs to provide adequate support when needed. As previous studies have shown the internal factors (Poulou, 2007) and external factors (Dickstein, 2013) as sources of pre-service teacher's self-efficacy, but a need exists for investigation of both internal and external factors that contextually cause changes to different levels of self-efficacy during student teaching (Oh, 2010).

Teachers with high self-efficacy demonstrate effective teaching performance. Yet, perceptions of higher teaching efficacy do not extend to teachers dealing with students with special needs. Teacher preparation programs must introduce prospective teachers to the skills, knowledge, and dispositions necessary for meeting the needs of students with special needs. These programs should include coursework specific to special education and include opportunities in the structure of student teaching to enhance the preservice teachers' sense of self-efficacy when working with students with special needs.

The current literature fails to adequately capture preservice teachers' perceptions of self-efficacy when working with students with special needs. Current research has not sufficiently explored preservice teachers' perceptions of their skills, knowledge and

dispositions when working with special needs students and if those perceptions change throughout the student teaching experience. The current research has relied predominately on survey methods, failing to provide a richer understanding of reported self-efficacy and changes in those reports throughout the student teaching period.

Additionally, factors to which preservice teachers attribute perceptions of self-efficacy and changes in self-efficacy have not been sufficient.

Purpose of the Study

The purpose of this study was to investigate preservice teachers' reported self-efficacy in working with students with special needs during the student teaching experience. The study explored reported self-efficacy at the beginning and end of the student teaching experience, and included qualitative methods to deeply explore changes in those perceptions and the factors to which the preservice teachers attributed their perceived self-efficacy and changes in those perceptions.

This study focused on student teaching as a pertinent aspect in teacher preparation programs that impact the effectiveness of teachers who are amateurs in teaching (Boyd et al., 2009). Zeichner (2002) states that student teaching is a crucial aspect in teacher preparation programs. This research explored how preservice teachers perceive self-efficacy, and which sources of self-efficacy influenced their self-efficacy in teaching students with special needs during student teaching.

Research Questions

The research questions for this study are:

- 1. How do preservice teachers perceive their self-efficacy in teaching students with special needs during student teaching?
- 2. Do preservice teachers' perceptions of self-efficacy for teaching students with special needs change over the student teaching experience?
- 3. What do preservice teachers identify as factors influencing their efficacy to teach students with disabilities in student teaching?

Significance of the Study

This study explored the status of preservice teachers' self-efficacy beliefs before and after student teaching to teach students with special needs in the classroom based on qualitative and quantitative data. The results contribute to the accumulation of knowledge about factors influencing preservice teachers' perception of self-efficacy in various educational settings. Understanding the nature of preservice teachers experiences during student teaching may inform teacher preparation programs how to provide adequate support as part of high quality of student teaching program. (Ronfeldt & Reininger, 2012) revealed that a better quality of student teaching yielded preservice teachers' feeling more prepared to teach and efficacious, rather than the length of student teaching. Sources of self-efficacy have been investigated in previous studies and found that internal (Oh, 2010; Poulou, 2007) and external factors (Dickstein, 2013) contribute to the development of self-efficacy beliefs of teachers' candidates. This study explored both

internal and external factors in relation to changes of pre-service teachers' self-efficacy levels of teaching students with special needs.

The exploration of may provide important information for teacher preparation program to develop and maintain strong self-efficacy beliefs of novice teachers (Tschannen-Moran & Hoy, 2001). The results may help inform the content and structure of teacher preparation programs, including the student teaching experience.

Definition of Terms

Self-Efficacy

Ashton (1984) defined teachers' self-efficacy as "teachers' belief about their capacity to affect student performance" (p.28). Bandura (1997), stated that self-efficacy is "the beliefs in one's capabilities to organize and execute the course of action required to produce given attainments" (p.3). Hoy and Spero (2005) define teachers' efficacy based on Bandura's theory as teachers' belief about their abilities to support students' learning. In this study, self-efficacy is defined as preservice teachers' belief about their capacity in providing instructional adjustment, collaborate with other teachers, providing support, and conduct classroom management when they teach students with special needs during student teaching program. Investigation of sources self-efficacy and how preservice teachers reflect upon it is needed to understand the development of self-efficacy (Morris, Usher, & Chen, 2017). Bandura (1997) mentions four sources of information which develop personal self-efficacy, "performance accomplishments," "vicarious experiences," "verbal persuasion," "emotional arousal." Personal characteristics, motivation, and

teaching competence are added as other sources of self-efficacy (Oh, 2011; Poulou, 2007). Furthermore, this study explored preservice teachers' self-efficacy development through the lens of preservice teachers especially how they perceived sources of efficacy during their student teaching program.

Students with Special Needs

Students with special needs is defined as students who receive special education services under IDEA. They might have one or more disabling conditions: autism, communication disorders, deaf blindness, emotional disturbances, hearing impairments, intellectual disability, orthopedic impairments, other health impairments, specific learning disability, traumatic brain injuries, and visual impairment. This study focused on students with mild disabilities because they more prevalent in regular schools where the student teaching was conducted.

Student Teaching Program

Student Teaching Program is a program that begins when Teacher Preparation

Program after pre-service students finish all the course works. Teacher candidates have experiences on working in the real classroom for seventeen weeks under personalized and professional supervision. There are five major activities during student teaching: classroom teaching, supervisory conferencing, seminar, reflective journals, and a summative performance assessment.

CHAPTER 2

LITERATURE REVIEW

This study examined the reported self-efficacy of preservice teachers in teaching student with special needs during their student teaching experience. This chapter discusses characteristics of students with mild disabilities, who represent the majority of students with special needs in a regular classroom. The next section presents teacher's competences for teaching students with special needs, including skills, knowledge, and dispositions. This section includes professional standards as well as national regulations and state law addressing meeting the needs of students with disabilities. Additionally, I present models of teacher preparation programs which prepare future teachers to deal with students with special needs I finally revisit previous studies in preservice teachers' self-efficacy to teach students with special needs to illustrate the gap between what we know and what we don't know about the changes of self-efficacy and the sources of self-efficacy in the context of preservice program.

Students with Mild Disabilities

This section discusses a general overview about students with mild disabilities including their learning needs and instructional support. Children with mild disabilities are mostly placed in the public schools and need curriculum adjustments. Their educational needs are substantially different from students with moderate and severe disabilities. The definition of children with mild disabilities is related to a non-categorical idea proposed by Hallahan and Kauffman (1977). These are children with intellectual

disabilities (ID), learning disabilities (LD), and behavioral/emotional disorders (E/BD). Children under these two categories with mild disabilities also includes students with language impairments, autism, and children with health problems and including attention deficit hyperactivity disorder (ADHD) (Gage et al., 2012; Sabornie, Evans, & Cullinan, 2006; van Dinther, Dochy, & Segers, 2011). This study will focus solely on LD, ID and E/BD because they are more prevalent in schools compared to other disabilities. The highest prevalence of students with special needs ages 3 to 21 years in 2011/2012 served under IDEA are students with LD (see *Figure 2*).

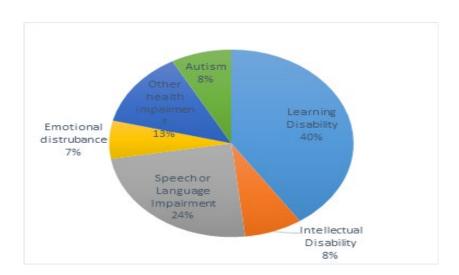


Figure 2. Students with special needs served under IDEA in regular classroom
Source: U.S. Department of Education, National Center for Education Statistics. (2018)
Digest of Education Statistics, 2016 (NCES 2017-094). Chapter 2.

Forty percent of the total school-age students with all kinds of disability identified as students with LD. The number of students with LD was around 2.3 million or approximately 5% of total students in the U.S. The prevalence of students with speech or language impairment is the second highest with 1.3 million students or 24% of the total

students with disability. Students with ID and E/BD have almost similar percentages which were 8% and 7% respectively from the total students with special needs served under IDEA. Most of these students are in regular classroom and learn together with their peers. In this point, the educational support is relying on both regular teacher and special education teacher. During student teaching, preservice teachers might have students with mild disabilities in their classroom. More understanding about the impact of disabilities in student's learning and best practice to serve them in regular classroom will enhance the ability of future teachers to provide adequate educational services. The following section describe characteristic and teaching approach for students with mild disabilities.

<u>Definition according to DSM-5 and Legal Definition</u>

I discuss the definition of ID, LD, and EBD based on the DSM-5 and the legal definition to provide an overview about what they are to understand their commonalities for providing educational services. The definition of ID according to the Diagnostic and Statistical Manual of Mental Disorders (DSM-5, American Psychiatric Association, 2013) requires two deficit areas that need to be met during the developmental period: intellectual functions (reasoning, problem solving, planning, abstract thinking, judgment, academic learning, and learning from experience) and adaptive functions (communication, social participation, and independent living). According to the DSM-5, the definition of LD consists of four different criteria. The first criteria refers to the key symptoms of learning disability (at least one of six symptoms) that have persisted for at least 6 months regardless of them receiving intervention. The second criteria refers to the measurement of academic or occupational skills, which is below chronological ages as

confirmed by a standardized test. For individuals more than 17 years old, the standardized test assessment can be substituted with a documented history of learning difficulties. In the DSM-5, EBD covers some disorder conditions such as antisocial personality disorders, disruptive behavior disorder, suicidal behavior disorder, and depression. According to the federal law, some examples of EBD include inability in building relationship and learn, display inappropriate behavior, mood, and physical symptoms which interferes educational performances (for more see 34 C.F.R. § 300.8(c) (4) (i) (A – E)). I discuss each description of students with LD, ID, and EBD in the next section based on cognitive, academic, adaptive, social, perceptual motor, and general characteristics.

Characteristic of Children with Mild Disabilities

In general, students with mild disabilities shared characteristic in two areas: 1) cognitive and motor skills and 2) social and behavior profiles. Those two areas are related to each other, so the way teachers provide educational services need to address those two different characteristics to provide successful instructions. By knowing similarities and differences among children with mild disabilities, teachers could manage their instruction effectively. Instead of teaching student one-on-one, a teacher could group students and teach several of them at the same time based on students' common needs. However, the learning goals in respect to each student need to be created because they have different needs to fulfill.

Cognitive and Motor Skills. Children with mild disabilities have lack of cognitive skills and have problems related to lower academic achievement compared to typical peers (Gage et al., 2012; Lane et al., 2006; Sabornie et al., 2006). Low motivation and lack of interest in school are two common traits of students with mild disabilities (Henley et al., 2006). However, students with LD, EBD, and ID have different cognitive characteristics that teachers need to understand. The IQ scores of children with ID are lower than students with E/BD and LD (Sabornie et al., 2006) and their cognitive profiles are different (Gage et al., 2012). Students with mild ID have sub-average intellectual abilities ranging from 50 to 75 (2 SDs below the mean) which affect their learning due to deficits in their memory span, generalization ability, reasoning skills, abstract thinking, and attention (Henley et al., 2006). In contrast, students with LD have intellectual abilities ranging from average to above average, but these students have difficulties in mental processing, which affect their thinking process and impact their learning (Henley et al., 2006). Students with EBD may have academic failures, not because of lack of intellectual ability but lack of engagement due to their behavior problems (Payne, Marks, & Bogan, 2007). Thus, academic problems among students with mild disabilities have different causes which required different interventions.

Reading and mathematical difficulties are common among students with mild disabilities with different profiles. Weak memory skills are found in students with ID who have more cognitive impairments compared to E/BD and LD. Students with ID are also found to have more problems in comparing non-symbolic objects and digits than typical peers (Brankaer, Ghesquière, & De Smedt, 2013) that will impact their math

problems. Another study conducted by Peng and Fuchs (2016) shows that students who have more cognitive impairments tend to have memory deficits in verbal and numerical domains, so they seem to have both severe math and reading problems.

Students with LD have better academic achievement compared to the low achieving group in class (Lackaye & Margalit, 2006). However, there are different profiles of LD students, because sometimes they have only reading problems or math problems instead of both math and reading problems. When children with LD are found with math problems only, but they are good in reading, this might be because they have a lack of working memory in numerical domains (Peng & Fuchs, 2016). Especially for students with LD who struggle in spelling, they tend to have problems in working memory in phonological storage (Brandenburg et al., 2015), so they need simple and short instruction. Additionally, Peng and Fuchs (2016) also found that students with reading and math problems have a lack of working memories in verbal domains while students with difficulties in math have problems in numerical domain of working memory.

Cognitive problems in students with mild disabilities are also related to their motor skills (Vuijk, Hartman, Mombarg, Scherder, & Visscher, 2011). To couple with it, the motor problem detection at early age give early signals for teachers about the possibility of other developmental difficulties (Iversen, Berg, Ellertsen, & Tønnessen, 2005). The impact of lower functioning in children with ID and borderline was investigated by P. J. Vuijk, Hartman, Scherder, and Visscher (2010). They suggest that students who have lower executive function also have poor object control

skills. According to them, children with ID will need more time to do the complex tasks but shorter time for planning activities. The lack of skills to make a plan prior to performance is also found in children with learning disabilities (Vuijk et al., 2010). They mentioned that the ability to make a prior plan in children with LD is related to lower motor skill, spelling skill, and math. All these skills need planning, developing, and applying strategies, which require interconnected brain function. This is the main problem of students with learning disabilities. According to Mancini, Rigoli, Cairney, Roberts, and Piek, (2016) poor motor skills may lead to EBD especially internalizing problems because inability to perform age-appropriate movement lead improve psychosocial problem such as social disengagement. It is suggested to provide intervention in motoric development in order to support cognitive development (Vuijk et al., 2010).

Even though children with mild disabilities have common problems in academic areas which are related to their lack of cognitive and motor skills, the reason why they have these problems are relatively diverse. Causal factors behind their problems for student with ID, LD and E/BD are different. Students with ID have limited cognitive skills, while students with LD have problems in their information process, and students with E/BD have emotion and behavior problems that influence their academic, motor and social abilities. As a result, they need different teaching goals even though teachers utilize similar teaching strategies to cope with their educational needs.

Social and Behavior Profiles. Students with high social competence will be able to maintain their behavior to meet the social standards because those two skills are related

to daily social interaction. However, for students with mild disabilities, they have problems in social interaction and behavior not only because of their lack of internal ability but also the response from their surroundings.

The profile of social skills among children with mild disabilities are almost similar, with E/BD student as an exception (Gage et al., 2012; Lane et al., 2006; Sabornie et al., 2006) for their behavior performances. The reason for this is because LD and ID children perform behavior that meet the teachers' standard criteria, such as following instruction, listening and doing assignments. In the contrary, students with E/BD, they perform inappropriate behavior that invite peer rejection and less acceptance from teachers. Similarly, Krull, Wilbert, and Hennemann (2014) found that student with E/B are rarely chosen as seatmate. Students with E/BD tend to have more rejected because of their misbehavior.

Previous study have shown that difficulties of processing social cues will impact social problems of LD students (Bauminger, Schorr Edelsztein, & Morash, 2005) because they might select inappropriate conflict resolutions. Similarly, students with ID have problems in social information processing, specifically for emotion recognition and interpretation skills of particular situations (Van Nieuwenhuijzen & Vriens, 2012). Both types of students have social problems due to their deficit in perceiving the meaning of facial expressions of other people, so they tend to provide unsuitable feedback. That is why they tend to be rejected by their peers and have problems developing friendships because of their difficulties in forming social interaction.

Children with E/BD tend to have more behavior problems based on number of suspensions, negative comments in their cumulative records, and more missed school compared to ID and LD students (Gage et al., 2012; Lane et al., 2006). They also have academic problems as an impact of their behavior problems. This condition might happen because of the limited amount of learning engagement due to their off-task behavior and disruptive behavior (Bentley-Williams & Morgan, 2013). Family, biological, and social environments are causal factors for emotional and behavioral problems (Murray & Whittenberger, 1983). When students receive more verbal abuse, physical assault, and grow up in the environment with lack of expected positive behaviors, they tend to be frustrated easier and have behavior and emotional problems.

As an external factor, students with mild disabilities tend to have less acceptance from peers and teachers (Gresham & MacMillan, 1997; Krull et al., 2014; Sabornie et al., 2006) because of the unwelcoming social environment. Bullying and victimization from peers also reported by students with learning difficulties more than other students (Kokkinos & Antoniadou, 2013; Luciano & Savage, 2007). Additionally, teachers need to create positive environments for all students to develop a healthy social interaction to provide a conducive learning atmosphere. Moreover, at the same time, this condition also supports teachers' attempts to improve social and behavioral skills of students with mild disabilities.

The Relationship of Cognitive and Behavior Problems

Student with mild disabilities, as mentioned before, have similarities and differences not only in cognitive and motor profiles but also behavior and social profiles. Previous studies found a positive correlation between behavior problems with lower academic achievement. Those two major areas are related to each other based on previous studies. P. L. Morgan et al. (2008) shows that a poor task engagement of a student in the 1st grade is a predictor of poor reading performance of a student in the 3rd grade. They found that students with specific behavior problems will result in reading problems. Similarly, inattention problems and poor inhibitory control were found to be related to reading problems (Cho et al., 2015; Mcdermott, Goldberg, Watkins, Stanley, & Glutting, 2006). The Impacts of reading problems that are related to behavior problems also investigated by Zentall and Beike (2012). They say that students with reading problems have less personal motivation. They also found that students with reading problems are seemed to be less curious and have low self-motivation in learning because they learn something to make other people happy. The feeling of being incompetent when students have repeated failures will reduce self-motivation and increase escape behavior. For this reason, the need for flexibility to make curriculum adjustments that matches with students' ability will provide such students with greater chances for success and will improve student's positive attitudes toward learning. This vicious cycle in academic problems of students with mild disabilities needs teachers' deep understanding. When the students feel helpless, they tend to have lower learning motivation. Furthermore, teachers need to adjust the level of task complexity based on the students' current

academic level. If students work on their academic level, they tend to have greater chances for success in the class that will develop their efficacy. Furthermore, the intervention that focus on both academic and behavior deficit are needed (Riggs et al., 2006). Cognitive, social and behavior problems of students with mild disabilities are entangled with chains of problems that needs teachers' apprehension to define suitable teaching strategies to address them.

Instructional Approaches for Students with Mild Disabilities

Student with mild disabilities, as described before, have academic, behavior, and social concerns that need to be addressed. Systemically in many states in the U.S, school wide initiatives have been addressing these concerns through Multi-tier System of Support (MTSS) or Response to Intervention (RtI) to provide support for all learners including students with special needs. This multi-tier support not only covers academic intervention (e.g., literacy and match) but also behavior intervention (e.g., Sugai & Horner, 2009) namely positive behavior intervention system/PBIS. Furthermore, I discuss the instructional support for students with mild disabilities using the multi-tier approach, starting with cooperative learning and Universal Design for Learning (UDL) for all learners (see *Figure 3*). Then, I discuss differentiated learning, accommodation and modification, and assistive technology for some students who need more instructional adjustment and support. In addition, the multi-tier approach also applies to classroom management for creating a safety environment and dealing with specific behavior problems.

Assisstive technology Accommodation and modification Differentiated learning, Universal Design for Learning Cooperative learning

Figure 3. Multi-tier instruction for students with mild disabilities

According to Kagan (1989), cooperative learning focuses on academic and social domains as students learn to build communication, conceptual knowledge, and mastery in their team. Cooperative learning facilitates students to work together and develop their social skills with peers. Sencibaugh and Sencibaugh (2016) reviewed previous studies that focused on the implementation of cooperative learning for LD and revealed improvement in academic achievement. The methods of cooperative learning included cross-aged tutoring, class wide peer tutoring, structured and unstructured, and peermediated learning. General education teachers prefer to apply cooperative learning in their class as they found its benefit (Jenkins, Antil, Wayne, & Vadasy, 2003). Jenkins et al. (2003) also revealed that cooperative learning improved self-esteem, created a safe learning environment, and enhanced classroom success rates and products from general education teachers' perspective. Some adjustments for cooperative learning practices include learning partner selection for students with mild disabilities, group task modifications to facilitate students' participation, and altering instructional materials based on students' needs.

The implementation of peer tutor programs could help children with mild disabilities get direct feedback on their learning from their peers. At the same time, teachers also could manage the class and provide learning instruction for all students. This strategy is not only beneficial for students with mild disabilities, but also their peers. A study conducted by Saenz, Fuchs, and Fuchs (2005) found that Peer-Assisted Learning Strategies (PALS) improved the reading comprehension skills of 3rd grade students with LD after 15 weeks of instructions; their tutors also gained higher scores in reading comprehension. However, this research found that there were no significant impacts for number of correct words and correct questions after a PALS intervention. In other words, peer tutors seem not to be effective to increase the reading skills for students with moderate and severe learning disabilities. A similar study conducted by Scruggs, Mastropieri, and Marshak (2012) about Class Wide Peer Tutoring (CWPT) with additional parent training for students with LD and E/BD in ten inclusive schools. They found students with mild disabilities gain academic improvement in Social Studies and they had almost similar mean scores compared to their typical peers. The academic improvement was also found in non-target material (e.g., math). Powell and Driver (2015) found improvement in math skills for first grade students who had math difficulties after peer tutoring program with and without additional materials on math vocabulary. A meta-analysis study of 26 single case-studies conducted by Bowman-Perrott et al. (2013) revealed the same result; peer tutors were effective for academic improvement, such that students with E/BD gained most positive impact compared to other disabling conditions.

Universal Design for Learning (UDL) is a tool to provide accessible learning experiences for all learners. It focuses on three main areas: representation (how to deliver the content to make it accessible), expression (how students can perform their learning in various ways), and engagement (how students interact with each other during instruction; Center for Applied Technology, 2018). UDL has been applied successfully for students with mild disabilities as it offers flexibility to support students' mastery of a subject (S. Cook & Rao, 2018) and enhance social engagement (Katz, 2015). Furthermore, S. Cook and Rao (2018) suggested how teachers can systematically adapt their teaching practices with UDL framework to meet the needs of students with special needs. The implementation of UDL based on students' needs and teacher strengths in technology improved the reading skills of students with LD (Hall, Cohen, Vue, & Ganley, 2015). To effectively apply UDL in the classroom, teachers need to be able to acquire skills to select various instruction tools, provide various type of assessment, develop alternative assessment, and able to select and employ technology to support students learning.

George (2005) argued that differentiated instruction provides democratic learning experiences for students. In addition, differentiated instruction provides a framework for individualizing in heterogeneous classrooms (Landrum & McDuffie, 2010).

Differentiated instruction has two coverage goals: 1) maximize educational attainment of all learners in the grade-level curriculum and 2) provide adapted curricula for students who struggle (Lawrence-Brown, 2004). Examples of extra support for students with mild disabilities included manipulatives, visual aids, charts, outlines, picture cues, and audio tapes (Mastropieri et al., 2006). To maximize the impact of differentiated instructions,

Tomlinson (2010) suggested focusing on student's interest, starting from their current ability, and allowing students to work based on their own pace of learning. Fewer studies have been conducted in differentiated instruction for students with mild disabilities, but they offered promising results that teachers need to consider. One example is provided by B. K. Taylor (2015) who developed a differentiated instruction in the content, process, and product of learning that teachers could follow. However, differentiated instruction is not easy for teachers to implement because students prefer to have similar activities with peers, so teachers tend to make adaptations in classroom interaction with students (Westwood, 2001). In line with this, Kurth and Keegan (2014) revealed that instructional adaptation was focused on general education curriculum with limited adaptations focusing on student's skills, such as motor and communication skills. Kurth and Keegan (2014) suggested to align the student's IEP with adaptations. It is because when the modifications were provided, students' engagement improved and resulted in fewer behavior problems in class (Lee, Wehmeyer, Soukup, & Palmer, 2010).

Teachers provide learning accommodation to support students with special needs in their classroom through being flexible. Accommodation is provided to enable students with disabilities to demonstrate their learning performance regardless of their disability (Thurlow, Lazarus, Thompson, & Morse, 2005). According to Thurlow et al. (2005), the five major accommodation categories are: (a) *timing* (e.g., extended time, the use of break), b) *response* (e.g., put the answer directly in the test booklet), c) *setting* (e.g., taking the test in the separate room), d) *equipment* (e.g., calculators), and e) *presentation* (e.g., Braille, read aloud, and sign interpretation). Elbaum (2007) revealed the positive

impact of accommodation for students with LD; the use of oral accommodation improved their scores on a math test compared to their typical peers. However, previous studies also revealed inconclusive results of the effectiveness of each accommodation (Lai & Berkeley, 2012) and some of them (e.g., calculator, read aloud, scribe) are controversial (Thurlow et al., 2005). Bouck, Bouck, and Hunley (2015) revealed that a calculator is insufficient accommodation for students with special needs solving grade level math problems. They suggested to adjust the content of math test with students' ability and then calculators might be meaningful for the students. A calculator only accommodates mental math problems, but has nothing to do with conceptual understanding (Bouck & Yadav, 2008). The careful selection of accommodations for each student with mild disabilities are needed. Overall, curriculum modification is suggested for students with disabilities to enhance access to the general curriculum (Palmer, Wehmeyer, Gipson, & Agran, 2004), including the use of technology.

Assistive technology is suggested for three general purposes: 1) facilitating students with special needs to general education curriculum successfully (Parette, Wojcik, Peterson-Karlan, & Hourcade, 2005; Puckett, 2004), 2) enhancing peer acceptance (Parette et al., 2005), and 3) providing individualized instruction (Qahmash, 2018). G. M. Johnson (2013) revealed the benefit of technology for students with mild disabilities. A list of free [assistive?] computer software is provided to provide options for teachers and schools with limited budgets (Bouck, Meyer, Satsangi, Savage, & Hunley, 2015). Thus, future training in using assistive technology should be considered

to improve teachers' familiarity of the technology (Puckett, 2004) because it will affect teachers' decisions (Parette et al., 2005).

Teachers cannot solely focus on student's academic problems without considering their behavior, because they need to improve their task engagement and learning motivation as well as their academic skills. A program using the whole-school approach for supporting students' behavior, such as the Positive Behavior Intervention Support (PBIS), is found to be effective to promote social acceptance toward students with special needs, increase the social competence of all students, and prevent behavior problems (Meadan & Monda-Amaya, 2008). The same approach was also applied to a bullying prevention program (Rose & Monda-Amaya, 2012). Simonsen, Briesch, Myers, and Sugai (2008) developed the Classroom Management Assessment tool that teachers can use to assess the classroom and develop a plan to improve the physical lay-out, teaching expectations, and to respond to appropriate and inappropriate behavior.

Instructional and behavior interventions in multi-tier systems allows general education teachers to provide suitable educational services for all students, including students with mild disabilities. UDL and cooperative learning provide flexibility for learners. In addition to meeting the unique needs of students with mild disabilities, additional support through modification and accommodation, differentiated learning, and assistive technology could be added to deal with academic and behavior concerns. This is in line the suggestions by Christenson, Ysseldyke, and Thurlow (1989) about key points of instruction for students with mild disabilities, which should match students' abilities,

provide adequate support through adaptations and guided practices, and be monitored through direct feedback from teachers.

Students with mild disabilities have commonalities in academic, behavior, and social problems that need to be accommodated. Teachers need to understand the relationship between each problem to provide suitable educational services. Teachers need to be able to assess the needs of each student, so they can provide adequate support that will cover specific needs for each student. This effort would be challenging for each teacher, so they need to collaboratively work with school staff, namely special teachers, paraprofessionals, principals, and parents. Additionally, teaching skills that provide multi-tier instructions are needed so the teachers can teach all learners with appropriate delivery methods and content. Then, teachers need to consider helping student build social interactions with peers through different kinds of strategies. In summary, teachers should focus on each student's needs through a multidimensional approach of direct instruction during the learning process or peer tutor program.

Pre-Service Teacher Competencies for Meeting the Needs of Disability

In inclusive classrooms, preservice teachers might have students with different kind of abilities. In this situation, teachers need to consider a variety of teaching approaches to cover students' needs, and at the same time, the teachers are also responsible for the active learning of other students. This situation is quite challenging for preservice teachers who do not receive appropriate preparation.

National standards in the teacher preparation program address the importance of preparing future teachers to help students with special needs (Pugach, 2005). The National Council for Accreditation of Teacher Education (NCATE, 2008) addressed the need of future teachers' knowledge, skills, and positive disposition to teach diverse learners in standard one. In the introduction, it explicitly stated that the standard addresses the achievement gap issue between students with special needs and their peers; it demands teacher preparation programs to meet a high-quality, rigorous teacher professional standard.

Second, the National Board for Professional Teaching Standards (NBPTS, n.d) has five cores and the references to work with students with special needs explicitly appear in the first and fifth core. The first core focuses on, teachers committing to students and their learning, covering the fundamentals of teachers' knowledge and skills in understanding of how students learn in regards their individual context, cultures, abilities, and circumstances. The fifth core focuses on collaborative work where teachers are expected to collaborate with other teachers. In supporting students with special needs, teachers are required by law to work collaboratively with special education teachers.

Third, the Interstate Teacher Assessment and Support Consortium (InTASC, 2001) developed a model standard for licensing general education teachers of students with disabilities, which covers essential knowledge, skills, and disposition to teach all learners, including students with special needs, in the continuum of teacher professional growth. The current InTASC standard (2013) aligned with the previous ones and all tens standards strongly support general education teachers' competencies to support students

with special needs (Pugach, 2005). Dingle, Falvey, Givner, and Haager (2004) also found that essential competencies for general education teachers include holding positive attitudes toward inclusion and having the knowledge and teaching skills in order to create an effective learning process in inclusive classrooms. Therefore, teacher competencies for all learners, including students with special needs, cover teaching skills, knowledge, and a positive disposition toward all learners. Darling-Hammond and Baratz-Snowden (2007) included knowledge, skills/practices, and disposition as part of the framework for learning to teach. "Knowledge is an understanding of content, pedagogy, students, and social context. Practices are actions based on teachers' intention and belief, and dispositions is habits of thinking and action regarding teaching and children" (Darling-Hammond & Baratz-Snowden, 2007, p. 120-121). InTASC developed teaching progressions based on these three areas for each standard. I revisit three areas were to understand the efficacy of preservice teachers in the analysis section. In the following section, I discuss 10 InTASC standards (2013) with supporting studies on the topic of teaching students with special needs in regular classrooms.

Standard #1 and #2: Learner Development and Learning Differences

Learners develop at different paces, which will lead to different strengths and needs in learning. To facilitate learning based on each learners' needs, teachers need to believe that each learner has a different pace of development. Students with special needs have different paces and ways of learning that require teachers' understanding and acceptance. Teachers' beliefs about disability and how it affect students' learning is suggested to be built during teacher training (Jordan, Schwartz, & McGhie-Richmond,

2009). Teachers' disposition toward students with special needs direct teachers' actions (Hornstra, Mansfield, van der Veen, Peetsma, & Volman, 2015; Leatherman & Niemeyer, 2005). When teachers hold a negative disposition, it will promote negative behaviors. When teachers' have negative perceptions of students, they tend to use controlling strategies instead of autonomy-supportive strategies. On the other hand, positive beliefs about disability is hardly to change and not easily to achieved (Jordan et al., 2010). Jordan et al. (2010) argued that teacher's beliefs about disability is based on their perspective of how students learn and acquire knowledge. The important role of teachers' positive attitudes toward students is also supported by previous studies (Avramidis & Norwich, 2002; B. R. Johnson & Onwuegbuzie, 2004). Rosenfeld and Rosenfeld (2008) suggested that when teachers believe in their ability to help learners, they provide effective educational services. Different outcomes may result when teachers believe that learners have internal problems, so any instruction cannot meet a student's needs. For this reason, Rosenfeld, M., & Rosenfeld, S. (2008) suggested that developing positive beliefs toward learners should be addressed in professional development programs for teachers.

Knowledge about the different abilities of students in the classroom will enhance teacher's ability to provide suitable educational services through modification and flexibility. Each student has a different pace of learning, so they might have different readiness to learn (or not). Teachers can identify the different needs of learning and provide adequate lessons plans based on students' needs. The ability of teachers to address individual needs and suitable learning instructions based on students' needs will

enhance students' learning. The need of teaching skills to meet the need of students' needs has been emphasized by Stanovich and Jordan (2002) through effective teaching for all learners as teachers expand their zone of responsibility for all learners, including students with special needs.

Standard #3: Learning Environment

School and home as learning environment have the influential effect on student's learning that needs to be considered in the teaching process. Furthermore, teachers are needed to adjust the learning content with the culture and the context according to student's environment. To bonding with students' learning environment, teachers may need to develop communication with family, students, communities to establish positive learning environment based on respect and trust. As stated by Cohen (2006) that promoting safe and caring school atmospheres through home-school partnership is an alternatives way to build students' social-emotional skills. For example, teachers need to understand what kind of learning environment that will enhance the students' learning. For some students, they need a different arrangement. Simpson, Peterson, and Smith (2011) argues some specific situation and condition in the classroom environment that need to be considered for students with Emotional/Behavior Disability (EBD).

Teachers could improve the positive learning environment in the classroom by increasing students' engagement. Perrone (1994) states that teachers could promote students' engagement when they provide opportunities for students to define the learning content and set up their interest in learning. This situation might happen when teachers

understand the meaning of building communication and collaboration with students as a part of a teacher-student relationship, so they know the needs of each student. As a result, teachers can help each student to learn and develop their learning capacities. The impact of supportive teacher-student relationship to students' achievement and their behavioral adjustment is revealed (Hughes, 2012).

Standard #4: Content Knowledge

According to this standard, teachers need to understand the concept of knowledge that they are going to teach, how the inquiry process and the structure of its discipline, so they can create accessible content which meaningful for students to comprehend. Sometimes students comprehend faster than their peers, but some of them need extra support, so that teachers need to know about the current ability of each student and the sequence of knowledge in order to be flexible (Hudson, Morsink, Branscum, & Boone, 1987). Students might have a misconception about their learning that needs to be recognized by the teachers, so the teachers could provide learning guidance in order to support students' accurate understanding. The teacher can use multiple methods to present the materials, using student's primary language, provide supplementary resources for learning and add more opportunities to practice the skills to achieve mastery level. For example, the teacher might use evidence-based instruction for math which including concrete and visual representation, explicit and systematic instructions, consider range and sequence of example, heuristic strategy, and use of contextual problems (Shin & Bryant, 2015). Teachers may use technology to support students' learning as well as to support students' interaction. This is supported by King-Sears and colleagues (2015)

study. They conducted an exploratory study of the use of UDL, which increases interaction between students with disabilities and without disabilities.

Standard #5: Application of Content

This standard requires teachers to understand the connection between concepts and its application, so they can promote students critical thinking and develop collaborative problem solving that related to their context and global issue. To do this, teachers' disposition to value the knowledge and the flexibility of learning environment is needed to ensure students learning through exploration, discovery, and inquiry. Hunt, Valentine, Bryant, Pfannenstiel, and Bryant (2016) revealed that flexibility in learning is highly valued by the teachers by modification in learning in order to provide additional opportunities for practices.

When teachers recognize the learning process of the students, so they might more flexible in the learning process. During the learning process, the teachers also need to facilitate learners to apply their learning in their context. In this process, knowledge to provide instructions to meets different students' needs (Berry, 2010), better communication skill of the teachers is needed in order to invite new ideas (Kozik, Cooney, Vinciguerra, Gradel, & Black, 2009) and perspectives to make the connection between student's knowledge with their experience to promote critical thinking and problem solving.

Standard #6: Assessment

In learning process, teachers need to decide what to teach and how to teach based students' needs. The information of these needs is gathered from assessment, so teachers can figure out the current abilities then they can either make curriculum adjustment to meet their learning level or monitor student's progress.

In the selection of assessment procedures, teachers are required to understand the benefit of various kind of assessment methods, so they can select multiple assessment methods to portray each student's learning progress. Marino and colleagues (2014) suggest that teachers need to use alternative assessments to distinguish students' learning progress when teachers employ UDL (universal design for learning) because, in this study, the effect of students' academic achievement was not shown with the paper-based assessment. In addition to this, Marchand and Furrer (2014) suggest the need for teachers to improve student engagement during assessment process because they found that student's engagement was related to increasing reading performance for struggling readers. Furthermore, teachers required understanding the multiple purposes of assessments because one assessment might not adequate to present students' learning abilities.

Standard #7: Planning for Instruction

Learners' abilities to comprehend the learning materials and to apply them in meaningful ways depend on how teachers prepare the lessons. Without a deep understanding of varieties ways of instructional strategies, teachers will have a problem

to provide meaningful learning process for each student. Students with a different pace, ways, and abilities on learning need different strategies. Curriculum modification to meet students with disabilities unique needs is found strongly related to students' academic response (Lee et al., 2010). Teachers' decision for instructional planning needs to consider evidence-based interventions as mandated by IDEA to achieve a high quality of educational services for students with special needs. B. Cook, Tankersley, Cook, & Landrum (2015) states that "evidence-based practices" should be a priority for teachers for improving students' outcomes with an additional students' progress monitoring, so it is required that teachers are already familiar with some evidence-based instructions. However, there is no one specific evidence-based practice that works for all students, so teachers still need to do adjustments based on students' progress. By knowing the variety of evidence-based instructions, teachers might have alternative strategies to meet student's needs and ensure their maximum substantial learning.

Standard #8: Instructional Strategies

Teachers with a wider understanding of varieties of instructional strategies will be able to provide learning instruction for students which enhance their understanding and generalizing it into a practical level in meaningful ways. For this reason, teachers require to be not only committed to updating information of new technology for learning support but also effectively select the technology which suitable with learners.

When teachers understand different ways of learning for each learner, they might aware the need of differentiated instructions to promote meaningful learning for all

students. H. Morgan (2014) stated that teacher needs to know various teaching strategy including technology, teaching approaches, and provide scaffolding for learning. Similarly, Vaughn and colleagues (2013) investigated how general teachers provide suitable educational services for students with special need. They conducted an experimental study to examine the effect of reading intervention to improve reading comprehension and content knowledge in social studies with eighth-grade students. This research provides an evidence that classroom teachers could promote learning process based on individuals needs in readings.

Standard #9: Professional Learning and Ethical Practice

The diversity of student needs requires different educational services that never end because there is no particular method or strategies that will be suitable for all kids. The ability of teachers to reflect their own practices and develop new approaches to teaching practice is a lifelong learning process as a part of professional development. They can learn from the students' responses as direct feedback to the way teachers taught them to ensure all students learn. Stricker, Gillis, and Zong (2013) suggest more opportunities for future teachers to reflect on their co-teaching experiences for meaningful learning. However, the willingness to make teaching processes better through reflection might not be the case if there is a lack commitment of teachers and limited school support. The need of conducive school climates for critical inquiry and opportunities for professional conversation supported by school policies will support professional development among teachers (Darling-Hammond & McLaughlin, 1995).

Standard #10: Leadership and Collaboration

Collaborative work between general education teachers, special teachers and parents are needed in inclusive classrooms based law and empirical studies. Iowa administrative rules of special education §281-41.400 (2) mentions that shared responsibility between general education and special education is needed to provide educational programs for students with special needs. In addition, the process eligibility determination to identify students who need special education services under IDEA and the implementation of education intervention as mentioned by law require teamwork which includes school staffs, teachers, and parents need to work together from assessment, planning, instruction delivery, progress monitoring, and evaluation of educational programs. The need for teacher initiative to develop collaborative work is stated by Scruggs, Mastropieri, and McDuffie (2007). They found two challenging situations that need improvement: shared responsibility in collaborative works is still dominated by the general education teacher, and collaborative work is mostly set up by school regulation rather than by voluntary actions.

Collaborative works need extra time and the high motivation from teacher to make it happened. Evans and Weiss (2014) argue there are two of three barriers in collaborative work: different expectations among teachers and lack of time commitment. Furthermore, daily interactions with back and forth discussion need to develop basic knowledge and skill to work together and manage their time on daily basis. Time flexibility at schools and moral supports from the principal are kind of example of school

support in this kind of situation. Furthermore, special and general education teacher will have greater access to meet and discuss the best way to deal with their students.

Teachers need to be able to assess the needs of each student, so they could provide a multidimensional approach that will cover specific needs for each student. Making this effort would be challenging for each teacher, so collaborative work with other school staffs, namely special teachers, paraprofessional, the principals and parents will support teachers' work. In collaborative work, there are some skills that are needed to build a mutual partnership among teachers. Those are a) participative decision and b) communication skills. Fuchs, Fuchs, and Bishop (1992) suggest that 'participative decision' is needed to determine specialized learning adaptations for students. General education teachers are not only following the suggestion that has been made by special education teachers, but they also shared their thoughts about the suitable adaptation for each student. Minke, Bear, Deemer, and Griffin (1996) found that teachers articulate the need for communication and cooperation for successful collaboration among team members in a co-teaching model. This model was found beneficial to the professional development of teachers and students in both social and academic areas (Scruggs et al., 2007).

Teacher Preparation Programs

Diversity issues regarding race, ethnicities, and level of abilities are common in the U.S. and need to be addressed by teacher education programs to prepare future teachers in order to provide equity and equality in education. The idea of redesign and

curriculum changes in teacher education programs was proposed three decades ago as supported by federal law to meet the need of students with special needs and empirical facts. The Individuals with Disabilities Education Act (IDEA, 2004, 20 U.S.C. § 300.114, n.d.) mandated full access for students with special needs in the least restrictive environment (LRE). It raises two challenges, the requirement for special education teachers to know more about general education and the general education teachers must understand the special education approaches (Kozleski et al., 2002).

The reason for redesign curriculum is current teacher education programs are not in line with the need of teachers' competencies to deal with diverse learners. Majority of children with special needs are served in regular classrooms. According to National Center for Education Statistics report in 2013, 95% of the number of children with special needs receiving special education services under IDEA (6.4 million) are enrolled in general education. However, Darling-Hammond and Youngs (2002) revealed that majority of new teachers rated themselves inadequately prepared to address the needs of students with special needs. These situations represent a gap between teacher education programs with the need of teaching skills in the current situations. The needs of specific teaching competencies to deal with diverse learners are undeniable so future teachers are necessary to know how to meet the needs of a myriad diversities in terms of students with different learning styles and abilities. In other words, teacher preparation programs need to enrich their curriculum with special education content.

In 1975, the earliest government effort to support general teacher preparation programs with special education courses through "Dean Grants" was announced and

implemented (Pugach et al., 2011). The government funding declined in early 1980, so currently preparation of future teachers to support inclusive education became invitational rather than competitive. However, teacher preparation programs struggle with the issue of diversity in the classroom that related with race, a student with special needs, and ESL students. Moreover, time constraints (Jennings, 2007) and limited credits for completion of general education (Forlin et al., 2009) cause dilemmatic situations to prioritize the various forms of diversity into their programs. Based on a survey of 142 public university in elementary and secondary teacher preparation programs in the U.S, special needs are found to be less concerning compared to another diversity issue (race/ethnicity, special needs, language diversity, economic/social class, gender and sexual orientations) (Jennings, 2007). However, according to Harvey, Yssel, Bauserman, and Merbler (2010) based on his exploratory studies of faculty members in 124 universities, he found that the majority of faculty members agree to include inclusive education materials in their programs, provide field experience in inclusive classrooms with diverse learners for pre-service students and collaborate across department for teaching majors.

Current State and Promising Trends

The National Council for Accreditation of Teacher Education (NCATE) explicitly mentioned the need for preparation of future teachers to deal with diverse students in Standard 4: Diversity requirement that programs prepare future educators in the area of educating diverse learners. Harvey et al. (2010) conducted a survey that portraits the situation of the higher institution regarding inclusive education. Majority of participants

agree that pre-service programs in their institutions need to cover inclusive education in course works and fieldworks. They indicated the need for collaboration with other faculty members for co-teaching, more support on financial and time to initiate collaborative work. However, Allday, Neilsen-Gatti, and Hudson (2013) based on their survey of 109 universities revealed that many universities provide minimal courses on special education, and one-third of them are not allocating content in special education. This research is limited due to its focus on the title of the course solely, so they might be missed some content in special education as a part of the syllabi and excused from observation and interview data in order to provide balanced information about the context of situations. The different result of those two studies might happen because of different type of data. The data of the study that is conducted by Harvey et al. (2010) is based on respondents' opinion, so it might not represent the situations in the department due to the subjectivity of the faculty member's. While the data of the study that is conducted by Allday et al. (2013) is based on data report as a real fact that represent an agreement of groups of people under department policies.

The need for redesign of teacher education programs is based on the limitation of teachers' competence to deal with diverse learners at schools whether it related with negative belief or lack of teaching skills (De Boer et al., 2011; DeSimone & Parmar, 2006; Hornstra, Denessen, Bakker, van den Bergh, & Voeten, 2010). To fulfill the need of highly qualified teachers, the government supported the initiative of the redesign programs by providing external funding, but it still has some concern. In 2007, a competitive grant program for five years known as 325T in 40 states was introduced in

order to develop collaborative programs in the higher education. A study of the impact of this grant found that collaboration between special and general education is increased. However, there is a limited initiative Little, Sobel, McCray, and Wang (2015). They revealed resistance among faculty members as a hindrance for change and collaboration. Moreover, they articulated the needs of active leadership support in order to increase collegial support and participation. It seems that external support is not enough, so shared vision as internal strength would be one promising sustainability of collaborative works in teacher education programs across departments. In line with this, redesigning teacher education programs to prepare qualified teachers to meet the needs of students with special needs is not easy (Kozleski et al., 2002) without shared vision and strong internal commitment from the leaders and the faculty members. That vision and commitment will represent in the policies and teaching practices in teacher education programs. Darling-Hammond et al. (2000) conducted case studies of high reputation of pre-service programs and found commonalities among them, as follows:

- a. A common, clear vision of good teaching that is apparent in all course work and clinical experiences;
- b. well-defined standards of practice that are used to guide and evaluate coursework and clinical work;
- c. a curriculum grounded in and substantial knowledge of child and adolescent development, learning theory, cognition, motivation, and subject matter pedagogy, taught in the context of practice;
- d. extended clinical experiences (at least 30 weeks) which are carefully chosen to support the ideas and practices presented in simultaneous, closely interwoven coursework;
- e. strong relationships, common knowledge, and shared beliefs among school-and university-based faculty; and
- f. extensive use of case study methods, teacher research, performance assessments, and portfolio evaluation to ensure that learning is applied to real problems of practice. (p.x)

In general, the highly qualified of education programs have three major characteristics, namely: clear vision, strong collaboration not only within the institutions but also with schools, and high standard of the learning process for both coursework and fieldwork. The interconnection between coursework and fieldwork is explicitly presented in the vision and its actualization in learning practices. This list is valuable information as a model for other universities to improve their quality to provide adequate learning experiences for future teachers.

The gap between the need for a teacher education program which supports inclusive education and the limited initiatives to make it real due to lack of commitment needs to be solved. With regard to solutions towards this situation, Harvey et al. (2010) suggest that it is the priority to have time to develop initiatives, provide access for collaboration among faculty members to increase faculty awareness of special education, and offer more experiences with special education through giving courses across disciplines or majors. To recognize the preparation towards the success of the entire program, this is therefore, important to investigate: a) the impact of the current model in terms of pre-service teachers' attitude toward inclusion and their self-efficacy, b) preservice teachers' challenges during teaching practices at practicum sessions, and c) barriers among faculty members to work collaboratively. The future study as a starting point to solve major obstacles in the redesign of teacher education in response to inclusion could be done in two ways, mapping the students' achievement in the current model to represent the effect of coursework and field experiences that have been done or explore the feasibility of collaboration across departments. This study will focus on

investigating the current disposition and self-efficacy of pre-service students in the most common model of teacher education programs.

Models Teacher Preparation Program

There are three different models of teacher education programs to support inclusive education: separate model, infusion model, and collaborative model. The separate and infusion models are found provided by the majority of universities in the U.S., while only a small number of them implement the collaborative model (Harvey et al., 2010; Voltz, 2003).

Separate model. In the separate model, special education courses are added into general education curriculum in order to enhance knowledge and teaching skill of preservice students. Powers (1992) found that this model could improve pre-service disposition and knowledge of inclusion. He suggests that one separation course would be not enough to support the need of competencies that are required in teaching practices, such as collaboration skills among teachers. However, this model is found to be the most common approach for preparing general education (Blanton & Pugach, 2007; Voltz, 2003). It might be because it would be easier to add one or more courses in special education which are taught by special education instructors rather than enrich other courses with special education contents that need extra work.

The drawbacks of this model are stated by B.G. Cook (2002). He mentioned that "many reformers feel that providing separate special education coursework reifies the disjointed nature of special and general education and advocate for merging the two

teacher preparation programs" (p. 263). However, time constraints in limited credits and the extent of content that needs to be covered might limit the opportunities for pre-service teachers to develop their attitude and disposition besides teaching skills and knowledge to deal with students with special needs.

As the majority model of teacher preparation models, there was a limited study in separate models. R. W. Taylor and Ringlaben (2012) conducted a study to investigate the impact of special education courses regarding pre-service students' attitude toward inclusion, knowledge, and self-efficacy. They employed two surveys (Teachers' Sense of Efficacy Scale/TSES and Opinions Relative to the Integration of Students with Disabilities (ORI) scale) and interviews in order to depict pre-service student's attitude toward inclusion, knowledge, and self-efficacy before and after special education courses are conducted. They revealed that pre-services teachers from general education had more positive attitudes toward inclusion after joined special education courses. This research has a limitation in providing unclear measurement to portray pre-service students' knowledge of inclusion and to what extent the courses impact pre-service students' attitude toward inclusion, knowledge, and self-efficacy in real teaching experiences. They suggest further investigation is needed to compare those three competencies after preservice students finish their practicum.

<u>Infusion model</u>. Infusion model is the integration of special education materials into the general education curriculum (Pugach et al., 2011). In this model, instructional and appropriate content that related to diverse learners are integrated into relevant courses, in other words, special education materials are embedded in general education materials.

Since the 1980s, instructors from special education departments could be a guest lecturer and teach about special education materials in general education classrooms (Pugach et al., 2011). This model could be an alternative if there is a limitation to add an additional course (McKenzie, 2009).

In comparison to the separate courses, pre-service students in infusion model have more positive attitudes toward inclusion (J. Kim, 2011) and confidence working with students with special needs (Lombardi & Hunka, 2001). Similar to this, Henning and Mitchell (2002) also posits that pre-service teachers improve on their self-efficacy after they had been taught several lessons on inclusive education. Moreover, a study conducted by K.S. Brown, Welsh, Hill, and Cipko (2008) investigates the impact of embedded special education materials in teacher preparation programs based on self-reported surveys. This study articulated that the higher-level knowledge and positive attitudes toward students with special needs of 208 pre-service students were caused by the ability of instructors who have experience and training in meeting the needs of students with special needs.

However, this model has some drawbacks based on previous studies which invite some suggestions. B.G. Cook (2002) investigated the effect of the infusion model in teacher preparation programs of 181 undergraduates. He found that pre-service students have positive attitudes towards students with special needs, but they were not confident in their teaching skills because of lack of knowledge and experiences in effective instruction for children with special needs. B.G. Cook (2002) states that pre-service students have a lack of confidence in teaching skills because of the broad topics covered in the courses,

such as diversity, technology, educational psychology, and history and culture of American schooling with additional topics in inclusion and limited experience of the instructors about the real situations in inclusive education. However, this research could not be generalized to other universities because the different context of learning contents, instructors, and students. The need of assistantship from special education faculty members to develop and integrate the best practices in special education into general education teaching materials is required in this model (Lombardi & Hunka, 2001). In other words, co-teaching between special education and general education faculty members is suggested in certain courses. Some courses that are viable for embedding curriculum stated by K. S. Brown et al. (2008) are evaluation and measurement, educational psychology and instructional technology so the focus of the courses will be emphasis on variety of assessment and how to modify learning materials and strategies as a part of teaching practices in inclusive education.

Infusion model might be the best solution when additional credits are difficult to implement. This model significantly improved pre-service teachers' positive attitudes toward students with special needs and their self-efficacy. However, lack of teaching skills to deal with students with special needs and the varieties of instructors' knowledge and experience in inclusive settings are calling for collaborative efforts between special education and general education faculty members to work together.

<u>Collaboration model</u>. Collaboration model is a program with intensive collaboration between special and general faculty members to develop the content, delivery system, and the outcome of the programs (Blanton & Pugach, 2007; Pugach &

Blanton, 2009). There are some varieties of collaborative models which different degree of collaboration including merged courses and dual certification for special and general education. This model wants to answer the weaknesses of the infusion and separation model because there are fewer opportunities for pre-service students from different majors, namely: special education, elementary education, pre-school education and K-12 to collaborate during the coursework and fieldwork in both models.

Previous studies present positive impacts on pre-services teachers' disposition, knowledge of inclusive education, and collaborative skills. Van Laarhoven et al. (2007) investigates a collaboration model called ACCEPT (Achieving Creative and Collaborative Educational Preservice Teams) with specific courses for both pre-service students majoring in special education and general education. These courses covered educational practices in inclusive classrooms (i.e. functional behavior assessment, assistive technology, and universal design for lessons plans) and were followed by fieldwork experiences that provide opportunities for collaboration between pre-services students in both majors. The only distinguished treatment between the control group and experiment group is collaborative work during the field study. They found that after one year of implementation of this project, both students in control and experiment groups improved their knowledge and positive attitudes toward students with special needs. Participants in ACCEPT showed that collaboration with other majors were influential experiences during the program and gained higher knowledge in terms of selection of instructional modification, assessment, and assistive technology for students with special needs even though they have similar level knowledge before they were enrolled in this program.

Similarly, McHatton and McCray (2007) investigate the attitudes of pre-service in elementary and secondary department towards inclusion based on self-report questionnaires before and after they were involved in co-teaching course work, fieldwork, and one year later. They found that pre-service students in the elementary department increased their positive attitudes towards inclusion. However, this study did not consider another factor that might be related to the development of positive attitudes towards inclusion, such as the content of the coursework, mentor teachers, school climate, the process of fieldwork, and collaborating partners.

Even though some studies found the positive impacts on a collaborative model of teacher education programs, the number of higher education implement this model is still limited (Van Laarhoven et al., 2007; Voltz, 2003). Previous studies found some potential barriers related to this model (McKenzie, 2009; Miller & Stayton, 2006), limited time and praise for collaboration, lack of cooperation in administrative procedures, variation of faculty member's knowledge, shortage of commitment and leadership role, lack of interdepartmental cooperation. Similarly, Harvey et al. (2010) asserts the situation of different expectations of faculty members from special education, curriculum and instruction, elementary education and secondary education to conduct collaborative courses. To overcome the barriers and provide alternative ways to overcome administrative issues, assistance from external funded (Weiss, Pellegrino, Regan, & Mann, 2015) and "curricular coherence" and "faculty collaboration" (Pugach & Blanton, 2009) are needed.

Three different teacher education models have been developed related to educational policies in the U.S. Pugach et al. (2011) revealed the government policies

related to the growth of teacher education model. In the first era of IDEA in 1975, the separate model was established. Then, NCLB and RTI mandated collaboration between special teachers and general education teachers, so their preparation program is required to develop collaborative skill as a team. Moreover, collaborative model promises more valuable outcomes in disposition and knowledge of teaching a student with special needs in the regular classroom, but some barriers have been found (Brownell et al., 2011). In addition, a huge number of separate models and infusion models are implemented in higher education. However, there are limited studies investigating the impact of a separate model. Previous two studies of the separate models have some limitation in the extent of study that do not cover the effect of special education courses into students' experience in fieldwork. A study to fulfill this gap is needed as scientific evidence of the separate model in order to improve the quality of teacher education programs. Moreover, this model is the first stepping stone to infuse special education content in general education when collaboration in higher education is still on-going progress to build, but they want to start their effort to support inclusive education as mandated by law.

The Structure of Teacher Education Program

In general, teacher education programs consist of two main parts, coursework, and fieldwork. Previous studies investigate specific elements in those parts that are related to effective teacher education program for inclusive education.

<u>Coursework</u>. Based on open-ended questionnaires, Gehrke and Cocchiarella (2013) finds that there are some pertinent aspects in coursework that develop pre-service

students' knowledge of inclusion, namely: content of courses in terms of learning sources and topics, instructors' knowledge and experiences, a specific course that enhanced knowledge of inclusion and feedback that provided from their instructors. Those elements will be discussed along with relevant studies as follows:

Content. The content of studies that related to inclusive education are suggested by previous researchers. The first, mentioned by B. G. Cook (2002), is assessment techniques with variety approaches. Students with special needs might certain conditions that hinders their learning performances so different types of assessment procedures are required to depict the current abilities of these students. The second is effective practices for educating students with special needs in regular classrooms (Bain et al., 2009; B. G. Cook, 2002; Gehrke & Cocchiarella, 2013; Van Laarhoven et al., 2007), for example differentiated instruction and curriculum and curricular and instructional adaptation. Students with special needs have different ways and paces of learning that need different teaching approaches, so they can actively participate during learning process. Some of them might need less learning objectives compare to other students, but some of them required similar learning goals but flexibility in scope of learning materials based on their Individualized Education Programs (IEP).

The third is knowledge of policy and law related inclusive education are needed to be a part of coursework (Forlin et al., 2007). Teachers' responsibility and specific procedures of delivering educational services for student with special needs explicitly stated in the state and federal law as basic rules that need to be followed. Failures of meeting those laws requirement might invite parent's action to use their rights for hearing

process. Lastly, courses might include behavior management (B. G. Cook, 2002) to deal with students with behavior issues so the teachers could provide suitable environment for them to prevent some triggering situations that may disturb the learning process. If preservice students have a lack of knowledge about how dealing with students with special needs in regular classrooms, it will lead to their frustration and anxieties (Boling, 2007).

Teaching strategies. Teaching strategies represent the real problems of children with special needs to practice problem-solving. Henning and Mitchell (2002) used pictures of students with special needs and simulation to provide context so pre-service students could examine the strengths and weakness of the child as the basis for the planning of learning differentiation. Through simulation, pre-service students could acquire different experience as if they had disabilities in order to understand the different ways of learning of their students. However, pictures might represent the needs the related to physically conditions but might not for unphysically seen, for example, academic abilities, behavior abilities, and social abilities. Moreover, in order to enhance teacher-students' knowledge, case pedagogies is found meaningful to support their skill to be the creator of the curriculum in their class because they can understand the real issues that happened in a daily basis so it will enable teacher-students to feel the real situation before they do practical experiences. Cases present the real situation of dilemmas and problems that may be similar to another context that might appear in the student's future experiences (Wade, 2000). By analyzing complex teaching situations and by articulating, listening to, and possibly challenging a variety of interpretations presented during case discussions, preservice students can become creator (Harrington & Garrison, 1992). Arndt and Liles (2010)

conducted a qualitative study of social studies lessons to develop co-teaching through reading materials, review movie, and a case study of students with special needs and they found pre-service students have an open mind to co-teach.

Instructor's experiences and knowledge. The instructor has experience and training in special education and field experiences in the inclusive classroom (K. S. Brown et al., 2008; B. G. Cook, 2002; Gehrke & Cocchiarella, 2013) so they can support deep understanding of pre-service students about the real situations that need be to address and related to their coursework content. Faculty disinterest and lack of knowledge with diversity topics are found significantly related to student's disinterest (Jennings, 2007). Training in special education content could provide basic information for a faculty member to merge the general content with special education approaches (K. S. Brown et al., 2008; Lombardi & Hunka, 2001).

<u>Feedback.</u> The way instructors give responses to provide feedback of pre-service students (Gehrke & Cocchiarella, 2013). Boling (2007) conducted a grounded theory studies to understanding changing attitudes of the pre-service student, and he found that conversation of previous experiences might open positive disposition toward inclusions if educators provide safety space to reflect their concern and make welcoming environment whether the pre-service students still struggling to accept the idea of inclusion.

Coursework will provide stronger basic knowledge for future teachers about certain areas in inclusive education (i.e., assessment, teaching strategy, behavior management) with suitable teaching strategies and adequate feedback and support from

the instructors. Furthermore, pre-service teachers might comprehend how different needs of students required adaptation in learning, so they will be able to prepare and plan suitable learning strategies for them. However, this knowledge is not enough and needs additional real experiences so pre-service students will obtain direct feedback from their students about the quality of their instructions.

Field experiences. Field experiences are believed to improve self-efficacy and confidence on teaching students with special needs (Fives, Hamman, & Olivarez, 2007; Forlin et al., 2007; Jung, 2007; McHatton & McCray, 2007). However, other studies showed different results. A study conducted by Forlin and Chambers (2011) found that direct interaction with people with disabilities negatively impacted pre-service teachers' attitude towards inclusion. On the other hand, study conducted by J. Kim (2011) found that there is no direct relationship between pre-service teachers' positive attitudes toward students with special needs with field experiences. Certain situations that might underlie the effectiveness of field experiences based on previous studies consist of the circumstances where the field experiences took place, the structure of the field experiences, and the availability of support groups.

<u>Positive and supportive environments.</u> Practical experiences for teacher-students need to be placed in positive and supportive environments (Brownell et al., 2011; Forlin et al., 2007; Silverman, 2007) so they will have opportunities observing and modeling how the teacher is dealing with students with special needs in effective ways. In addition, reduction of preservice teachers' burnout was found when they received guidance from mentor teacher and at the same time their self-efficacy increased (Fives et al., 2007). When

pre-service had teaching practices, they will receive feedback on their instruction, and it will improve their teaching skills in order to have greater opportunities to experience success. The success of teaching experience will develop self-efficacy (Bandura, 1977) of pre-service teachers because they acquire authentic feedback from students. Mapping appropriate placement for practicum and build a partnership with school and mentor teachers to gain shared vision to support future teachers are necessary to be considered in effective field work.

Linked coursework and field experiences. Darling-Hammond et al. (2000) found that linking the coursework and the field experience is one of characteristics of the higher ratings of teacher education programs based on their alumnae's confidence level of teaching. In these situations, pre-service students could make connection between their previous knowledge based on their coursework into real conditions. It might be the case that field experiences in previous study conducted by Forlin and Chambers (2011) result in less positive attitudes toward inclusion because the participants in this study joined social works to assist people with disabilities in social activities which not deliberately designed as embedded activities with their coursework.

Field experiences do not always represent the activities in the school classroom, but it could be conducted during coursework as practical experiences which depends on the content of study that are being taught. Bain et al. (2009) conducted a study about embedded design in cooperative learning and peer-assisted learning (PAL). The participants were taught about both concepts and then they practiced with their peers.

After that, they continued the application with additional feedback, and then the last step is reflection of personal impact from the activities.

Reflective activities. During the implementation of teacher training, Etscheidt, Curran, and Sawyer (2012) recommended that reflective activities should be covered throughout the preservice program deliberately. Reflective activities allowed insightful of teacher-students about their own learning and give feedback about what was useful, what could be more useful (Darling-Hammond & Bransford, 2005). The reflective process during in-service training would be needed to continue when teacher-students work as a teacher in order to improve their professionalism and influences on later practice for both general and special education teachers (Kozleski et al., 2002). Critical reflection of preservice students during field work represent a deep understanding of real challenges in inclusive classrooms to maintain learning process for all students including students with special needs appropriately (Hutchinson & Martin, 1999). Kozleski et al. (2002) found that most of the teacher students changed belief when their efforts and attempt to create inclusive classrooms shows some limitations. The availability of positive feedbacks and supports from instructors, mentor teachers, and cohort groups is valuable resources to overcome their barriers in the first teaching experiences.

Field experiences will provide extensive experiences of pre-services teachers dealing with students with special needs if they can obtain proper feedback from their students, peer, mentor teachers, and instructors. The feeling of confidence will gradually develop as long as they have greater possibility of being successful in their teaching experiences. Even though some pre-service students might find hinders or difficulties in

their teaching practices, the availability of positive supports from the environment that guide them to reflect and learn from their mistakes will enhance their teaching competencies little by little.

In conclusion, different kinds of teacher preparation models closely related with the culture and the vision of the higher institutions. Even though the need of teacher competencies to deal with diverse learners is explicitly required based on law, government, and the evidences of higher percentages of diverse students at school, the concern of higher institutions to fulfill the needs are varied. The separate model is the easiest and the most common way to add special education materials into general education programs, but there are limited studies that have been conducted. Future study is needed in this model in order to provide in-depth analysis about its process and its impact on pre-service teachers' competencies in inclusive classroom.

Preservice Teachers' Efficacy Beliefs

Previous studies have been conducted to investigate pre-service teachers' self-efficacy in their teacher education. Aydin and Hoy (2005) states that the quality of teacher preparation program is one of the sources of teachers' self-efficacy. Dunst and Bruder (2014) statement that the feeling of confidence and competence of teaching predicts of how preparation program provide adequate experiences. Coursework which enhances the deep learning of the subject materials and provides varied experiences through cooperative problem-based learning are found have a greater impact on preservice teachers' efficacy (Darling-Hammond & Youngs, 2002; Gordon & Debus, 2002).

Gordon & Debus (2002) that pre-service teachers' efficacy started to be increased at the end of the second year of study and during the third year. It might be because pre-service teachers' have fieldwork opportunities that enhance the need for deep learning.

The important role of experiences during fieldwork was investigated by previous studies (Cole, 1995; Hoy, 2000). They found that extended field work with enough support would improve self-efficacy of pre-service teachers. Previous study was explained the learning process within coursework and fieldwork that might influence different levels of pre-service teachers' self-efficacy. Burton and Pace (2009) conducted three years case studies of the pre-service students to teach Math. They found that at the end of the third year, pre-service students had greater self-efficacy to teach mathematics for students with special needs based on self-report survey and pre-services student's reflections. In the third year, pre-service students have the opportunity to be a tutor for students with special needs for 20 meetings. This study asserts that coursework with structured field work could improve pre-service students' self-efficacy to teach students with special needs. However, fieldwork in this study is limited in tutoring students with special needs in special education settings, so it might have different results if pre-service teachers conduct field work in regular settings because they need to arrange lessons plans for all students including students with special needs.

<u>Influential Factors of Preservice Teachers' Efficacy Belief to Teach Students with</u>

<u>Special Needs</u>

Specific context of field experiences influences teacher's efficacy (Tschannen-Moran et al., 1998) Woolfolk Hoy & Davis, 2006). Teacher might feel efficacy either in specific content, specific circumstances, or teaching situations but might not feel the same in other contexts. For example, preservice teachers felt more efficacious to implement variety of teaching strategy after student teaching but reported that they struggled to teach students with special needs in their classroom (Şahin & Atay, 2010). For this reason, the use of interpretive research is suggested (e.g., Tschannen-Moran et al., 1998; Wheatley, 2005). Bandura (1997) stated that context provides possible sources of either achievement or failures of performance. The availability of sources, support, and feedback, might affect personal performance and their self-efficacy as an external factor. As an internal factor, self-monitoring to focus on particular activities is found to be contributed to the personal success and develop their self-efficacy (Bandura, 1997).

Seven different factors influence preservice teachers' self-efficacy levels to teach students with special needs according to reviewed studies (Ahsan et al., 2013; Gao & Mager, 2011; Leyser et al., 2011; Loreman et al., 2013; Peebles & Mendaglio, 2014; Pendergast et al., 2011; Romi & Leyser, 2006; Sharma, Simi, & Forlin, 2015; Shaukat, Sharma, & Furlonger, 2013; Sokal, Woloshyn, & Funk-Unrau, 2013; Specht et al., 2016). These factors include gender, program/area of study, intensity of study, previous experience with students with special needs, education levels, and design of coursework and fieldwork (Ahsan et al., 2013; Gao & Mager, 2011; Leyser et al., 2011; Loreman et

al., 2013; Peebles & Mendaglio, 2014; Pendergast et al., 2011; Sharma, Shaukat, & Furlonger, 2015; Sharma, Simi & Forlin, 2015; Shaukat et al., 2013; Sokal et al., 2013; Specht et al., 2016) Some conflicting results were found, and the possible explanations and suggestions for future studies are discussed as follows:

Gender differences. Reviewed articles found gender as one of the influential factors of the self-efficacy levels of preservice teachers in teaching in inclusive schools (Ahsan et al., 2013; Forlin et al., 2010; Gao & Mager, 2011; Romi & Leyser, 2006; Scheer et al., 2015; Shaukat & Sharma, 2013; Specht et al., 2016). These studies had conflicting results that yield some suggestions for future studies to consider gender as socio cultural issues in the context. Three studies in developed countries found no significant gender differences (Burton & Pace, 2009; Loreman et al., 2013; Pendergast et al., 2011), but seven studies found significant differences (Ahsan et al., 2013; Forlin et al., 2010; Romi & Leyser, 2006; Scheer et al., 2015; Shaukat et al., 2013; Specht et al., 2016). Two studies conducted in the U.S by Gao and Mager (2011) and in Germany by Scheer et al., (2015) revealed that male preservice teachers had lower self-efficacy scores compared to females when dealing with students with special needs. However, males tend to be underrepresented in this population. A study conducted in Canada by Specht et al. (2016) revealed that different genders tended to have different levels of self-efficacy levels based on the specific self-efficacy subgroups. Male preservice teachers reported higher sense efficacy beliefs than female participants on the Managing Behavior subscale, while female preservice students reported higher self-efficacy in inclusive beliefs. Four different studies conducted in developing countries: Bangladesh (Ahsan et

al., 2013), Pakistan (Shaukat et al., 2013), Mexico (Forlin et al., 2010), and Israel (Romi & Leyser, 2006), and two studies conducted in Canada (Scheer et al., 2015; Specht et al., 2016), found that gender yields different self-efficacy levels in teaching students with special needs. The female pre-service teachers were found to have a higher self-efficacy level when teaching students with special needs (Romi & Leyser, 2006; Shaukat & Sharma, 2013; Forlin et al., 2010; Scheer et al., 2015; Specht et al., 2016), but a different result was found by Ahsan and colleagues (2013). Ahsan and colleagues (2013) interviewed six education administrators to explore the contextual factors that related lower female teachers' self-efficacy score compare to male. The possible reasons for differences could be the use of qualitative methods (Ahsan et al., 2013). Ahsan et al. (2013) found that sociocultural issue's yield different responses from female participants in terms of efficacy in teaching. In addition, future research needs to include more male participants if possible, and consider the hidden factors in the society that affect whether males or females tend to have a higher sense of self-efficacy in teaching students with special needs.

Program/area study. Special education pre-service teachers have higher efficacy in teaching students with special needs compared to pre-services students in other programs (Forlin et al., 2010; Huber, 2009; Leyser et al., 2011; Lifshitz & Glaubman, 2002; Romi & Leyser, 2006; Scheer et al., 2015; Sharma, Simi, & Forlin, 2015; Specht et al., 2016). For this reason, the comparison study of self-efficacy of teaching students with special needs which include participants from different programs of study need to be considered separately from pre-service students who are majoring in special education.

For example, Loreman et al. (2013) found that preservice students in Indonesia have higher self-efficacy compared to those in Hong Kong. This may lead to the conclusion that eastern countries (Indonesia and Hong Kong) have differing levels of self-efficacy. However, the reason for these differences might be because of the different programs of study among the participants. Hong Kong participants' major was primary/secondary education, while Indonesian participants were majoring in special education. Pre-service teachers majoring in special education might have a higher self-efficacy level, so participants for comparative study need to minimize sampling differences.

Focus of study. The more training in special education, the higher level of self-efficacy of preservice teachers (Ahsan et al., 2013; Gao & Mager, 2011; Leyser et al., 2011; Loreman et al., 2013; Sharma, Simi, & Forlin, 2015). Specifically, Ahsan and colleagues (2013) found no correlation with the length of the program. They revealed that one year of training improves self-efficacy level in preservice teachers compared to the four-year program because the content of the one-year training is specifically designed to support the implementation of inclusive education. One course in special education program did not significantly change the self-efficacy levels of preservice teachers (Sharma, Simi, & Forlin, 2015). In addition to this, more knowledge about special education, such as: law and policies in local context, specific instruction for students with special needs, and behavior management, was found to have a positive relationship with higher levels of self-efficacy of pre-service teachers (Ahsan et al., 2013; Loreman et al., 2013; Sharma, Simi, & Forlin, 2015). For this reason, pre-service teachers majoring in

special education should have higher self-efficacy levels in teaching students with special needs compared to other field of studies (general education, secondary education).

Previous experience. Previous teaching experience and interaction with people and/or students with disabilities had a significant relationship to the levels of self-efficacy in teaching students with special needs (Ahsan et al., 2013; Forlin et al., 2010; Leyser et al., 2011; Loreman et al., 2013; Peebles & Mendaglio, 2014; Shaukat & Sharma, 2013; Sharma, Shaukat, & Furlonger, 2015; Specht et al., 2016; Sokal et al., 2013). Prior experiences with students and/or people with disabilities can be found in different forms, such as practicum, family members, tutees, classmates, and playmates. The more prior experiences that preservice teachers have, the higher self-efficacy (Ahsan et al., 2013; Forlin et al., 2010; Leyser et al., 2011; Loreman et al., 2013; Peebles & Mendaglio, 2014; Sharma, Shaukat, & Furlonger, 2015; Shaukat et al., 2013; Sokal et al., 2013; Specht et al., 2016). However, pre-service teachers without prior experience dealing with people and/or students with special needs also improved self-efficacy levels after completing a course and field works (Peebles & Mendaglio, 2014). In addition, the design of the preservice program was found to have the promising effect to improve pre-service teachers' levels of self-efficacy for those who have no or little prior experience with people with disabilities and/or student disabilities (Peebles & Mendaglio, 2014). As a result, the teacher preparation program can improve the levels of self-efficacy for future teachers to work with students with special needs through systematic practicum (R. K. Kim, 2016), well-developed coursework and fieldwork (Gao & Mager, 2011; Lancaster & Bain, 2010; Peebles & Mendaglio, 2014).

Education level. Previous studies found that the levels of self-efficacy of preservice teachers were changed during their teacher preparation program (Gao & Mager, 2011; Pendergast et al., 2011). In the first year, preservice teachers had high selfefficacy in inclusive education because they have less or no direct experience teaching students with special needs. Then, self-efficacy dropped when pre-service teachers had first direct teaching experience in the real classroom. The overestimation of pre-service students' sense of efficacy in the first years of study was one reason for the higher level of self-efficacy because the preservice teachers had little or no interaction with real inclusive classrooms. Similarly, Shaukat et al. (2013) reveals that preservice teachers in Pakistan have higher self-efficacy levels teaching students with special needs compared to those in Australia because preservice teachers in Pakistan have less interaction in the real classroom. The explanation of 'reality shock' in this phenomenon was found in real classrooms during the first field experience. This caused the preservice teachers to adjust previous expectations of teaching students with special needs (Gao & Mager, 2011; Pendergast et al., 2011).

Design of coursework and fieldwork. A specific design of course works and fieldworks were employed to improve the levels of self-efficacy of preservice teachers to teach students with special needs (Burton & Pace, 2009; Gao & Mager, 2011; Jobling & Moni, 2004; Lancaster & Bain, 2010; Peebles & Mendaglio, 2014). The more opportunity for students to reflect and experience in real classrooms with feedback from instructors seemed to improve their sense of efficacy teaching in inclusive classrooms (Huber, 2009; Jobling & Moni, 2004). These studies had different program designs that

have some similarities which lead to changes of levels preservice teachers' efficacy teaching students with special needs.

Solid understanding can be gathered about influential factors of preservice teachers' self-efficacy levels according to previous studies, including program of study-especially special education department, focus of the study program that relate to inclusive education instead of the length of the study, previous experience, education level, and design of coursework and fieldwork (Ahsan et al., 2013; Gao & Mager, 2011; Leyser et al., 2011; Loreman et al., 2013; Peebles & Mendaglio, 2014; Pendergast et al., 2011; Romi & Leyser, 2006; Sharma, Shaukat, & Furlonger, 2015; Sharma, Simi, & Forlin, 2015; Shaukat et al., 2013; Sokal et al., 2013; Specht et al., 2016). However, more studies with in-depth investigation about how different sources of self-efficacy lead to higher self-efficacy in teaching (Wang et al., 2017) will be beneficial in teacher preparation program to provide support for future inclusive education teachers.

The Changes of Self-efficacy Level during Pre-Service Program

According to reviewed studies that reported changes of self-efficacy levels of preservice teachers to teach students with special needs, different results were found. Five reviewed studies reported improvement of self-efficacy levels in various program designs (i.e., a mandatory course in special education; Lancaster & Bain, 2010; Peebles & Mendaglio, 2014), a dual certification program (Gao & Mager, 2011), a student teaching program (Huber, 2009), and an after-school program (Jobling & Moni, 2004) during preservice programs. However, six reviewed studies reported no change or reduced levels of

preservice teachers' self-efficacy when teaching students with special needs (Ahsan et al., 2013; R. K. Kim, 2016; Leyser et al., 2011; Pendergast et al., 2011; Sharma, Simi, & Forlin, 2015; Woodcock et al., 2012). Possible explanation regarding these differences is the design of coursework and fieldwork, and measurement tools that were used to calculate the changes of self-efficacy of preservice teachers.

Prior research has focused on how coursework design influences the changes levels of self-efficacy (Gao & Mager, 2011; Huber, 2009; Jobling & Moni, 2004; Lancaster & Bain, 2010; Peebles & Mendaglio, 2014). The description of the designs of coursework and fieldwork were found based on a description of programs in each reviewed study (see Table 1). As depicted in Table 1, improvement in self-efficacy levels in pre-service teachers to teach students with special needs was supported by the specific design of programs that emphasized through the connection between the coursework and fieldwork.

In addition, the coursework was devoted to strengthening both the knowledge and teaching skills to deal with students with special needs in real classrooms through problem-based approach to make a strong link between the coursework contents and fieldwork activities. Furthermore, collaboration skills and teaching skills are supported through supervision, modelling, and reflective feedback from qualified mentor teachers in various sites (urban, suburban, and remotes areas) and various types of teaching experiences (individual and small groups teaching).

Table 1: Design of coursework and fieldwork that improved self-efficacy levels of preservice teachers based on reviewed studies

Studies	Content and design of coursework	Design of Fieldworks	
Lancaster & Bain, 2010 (a mandatory course in inclusive education)	 Collaboration Deeper understanding of the content and skills of inclusive practice 	 Connection between coursework and fieldwork modeling by instructors Feedback from peers 	
Gao & Mager, 2011 (dual certification programs)	 applied critical reflections emphasize on cultural responsiveness through various contents and methods 	 The high intensity of field work in different settings (urban, suburban, remote) Connection between coursework and fieldwork 	
Peebles & Mendaglio, 2014 (a mandatory course in inclusive education with field experience)	 Focus on educational implication and instructional strategies for teaching diverse students. reframing deficit model problem-based learning Collaborative inquiry 	 Develop and teach both individual and a small group of learners. connectedness with coursework (after finished 10 weeks coursework) 	
Huber, 2009 (student teaching program)	N/A	Full placement in school site under the supervision of faculty member and mentor teacher with specific criteria.	
Jobling & Moni (2004) (reading after school program)	Sequential learning that is started with literature review and followed by structured observation of students with special needs in regular program	Micro teaching after students completed all the practicums in teams that consist of preparation, implementation, evaluation and submission of a report.	

In Table 2, the design of coursework and fieldwork was less described and the seven aspects that are found in reviewed studies that improved self-efficacy levels were absent (Ahsan et al., 2013; R. K. Kim, 2016; Leyser et al., 2011; Pendergast et al., 2011;

Sharma, Simi, & Forlin, 2015; Woodcock et al., 2012). It might be because the research methods were surveys, so the research questions themselves were not devoted to investigating the learning process as a causal explanation for different levels of selfefficacy among pre-service teachers to teach in inclusive classrooms (Huber, 2009). However, some important information from these studies can be gathered. One course in inclusive education is not adequate to improve preservice teachers' self-efficacy to a high level (Sharma, Simi, & Forlin, 2015). In addition to this, traditional designs of delivering the coursework and conducting fieldwork with less support (Huber, 2009) and less balances in cognitive, psychomotor, and affective domains (Sharma, Simi, & Forlin, 2015) might not improve the levels of self-efficacy. For these reasons, future researchers need to be focused on a variety of strategies with sufficient information about the learning processes that are designed in the coursework and fieldwork. More research should be conducted to build an accumulative knowledge and a deeper understanding about how preservice programs improve and sustain high levels of self-efficacy of preservice teachers to deal with students with special needs.

Pre-service teachers tend to have higher self-efficacy levels in early on, and a possible decline trend when they have their first direct teaching experience in inclusive classrooms (R. K. Kim, 2016; Pendergast et al., 2011). However, most of previous studies in pre-service teachers' self-efficacy in inclusive classroom employed self-report that might not represent their behavior because the participants prefer to respond based on socially desirable answers. In addition to this, the selection of measurement tools to measure pre-service teachers' self-efficacy need to consider different teaching

competencies that require to work with students with special needs (Zhang, Wang, Stegall, Losinki, & Katsiyannis, 2018). Furthermore, carefully examination of the available measurement tools and modification of the current scales might need to be conducted with alignment of research questions.

Table 2: Design of coursework and fieldwork that reduced self-efficacy levels of preservice teachers based on reviewed studies

Studies	Content and design coursework	Design Fieldworks
Pendergast et al., 2011	did not specify the content in inclusive education	seven weeks practical experience
Ahsan et al., 2013	Only specify the various program design, i.e., a one-day inclusive education training, embedded content in bachelor program, and three one-hour specific course in special education, but not the content	N/A
Leyser et al., 2011	did not specify the content and design	N/A
Sharma, Simi, & Forlin (2015)	provided one course in special education	N/A
Woodcock et al., 2012	lecturing about inclusive education	a four-week of teaching practicum
R. K. Kim, (2016)	two or higher credits of Special Education course without standard of completion	practicum in inclusive classrooms

Different measurement tools were employed in previous studies ranging from general to specific scales that measured self-efficacy levels of preservice teachers in

inclusive education. The reviewed papers that employed either specific or general scales of self-efficacy found both positive and negative changes in preservice teachers' selfefficacy to teach students with special needs (Ahsan et al., 2013; Forlin et al., 2010; Gao & Mager, 2011; Huber, 2009; R. K. Kim, 2016; Lancaster & Bain, 2010; Leyser et al., 2011; Peebles & Mendaglio, 2014; Pendergast et al., 2011; Sharma, Simi, & Forlin, 2015; Woodcock et al., 2012). The Teacher Efficacy Scale (TES) developed by Gibson and Dembo (1984) and The Teachers' Sense of Efficacy Scale (TSES) developed by Tschannen-Moran and Hoy (2001) are general scales of self-efficacy used in previous studies of self-efficacy teaching in inclusive classrooms. Both scales were developed based on Bandura's construct of self-efficacy (Bandura, 1997). Some weaknesses of TES (Gibson & Dembo, 1984) that should be considered are the clarity of meaning between personal and general teaching efficacy and "The lack of clarity about the meaning of the two factors (personal teaching efficacy and general teaching efficacy) and the reliability of the factor structure (Tschannen-Moran & Hoy, 2001). However, there was a correlation between TES and TSES (Huber, 2009).

The TSES was used for the pre-service and in-service program (Tschannen-Moran & Hoy, 2001), so this scale can be used in both situations with a broader range of teaching tasks. For example, dealing with disruptive students and high achieving students, the creativity of teaching, the flexibility of teaching to conduct alternative assessments and teaching approaches. Some of the items that represent efficacy teaching in inclusive settings are found in all three factors of the TSES. According to the list of items, the TSES required judgments of efficacy in teaching to deal with diverse students

that are not restricted to only students with special needs, but also broaden the scope of diverse learners who might have learning problems at schools. Similarly, Zhang et al. (2018) found that the TSES items are partially applicable in teaching students with special needs. In addition, if the scope of research does not specifically focus on students with special needs, then this scale can account for the measurement of self-efficacy for pre-and in-service teachers to deal with diverse learners in inclusive settings.

The Teacher Efficacy for Inclusive Practice (TEIP) and The Self-Efficacy toward future Interaction with People with Disabilities Scale (SEIPD) are the specific scales used to measure the self-efficacy of preservice teachers in inclusive settings. Two studies conducted in Australia employed the SEIPD which has 15 items to measure three areas: willingness to initiate behavior; willingness to expend effort in completing behavior; and persistence in the face of adversity (as cited in Lancaster & Bain, 2010; Woodcock et al., 2012). The TEIP scale was developed by Sharma, Loreman, and Forlin, (2011) because they found limitation on previous scales that focused on general self-efficacy and the use of medical approaches to define disability. The participants were from four different countries that consisted of one university from Canada, Australia, and Hong Kong and three universities from India. The TEIP is the one efficacy scale that includes developing countries in the development stage, so the scale is already adjusted in both developed and developing countries. However, the use of the term "student with disabilities" in their items can be problematic. A weak diagnosis criterion and procedures in developing countries for students who are served as students with special needs might not cover students with mild disabilities. In addition, the participants might have different

conceptions and perceptions about their teaching efficacy for students that they assume have special needs education.

Another measurement developed by Dawson and Scott (2013) based on the U.S context to measure both practicing teachers and preservice teachers to teach students with disabilities in the classroom. The Teaching Students with Disabilities Efficacy scales (TSDES) was validated with TSES with positive correlation and predicted the intention to teach students with special needs. This study employed this instrument because it captures specific teaching task to handle students with special needs in the U.S context. It has five subscales, instruction, professionalism, providing support, classroom management, and related duties. This study employed the TSDES for both the first placement survey and second placement survey (see Appendix H).

Both specific and general self-efficacy scales are appropriately used to depict the levels of pre-service teachers' self-efficacy in teaching students with special needs, with some drawbacks as previously mentioned that need to be considered. Some qualitative data can be added to minimize weaknesses and provide comprehensive information to reduce the bias of self-report evaluation. Deemer and Minke (1999) argue that the items in the efficacy scales do not consider the external factors that might have a positive influence on teaching and learning, so the qualitative information can provide adequate data about the role of support system, such as mentor teachers, peers, and other support from educational institutions. In addition, revalidation of the scales is recommended to increase the validity of the scales, specifically if the translation is conducted.

A clear movement exist in education policy in inclusive education both in developed and developing countries that impacts how preservice programs prepare their future teachers. Unfortunately, only a few studies focus on the various strategies to sustain the high level of self-efficacy (Gao & Mager, 2011; Huber, 2009; Jobling & Moni, 2004; Lancaster & Bain, 2010; Peebles & Mendaglio, 2014) because most studies focused on influential factors of self-efficacy of preservice teachers in inclusive classrooms. Some missing information about how preservice programs provide adequate learning experiences for preservice teachers through various research methodologies. In addition to this, future studies need to explore different learning experiences of preservice teachers during their teacher-training programs that might impact self-efficacy levels in teaching (Leyser et al., 2011). Thus, a need exists for a deeper and a clear explanation of how different learning experience during pre-service program lead to different level of self-efficacy teaching students with special needs for future studies to be conducted.

Why Student Teaching Creates a Meaningful Event for Self-Efficacy Development?

Student teaching program is a pertinent process in preservice program in building and improving teachers' sense efficacy (A. L. Brown, Lee, & Collins, 2015; Leyser et al., 2011; Moulding, Stewart, & Dunmeyer, 2014). A. L. Brown and colleagues (2015) investigate through mixed-method design about some of the themes that emerge during student teaching that might contributes to improvement of sense efficacy in teaching. They reveal three main points, are: the opportunities for teaching practices, opportunity to observe experienced teacher, and build relationship with cooperating teachers. In other

words, preservice teachers have more opportunities to teach students that to establish their teaching competences under supervision of university instructor and mentor teacher. The gradual improvement of teaching tasks can be seen in the program structure of student teaching. Vicarious experience is gathered from classroom observations when their mentor teacher delivers lesson plan. The quality of mentor teacher is setup to make sure the quality of teaching is transferable to future teachers. Similar to this, Cahill (2016) revealed that preservice teachers also have more opportunity to observe and gain mastery experiences, so they were more efficacious compare to other student in their practicum process. A mixed method study was conducted by Huber (2009) suggests that mentor teachers influenced the positive changes of efficacy levels of preservice teachers in inclusive classroom after student teaching program. The way of mentor teacher provide supportive feedback is part of verbal persuasion that enable preservice teachers to improve their teaching quality.

Bradbury and Koballa (2008) found that mentor teachers who do not have adequate preparation for their role as a coach have different conception about the way to conduct mentoring and strategy to build communication with preservice teachers. Similarly, Hoffman et al., (2015) found that mentor teachers with limited preparation tend to provide evaluative feedback to preservice teachers and do not provide enough space for the preservice teachers to reflect based on their teaching experiences. Engagement of teacher candidates in reflection to examine their beliefs about teaching enable preservice teachers to evaluate themselves so they can improve their future practices, especially during field experience (Artzt & Amour-Thomas, 2002). In this situation, the critical reflection of preservice teachers might not happen when the mentoring process is conducted in

corrective and punitive ways. Furthermore, Coward et al. (2015) revealed in their qualitative study that preservice teachers' self-confidence emerges when they were involved in the decision-making process with mentor teachers. According to these studies, the quality of mentor teachers yields the quality of preservice teachers to reflect, decide future improvement, and engage in professional teaching practices.

CHAPTER 3

METHODS

This chapter covers a description of the research methodology which includes (a) research design and rationale, (b) procedures, (c) participants, (d) instrumentation and data collection, and (e) data analysis. This study was to examine the changes in preservice teachers' self-efficacy following student teaching when they taught students with special needs in the area of instruction, professionalism, teacher support, and classroom management. Some possible factors which might contribute to the changes level of efficacy based on previous studies and contextual factors were analyzed.

Research Design and Rationale

This study employed a mixed-method design based on the consideration that neither a quantitative nor a qualitative design is sufficient to understand the changes of self-efficacy (Deemer & Minke, 1999; Poulou, 2007; Tschannen-Moran et al., 1998; Wheatley, 2005). Existing self-efficacy scales are self-reported with some bias that need to be considered. Wheatley (2005) provides an example of the bias of score in efficacy scale. An individual may respond low score in their self-efficacy of the specific task with two possible responses: they might able to do the task, but they have time constraints that limited their activities, or they might have lack of capabilities, so they prefer not to compel it. In addition, self-efficacy cannot solely be reported as a number, but needs an interpretive approach to explore the context (Gerges, 2001; Oh, 2011; Wheatley, 2005; Wyatt, 2014). Furthermore, the use of self-report in understanding efficacy belief can be maximized by exploring the process of how individual comprehend tasks, describing the

context, and acknowledging the availability of support (Gerges, 2001; Oh, 2011; Wheatley, 2005). The mixing of quantitative and qualitative data in this study occurred at the research objective, data analysis, and inference stages. Moreover, mixed-method research in this study provided a better understanding of the research problem (Tashakkori & Teddlie, 2003) by strengthen the validity through triangulation, and provide different perspectives on complex phenomena (Bamberger, Rao, & Woolcock, 2010).

A mixed-methods sequential explanatory design was utilized during the student teaching experiences. This design consist of two phases using both quantitative and qualitative data (Creswell, Clark, Gutmann, & Hanson, 2003) to gain information about pre-service students' sense of self-efficacy during and after student teaching. The study started with quantitative data collection, followed by the collection and analysis of qualitative data and the two methods were integrated during the interpretation phase (Creswell et al., 2003). This type of design was selected to collect general information about preservice teachers reported self-efficacy scores during and after student teaching quantitatively through online surveys and examined whether perceptions of self-efficacy changed after student teaching. Second, interviews were conducted for four participants to explore their perceived efficacy in the first placement and experiences with their perceptions after student teaching. The inclusion of interview data permitted an examination of the context of self-efficacy changes through a multiple case study approach.

Participants

The participants in this study were preservice teachers in one of a Midwest university who conducted student teaching in Spring 2018. Eighty-two participants started the pre-survey and 65 surveys were completed. Eleven participants were recruited from classroom invitation, yielding a total of 76 preservice teachers out of 230 students (33% participants rate) for the first placement survey.

First placement and second placement surveys were distributed through Qualtrics; 41 preservice teachers participated in both surveys. Second placement survey participants represent similar demographic characteristics as first placement survey participants in regards to age, gender, ethnicity, and school location. According to the demographic information, participants ranged in age from 21 years to 53 years (M=24, SD=5.67). More females (n=50, 70%) than males (n=21, 29%) completed in the first placement survey. The demographic was similar in the second placement survey for females (n=29, 71%) and males (n=11, 27%). Most respondents were Caucasian/White for both the first placement survey (n=66, 91%) and second placement survey (n=35, 85%). Participants' site placement represented schools from urban, suburban, and remote areas almost equally. The majority of the respondents worked with students with an IEP for both the first placement (n=71, 92%) and the second placement (n=39, 95%).

Participants were seeking certification in early childhood education, elementary education, secondary education and middle grades. All participants had finished coursework, including a required course (2 credits) with integrated special education

content. For those who completed a minor in special education, the preservice teachers completed 24 credit courses in special education. Preservice teachers with a minor in special education were included even though they tend to have higher self-efficacy to teach students with special needs due to higher credits in special education (Ahsan et al., 2013; Gao & Mager, 2011; Leyser et al., 2011; Loreman et al., 2013; Sharma, Shaukat, & Furlonger, 2015). The reason for this is because the goal of this study is exploring the change of self-efficacy level, so the exploration of how the change of preservice teachers with different self-efficacy levels provided a comprehensive understanding of the dynamic of self-efficacy in various preservice teachers.

Respondents reported teaching students with mild disabilities including Learning Disability, Emotional/Behavior Disabilities, and ADHD for first and second placements more than any other disabling conditions. More than half of the total participants in this study were classroom teachers, (n = 49, 63%) for first placement and (n = 31, 76%) for second placements, and they reported that paraprofessionals were available in the classroom (n = 49, 63% in the first placement and n = 24, 58% for the second placement).

The four cases for the qualitative study were selected voluntarily. The previous scenario to select participants instrumentally (based on the higher and the least amount of change of score of the self-efficacy measurement) was revised due to a limited number of participants who agreed to participate in the interview sessions. Three criteria were used for interview participation: a) participated in both first placement survey and second placement survey, b) taught students with special needs during student teaching, and c) provided consent for the follow up interview sessions. Ten preservice teachers out of 41,

who participated in the first placement survey and the second placement survey, agreed to share their experiences during student teaching, but four participants were provided consent for interview sessions.

Four participants were interviewed three to four times, with duration ranging from 39 minutes to one and half hours. The interview participants less represent the group of students who had high intensity of special education courses because none of the interview participants completed the special education minor. The four interview participants represented various school contexts (see Table 3) in terms of grade levels and opportunities teaching students with special needs.

Table 3: Profile of interview participants

Interview participants' name*	Grade levels		Opportunities teaching students	
	1 st placement	2 nd placement	with special needs	
Mima (Math)	K-9	K-8	Taught classrooms which had some students with special needs	
David (Math)	K-9 to K-12	K-9 to K-12	Taught students with special needs daily in special class where 80% were students with special needs	
Jago (ESL)	Pre-K and Elementary school	K-7 to K-12	Taught ESL students and some of them are students with special needs	
Tatum (ESL)	K-1-10	K-1	Did not have students with special needs at her pull out class but supervised one student with special needs one time	

Note: *pseudonym

Procedures

Data was collected using the first and second placement surveys and interviews (see *Figure 4*). The first placement survey was distributed through online and a class invitation. For online recruitment, participants were sent an e-mail with a consent form. An invitation email was sent to 230 preservice teachers enrolled in Spring 2018 after this study was approved by the Institutional Review Board (see Appendix A). One class invitation also was presented during a seminar when preservice teachers met their university instructor to discuss their student teaching experiences. The participants were provided a consent form, which presented the purpose, expectations, benefits, and risks of the study.

The researcher presented the importance of the research study and provided a brief explanation about the process of the study. Both the university supervisor and researcher left the class while the students completed the consent form and first placement survey. The instrument and the protocol for survey administration were sent to the participants who voluntarily participated in the study. The participant received assurance of the confidentiality of their responses, with the option to withdraw at any time. The assurance was clearly stated on the first page of the survey, which the participant could read before completing the first placement survey. The sequence of this study is visualized in Figure 4 and indicates the connecting points between qualitative study and quantitative study as suggested by previous studies (Ivankova, Creswell, & Stick, 2006) to specify each data collection aligning with analysis procedures. Those who took the online survey provided consent electronically and were then directed to the

survey. Reminders emails were sent four times for the first placement survey in the following weeks.

The second placement survey was distributed to preservice teachers who participated in the first placement survey during the second week before student teaching finished. A total of 41 students participated. The instruments remained similar for first placement survey and second placement survey except the demographic questions which was deleted for the posttest.

The connection of surveys and interviews as depicted *Figure*. 4 was designed in three ways: the interview participants selection was planned based on survey results to understand participant's perceived self-efficacy. Second, some interview questions were developed based on the quantitative findings to explore reasons and situations behind preservice teachers reported self-efficacy. Third, the integration of both quantitative and qualitative findings provided in-depth understanding of preservice teachers' self-efficacy, how it changed over time, and influential factors of preservice teachers' self-efficacy.

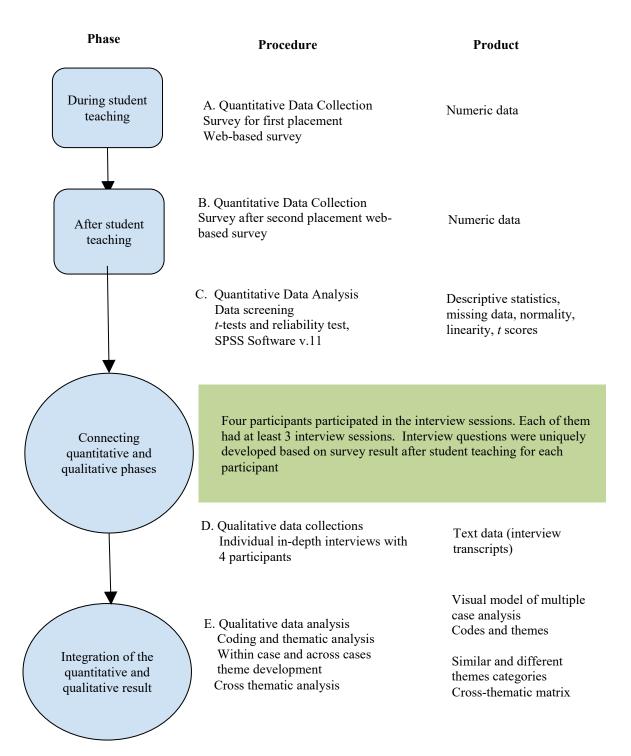


Figure 4. Visual model of sequential explanatory design procedures

The preservice teachers who participated in both first placement survey and second placement survey were invited to the interview sessions. If they agreed to participate in the follow up sessions, they were asked to provide their email address for further correspondence. The consent forms for follow up interview were sent to the participants via email when they agreed to have three to four interview sessions via Zoom or face to face meetings. The four of interview participants were asked a similar list of questions for the first time. The list of questions was developed based on the literature review, theoretical framework, and survey findings. The interview sessions were conducted based on the participants' preference. At least three rounds of interview sessions were completed to improve clarity and achieve in-depth understanding of preservice teachers' efficacy belief s as suggested by Kvale and Brinkmann (2009) through follow up questions and clarification. All online interview sessions were recorded through Zoom for automatic transcription and the face-to-face interview sessions were audiotaped. I wrote notes about key points during the interview, and some reflections were written down immediately after the interview was finished. Merriam (1998) suggested that the reflections cover "insights suggested by the respondents, descriptive notes on the behavior, verbal and nonverbal thought from the respondents" (p. 88). I corrected all transcriptions following each interview to have a connection with and increased familiarity with the data. I also hired a second transcriptor to check 80% of transcription in this study.

Instrument and Data Collections

The first placement survey and post survey consisted of two parts. The first part was 19 items of The Teaching Students with Disabilities Efficacy Scale (TSDES, Dawson & Scott, 2013). This instrument consists of five subcategories: instruction, teacher professionalism, teacher support, classroom management, and related duties. The number of items per each category varied. There were five questions for instruction in this instrument, which focused on curriculum adaptations and adjustment, variety of teaching strategy, and breaking tasks down into fundamental sub-skills. There were five questions for professionalism, which covered perceived efficacy in working collaboratively, modelling positive behavior for all students, consulting with other specialist, praising students' progress consistently, and encouraging students to be a good role model for students with special needs. Teacher support included three questions about encouraging all students to accept students with special needs, creating a positive learning environment, and building relationships with students with special needs. Classroom management scores were based on three questions which focused on dealing with disruptive behaviors, managing classrooms that include students with special needs, and controlling a situation that involves a major temper tantrum. The example of the questions for related duties which was not included in this study were "I can effectively transport students with physical disabilities from vehicles to wheelchairs, from wheelchairs to desks, and to the restroom without becoming intimidated", "I can administer medication to students with disabilities if I am asked to and have the proper certifications", "I can assist students with disabilities with daily tasks such as restroom

use and feeding". The computation of Cronbach's alpha was conducted to confirm the reliability of the internal consistency of the TSDES scale. The requirement score for the reliability is 0.70 or higher (Devellis, 2003; Kline, 2005). The scale achieved adequate reliability: $\alpha = .823$. The internal consistency for each sub scales were: instruction ($\alpha = .77$), teacher professionalism ($\alpha = .76$), teacher support ($\alpha = .80$), and classroom management ($\alpha = .81$).

Additional questions based on various factors related to self-efficacy changes in teaching were added. These questions included demographic information, such as gender, age, race, major of study, previous courses and experience with student with disabilities, and school location. Specific information about each context was collected, such as grade, number of students with special needs, type of disabilities, number of the total students in the classroom, the availability of support (paraprofessional and special education teacher). In addition, self-report data about the quality of rapport with students and satisfaction rate of teaching were gathered to examine these factors in relationship to perceived self-efficacy in teaching.

The interviews were conducted after student teaching. This study employed an open-ended and less structured interview techniques for the preservice teachers to explore how preservice teachers perceived their teaching experiences during student teaching when they taught students with disabilities. Each participant was interviewed three to four times after student teaching. The interview questions were modified from Dickstein (2013) which focused on previous experiences with students with special needs in teaching activities and other interactions, previous beliefs of teaching students with

special needs in the classroom, and previous teaching efficacy. The researcher provided a definition of self-efficacy to the participants and then asked how they interpreted their self-efficacy to teach students with special needs, and how they perceived their challenges, and successful and unsuccessful events when teaching students with disabilities. Additional questions for the interview were formed based on first and second placement survey analysis results to understand specific patterns for the changes of self-efficacy according to preservice teachers' opinion; and learning experiences in different activities during student teaching that relates to sources of these changes.

The questions for the interviewee addressed the following aspects after student teaching: class context, personal belief as a teacher, previous experiences, previous knowledge and skills, role model, challenges, learning experiences and consequences of learning experiences. These categories were selected based on the literature review reported in Chapter 2 pertaining to different sources of self-efficacy and self-efficacy changes. The information from interview sessions provided a general overview about their preparation program and experiences during student teaching which influence their efficacy in teaching students with special needs. The list of the questions is provided in the appendix B. Some prompts were prepared to clarify and explore detailed information.

Data Analysis

In this study, the data analysis from the survey and interviews were conducted separately. The surveys were administered using Qualtrics for further statistical analysis through SPSS. There were three steps in the quantitative analysis. First, preliminary analyses were conducted to examine whether gender differences existed preservice

teachers' perceived efficacy. Second, paired *t*-tests comparing the first placement survey and the second placement survey were conducted to determine if there was a significant change in self-efficacy scores. The students' emails were used for matching purposes as the survey data of preservice teachers' self-efficacy were collected two times. Third, independent *t*-tests were conducted to compare various groups of preservice teachers based on teaching satisfaction levels, previous experiences, availability of paraeducator, knowledge about students with special needs in their classroom, and number of completed special education course on perceived self-efficacy variables. I reported effect size measure for inferential purposes of all quantitative findings.

The interviews were transcribed verbatim, and each transcription was made after the researcher conducted the interviews to make sure that the specific information stored electronically and printed in preparation for coding. I employed the excel sheet for data storage, coding and theme development in the qualitative analysis process.

Interpretational analysis procedures employed to analyze the qualitative data systematically through developing codes, categories, and themes (Miles, Huberman, & Saldana, 2014). The transcriptions were coded with three type of coding (Corbin & Strauss, 2014). During open coding, precoding list were developed based on literature reviews and theoretical framework to start the coding. New codes were added if they were not mentioned in the precoding list. Same conceptual coding was given if I found participants' statement which had similar concept. During axial coding, I examined the pattern among codes for efficacy changes with keywords (e.g., more..., less ...) and influential factors (e.g., X influence Y). I combined similar codes in to categories, and

determined the relationship between categories among four participants and identified themes. Common themes for the efficacy changes mapped out to understand the interaction of each theme across cases.

A thematic analysis of each case based on identified themes for the influential factors of efficacy changes were conducted in order to summarize the themes and causes for specific changes and sources of a sense of efficacy. The matrix display was used for detailed analysis to depict each case and compare with other cases (Miles et al., 2014).

Validity and trustworthiness in this qualitative study achieved by member check, triangulation, rich and thick descriptions of the cases, and exit checks (Miles et al., 2014). Member check confirmed the key statements of each interview participant from previous interview session. Then, probing questions were created and asked differently for each participant. Data triangulation verified the same phenomenon from different sources of interview data and quantitative data, so each piece of information was supported by multiple data sources from multiple respondents. The information from pre-service teachers with different student teaching experiences and trend of efficacy changes provided rich information about their self-efficacy that might have some commonalities, but also differ in certain ways. This data supported by the quantitative analysis result. Exit checks were conducted to eliminate the bias of interpretation to ensure the accuracy of the information by presenting the data and its interpretation to people who are being interviewed (Merriam, 1998). The researcher emailed the review of each interview to the participants, so they confirmed the emerging themes to secure additional information on the emerging themes. I provided emerging themes for each question to the interview

participants to add information and clarify whether the emerging themes captured their student teaching experiences in teaching students with disabilities. I also provided an opportunity for participants to indicate if they did not agree with the emerging themes and invited them to provide explanations. Three participants confirmed that the findings represent their experience in teaching students with special needs during student teaching. One participant did not respond due to the limited access of their university email address.

In summary, this mix method study achieved validity for the quantitative processes and trustworthiness for the qualitative processes to maintain the accuracy of the data throughout the process.

CHAPTER 4

RESULTS

This study utilized quantitative data based on pre- and post- surveys of 76 preservice teachers conducted in 2018, and qualitative data from structured interviews of four preservice teachers. I wanted to see if there were changes in their self-efficacy during their student teaching experience and to examine the possible factors impacting self-efficacy changes.

The results of this study are presented in five sections. The first section provides a preliminary test for gender to decide if further analyses should be conducted separately based on gender. The second section reviews the results of the first question during preservice teacher's first placement, based on both quantitative and qualitative data. The third section provides the results of the second research question to examine the changes in self-efficacy during and after student teaching based on the quantitative findings, with the qualitative data providing context for the changes of the four participants. The fourth section reviews the third research question, also through both quantitative and qualitative lens. Finally, the fifth section reviews the corroborating and contradictory evidence for my quantitative and qualitative findings through the method of data triangulation.

Preliminary Analysis

Previous studies revealed that gender as one of the influential factors of preservice self-efficacy belief in teaching students with special needs with mix results. Three studies in developed countries found no significant gender differences (Burton & Pace, 2009;

Loreman et al., 2013; Pendergast et al., 2011), but seven studies found significant differences (Ahsan et al., 2013; Forlin et al., 2010; Romi & Leyser, 2006; Scheer et al., 2015; Shaukat et al., 2013; Specht et al., 2016). Thus, gender differences were first tested to determine the preservice teachers' self-efficacy belief in this study.

An independent sample t-test was performed to examine whether male participants (n = 21) and female participants (n = 50) had statistically different mean self-efficacy scores for first placement and second placement. The t-test were not significant: instructional strategies; t (69) = -.39, p = .697, professionalism; t (69) = -1.52, p = 1.32, support; t (69) = -1.165, p = .248, classroom management; t (69) = -.480, p = .633, and overall efficacy; t (69) = -1.05, p = .295. Therefore, the decision was made to include males and females in all analyses rather than separating by gender.

Preservice Teachers' Reported Self-Efficacy during First Placement

The first focus of this study was to explore preservice teachers' sense of efficacy in teaching students with special needs. Qualitative data provided information about preservice teachers' efficacy in teaching students with special needs in the first placement before they took the survey and added context to understand preservice teachers reported self-efficacy in teaching students with special needs. Quantitative data describes preservice teachers reported self-efficacy based on first placement survey data.

Quantitative Results of Preservice teachers' Perceptions of Self-Efficacy

The quantitative results provide descriptive information about preservice teachers' efficacy in teaching students with special needs in general. Table 4 presents descriptive

statistics of four sub-variables (instruction, professionalism, teacher support, and classroom management) in the TSDES survey for the pre- survey.

Table 4: Preservice teachers' self-efficacy scores in first placement survey (n = 76)

Sub-variables	Mean	SD	
Instruction	5.81	0.59	
Professionalism	6.44	0.53	
Teacher Support	6.48	0.57	
Classroom Management	5.38	0.88	
Overall efficacy	6.02	0.50	

Note: scale 1-7 (1 is strongly disagree and 7 is strongly agree)

In general, preservice teachers reported high self-efficacy for teacher support and professionalism, and moderately high self-efficacy for instruction and classroom management. This data suggests that the majority of participants felt more efficacious in providing support and working professionally than in classroom management and instructional adjustment during the first placement. In addition to this, the structured interviews of four participants added more information about preservice teachers' self-efficacy in regards entry level of preservice teachers' disposition, knowledge, and skills to teach students with special needs.

Qualitative Results of Preservice Teachers' Perception of Self-efficacy

As mentioned previously, preservice teachers rated higher efficacy in providing support and professionalism at the end of first placement based on pre- survey. The information from the structured interviews of four participants revealed three emerging themes that represented their efficacy beliefs in the first placement: positive disposition

toward students with special needs, lack of entry level knowledge, skills to teach students with special needs, and struggle to collaborate with other teachers. The next section describes each theme with supporting quotes from each participant.

Interview participants reported various perceived self-efficacy mean scores in the first placement survey, ranging from five as somewhat agree to seven as strongly agree.

The two highest scores were providing support and professionalism as similar to the first placement survey result from the quantitative data. They also reported to have the least efficacy for classroom management along with instructional adaptation.

Preservice teachers reported high efficacy in providing support and working professionally with other teachers based on the pre- survey, and yet the qualitative data revealed that while participants reported positive dispositions working with students with disabilities, they reported that their entry level knowledge and teaching (as result of their preparation program) did not adequately prepare them to teach students with special needs. They reported they felt unprepared to teach students with special needs in their classroom and collaborate with other teachers due to limited access to gain adequate knowledge and teaching skills, specifically in dealing with students with special needs through their previous coursework. The four reported that they took one course about diverse learners, and special education content was one aspect of that course.

Positive disposition toward student with special needs. Mima, Jago, and Tatum explicitly reported that they have a positive disposition towards students with special needs. Mima stated her belief that students with special needs were capable of learning and chose

not to focus on their weaknesses. Mima described how she promotes inclusive environment in her classroom for all learners who support each other:

I want to help them academically because I want them to understand that a lot of these students are aware of their disability. Or at least the ones that I dealt with were aware of their struggles and I wanted them to know that just because they have a special need doesn't mean that they are not capable of learning. So, I want to help them. Because if I would teach them different content, or if they were in just a special education math class instead of being in the normal Algebra One, or the normal eighth math, some might perceive that as 'I'm incapable of learning and I'm not on the same learning ability as my classmates' and they might take it personally as they're lesser in value. It's great if they end up understanding all of the content in great depth. Even if they try their hardest and they got a C, that's their work. They earned that grade and I want them to understand that earning something if it is a true reflection, if that's what they earned and they did their best that is a good thing. If you get if you get an F, then I want them to know that if you use your resources in life, there are people who want to help you and that we need each other. But my students who do not have special needs know in my classroom too is that we all have special abilities and so instead of focusing on what disables us or what we struggle with, maybe let's focus on what we can do with what we have. How can we help other people reach their goals because we need each other? (Mima, June 11, 2018)

When Jago provided tutoring, she provided advance materials for her students, including those with IEPs, because she believed that they able to excel. Jago stated that her previous coursework taught her to have high expectations for all learners, including students with special needs:

Yes, they do. I was taught like that at university – that all learners should have access to it, to the language. More advanced even. Of course, you have to guide them, maybe guide them first. And then provide them some more resources. And show them the real thing that **they can learn more**. **They definitely can do that**. Like, he had kind of IEP, but he was like all of a sudden was a different person. Like he all of a sudden wanted to learn because he realized there were so many verbs, you know. (Jago, May 12, 2018)

Tatum also reported a positive disposition by noting that her previous courses taught her to set high expectations for all learners, including students with special needs:

I think it has a lot to do with the cultural training I received with my ESL kiddos. We're trained that you have high expectations of a student no matter what you can see on the outside. **Our students aren't able to speak but that doesn't mean they don't understand.** There's a lot more going on. There's a lot more sinking in than we ever see it first. I think for me that once you see that in one child, you see that in all children. So, I think that's kind of where that came from, is learning that for my students and then seeing that for all. (Tatum, May 21, 2018)

Mima, Jago, and Tatum explicitly stated that their previous courses support their positive disposition toward students with special needs, which enable them to hold higher expectation for all students, including students with special needs.

Lack of skills in teaching students with special needs. Mima and Jago mentioned that they have positive disposition toward students with special needs, but they felt less prepared to teach the students. Mima and Jago expressed their lack of knowledge and teaching skills in supporting students with special needs due to limited coursework in their teacher preparation program. They stated that they did not feel prepared to accommodate the pace of learning of students with special needs with their instructions. One course in special education was insufficient to support their teaching skills to reach students with special needs while they taught other students in their class:

So, when I got to my first placement, which was at the high school, I was faced with 25 students who had IEPs which was really high. And at university, I had one special education class, it's two credits and so I literally had no experience and so that was a little bit overwhelming at first, just because I was at a larger school and so how am I going to meet the needs of all of these students. I felt like, yes, I could reach those who did not have those IEPs, like my explanations and the pace that I was moving, it was okay but the students who had IEPs with special requirements, they needed extra guidance and you only have 15 minutes per class period. Because when I'm already feeling crunched for time and at home you know you're exhausted. I just felt under prepared. And so I think that was a big challenge, knowing that I was reaching some students, but definitely not all, especially those with the IEPs. And then also connect with the first placement. I think it was more can I create lessons using the content? So here I

knew the math content - that's what I've been studying for the last four years. It's something I enjoy but can I teach it in a timely manner and effectively? So that was something, but I was more concerned with was can I create lesson plans and implement them? And so, meeting a diverse spectrum of needs, especially with that many IEPs is just something that frustrated me just because I know I wasn't reaching them. (Mima, May 23, 2018)

Jago reported frustration when her students with special needs did not follow her instruction, and she also had concerns about her lack of preparation in her coursework.

Her feelings of inexperience and inadequacy of teaching skill influenced her self-efficacy in teaching students with special needs in her class:

You have to go the pace of the lesson, you have to do many exercises. You have to do in the lesson, you have to do many exercises so you have to be fast during in the pace. So, when there were students who were not doing anything and they do have special needs, you can be frustrating too for the student. (Jago, May 12, 2018)

When I took, it was a special need course... but it was really, the course was very short and yeah, short. I'd like some programs covering more details and different students with special needs too because sometime they look the same but they need more time, more included. (Jago, May 12, 2018)

Similarly, David mentioned that the uniqueness of his class was most of the students were students with special needs and this class composition was unfamiliar to him. He stated that his class did not align with his previous experience, so he felt unready at the time:

I just feel that as a regular education teacher and under my regular educational experiences, like my field experiences I would go and basically be in a regular education class all the time. I wasn't ready to teach a fully special education class. That class was fully special education, 80-90%. Therefore, I have never had the experience of working with a large group of students that have disabilities. Prior to student teaching I worked with classes with maybe a few at a time, which is different because it's not as many. You can design lessons differently, things like that. But when the majority of the class is that ...I've

never had that experience. I wasn't quite sure of their pace and what accommodations to make for every single student. I just felt that I hadn't had that experience. (David, July 3, 2018)

Even though David stated feeling incompetent in teaching students with special needs in his unique class, David expressed his confidence in teaching a lower number of students with special needs (3-4 students) in his class compared to other interview participants:

- I Okay. Previously you mentioned that your class in student teaching had 80 to 90% of IEPs students, did you had an opportunity to teach heterogeneous class, which has less students with pecial needs?
- D Oh yeah, my regular Algebra one class we maybe had like three or four out of 30 So, yeah. More like 10%
- I Did you feel any differences in your confidence in teaching that class?
- I was more confident, just because that's what I've been taught, I've been taught how to teach regular education, not so much special education. So, I'm more confident in myself because this is what I've been doing my four years at university (David, July 3, 2018)

Note: I= interviewer, D=David

The feeling of lack of readiness for David varied based on the class composition.

David felt less efficacious when the class included large numbers of students with special needs and better prepared when classes contained fewer students with special needs.

David shared his previous coursework that enabled him to differentiate lessons and support a smaller number of students with special needs in class:

"The program really just develops your skills to differentiate your lessons. So, learning how to make your lessons interactive and reach the needs of different students. Whether you're using technology or you're using manipulatives like the hands-on blocks or something or your students are writing on white boards or learning out of the textbook, working in groups. There are so many different strategies to reach a number of different students that we've

learned in the math way. That has helped me prepare ways to differentiate how I teach my class. Especially those students with disabilities..." (David, July 3, 2018)

Tatum also stated that she felt less prepared similar to Mima and Jago, but she had only one opportunity to supervise students with special needs privately during student teaching. She connected her limited coursework to her feeling of incompetence in supervising students with special needs:

"I felt less prepared. I'd only taken two or three courses that address special needs students. So, going in, I felt less prepared. But coming out, I know that it's not exactly my area to be prepared in. It's just that I need to work with the people who have had that learning and have that knowledge and share that with them when I come into that situation of teaching." (Tatum, lines 224-227)

Tatum attributed her perceived lack of skills in teaching students with special needs to insufficient preparation. As a support teacher for ESL students, she thought that she needed to collaborate with other teachers to support her students, so that if she had students with special needs in her class, then she could support them with another teacher.

Four of the interview participants had a different perspective on how their preparation program supported their knowledge and skills in teaching students with special needs. Jago, Mima, and Tatum reported that they had one to two courses in special education, which was insufficient to learn the specific methods and strategies to teach students with special needs in regular class. However, David stated that he learned different instruction during his previous coursework, which supported his teaching skills to deal with students with a small number of students with special needs in his classroom. Presumably, the access to learn teaching strategies in teacher programs differed for the

four interview participants that resulted in less efficacy for those preservice teachers with less special needs education.

Lack of experiences in collaborating with other teachers. In addition to the insufficiency of preservice programs to prepare the participants to meet the needs of students with special needs, the participants also reported that they were not prepared to collaborate with other teachers. David and Mima expressed that they lacked the entry-level knowledge and skills in collaborating with other teachers. David mentioned that previously he did not have working experiences with other teachers, but during student teaching, he was exposed to collaborative work with other teachers:

Before, I had no experience working with other teachers. But now I get to work with them and collaborate with them and find ways to work. I know all those skills are slowly improving. I think that I haven't really learned much, but continuing to learn more. (David, July 3, 2018)

Mima specifically mentioned that she was not sure how to work with the paraprofessional in her class to support students with special needs. She described an unsuccessful moment when she was unable to provide student assistance requested by the paraprofessional:

I just wasn't quite sure if as a preservice teacher, should I use them or should I pretend like it's all up to me. Because in some schools, not all classes have teacher aides. And so, I wasn't quite sure what to do in that situation. I wish I would have used the teacher aides more because she [mentor teacher] would. The teacher aides would go around and help the students, and they did when I was teaching, and work with the special needs students. I don't know, just giving them a task." (Mima, May 23, 2018)

...for example, there was a time where a teacher or an aide asked if we could have an outline. So, like I said, my teacher was good about creating notes,

teaching guides and the aide asked if I could provide her with one of those and I didn't before the lesson. And so that that made me feel bad because I felt like she requested that for a reason and I didn't fulfill that and so that student potentially could have not have taken away as much from that lesson as he could have. That would be an unsuccessful moment for sure for me. (Mima, May 23, 2018)

According to the interview participants, their preservice program supported their positive disposition toward students with special needs, but was insufficient to develop entry level knowledge and teaching skills in two major areas: teaching students with special needs and collaborating with other teachers. Preservice teachers perceived their teaching experiences differently even though they stated commonalities in lack of confidence dealing with students with special needs. The feeling of incompetence in knowledge and teaching skills in teaching students with special needs were found in all participants but the way they perceived their incompetence was different for various reasons. Mima and Tatum focused on their lack of confidence in providing flexibility and accommodating different pace of learning of students with special needs whereas David faced a higher percentage of students with special needs, which was not what he had experienced in his preparation program. Tatum expressed her lack of confidence in teaching students with special needs, but then she thought that this was not her concern, because she believed that she needed to work as a team. Tatum perceived her lack of entry level knowledge and teaching differently than the other preservice teachers. She connected her role as a support teacher for ESL learners and students with special needs with other teachers as a team.

In summary, the first research question focused on preservice teachers' perceived efficacy in teaching students with special needs during student teaching. Both

quantitative and qualitative findings were similar. Preservice teachers have positive dispositions toward students with special needs and perceived high efficacy in the area of professionalism and providing support, but not in instruction and classroom management due to insufficiency of teacher preparation program and lack of preparation in collaboration.

Preservice Teachers' Reported Self-Efficacy Changes

In the previous section, preservice teachers reported higher levels of self-efficacy in providing support and professionalism than self-efficacy levels in instruction and classroom management. This section discusses how preservice teachers' self-efficacy changed after student teaching based on a quantitative and qualitative design.

Quantitative Results of Preservice Teachers' Self-Efficacy

Paired-samples t-tests were conducted to determine if significant changes occurred for efficacy scores for each sub variable (i.e., instruction, professionalism, support, and classroom management) and total scores during and after student teaching. Means and standard deviations for preservice teachers' sense of efficacy during and after student teaching were examined to determine the changes in preservice teachers' efficacy belief in teaching students with special needs in their class. Separate paired t-test indicated that the 41 preservice teachers who participated in both first placement and second placement reported that their efficacy beliefs significantly improved during the student teaching program, but only in the area of classroom management. Participants reported higher self-efficacy in classroom management (M = 5.64, SD = 0.63) at the end

of second placement compared to the first placement of student teaching (M = 5.3, SD = 0.84). The classroom management scores elicited a mean increase of 0.28, 95% CI [.027, .53], t (40) = 2.245, p < 0.005, d = 0.35 (see Table 5).

Table 5: Preservice teachers' self-efficacy changes

	Group 1^{st} placement $(n = 41)$		Group 2^{nd} placement $(n = 41)$	
	M	SD	M	SD
Instruction	5.83	.58	5.90	.57
Professionalism	6.57	.49	6.51	.45
Teacher	6.59	.51	6.53	.51
Support				
Classroom	5.36*	.85	5.64*	.63
Management				
Overall efficacy	6.12	.45	6.15	.43

^{*}indicates significant differences p<.05

For the other areas of self-efficacy, preservice teachers' efficacy scores did not significantly change: t (40) = .91, p = .37 for instruction, t (40) = -.68, p = .50 for professionalism, t (40) = -.83, p = .41 for teacher support, and t (40) = .48, p = .64 for overall efficacy. These results indicate that over time, preservice teachers who participated in this study felt more confident in the area of classroom management, but not in other areas in teaching students with special needs. Follow up interviews of the four participants were conducted to explore more evidences of preservice teachers' efficacy changes.

Qualitative Results of Preservice Teachers' Self-Efficacy

The interviews with the four participants provided a deeper understanding of the quantitative findings in two ways: a) the data revealed two reasons for limited change in perceived efficacy in classroom management, which included limited opportunity to

address behavior problems and limited success when dealing with behavior concerns, and b) the data identified three areas of improvement of four interview participants' self-efficacy in teaching students with special needs.

Limited opportunity to address behavior problem of students with special needs. Two of the three questions in the TSDES survey directly address students with behavior concerns, especially students with tantrums. According to the interview participants, students with special needs in their classroom either did not have high intensity of behavior problems or if they had students with behavior problems, then their supervising teacher addressed the behavior problems. Mima and Tatum stated that they did not have students with behavior problems:

Those are the two biggest things that I would say from special needs students that I dealt with so they were pretty harmless anyway. (Mima, June 21, 2018)

I think I wrote no improvement because I had no temper tantrums or no incidents in in my second placement. (Mima, June 21, 2018)

Completely I wouldn't call it a temper tantrum, because at that age, they don't yell, as he wasn't yelling. He would just refuse to do things. But he was difficult case but it came down to the school provided him with like counseling support he goes to the counselor at any time, but he was having a real tough adjustment for sure." (Tatum, July 3, 2018)

David and Jago stated that their supervising teacher handled students with behavior problems, so they did not have direct experience dealing with students with behavior problems. David reported fewer opportunity to improve teaching skills to deal with students with behavior problems:

Just having students with behavioral IEPs that can be really frustrating and hard to work with that time, whether they are non-compliant to your instructions or being rude and talking to you, as I have experienced that in the classroom. However, my

mentor teacher has taken more of the role and handling those situations than I have. Therefore, I have completely experienced and agreed to situations like that. But I've been a part of it and I've experienced that a little bit. But I haven't fully dealt with the situation so having students that I really disrespectful or don't want to do any work and really misbehaving, being disrespectful being rude swearing all the stuff I've experienced and seen in the classroom and seeing how my mentor to just deal with it, but I haven't addressed it completely on my own. (David, July 3, 2018)

Jago reported that her mentor teacher also adjusted students' schedules to address behavior problems, thus limiting the opportunity for preservice teachers to experience and learn behavior management strategies:

There were even two students that my teacher took to teach ESL (English as a Second Language) separately. Three of them separately from other students from other school. They were not joining the group; they were like taking ESL class after all the groups. She pooled three of them. I am not sure if it is good or not. I was somewhat skeptical why she was doing that. She told me, "They have high IEPs. So, I decided I can't handle them with the entire class because they misbehave" and she pooled them for ESL at the end of the day. (Jago, June 23, 2018)

While participants reported limited opportunities to deal with behavior issues, they also reported difficulties and challenges when afforded opportunities to do so. For example, Jago reported difficulties in addressing student non-compliance.

Limited success in dealing with behavior problems. Jago mentioned that she had experienced failure to manage one student who refused to do their assignment. Although she had followed her mentor's suggestion regarding providing some management signals, the student showed no indication of following her instruction:

It was not successful to keep repeating those management signals. He was not working at some point. (Jago, June 23, 2018)

She gave me the material, she told me what to do in the lessons. I could not adjust much myself. She told me to say some quiet signals like tell him he is going to stay for recess, so he stayed for recess on time. He liked it because he stayed with us. Therefore, it did not work. (Jago, June 23, 2018)

In this situation, the mentor teacher recommended that the student be punished by remaining in the classroom with the teacher during recess for not doing the assignment.

Jago stated that this management signal did not work for the student because the student preferred to stay with the teachers instead of playing. Jago's failed experiences in following her mentor teacher's suggestion contributed to her limited change of self-efficacy in dealing with students with behavior problems.

As mentioned previously, the quantitative data revealed preservice teachers had more improvement in efficacy in teaching students with special needs after student teaching, especially in the area of classroom management. However, all interview participants reported challenges in classroom management due to the limited opportunity to address students with behavior problems and limited success in behavior interventions.

A deeper look at changes of preservice teachers' perceived self-efficacy.

Previously, the quantitative findings revealed efficacy changes in classroom management only. However, the qualitative data revealed several themes related to how the preservice teachers' self-efficacy belief change over time in other areas. These areas included providing instruction, professionalism, and providing support. At the beginning of student teaching program, four of interview participants reported lack of confidence due to inadequacy of their knowledge and teaching skills in teaching students with special

needs in their classroom. The qualitative data suggests that that perceived efficacy gradually improved in the area of instruction, professionalism, and providing support.

Each participant worked with students with special needs in various settings.

Except for Tatum, interview participants taught students with special needs in classroom.

However, all of them had the opportunity to provide educational support for students with special needs with the continuum ranging from one time to everyday. Mima, David, Jago, and Tatum expressed an improvement in their efficacy in all three areas (i.e., providing instruction, professionalism, and providing support). Even though, Tatum was the only participant who had one opportunity for providing instruction for student with special needs, she expressed her comfort in working with students with special needs, which was not necessarily related to instructional adjustment.

Improvement in preservice teachers' self-efficacy in providing instruction. Mima and Jago reported that they gained improvement in providing instruction for students with special needs in limited settings while David experienced more efficacy instructing his class for students who struggle with math. Mima stated that she experienced success in providing instruction for one student with special needs in a separate room:

I would have to say, dealing with the special needs students during that second placement brought me a lot of joy. Just being more open and having more focus on them. I felt very guilty my first placement when I know I was ...it's not like I didn't know they were there, but I just knew that for me with this first placement, I just needed to do my thing. I needed to get the lessons out and then work from there. So, with my second placement. There was a student who was a selected mute. I had never heard of such a thing before. So, she just didn't really talk to people. I mean, she would talk with her friends but quietly. So, it was my goal. Her scores were at a second-grade level in math. And so, I guess a moment

of success was when I was working with just the special needs students in a separate room so they weren't in the same room. I was just working on them with order of operations involving equations, the solving for a variable. And I just remember she was leading the pack. I would have them go around and they got to choose which problem they wanted to work on and then we all worked on that problem together individually, and then we would talk about it. I think I could tell she took great pride because she really was doing it very quickly. It's not like quickness necessarily means smartness in math but I think she really felt like she was succeeding in math and when I would ask her a question, she would respond to me. Quietly, but she would respond. That was a big success just because I feel like a lot of time somethings that I heard ... I know there's a lot of students who didn't want to work with her because she wouldn't talk to them. And so, I wanted her to know that I believed in her. I believe that she could learn and that she could do well. (Mima, May 23, 2018)

However, Mima reported that she struggled in adjusting her instruction for students with special needs in the second placement. She mentioned that her lessons remained the same from her previous placement, but she offered more flexibility for students with special needs during instructions instead of ignoring them:

I felt like I made efforts. So, I use that method of talking to those students, either in a small group setting or ...so I mean, they didn't move, but I just would approach them and use those moments as re-teaching moments and use that to assess their learning, which is great. That's a fantastic method. However, when it actually came to lesson planning or implementing an overall lesson, I just noticed that my instruction did not really change. I would keep my lesson the way that it was, I would just offer different resources. So, I would offer whiteboards to the students, partner methods. But again, some of the students wouldn't want to work with special needs students or special needs students weren't really encouraging each other to stay on task. So, I kind of had difficulties there and then also, I didn't really incorporate any methods teaching-wise for my overall my main lesson. I would just work it up so that I was able to go directly talk with students. Like the way that I taught each lesson didn't really change, but the different things that I incorporated did change though, as a way to kind of compensate. So, I made those changes that worked for me. (Mima, June 21, 2018)

As similar to Mima, Jago stated that her successful experience tutoring improved her efficacy in teaching students with special needs:

- J In adjusting curriculum, I think improve after second placement. I think you should definitely adjust curriculum when they teach the entire class and they have students with special needs, you give them more questions. (Jago, June 23, 2018)
- I Did you have specific moment when you feel more confident in adjusting curriculum?
- J Yes, it was when I did tutoring in the second placement. You have to guide the student step by step when we do some activities. (Jago, June 23, 2018)

Note: J = Jago, I = interviewer

Jago implicitly stated that she had a problem in curriculum adjustment in the classroom by stating different pronouns such as 'you should' even though she stated improvement in her tutoring sessions. Jago reported a conflicting situation when she followed her teacher's procedure and did not provide adjustment in her lesson plans. Jago stated that adjusted curriculum was something that she did not provide but is willing to do in the future as a teacher:

- I Did you adjust the curriculum?
- He was still misbehaving. I did not adjust the curriculum because I had to follow the procedure the teacher gave me, I couldn't do anything. Sometimes I would ignore him and just went through the lesson but I knew that he had problems at home that was something bigger that I couldn't control. But if I have my own class as a teacher, I will think about that particular student and I will change something so he can get more involved. (Jago, lines 524-530)

David stated that his efficacy in teaching students with special needs was improved as he received tremendous support and affirmation about how he teaches:

I would say that throughout my entire student teaching my confidence in my teaching practices and myself were all increasing until the very end. I would say it was never really a point where I felt that lack of confident in myself and I was because I had a lot of support and whole affirmation and I felt like I was actually doing a good thing for the students. (David, July 3, 2018)

Furthermore, David provided example of support from his team and how they worked collaboratively in providing differentiated instructions for students with special needs, which improved his efficacy in teaching:

So, one of our math classes is the IEP class where students are like 80% to 90% IEPs almost a whole class. We would have kind of three components of that class to try to really engages students and apply their mathematical skills. So, one was like a wood shop or metal shop component one was like programming little robots Lego robots. And another was math in the classroom. And so, and even within each of those three main topics we try to different strategies within them, whether that be having them work in teams, having them work on projects, or just really different strategies within those three so they were always doing something a little bit different. Trying to hopefully reach everyone and their learning strategies and made their disabilities and in yeah, we mix it up a lot. We had a lot of different teachers teaching different things. It was just very diverse in those strategies and I think there were successful students had a lot of fun. They were learning a lot and I feel like they will be ready for next year. Once they move back to the regular path of mathematics. (David, July 3, 2018)

Tatum supervised students with special needs, which went well and improved her comfort to teach students with special needs. She realized that working with students with special needs was not her expertise, but her experience changed her nervousness into enjoyment:

At first, I felt nervous going into the day I spent with one student. I was a little nervous because I did not know. I have never seen him like have a negative behavior or maybe like an outburst or anything. So, I did. I was just not very confident in my ability to handle like that right away. (Tatum, July 3, 2018)

I definitely feel that I had more exposure and I feel more comfortable just working with my special needs students in the mainstream classrooms that I pushed in to work students, you know, they were the same. You know and as joyful and they are kids just like all kids. So, I guess for me. That's what I took away from it. And that's why I feel more confident, working with special needs. (Tatum, July 3, 2018)

Tatum related her instructional skills adjustment for ESL students that she felt confident about to her instructional adjustment approach for students with special needs.

Furthermore, she felt that she was able to provide instructional support for students with special needs, and if her skills had not been adequate, then she would have reached out to special education teachers for support:

I'm not going to get her to bend for me, I kind of got to bend for her in that situation. So, things like that. I feel confident on behavioral like trying to adjust my curriculum behaviorally and making sure it's appropriate and engaging. Yeah, as far as like content or a specific need, I think it has to be dependent on the student in my class anyways. Like there specific case. And that's where **I just feel confident asking**, "What is this child's plan?" "What are the scaffolds expected in their classroom?" (Tatum, July 3, 2018)

Jago and David also reported that they gained improvement in providing instruction for students with special needs. Both Mima and Jago experienced improvement in their teaching efficacy from neglecting to providing flexibility and supporting students with special needs in limited settings (e.g., one-on-one instructions and tutoring sessions). David experienced more efficacy in adjusting instructions for students with special needs in the classrooms with his team, and Tatum did not clearly state that she had more efficacy in providing instruction, but she felt more comfortable teaching students with special needs and asked questions to special education teachers.

In addition, interview participants also reported other areas of improvement as they interacted and worked collaboratively with other teachers to support students with special needs. Improvement of self-efficacy in the area of professionalism is the next theme for the next discussion.

Improvement in preservice teachers' self-efficacy in professionalism. Preservice teachers' improvement of self-efficacy in professionalism was revealed in addition to improvement in providing instruction. Mima and David had direct experience working with special education teachers to provide instruction for students with special needs that changed their efficacy in working with other teachers. But Jago and Tatum did not have experience working with special education teachers to support students with special needs.

Mima stated that both she and the special education teacher were enthusiastic in working collaboratively in her second placement. After realizing that she missed collaborating with a para-educator to support a student with special needs in the first placement, Mima purposefully devoted her time to collaborate with other teachers in the second placement. This is evidence that her efficacy in working with other teachers was changed deliberately from her first to second placement:

I definitely was talking to my mentor teacher and asking questions, but I feel as far as the special education department, I didn't utilize their expertise as much as I should have. And so, during my second placement I made sure to quickly introduce myself to the special education teacher and to let him know that his services were very much appreciated and that I would be open to communicating with him and receiving opportunities if I had any. That's what I would say are the tasks. (Mima, May 23, 2018)

David worked in the special class where he collaborated with special education teachers as a team. Due to the high frequency of collaborative work, David reported that he gained familiarity in working with other teachers over time and felt more comfortable working with them:

It was more of gradually becoming more familiar with working with the other teachers, parents and administrators. For teachers, I started to ask more like what their curriculum was really aiming at. And that we're on the same page were given test that measures the same stuff. We're moving along at the same page and teaching the same or teaching the students is generally the same material. (David, July 3, 2018)

It was just more frequent I just got more comfortable interacting with teachers and more frequently. (David, July 3, 2018)

Jago did not have direct experiences working with special education teachers, but she worked collaboratively with other teachers:

We never collaborated with special education teachers. I never saw the teacher collaborate with them either. Because she was traveling from school to school. She does one hour in one school and goes to another school. I don't think she collaborates with special education teachers. But she collaborates with the ESL teachers. Maybe the other ESL teachers have some solutions. (Jago, May 27, 2018)

There was not teamwork [with special education teacher]. There was team work with content teachers. (Jago, May 27, 2018)

Jago avoided direct expression about her efficacy in collaborating with other teachers to support students with special needs as she did not have the opportunity to work with a special education teacher. However, she stated that her interactions with other teachers during student teaching for observation and direct conversation influenced her efficacy in collaborating with other teachers in the future:

It improved because I talked to other teachers and I observed their classes. I also observed the high school and talked to some of them, they let me participate sometimes, and they explained to me their exercises. I think I would collaborate with other teachers (Jago, June 23, 2018)

Tatum supervised students with special needs one time during her student teaching, and this experience allowed her to reflect that she needed to work with other teachers to support her teaching approaches for her students with special needs:

Yeah, I feel more confident in that even though I don't know how like up at the present moment, I wouldn't know how to teach you know, any special needs kids that walks in my door, but I am confident in the ability of working with the special needs coordinator or whoever I need to. I feel more comfortable and collaborating. (Tatum, July 3, 2018)

Four of the interview participants experienced self-efficacy changes in professionalism in different ways based on their student teaching contexts. David experienced a gradual change in his collaboration with other teachers as his class was specifically designed based on teamwork. Mima reported her collaborative work changed in second placement as she and her mentor teachers were eager to collaborate. Tatum and Jago did not have the opportunity to work with special education teachers, but the experience of interaction with other teachers and supervised students with special needs supported their willingness in working with other teachers in the future.

During student teaching, preservice teachers spent considerable time interacting with students, including students with special needs inside the classrooms and out the classrooms. The changes of efficacy in providing support for students with special needs was revealed as the third theme that happened during student teaching.

Improvement in preservice teachers' self-efficacy in providing support. Providing support for students with special needs in this study specifically focused on creating a positive environment, encouraging acceptance, and establishing meaningful relationships with students with special needs. Mima, David, Jago, and Tatum stated that they had changes in confidence in the quality of their relationships with students with special needs. Mima mentioned that in the second placement, she felt more confident in building relationship with students with special needs in her class based on her direct conversations during her instruction:

I felt confident in how I dealt with [students with special needs] I felt like I asked students individually for feedback more in the second placement than I did the first placement and I felt confident in being able to do that. And then, especially with the special needs students, I felt like I was able to form better relationships. I felt like I was able to make sure that they had a positive perspective in the classroom and so that I felt confident in but as far as confidence and teaching the majority, I had complications there. It was a different situation. (Mima, June 11, 2018)

David reported the changes of quality of relationship with his students by comparing the students' interaction from the first time he came to the end of his student teaching. He felt that the interaction between students with special needs with other students as well as with him were getting better based on the quality of daily conversations that they had:

I think a lot of it just how the conversations go like the overall tone and positive and joking or things, knowing that students at the beginning of the year would have not talked about or not have been themselves. I've really made known to me or known to the other students. It's seen that relationship between us reflects on the relationships that they have in the classroom. So students that I want open in the classroom and more interacting and really shows how positive that those interactions (David, lines 361-367)

I just doing and really a self-assessing myself and my students from the beginning of the year to the end of the year. You can really see how they interact in the classroom is different, how they interact with each other how they interact with me. It's kind of a thing that you really have to experience is not a lot of things on paper, statistically, that you can measure. Growing in maturity and leadership for students, but just something you really experienced you see more interactions that more positive interactions between the students and between the teachers as well. (David, lines 13-19)

Jago and Tatum knew their students with special needs better during one-on-one teaching moments. Jago stated that she understood her students' needs and offered guidance for their learning in the classroom after tutoring sessions:

The tutoring experience I got to know students more. That makes me think that I would do some adjustments for the students if I got to know them very well as I did during the tutoring. (Jago, July 4, 2018)

I improved in providing support, because I talked to them more, I got to know them more and I could ask them more questions how to guide them. I notice that they don't write a lot, they don't write very well. So, I figured out asked them more questions. Came to their table, stands by them and asked them more questions, point the words, point the sentences, they can write pictures, I used all of these different tools. (Jago, July 4, 2018)

Regardless of the limited opportunity Tatum had interacting with students with special needs, she had a good moment with one student with special needs. This successful moment built her confidence in building relationship with her students:

But after spending the day with him and knowing. You know, he never really had an outburst, but knowing when he was maybe too stimulated or not stimulated enough and just helping provide things that were already planned for him. But just knowing when to do that. That was good. I felt like by the end of the day, **I really did feel a good connection with him**. And yeah, he was just he smiled and he hugged me and it was good but I try to make those connections with all students too. (Tatum, July 3, 2018)

Tatum also expressed that her experience with students with special needs provided her more knowledge to wait before she referred her students to receive special education services:

I don't know if it will change how I deal with students already with special needs. But **I will be patient in diagnosing or recommending anyone for being tested** or observed. It makes me more patient, I want to give the student that time to learn language to get used to their settings before trying to label them as something else. (Tatum, July 3, 2018)

Interview participants experienced improvement in providing support for students with special needs in different areas. While David and Mima expressed better relationship with students with special needs, Jago reported a deeper understanding of her student's needs through one-on-one interaction and then provided support afterwards, and Tatum felt more knowledgeable about referring students with special needs.

Preservice teachers reported that their perceived self-efficacy improved after student teaching in classroom management only based on quantitative data while the qualitative data revealed more areas of improvement based on the interviews of four participants. All four interview participants stated that they felt more confident in teaching students with special needs in three areas (e.g., instructional adjustment, professionalism and providing support) along three continuums. The efficacy improvement varied in terms of space for successful experiences (one-on-one instruction to larger classrooms) in providing instruction, actions to work with other teachers (waiting invitation to be proactive), degree of convenience working with students with

special needs (nervous to comfortable), and level of support (no actions to careful referral purposes and build personal approach for a better support).

In summary, changes were found in preservice teachers perceived self-efficacy over student teaching in dealing with students with special needs, answering the second research question. There was preservice teachers' self-efficacy changed in classroom management based on quantitative finding and other self-efficacy improvements in instruction, professionalism, providing support, and classroom management based on qualitative findings. Further exploration of influential factors that lead to various degree of preservice teachers perceived self-efficacy changes as the third research question is discussed in the next section.

Influential Factors on Preservice Teachers' Self-efficacy in Teaching Students with Special Needs

To investigate the potential influential factors on preservice teachers' self-efficacy changes in teaching students with special needs, first, I examined the quantitative data for potential factors that differed self-efficacy based on previous studies (e.g., program area of study, previous experiences, availability of support, quality of relationship, knowledge, and teaching satisfaction). Both the first placement survey and second placement survey were analyzed for each sub variable of efficacy in teaching students with special needs. Second, the qualitative result identified themes based on the interview data of the four participants.

Teaching Satisfaction

Participants rated their teaching satisfaction in pre- placement survey and postsurvey. Then, I reclassified participants into three groups based on their responses. The high satisfaction group consisted of participants who rated their level of satisfaction at 7 and 6 (n = 49 for the pre- survey, n = 28 for the post- survey). The moderate satisfaction group consisted of those who rated 5 and 4 (n = 22 for the pre- survey, n = 13 for the post- survey). The low satisfaction group consisted of participants who selected 3 and 2 (n = 2 for the pre- survey and n = 0 for post- survey). Due to the limited number of the low satisfaction group, then independent t-tests were conducted to compare the mean differences of preservice teachers' self-efficacy scores between the high satisfaction group and the moderate satisfaction group for first placement and second placement data.

Independent t-tests were conducted to compare high satisfaction and moderate satisfaction groups on self-efficacy for instruction, professionalism, teacher support, and classroom management during the first placement. Evaluation of the means revealed that the high satisfaction group reported significantly higher efficacy in instructional strategies than the moderate satisfaction group, t (68) = -2.93, p < .05, d = .73. The high satisfaction group reported significantly higher efficacy in professionalism than the moderate satisfaction group, t (68) = -2.06, p < .05, d = .52. The group of preservice teachers with high satisfaction in teaching reported higher efficacy in providing support than the moderate satisfaction group, t (68) = -2.28, p < .05, d = .58. Lastly, the high satisfaction group reported significantly higher efficacy in classroom management than the moderate satisfaction group, t (68) = -2.25, p < .05, d = .57. In the first placement,

preservice teachers who rated high teaching satisfaction reported high efficacy in all subvariables and overall efficacy of efficacies, t (68) = -3.13, p < .05, d = .80 (see Table 6).

Table 6: Preservice teachers' efficacy differences based on teaching satisfaction levels

		st placeme	ent	Group 2 nd placement					
	Moderately		I	High		Moderately		High	
	satisfaction		satis	satisfaction		satisfaction		satisfaction	
	(n = 21)		(n	(n = 49)		3)	(n = 28)		
	M	SD	M	SD	M	SD	M	SD	
Instruction	5.49*	.64	5.91	.53	5.58*	.57	6.05	.51	
Professionalism	6.25*	.52	6.53	.53	6.31*	.55	6.61	.37	
Teacher	6.23*	.58	6.60	.54	6.33	.53	6.61	.49	
Support									
Classroom	5.05*	.96	5.56	.85	5.46	.70	5.73	.59	
Management									
Overall	5.76*	.51	6.15	.46	5.92*	.47	6.23	.37	
efficacy									

^{*}significant <.05

A similar set of t-tests were conducted to compare the high and moderate satisfaction groups on the second placement survey. The high satisfaction group reported significantly higher efficacy in instructional strategies than the moderate satisfaction group, t (39) = -2.63, p < .05, d = .87. There was a significant difference between high satisfaction group and moderate satisfaction group for professionalism, t (39) = -2.05, p < .05, d = .64. Preservice teachers who felt high teaching satisfaction also reported higher accumulative of self-efficacy scores than the moderate satisfaction group, t (39) = 2.22, p < .05, d = .73. The findings revealed not significant differences for these group of preservice teachers in the area of teacher support, t (39) = -1.71, p = .96, and classroom management, t (39) = -1.26, p = .22.

Overall, the quantitative findings revealed that satisfactory level of teaching students with special needs differed the mean of efficacy level for both first and second placements in the area of instruction, professionalism, and the total score. More information was collected based on four structured interviews to support these findings.

Qualitative results on how teaching satisfaction affect self-efficacy. Previous quantitative findings revealed teaching satisfaction levels differed the mean of efficacy level for both first and second placement in the area of instructions, professionalism, and overall efficacy in teaching students with special needs. In addition, the qualitative data revealed preservice teachers' experienced teaching satisfaction when they felt successful in teaching students with special needs as they stated "happy ending" and "good experiences". In addition, preservice teachers' satisfaction also found in working collaboratively with other teachers.

All interview participants reported successful experiences in teaching students with special needs during student teaching that made them feel efficacious. Participants stated that their successful experience in teaching students with special needs positively influenced their self-efficacy, as described through their students' reactions during instruction which including students' enjoyment, engagement, and mastery skills in learning. Successful experiences in teaching students with special needs for Mima, Jago, and Tatum were found during tutoring activities when they were provided specific instructions so the students with special needs reacted to their instruction as intended.

Mima stated that her experience providing tutoring for one student was successful as she observed how her student was comfortable in learning, showed that she was able to follow her instructions, and made progress on her learning:

I think just the fact that I was able to get to a level where she felt comfortable to learn. I was able to help instruct and she able to take that knowledge and own it, and show me she could do it. I could tell that she was content with herself. And I think that contentness with herself and seeing that, I think that made it a success. Working with special needs students as far as working with them individually in that first placement was not something that I did. And so the fact that this was, it seemed like a like **a happy ending**. During my second placement, I felt like it made it a success. (Mima, May 23, 2018)

Jago stated that she was able to see her student's improvement in learning during the tutoring session. Jago provided modelling and guided the student step by step. She saw that her student demonstrated having mastered the skills she had provided instruction for after subsequent attempts. This was a moment of success for Jago.

I told him that all the time. And when you're writing, I saw his improvement during the tutoring session. At first, he didn't know what to do and he didn't want to do anything. But I walked him step by step. Open the document, open the slide, he needed to write some slides and then I said, "Go to the website and open". He had to choose a topic like Miami. He chose the hotel and I said "what is the name?", and "copy, paste to the slide." And then also copy some information. I guided him. The next time when we met, he knew what to do and then he was working himself and I was working on my stuff and I kind of checked on what he was doing. He was typing and writing the presentation. (Jago, May 12, 2018)

Tatum shared her experience providing supervision to one student with behavior problem. She felt successful when her teaching went well event though she did not sure how to supervise students with special needs. This successful experience convinced Tatum that she had been able to support other students as well:

Yes, I got to push in and kind of aid a lot. I got to teach two or three lessons for the full class. There was one day, and I don't think this is best practice, per se, but there was one day where one of the little boys who has a full time attendant, she was gone that day. And so, I was his attendant for the day. And it was great. I didn't know what I was doing 100% of the time. But we had a good time and I feel more comfortable working with all kinds of students as a result. It was **a good experience** even though I was like "this isn't my area." (Tatum, May 21, 2018)

David described his successful experiences by sharing some of his students' general comments about his class that showed how they like the class. The student's feelings of enjoyment in the math class sent a clear message for David that he did a good job as a teacher. He knew that majority of the students in his class had low motivation in learning and had learning problem, so expression of enjoyment in learning in his class was an accomplishment for David:

A lot of them comes from students are not doing so well or they are not motivating comes to school and giving them a reason to and exciting them. When I hear the students say like "I look forward to come to your class everyday"; "I like even though I don't [like] math, this math is good"; "this is exciting"; "This is one of my favorite math class that I ever taking". Things like that that really show that I making a difference in how they view education rather than all the numbers, all grades. I think it is changing their mindset how they view education how they view math and changing that. I know I have one student in particular who have been through in his life, doesn't like school, and every day he come to my class and smile, and trust to work hard, even though some materials were really hard...it's been a lot of moments like that what I will call as successful when my student teaching. (David, May 19, 2018)

In addition to successful experiences in teaching students with special needs,

Mima mentioned her successful moments with special education teacher when special
education teacher acknowledged her idea and implemented it in his instruction:

He came up with this. In math we have a coordinate plane with Y axis. And so, he decided to make this graph instead of using pencil and paper because some of the

students struggle with fine motor skills. At least with pencil and paper he thought he would incorporate more movement. And so, he taped a grid on the carpet. So, he had this coordinate plane out of tape on the carpet and then he asked me, "Okay, so I have this string and I have this coordinate plane. I just don't know how to make this so we can really track where we're going or make the line accurate." I said, "What if you took different objects from the room and use those as your markers as your different points on the plane and so that way more students could get involved and could have fun. That way you could assess a larger amount of students instead of just assessing one or two." He thought that was a really good idea. And it was a really simple, very small idea but he just got so excited, and he was thrilled because it was something he hadn't thought of. He was so excited to utilize that. He's like, "oh my goodness, I'm going to do that." So I felt pretty cool, even though it was a pretty small idea pretty quick and easy. That's what it takes, right, just a small idea that will blossom into something else. (Mima, June 21, 2018)

Successful moments for preservice teachers were varied in terms of the settings and how they perceived their experiences as successful moments. In this study, successful moments were found during teaching and collaborating with special education teachers.

Jago, Mima, and Tatum reported specific settings where they provided specific instruction for students with special needs and students responded positively. David experienced success during the general interaction with his students. Participants defined their successful moments based on the way they perceive their teaching impact on student enjoyment in learning and students' active response. Preservice teachers found these successful experiences based on students' verbal comments, gestures (e.g., hug, smile) and engagement during instruction. Mima felt very honored when a special education teacher asked her expertise in math instruction for students with special needs. This experienced was Mima's successful moment in collaborating with other teachers.

Overall, the qualitative result aligned to quantitative findings such that the degree of

teaching satisfaction differed the mean of efficacy in instruction. The opportunities to build relationships enhanced the successful experiences is described in the following section.

Quality of Personal Relationships

Independent t-tests were conducted to determine if the quality of preservice teachers' rapport with students with special needs differed on self-efficacy constructs. Preservice teachers who rated a lower quality of rapport (M = 5.25, SD = 0.39) reported lower efficacy scores in instruction than those who rated a higher quality rapport (M = 5.89, SD = 0.58), a statistical difference of -.64 (95% CI [-1.00, -.27]), t (70) = -3.472, p < .05, d = 1.16. Cohen's d was estimated at 1.16, which is large (Altman, 1999). The t-tests also were significant for professionalism, t (70) = 4.01, p < 0.05, d = 1.32; providing support, t (70) = 3.62, p < 0.05, d = 1.17; and classroom management, t (70) = 2.97, p < 0.05, d = 1.07. To sum up, in the first placement, there were a statistically significant difference in the mean score of all self-efficacy constructs (instructional, professionalism, support, and classroom management) between preservice teachers who rated themselves had higher quality rapport and those who had a lower quality of rapport with students with special needs (see Table 7).

The *t*-test for second placement revealed no significant differences between the groups of preservice teachers' who reported higher quality of rapport (n = 23) and those who rated lower quality of rapport (n = 18) in the area instruction, t(39) = 1.37, p = .18;

professionalism, t(39) = .99, p = .33; teacher support, t(39) = 1.80, p = .08; classroom management, t(39) = 2.01, $p \le .05$; and overall efficacy: t(39) = 2.02, $p \le .05$.

Table 7: Preservice teachers' efficacy differences based on quality of rapport

	G	roup 1st p	lacemen	t	Group 2 nd placement			
	Lower quality of		Higher quality		Lower quality		Higher quality	
	rapport $(n = 11)$		of rapport		of rapport		of rapport	
			(n = 61)		(n=18)		(n = 23)	
	M	SD	M	SD	M	SD	M	SD
Instruction	5.25*	.39	5.89	.58	5.77	.63	6.00	.49
Professionalism	5.89*	.52	6.54	.49	6.43	.51	6.57	.40
Teacher	5.97*	.55	6.60	.52	6.37	.56	6.65	.44
Support								
Classroom	4.72*	0.66	5.54	0.86	5.43	.75	5.81	.47
Management								
Overall	5.46*	0.38	6.14	0.46	5.99	.50	6.26	.33
efficacy								

^{*}significant <.05

In conclusion, quality of interaction of preservice teachers with students with special needs differed in their reported self-efficacy scores in all areas during first placement, but not in the second placement. An emerging theme which aligned with the personal relationships factor found in the interview sessions of four participants was the importance of building relationship with both students and teachers. This theme influenced preservice teacher's perceptions of self-efficacy in teaching.

Qualitative results on how building relationship affect self-efficacy. In addition to successful experiences, all interview participants also mentioned that their self-efficacy was influenced as two of them stated "focus more on the relationship" and "confident after building relationship", including students with special needs. This quality of rapport

with students with special needs learning and special education teachers affected interview participants' self-efficacy in providing support of students with special needs.

Preservice teachers build relationships with students with special needs. Jago described the influence of student relationships through her tutoring experience, which allowed her to understand more about her students' needs:

The tutoring experience I got to know students more. That makes me think that I would do some adjustments for the students if I got to know them very well as I did during the tutoring. (Jago, July 4, 2018)

Mima and David shared a similar belief. They both approached students beyond the content of the study that they taught and focused more on sending the message that they care about the students and motivated them throughout their instructions:

Like I said, I like people and enjoy their stories. And so, I just thought, 'why don't I just try it from what I find interesting, hear more about their story'. And so instead of focusing on math right away, I decided to focus more on the relationship. I realized that in order to reach them. I needed to spend even more time than normal talking just about normal conversation. I feel like with other students, I able to talk with them briefly and do small things to let them know that I care. I feel like these special needs students, they needed attention. They needed the extra time so that "it's Ok if you don't understand, I'm going to be patient" and that you truly want to help them. I think they just needed that extra time and it paid off. That second placement I saw really good results and I really enjoyed it. (Mima, May 23, 2018)

When I teach them? I feel like sometimes it was very overwhelming but we have a lot of helped and I know like with my teaching philosophy it really builds relationship with students. **So, I tried to build the relationship with the students in order to help them learn.** And letting them know that we're there for them even though it hard for them to learn the material. Just kind of sense of my freshmen it just introducing the desire of learn and learning is fun and the high school can be easier for them. (David, July 3, 2018)

Mima expressed her willingness to spend more time to talk with students with special needs to show that she cared and wanted to understand to provide support. The quality of relationship that she built with students with special needs increased her efficacy and confidence in providing support for students with special needs:

I think my confidence in teaching students with special needs has increased, just because I know that I can develop good relationships with them. I feel like my experience in my second placement, that effort that I took the reflection on. You know, just acknowledging their need I think, just made me feel like a more effective teacher. And so I'd say my confidence has increased and I'm excited just because I feel like I've tapped into both students who do not have special needs and students who do have special needs. I've acknowledged. I know we all would like you know to be recognized, to be encouraged and to be reminded that we all can learn. (Mima, June 21, 2018)

David spent more time to reach out to students during his instructions and asked general questions about his students to get to know more about them and build a positive learning environment:

It is happened with fine line between building the relationship and the content cause where they to teach or they just to build relation with students. Then building relationship comes first for me in many cases because that makes school place where students want to go and want to learn. The way that I attack is in the down time when we have pre-work time or something like that, starting conversation with students about out of school, asking about their family, asking about what they deal outside the school, what kid are excited, what's their passion, hobbies, asking about their friends. (David, July 3, 2018)

So how did I build confidence? A lot of it was asked him a resource for questions that I wanted. I'm like, okay, so how do we deal with these students, what's the best way to get them and interact and also focusing on building the relationships with the students before the rigor and the actual education was big. I always like foreign relationship, but I think during student teaching I focused on it a lot more, and now it's become more part of how I teach. So, as I was building relationships

with them, like "okay so building relationship" like I'm get them encouraged get them motivated and then we can teach them. So that there's some barriers. So, we have top over first. So that's how I grew and confidence was after building relationships, like, "oh, this is, this is not too bad, not too hard to plan for an attack. (David, July 3, 2018)

Tatum had a slightly different experience in school context. She did not have students with special needs in her class, but she had an opportunity to supervise a student with special needs and decided to start a relationship with the student without negative judgement, even though the teachers warned her to be more cautious:

He had a behavior specialist and I was told just to keep tread lightly with him. But I tried to come in knowing that I was someone who wouldn't necessarily be aware of those behavior issues and just kind of gave him ...I wanted to give the sense of like the benefit of the doubt for him. Like "I don't know you. I don't want to assume that you have these behavior problems" like how he's established kind of with this teacher and that kind of thing. So I had pleasant interactions with him but I was kind of instructed to tread lightly. (Tatum, May 21, 2018)

But after spending the day with him and knowing. You know, he never really had an outburst, but knowing when he was maybe too stimulated or not stimulated enough and just helping provide things that were already planned for him. But just knowing when to do that. That was good. I felt like by the end of the day, I really did feel a good connection with him. And yeah, he was just he smiled and he hugged me and it was good but I try to make those connections with all students too. (Tatum, July 3, 2018)

Tatum's experience in supervising students with special needs was successful for her as she did not find behavior concerns like other teachers. She felt that knowing the student with behavior problems was not an issue as she built positive interactions with him.

All interview participants reported various opportunities to support students with special needs, which allowed them to have direct interaction with them. While David had

a large number of students with special needs, Tatum only had one opportunity to supervise students with special needs during her student teaching. However, overall interaction between interview participants and their students with special needs represented intimacy on a personal level, showing care and support beyond the content.

Not only did participants report how building positive interactions with students with special needs influenced perceived efficacy, but also they reported that the opportunity to collaborate with special education teachers influenced their self-efficacy. These relational opportunities influenced the participants' reported self-efficacy in meeting the needs of students with special needs. Mima stated that she built more interactions with special education teachers in her second placement. The quality of relationship between a special education teacher and Mima enabled her to discuss indepth about strategies or methods that she can apply in her classroom.

In my second placement, the special education teacher really lended himself and his services to me right off the get go. And so I was not afraid to ask him questions as far as, "what would you do? How would you help students with this particular topic? This is what we're learning about. What are some different methods that would work?" because he knew that individual students really well. I felt like we had a really good professional relationship because he would ask me questions. He would ask me about the math. He would challenge me as far as, "what do you think would be a good method for that?" So he had already come up with some and he would encourage me to think that way. And so I think that helped me develop that mindset as far as what are some different methods. So I know I had said at my previous interviews about how curriculum-wise in college I didn't feel like I received instruction on different methods to meet the learning needs of special needs students, but I felt like that's his area of expertise. And so he gave me just some real advice to assess the situation and to come up with some ideas. (Mima, June 21, 2018)

David stayed in the same placement during his student teaching. He stated that his interactions with other teachers, parents, and administrators gradually improved from his first eight weeks to his second eight weeks of placement. The initiative that David took to ask more questions in regard to curriculum, instructions, and evaluation to other teachers made him felt comfortable in his role as a teacher.

It was more of gradually becoming more familiar with working with the other teachers, parents and administrators. For teachers, I started to ask more like what their curriculum was really aiming at. And that we're on the same page were given test that measures the same stuff. We're moving along at the same page and teaching the same or teaching the students is generally the same material. So, I collaborated with them that teacher right across the hall from me just asked her for that. (David, July 3, 2018)

Building relationships with other teachers, as Mima and David did during their preservice teachers, showed how they fulfilled the knowledge and teaching gap they had by asking more questions and reaching out to available resources at schools. Furthermore, the availability of high qualified teachers and accessible resources during student teaching placement bridged the gap between preservice teachers' entry level knowledge and teaching skills with the needed skills to work with students with special needs.

In summary, the quantitative findings revealed that the quality of relationship with students with special needs differentiated efficacy scores of preservice teachers in all areas for the first placement, but not in the second placement. Based on the qualitative findings, preservice teachers reported that their connection with students with special needs broadened their knowledge about students (e.g., who they are and their interest), which led to more understanding about their learning needs and developed preservice

teachers' eagerness to provide more personal support. In addition, the interaction between preservice teachers and other teachers (e.g., special education teachers) create more opportunities for discussion in order to share and develop knowledge and teaching skills, which provides educational support for students with special needs. Once the preservice teachers had more intensive moments with students with special needs during their student teaching, they expressed more knowledge about how to support them. In addition to teaching satisfaction and the quality of relationship, previous coursework was found as one of the influential factors of efficacy change.

Previous Coursework in Special Education

Participants completed a variety number of special education courses at the university. A special education minor requires 20-24 hours of special education courses and one diversity course, which has special education content, for all teacher candidates. Some programs integrated special education content in their course as well. In this study, preservice teachers reported the number of college courses in special education: 7.8% none (n = 6), 43% one course (n = 33), 33.8% for 2-5 courses (n = 26) and 10% participants took 2-5 courses (n = 8). For analysis, participants were grouped into categories: none to one course (n = 39), 2 courses and more (n = 34). Independent t-tests were performed to examine differences in preservice teachers' self-efficacy teaching students with special needs between two groups: preservice teachers who had at least one course in special education compared to those who had two or more courses.

A series of *t*-tests were conducted for the other sub-variables of self-efficacy in teaching students with special needs. Students who only took one or fewer courses in special education reported significant lower self-efficacy for instructional strategies than did those students who completed two or more courses in special education, t (71) = -2.83, p < .01, d = .65 (see Table 8). However, the results were not significant for professionalism, t (71) = .78, p = .44, teacher support, t (71) = -.90, p = .37, classroom management, t (71) = -1.61, p = .11, and the overall efficacy score t (71) = -1.59, p = .12.

Table 8: Preservice teachers' efficacy differences based on number of special education course content

_	Gı	oup 1st	placem	ent	Group 2 nd placement			
_	1 course		2 or more		1 course		2 or more	
	(n = 39)		courses		(n = 24)		courses	
			(n = 34)				(n =	= 17)
	M	SD	M	SD	M	SD	M	SD
Instruction	5.63*	.57	6.00	.56	5.80	.54	6.04	.59
Professionalis	6.51	.54	6.41	.50	6.54	.45	6.47	.46
m								
Teacher	6.45	.56	6.56	.52	6.50	.54	6.56	.48
Support								
Classroom	5.23	.88	5.56	.90	5.46*	.59	5.90	.61
Management								
Overall	5.95	.45	6.14	.54	6.08	.41	6.25	.45
efficacy								

^{*}significant <.05

Separates *t*-tests also were conducted to examine if different courses in special education differed the self-efficacy scores for four sub-variables (instruction, professionalism, teacher support, and classroom management) and total efficacy in teaching students with special needs during the second placement. Students who took at

least two and more special education courses (n = 17) reported higher efficacy scores (M = 5.9, SD = 61) than the preservice teacher group who took only one course in special education (M = 5.46, SD = .59). Preservice teachers who took two or more courses in special education reported significantly higher self-efficacy for classroom management than those who only took one course, t (39) = 2.34, p < .05. Cohen's d was estimated at 0.72, which is medium to large (Altman, 1999). Separates t-tests were also conducted to compare these groups on instruction, professionalism, teacher support, and the total scores. These t-tests were not significant: instructional (t (39) = 1.39, t = .17), professionalism (t (39) = .49), t = .63, teacher support (t (39) = .42, t = .68), and Overall score (t (39) = 1.27, t = .21).

Qualitative findings of how special education courses affect self-efficacy.

Overall, self-efficacy for instructional strategies and classroom management were higher for those students who took two or more special education courses compared to those who completed one or less courses. The qualitative results help illustrate the impact of previous courses on the four interview participants' entry level knowledge, disposition, and teaching skills. Mima, Jago, David and Tatum expressed positive disposition toward students with special needs as they took one course in special education. However, one course in special education did not equipped them adequately for knowledge and teaching skills to deal with students with special needs. Furthermore, preservice teachers who took more number of course works in special education rated their self-efficacy higher in the areas of providing instruction and classroom management. Each of the interview participants developed their self-efficacy in teaching students with special needs during

student teaching as they received support from their school and university. The next session discusses how preservice teachers perceived different access of support during student teaching which enabled them to build their self-efficacy.

Availability of Support

The availability of paraprofessional in the classrooms was asked for both first and second surveys with yes and no questions. Preservice teachers who taught multiple classes either responded yes or no for these questions with less accuracy for specific class which might not capture all classes that need to be considered in analysis section. A total of 49 preservice teachers reported a paraprofessional in their class, and 25 preservice teachers who did not have one in first placement survey. Independent t-tests were conducted to determine differences in preservice teachers' self-efficacy for each subvariable in regard to paraprofessional availability. Preservice teachers without a paraprofessional (M = 6.62, SD = 0.43) reported higher self-efficacy than those who have paraprofessional (M = 6.36, SD = 0.58), a statistical difference of -.25 (95% CI [-.49, 01]), t (62.166) = -2.112, p < .039. Cohen's d was estimated at 0.50, which is medium (Altman, 1999). Comparison of the means revealed that students who had paraprofessional in their classroom reported significantly lower self-efficacy for professionalism than those students who did not have paraprofessional in their class (see Table 9). A series of *t*-tests also were also conducted for other sub-variables: instruction: t(72) = 1.09, p = .91; teacher support, t(72) = -.65, p = .52; classroom management, t (72) = .43, p = .67; and overall efficacy, t(72) = .46, p = .64. The t-tests were not significantly different for preservice teachers groups with paraprofessional and without

paraprofessional in the second placement for instruction, t (39) = 1.32, p = .19; professionalism, t (39) = .49, p = .63; teacher support, t (39) = -.42, p = .68; classroom management, t (39) = 1.49, p = .14; and overall efficacy, t (39) = .97, p = .34.

The quantitative findings revealed that preservice teachers who had paraprofessionals in their classroom had lower self-efficacy in professionalism compared to those who did not have paraprofessional in their classroom. Interview data clarified this situation.

Table 9: Preservice teachers' efficacy differences based on paraprofessional availability in the classroom

	G ₁	olacemer	Group 2 nd placement					
	With Para		Without Para		With Para		Without Para	
	(n=49)		(n=25)		(n=24)		(n=17)	
	M	SD	M	SD	M	SD	M SD	
Instruction	5.80	0.64	5.78	0.50	6.00	.53	5.76 .60	
Professionalism	6.36*	0.58	6.62	0.43	6.54	.42	6.47 .50	
Teacher	6.45	0.61	6.55	0.47	6.50	.54	6.56 .48	
Support								
Classroom	5.42	.93	5.32	.84	5.76	.59	5.47 .67	
Management								
Overall efficacy	6.00	.55	6.06	.42	6.20	.39	6.07 .48	

^{*}significant <.05

Qualitative findings on how the availability of support affect self-efficacy. One of interview participant reported a reason of lower efficacy when a paraprofessional present in the classroom. In addition, there are three emerging themes based on qualitative findings, which align with support for preservice teachers: program structure, quality of mentor, and working atmosphere.

Mima explicitly reported that she did not know how to work with paraeducator in her classrooms. Her experiences possibly explained the situation of preservice teachers

who rated themselves lower self-efficacy when they had paraprofessional in their classroom, mainly that they might not have known how to work with a paraprofessional.

The four interview participants reported different access to support during student teaching. Various opportunities and support for preservice teachers when they taught students with special needs varied because of three additional themes: program structure, quality of mentor teacher, and working atmosphere.

Program structure: Aligned emerging theme with "we were all involved in planning lessons together and making sure those supports were built in in the mainstream classroom" and "we all work together". All four participants had different opportunities to work with students with special needs based on their school placement. Each school has different programs and support for preservice teachers to access, which influenced their efficacy in providing instruction, collaborating with other teachers, and conducting classroom management. In addition to this, preservice teachers also received support from their student teaching program, which was managed by their university. Each preservice teacher perceived both support from school and student teaching program differently.

David stated that he taught a special class, which was a pilot program in his school wherein most students who enrolled were students with special needs. The design of the program allowed David to experience collaborative work in dealing with students with special needs:

At my school what they do is this new program with math, pulling most students out, that kind of struggle. They aren't ready for Algebra I. They made a separate class for them so they can be more ready for Algebra I. It helps the students who are on the right pace to still succeed without being dragged slower because of the other students. So, both sets of students can work at their own pace and really help each other reach their potential in math. I think we do it in math, but they haven't done it in other subjects. The same students are struggling in other subjects outside of math. It's just that they haven't developed this program where they're taking an introductory class before their core class that they're supposed to take. (David, May 19, 2018)

Through this special class, David worked as a team with other teachers, including special education teachers, which gave him opportunities to learn from other teachers about diverse students' needs and how to prepare and deliver instructions collaboratively:

Our math department will meet together and we'll talk about what our tests will look like, what units we want to cover and how we want to cover it.

Sometimes we'll talk about doing lessons together. We just kind of talk about the content and we talk about students. If there's a student that we didn't have that they had last year, how can we help them, what is best for them, what to watch out for. We collaborate that way. We also collaborate with special education teachers. I said this the last time. Figuring out what the student truly needs that they might know since they are trained in special education needs. They will let us know through communication. We also work with the shop teachers. They apply the math skills in the shop setting. We collaborate making those projects together and talking about the students as well. We talk about the students and what they need. We talk about the content and what we want to cover. (David, July 3, 2018)

David mentioned that he gained tremendous support from his team to develop lesson plans, deliver instruction, and maintain classroom management. Furthermore, the shared responsibility he gained through his teamwork in this special program influenced how he built his efficacy in teaching students with special needs:

We are work together, and they have meeting for instruction with their parents about what their needs for the students and what the parent wants for the students inside the school. and so the special education teacher meet with the general education teachers so like us and we talked about it in those meeting so we usually on the same level for what the students' needs. (David, July 3, 2018)

Mima and Jago had different opportunities to work with students with special needs and collaborate with other teachers, including special education teachers in their school. Mima worked with students with special needs in both of her placements, however, she reached out to the students more in the second placement. She mentioned that the length of instructions in the second placement, which was 30 minutes longer than the first placement, enabled her to provide more support for students with special needs in her classroom:

I feel like with a 50-minute schedule, you need to be pretty consistent as far as keeping the content interesting. But the format I think needs to be similar at least to begin with. So that way students understand that they need to focus. Otherwise, if you keep changing up the activities, I feel like students will feel a little discombobulated because it's like, "oh, wow, this is a totally different thing. And now, time is gone. What did I learn?" And so, I think it is important. You need to keep the students engaged in various ways, but I feel like the 80 minutes time block allowed for more discussion to occur. I didn't feel like I had to be like, "oh, I have to keep it only, you know, seven minutes long and not a minute longer" because in 50 minutes like each minute is so precious. At least for me it was. And I felt like I would already be crunching for time. And so, with the 80 minutes it was nice because they were covering the same amount of material. It was a whole year class with the same material, but they got an extra 30 minutes. They got an extra half hour per class period in the middle school. And so I was just able to see the benefits of not having to feel rushed. Nobody really likes feeling rushed. (Mima, June 11, 2018).

The block schedule in the second placement allowed Mima not only to deliver the instructions, but also to pay attention for students with special needs.

Jago did not have opportunity to experience work collaboratively with a special education teacher even though she had students with special needs in her class. She also reported that she never saw her mentor teacher did the collaboration due to limited time of her mentor teacher as she was mobile from one school to another school:

We never collaborated with special education teachers. I never saw the teacher collaborate with them either. Because she was traveling from school to school. She does one hour in one school and goes to another school. I don't think she collaborates with special education teachers. But she collaborates with the ESL teachers. Maybe the other ESL teachers have some solutions. (Jago, May 27, 2018)

However, Jago mentioned that her teacher wanted her to collaborate with a paraeducator, but Jago thought that collaboration was not part of her job. In this case, Jago perceived her role as a teacher differently than her mentor teacher:

- I : Did you have a chance talk with para educator?
- I : No, I didn't have the chance, because the mentor teacher was in charge, she sometimes talked to the classroom teachers, talked to the Para educator. She was in charge in that and part of her job. She wanted me to learn this thing, but it was not like I couldn't do it because I was not the teacher. So, I couldn't just go to class and say something about the students, because I was not the teacher. The teacher was my mentor teacher. She was definitely in charge. (Jago, July 4, 2018)

Tatum did not have students with special needs in her ESL class. However, Tatum had a onetime opportunity to work with a student with special needs. Even though none of her ESL students had disabilities, she had an opportunity to support a classroom

teacher in a regular class. During this time, she supervised one student with special needs.

She mentioned that this opportunity was part of her school program to keep all students with special needs in the mainstream classroom:

In my pull-out sessions, I didn't have any students with special needs. But pushing in I dealt with all students in the classroom. So, I interacted with students who weren't necessarily ESL but still had special needs. And I help them the same way I would help my kids or I would help in the best way that I could which was usually with writing (Tatum, June 12, 2018)

I think for me it was that the school keeps their students in the mainstream classroom and provides support through the teachers collaborating and lesson planning, even from the ESL perspective. We were involved in all of the teachers' plans and so were the special ed teachers. So, we were able to keep all of the students in the mainstream classroom because we were all involved in planning lessons together and making sure those supports were built in in the mainstream classroom. (Tatum, May 21, 2018)

Tatum added that pull out sessions in her school was in the same room with special education teachers that enabled her to observe how special education teachers provided educational services to students with special needs. Based on her observations, Tatum related her teaching approaches as an ESL teacher who support ESL students in the same way as students with disabilities:

Often in the same space. Yeah, so pull out. We had a very open floor plan. So even if you pulled out a student, there's still quite involved in they're still in the classroom, pretty much. So being able to see different pull outs from the speech pathologist from the behavioral specialist saying things like that. It wasn't that far away from what I was doing. It was just in their specific area, but there's still taking that time like their students to really understand and spine that next step, the same way I would do that with language. (Tatum, July 3, 2018)

In addition to this, Tatum also reported different a collaborative atmosphere between her two placements. In an elementary school, she was able to collaborate with various teachers, which was easier for her to provide more support. However, in the high school, collaboration was harder due to the compartmentalized classroom by subjects:

The difference between the elementary in the high school when I was in. In the elementary, that was established - collaboration was something that was planned into all of the teachers' schedules. It was made a priority. Whereas servicing ESL in the high school was much different. I felt like we were trying to play catch up the whole time because I think it's when the content gets separated out for different teachers, they kind of go into their own teams. And so, it was much harder to try to service those teams. We often just helped the kids kind of from a back end of things rather than a front loading kind of thing in the middle school and high school. So, that atmosphere was less collaborative as far as with ILS and her with ESL and special education. (Tatum, May 21, 2018)

David, Mima, Jago, and Tatum had similar opportunity teaching at the high school level, but their experiences were varied based on their school programs. In addition, all participants also mentioned that their student teaching program influenced the way they perceived their teaching experiences during student teaching.

Weekly guided reflection was one of the supports from student teaching that influenced preservice teachers' efficacy in teaching students with special needs. Mima stated that her reflections led her to transformation. She did this weekly as part of her student teaching program, which helped her to release some of her disappointment, especially when she felt unsuccessful dealing with students with special need in her class:

For me, in order for this transformation to occur, I reflected on it quite a bit. We had a journal every week that was due for our student teaching class. I

think it addressed important questions and it just helped me directly write down my feelings and my thoughts about certain things. I think that contributed. So, it wasn't something that was necessarily someone sat down with me and they were like, "oh, what do you feel like you aren't doing well at." However, it is those journals each week that were due was important and sometimes those journal writings were open. And I was able to talk about them. I enjoy talking about things that I was struggling with, or things that I felt like I was not succeeding at. I use that as a release because I knew I was not doing well, especially with the special needs or I was not doing as well as I would hope to. (Mima, lines 99-107)

Mima reported that her unsuccessful experiences in the first placement made her think more and reflect on the need to improve for the second placement. As her reflections were guided, she stated that she recognized her need for change:

I thought about it a lot. It was actually towards the end of my first placement. So, I was almost done teaching by that point. But it made me recognize the need to really work with the people in the room. So, if I am given either a special education teacher in the room, someone to co-teach with or those Para educators, the teacher aides, to really utilize them and to listen to them because they're an extra set of eyes. So, what they're telling you is not untrue. It's not like I didn't believe her. I didn't prioritize it enough to get the task done. So, it made me realize what are you going to prioritize? That's when I recognized that the change needed to happen. I knew that I was not successfully reaching all of the students. So, I knew that there was more that I could do. I could have made those note-taking guides. I could have done that and I didn't. Just a need, the realization that I needed to change my mindset, that I needed to realize that, yes, I think differentiating means putting in more time, even when you're tired and you're exhausted. If you truly care about these students you have to change it, you have to prioritize to meet their needs. (Mima, May 23, 2018)

Mima was the only preservice teacher who stated that she transformed her teaching approaches with students with special needs in the second placement based on her reflections. She also was the only interview participant who gained improvement while other interview participants rated limited change of efficacy based on the surveys.

Mima's unsuccessful moment in the first placement was reflected on, which led her to change her mind set in supporting students with special needs from individual actions to teamwork efforts.

Working atmosphere: Aligned emerging theme with "I really feel confident asking" and "I just saw it from a distance". Each placement has a different program which help preservice teachers improve their teaching skills. Preservice teachers also reported that the working environment in their school affected the accessibility of support, which also influenced their efficacy. David gained full support from his team in teaching students with special needs in his classes. Tatum had a solid collaborative team in one of her school placements, which enabled her to build her confidence in teamwork to provide support for students with special needs. Mima and Jago had students with special needs in their classes, but the way they interacted with their team to provided different support.

Based on David's statement, encouragement in working collaboratively with a team from mentor teacher was profound. The invitation from his mentor teacher showed a welcoming atmosphere in their workplace.

When my mentor teacher had meetings with other teachers, he would help me to go or like urged me to go even though it wasn't really required of me. You know I'm there from eight hours a day, but he would encourage me to go and I would say that, you know, for maybe nine hours a day. It took it to go to a meeting. But meeting with other teachers, we also let us that's why education class where we talked to the special education teacher so he was always interacting with his collaborative people and inviting me and you know those meetings as well, or in those conversations. It was never I'm just going to collaborate and I'll fill you in

and it was be a part of our team. And so, he really helped me get into that. (David, June 22, 2018)

Tatum also mentioned that the collaborative work in her school was strongly established that enabled her to participate and built her confidence in providing support for students with special needs by asking questions to special education teacher.

I feel really confident asking. I know that if I get a student with special needs who is an ESL, I know that like out of just out of the top of my head I won't know all the special caveats and scaffolds that would help that student. But I also feel really comfortable and confident asking a specialist, "in your experience, for children with this disability or need what do they need in their scaffolds for normal classroom?" And then I would see that and say, "Okay, what do I need to take over to English teaching to help line that up?" (Tatum, June 12, 2018)

Yes, but I can't stress enough how important the collaboration in my school made me more confident going into the future. I worked right next to the paraprofessionals and the specialists and so as a result, I feel much more comfortable going into a school and asking those specialists how I need to scaffold and how I need to better assist those students. [Tatum, May 21, 2018]

Mima compared her first and second placement and underlined that the access for support was important because her team clearly said they would support her in the second placement while they did not in first placement. A professional team was available in both placements, but the working environment was different. Mima mentioned that both her mentor teacher and special education teachers in the second placement encouraged her and provided tools to deal with students with special needs.

My teacher suggested different activities using the Kagan model. And also, the special education teacher just encouraged me. There were a couple of concepts, he gave me suggestions on different ideas. (Mima, June 11, 2018)

Although, she was shy at the first, Jago felt that there was no invitation from her team to participate as she wished. In the second placement, Jago had students with special needs in her class, but she reported difficulties in collaborating with other teachers.

Not really because they really didn't include me with my ideas at all during first month of student teaching. At the end of student teaching, the ESL teachers finally was included me more. And I think that was not really good experiences because she should include me from the very beginning. I should be able to participate very well of them. They met and they started talking and then I couldn't say anything. They started talking to each other and they had ideas each other. The ESL teachers told me to kind of listen and see what they would have. I didn't have really much voice in that part. I had voice in the variance of students (Jago, July 4, 2018)

I went for observations to other classrooms. I observed many classrooms. It was limited. They're in high school. In elementary school we had a team. In high school we also had a team; we met once a week with other ESL students' teachers in the district. I learned some laws and some testing laws. They have testing for ESL and like some regulation. They were watching the video what changed. So I got to know some of the work they do. But I did not have any relationships with other teachers. Except in elementary school I did. Because we ate lunch together and we planned for classes together. So, at first when I was doing student teaching during my first weeks, they didn't let me plan with them. They were just planning and I was like sitting on the side and they would sometimes talk to me. But they were talking to me – I couldn't participate. Like they didn't give me that active ... I didn't want to ask. I was kind of shy. But they should give me way more access because when I've done the lesson, there was all criticism about my lesson. But I did not get the access to plan it with them. I just saw it from a distance. I did not participate really in planning. You should not criticize me if you don't invite me to participate actively. (Jago, May 27, 2018)

David, Mima, and Tatum expressed a positive working environment in their placement while Jago had a different situation, which influenced the access to advance knowledge and skills in teaching. Jago reported that, because she did not have a good

connection with other teachers, she learned through observing other teachers instead of having discussions and asking more questions.

Interview participants stated that positive working environment through direct verbal acknowledgement of support at their placement sent a clear message that they were accepted and welcomed to access available support at the school. This positive environment enabled further conversations and discussions between preservice teachers and other teachers to improve their teaching skills.

Quality of mentor teachers: Aligned emerging theme with "I had great tremendous support" and "I had a lot of freedom to decide". In addition to program structure and working environment, three out of four participants reported the quality of their mentor teacher's support affected their efficacy in teaching students with special needs in three ways: sharing teaching strategies, providing feedback, and modelling. However, the mentor teachers' support quality was varied and preservice teachers perceived it differently as well.

Mima stated that she asked questions to her mentor teachers in both placements, especially about teaching strategies to support students with special needs:

I would say if I had a difficulty in class, either behavioral, dealing with classroom management, or maybe how could I have explained this concept more clearly or more effectively. So it was just about my lesson, the different aspects. How you deal with a certain behavior. **This would be like talking to my mentor teacher.**How would you have done it differently? What are some methods that I should try in the future? It was sometimes about the special needs students, but just overall how can I make the class flow better. I had great tremendous support with that. (Mima, May 23, 2018)

David also mentioned, like Mima, that he requested more information about how his mentor teacher dealt with students with special needs:

- I When you found that you felt unprepared for your class at the first time. How did you build your confidence in teaching in your special class?
- D So how did I build confidence? A lot of it was asked him a resource for questions that I wanted. I'm like, okay, so how do we deal with these students, what's the best way to get them (David, July 3, 2018)

Yeah, he would tell me different strategies to use and such and model. Well, but other than that, I mean I have books and stuff on it from my courses at university but I didn't use them that much (David, July 3, 2018)

Jago also stated that her mentor teacher provided more strategies to include other students in her classroom:

She told me many strategies. The students will write, maybe I need to give them more time to write and to read so you have to pay attention to that. You have to be more careful, like wait them. She wants to include everyone and she gave me good strategy to include everyone. (Jago, May 12, 2018)

According Mima, Jago, and David, their mentor teacher shared their teaching strategies in teaching students with special needs. In addition to this, they also reported that their mentor teacher also provided feedback that influence their efficacy in teaching students with special needs.

In the second placement, Mima received affirmative response from her mentor teacher when she felt unsuccessful. Mima felt that her mentor teacher in her second placement strengthened her confidence, especially when she felt disappointed with her teaching performance. As a practicing teacher with a lot of experience, Mima stated that

her mentor listened and accepted her unsuccessful moment, which made her more comfortable:

I remember I was having a conversation with her about a particular incident when a student who was partnered with a special needs students did not want to work with the special needs students and I was very heart broken by that. I was very hurt and I didn't like the way that I handled it. **But she was so supportive, my mentor teacher was. She just reassured me that the mindset is good.** At least I've run into that situation and I know that if it happens again, what would I change and what would I do differently. She encouraged. So when I was in that second placement, she was very encouraging of this positive mindset, this open mindset towards students with special needs. So that was incredibly helpful. A big confidence booster because I knew that the direction I was going was good and she was supporting that. I really appreciated that. (Mima, June 21, 2018)

In contrast to the second placement, Mima reported that she did not receive feedback when she had a concern in the classroom in her first placement:

I remember I would voice my concern over certain students, but she was not as open to sharing ideas, I guess. She would think about it, but I don't know if I ever really got any real definite answers of different methods. Her one piece of advice I do remember was to use the aides. (Mima, June 21, 2018)

David reported that his mentor provide him a lot of feedback and freedom to execute them. Moreover, David stated that he received positive affirmations from his mentor teacher about his teaching performance:

I had a lot of freedom to decide, he trusted me a lot, but like, he would say, okay, however you want to do it. But he would give me feedback on. Oh, hey, like after the fact is they want to give me the freedom of, oh, maybe next time you should do like this. This is what I've experienced or if I were to ask them, "Hey, I'm thinking about doing this", then he would give feedback and said, "I've done it like this in the past, you can choose to do it. However, but this is how I've done

it." And most of the time, I would follow his advice because of how experienced he is (David, July 3, 2018)

My mentor teacher would give me feedback on what students, saying, yeah, "The students are really changed since the beginning of the school year they're more engaged. They're having fun and they appreciate the work that you do for them, their respective" so he tells me that those things are you told me those things and also what he likes. At the last day of school a lot of the students, they knew like I wouldn't for sure coming back. So, a lot of them wrote me like letters and stuff for me things that were like, "oh yeah, like you really made math on this year like is really engaging". "He helped me stay motivated to this long semester" and things like that. So you know what a affirmations from this students but also my mentor teacher (David, July 3, 2018)

Jago had different experiences regarding how her mentor teacher provided feedback. When she expressed her disappointment because she cannot serve students who finished writing waiting for students with special needs, her mentor teacher suggested her not to talk and only wait, without addressing and affirming Jago's feeling:

When I didn't wait for the students to finish writing, but they move to another exercise because other students working with that with me. So I felt that I had to move to another exercise but I can't ignore them who did not finish. I didn't really move to another exercise but started talking about it so that made them anxious. Like teacher told me don't do that. I didn't really move to the next exercise, I was just talking, so that other students do not be bored. she told me to just wait and everyone will be patient, everyone in the classroom will wait for everyone to finish. So there is the strategy. The key strategy to wait for everyone in the class. (Jago, May 12, 2018)

In this situation, Jago felt that she was unsuccessful in her teaching, because she tried to follow her mentor teacher's suggestion but felt that she did not execute the strategy very well. Jago also reported a criticism that made her sad.

In the first placement, the criticism was a lot and even talking about my language, which was not very comfortable after what I have done with the English (Jago, June 23, 2018)

In the second placement, the criticism was very productive. It was not something that related with accent, it was positive criticism and it wasn't something that made me sad. In high school, the teacher was more open-minded. She told me that she travels. I think she met many people when she traveled to different countries. It was a different situation. She was very good to me; she is definitely the best person for me. (Jago, June 23, 2018)

The criticisms was something about the lesson, it was definitely something that I actually can work on rather than just saying, "You have to work on your language." It was devastating for me. (Jago, June 23, 2018)

Jago expressed that she had difficulties teaching students with special needs, and she failed when she followed her mentor's suggestion. Instead of receiving affirmation for her failures, she mentioned receiving criticisms which cause frustration. Jago's experiences were different compared to Mima and David who received more affirmative comments and positive feedbacks.

Interview participants also reported that their mentor teacher influenced their teaching confidence through modelling. Mima stated that her mentor teachers in the second placement taught her to reflect; her mentor teacher did it verbally in front of her:

You could just tell that she knew her students and that **she was reflecting herself** and so I saw a lot of her reflection in me. And so I think that made her more relatable to me in my eyes because she would tell me things that she thought went well in her lesson. She is like, "Oh man, I did this not go as well as I had hoped .I don't know because I feel like the students were thinking this" and that is kind of what goes through my head. So that was a big connecting point for me, just saying how much she was reflecting. (Mima, June 21, 2018)

So she still saw the need for improvement. She had reflected on this. My first teacher on my first placement mentor teacher, I think she knows that she could improve, but the reflection was not obvious to me. (Mima, June 21, 2018)

Mima learned from her mentor teacher to reflect on improving her teaching quality. David also reported that the way his mentor teacher taught him showed his passion for students with special needs, which influenced David's passion in teaching.

He has his master in two areas and he is super qualified to like being administrator, yet he chooses to work at the at-risk population students in the classroom, a year, and after a year out, he wants to work with students with disabilities, even though he could get be getting paid more to do something else. Or he could be having it quote easier, maybe. Some people would say, doing a different job. Yeah. And he chooses to work with these students and that just really shows his heart for these students and it shows us patients after he doing it for 25 years in and out of this area. So, I mean, just that alone and how he carries himself really shows that he cares for those students. (David, July 3, 2018)

On the contrary, Jago experienced that her mentor teacher had a negative perspective about students with special needs and unideal teaching practices, which was contradictory with her perspectives:

In the elementary school, sometimes she [mentor teacher] said that those students will not figure out anyway, they will not know any way, kind of gave up on them. But, I can see that they can draw very well, they can sing like do other things and maybe they just have different learning style. I would gave them more opportunities in drawing maybe some comics rather than writing paragraph. (Jago, July 4, 2018).

I supported them more than the teacher did. Because usually the teacher gave them a task to do and she was just sitting by the table while the students were doing the task. For me, I couldn't just sitting by the table because she would not be happy with that, she wants me to work in the classroom. So when they were writing the task, I always work with them. I didn't let them on themselves, I didn't just wait and did nothing, and I worked with them. (Jago, July 4, 2018).

Mima and David reported that their mentor teachers modelled their passion for teaching and reflecting while Jago experienced almost the opposite.

In summary, the quantitative findings show differences in self-efficacy in relation to paraeducator availability in professionalism. Preservice teachers who did not have a paraprofessional scored significantly higher for professionalism self-efficacy compared to those who had paraprofessional in the first placement.

The qualitative findings revealed that the lack of entry level knowledge and skills in collaborating with other teachers in dealing with students with special needs in the first placement possibly caused low efficacy level in working with paraprofessionals.

Furthermore, as preservice teachers learned how to collaborate with paraprofessionals during student teaching, there were not significant differences among these two groups in the second placement. Qualitative data provided possible explanations for how preservice teachers perceived various support from three sources: program structure, working atmosphere, and quality of mentor teacher, which influenced their self-efficacy development.

Previous Personal and Professional Experiences with Individual(s) with Disabilities

In the survey, preservice teachers provided information about previous experiences working with students with special needs in field experiences. Preservice teachers were grouped to differentiate between preservice teachers who had previous teaching experiences (n = 54) and who did not have previous teaching experiences in the field working with students with special needs (n = 7).

Independent *t*-tests were conducted to determine if there were differences in efficacy scores of preservice teachers based on previous experiences in the field working with students with special needs. As shown in Table 10, self-efficacy was lower in professionalism for group of preservice teachers who did not work in the field with students with special needs (M = 6.14, SD = .45) compared to those who worked in the field with students with special need (M = 6.57, SD = 0.46). The *t*-test was statically significant difference of 0.42 (95% CI [-.06, -.79], t (59) = 2.31, p < 0.05, d = 0.94. The effect size was d = 0.94, so there was a large effect (Altman, 1999). Separate *t*-tests were conducted for instructional strategies, teacher support, classroom management, and overall efficacy. The *t*-tests were not significant: instruction, t (59) = -1.25, p = .22); teacher support, t (59) = -1.26, p = .21; classroom management, t (59) = -1.33, t = .89; and overall score, t (59) = -1.40, t = .17. An independent t test in this sub variable for posttest did not run because of limited sample size (t = 1) for the group with no previous experiences in working with special needs during field experiences.

Table 10: Preservice teachers' efficacy differences based on previous experiences teaching students with special needs in fieldwork

	1 st placement				
	No experiences		Some experiences		
	(n = 7)		(n = 54)		
	M	SD	M	SD	
Instruction	5.57	.54	5.86	.59	
Professionalism	6.14*	.45	6.57	.46	
Teacher support	6.33	.54	6.57	.48	
Classroom					
Management	5.43	.59	5.48	.61	
Overall efficacy	5.87	.41	6.11	.45	

^{*}significant <.05

Quantitative findings revealed that previous work experience with students with special needs in the field affected preservice teachers' reported efficacy in professionalism. The effect of the previous working experience of students and people with disabilities were explored through the structured interviews of the four participants.

Qualitative findings of how previous personal and professional experiences with individual(s) with disabilities affect self-efficacy. In addition to the quantitative findings, four interview participants shared their previous experiences, not necessarily with people with disabilities, but these experiences influenced their interactions with their students with special needs during student teaching. Mima had a family member who has ADD and taught a swim lesson for a kid with Down syndrome. Mima expressed that her previous experience interacting with her cousin helped her to understand her students with attention deficit disorder (ADD) and prevented her from feeling hopeless:

When I was working in a small group with just the special needs students and one of the students have ADD and literally, one moment I thought we were super engaged. I thought he was really focused on the content and we had just gotten done with this amazing discovery and I'm not kidding, a second later he was so focused on the blinds to a window. I mean, it just random things like that initially surprised me. But when I recalled my cousin and some of the things that he said, or that he would discuss at length these things that I just don't think about because I don't notice blinds necessarily. It helped me in being patient because it's just crazy because I just felt like we had had this great mathematical discussion and then to switch gears and focus on blinds just seems so random. **So I think it just helped me not be discouraged.** It made me realize this is just things that they notice. These are things that they point out. (Mima, June 11, 2018)

Tatum mentioned that her previous work with students with special needs made her less concerned with students who have behavior problems:

I've had students at my daycare job. They've you know they've tried to rip into me before, and I always tell him. I love him afterwards. You know, you can say anything you want to me, but I still love you. And I'm being. And if you think I'm being hard on you. I still love you and I need you to do these things so that type of thing. I think I've always kind of yeah behaviorally. **I'm not too worried**, **especially with elementary age**, you know. (Tatum, July 3, 2018)

Jago applied her previous learning experiences as an international student who learned English to her ESL students with special needs. Jago stated that she motivated her students through her life experiences:

And I taught them how to use computer for learning. I also used computer to learn English, so I wanted to teach them to use the dictionary all the time. Checking on google, how to get the best information. I kind of used my example and I hope that they can continue to use the computer to learn English. (Jago, June 23, 2018)

David reported that he was inspired by his previous teacher who cared and changed his life direction. Furthermore, he prioritizes building a relationship with his students, including students with special needs:

Observing other teachers and how to really connect with the students to get them to learn. When I've observed teachers in education buildings, they have shown care and built relationships with their students. That's how those students have learned better and seeing that impact. And just also in high school, seeing the teachers that cared for me outside of the classroom really helped me learn and really made a difference in my life. (David, May 28, 2018)

All the interview participants stated that their previous experiences influenced the way they supported students with special needs in regards to developing relationship, creating expectations, understanding the unique needs, and providing instructions. Four interview participants had various opportunities to teach students with special needs in

their classroom and all of them connected their previous experiences with students and people with disabilities into their teaching practices.

In conclusion, quantitative and qualitative findings showed that previous working experiences with students and/or people with disabilities affected how preservice teachers work with their students and other teachers as they related their past experiences with their current experience.

Knowledge about Their Students with Special Needs

Participants rated their knowledge about their students with special needs in the first placement and second placement in regards to strengths, interest, and specific educational needs. Then, all responses were grouped in to three groups for analysis: more knowledge (n = 33) for those who rated 5 and 6, less knowledge (n = 37) for those who rated 3 and 4, and no knowledge (n = 2) for those who select 2. The analysis was only conducted for the group of students who selected more knowledge and less knowledge due to limited number of participants for the no knowledge group.

Independent t-tests were conducted for the first placement data to compare preservice teachers who reported less knowledge about their students with special needs to those who reported more knowledge on self-efficacy constructs (e.g., instruction, teacher support, professionalism, and classroom management) and overall self-efficacy scores. These t-tests revealed not significant differences between the group of preservice teachers who reported more knowledge and those who rated less knowledge in instruction (t (68) = -1.54, p = .13), professionalism (t (68) = -1.17, p = .25), teacher support t (68) =

-1.77, p = .08), classroom management (t (58.04) = -.57, p = .57), and overall efficacy (t (68) = -1.53, p = .13).

The *t*-tests for the second placement revealed that students who reported less knowledge about their students with special needs in their classroom significantly reported lower score for instruction than did those students who reported more knowledge, t (37) = -2.35, p < .05, d = .75. Students who reported less knowledge also reported lower score for overall efficacy scores than those students who reported more knowledge, t (37) = -2.09, p < .05, d = .67 (see Table 11). A series of t-tests were not found significant differences between the same groups in professionalism, t (37) = -.72, p = .48; teacher support, t (37) = -1.31, p = .20; and classroom management, t (37) = -1.69, p = .09.

Table 11: Preservice teachers' efficacy differences based on level of knowledge about their students with special needs

	Group 1st placement			Group 2 nd placement				
	Less		More		Less		More knowledge	
	knowl	edge	know	ledge	know	ledge	(n :	= 20)
	(n = 37)		(n = 33)		(n = 19)			
	M	SD	M	SD	M	SD	M	SD
Instruction	5.70	.55	5.92	.63	5.76*	.36	6.12	.57
Professionalism	6.39	.58	6.55	.50	6.49	.36	6.59	.46
Teacher Support	6.40	.61	6.64	.52	6.42	.53	6.63	.48
Classroom	5.36	.75	5.48	1.03	5.53	.46	5.82	.60
Management								
Overall efficacy	5.96	.48	6.15	.52	6.05*	.30	6.29	.41

^{*}significant <.05

Self-efficacy on instruction and overall efficacy scores were higher for students who reported more knowledgeable in the second placement compared to those who reported less knowledgeable about students with special needs. Qualitative findings did

not reveal a theme directly related to the knowledge factor. However, themes related to building relationships with students that lead to preservice teachers' level of knowledge about their students withs special needs emerged as a factor influencing perceived efficacy.

In summary, the third research question focused on the influential factors of preservice teachers' perceived self-efficacy and found that successful experiences, quality of relationships with students and teachers, previous course works and experiences, and availability of support influenced perceived efficacy based on both the quantitative and qualitative findings.

Review of Mixed Method Results

The mixed methods approach in this study allowed for triangulation of data analysis and results. However, the richness of the data in the mixed method approach requires a deeper understanding of the context where the study was conducted to be able to justify the alignment for both the quantitative and qualitative findings. Furthermore, this section reviews how the qualitative findings complemented the quantitative findings for the three research questions in this study. This section addresses each research question and explore the dynamic of preservice teachers' self-efficacy during student teaching and related influential factors.

How do preservice teachers perceive their self-efficacy for teaching students with special needs during student teaching? The majority of the preservice teachers rated higher self-efficacy in teaching students with special needs in the area of professionalism

and providing support (mean score ranged between six and seven on a seven-point scale) than instruction and classroom management. The qualitative findings revealed emerging themes, such as positive disposition, lack of entry level knowledge and skills in teaching students with special needs, and collaborating with other teachers. These themes described the self-efficacy of four interview participants' when they taught students with special needs at the first time in the first placement. These findings relate to their feelings of less efficacy in the area of instruction and classroom management. They felt a lack of knowledge and skills in teaching students with special needs was due to the insufficiency of their preparation program.

Do preservice teachers' perceptions of self-efficacy for teaching students with special needs change over the student teaching experiences? The quantitative findings revealed that preservice teachers reported improvement of efficacy in the area of classroom management after their second placement. The qualitative findings added more information to help explain why preservice teachers experienced a limited change in self-efficacy in classroom management, which was due to the limited opportunity to address behavior problems and their limited success experiences when dealing with behavior concerns. The survey questions specifically address students with tantrum, which some of preservice teachers might not have in their classroom. Consequently, preservice teachers might inaccurately rate their efficacy in classroom management when they responded to the survey questions.

The qualitative findings revealed other areas of efficacy improvement (instruction, professionalism, and providing support). The change of efficacy of four

interview participants in teaching students with special needs are on various continuums in terms of space (one-on-one instruction to large classroom), level of willingness to work with other teachers (waiting to be proactive), degree of convenient working with students with special needs (from nervous to comfortable), and level of targeted support for students with special needs (from build personal approach to provided educational support). Through the interview sessions, participants were able to explain various factors influencing their perceived self-efficacy.

What do preservice teachers identify as factors influencing their efficacy to teach students with disabilities? This study revealed six influential factors (e.g., teaching satisfaction, quality of relationship, courses in special education, availability of support, previous teaching experiences during fieldwork, and knowledge) of preservice teachers' self-efficacy belief based on qualitative findings. In addition, these findings supported the quantitative findings as depicted in Table 12 which revealed that these factors differed preservice teachers' self-efficacy levels in teaching students with special needs.

Quantitative findings support the qualitative finding that successful experiences in teaching students with special needs influenced preservice teachers' self-efficacy beliefs. Preservice teachers expressed their successful experiences by mentioning their satisfaction in witnessing their students apply the strategy that they just learned, owning their learning by asking questions, and showing more enthusiasm in learning. Thus, the qualitative and quantitative findings provide supporting evidence in how preservice teachers develop their efficacy based on mastery experiences.

Table 12: Varying variables of preservice teachers' perceived self-efficacy based on factors.

Factors	Quantitati	Emerging	
	First placement survey	Second placement survey	theme(s) based on Qualitative findings
Teaching satisfaction	Significant (all sub-variables)	Significant (instruction and professionalism)	Successful experiences influence perceived efficacy
Quality of relationship	Significant (all sub-variables)	Not Significant	Building relationship with students and teachers influence perceived efficacy
Previous special education courses	Significant (Instruction)	Significant (Classroom management)	Entry level of disposition, knowledge, and teaching skills influence perceived efficacy
Availability of support (paraprofessional)	Significant (Professionalism)	Not significant	Program structure, quality of mentor teacher, working atmosphere
Previous personal and professional experiences	Significant (Professionalism)	N/A	Previous personal experiences influence perceived efficacy
Knowledge about students with special needs in the classroom	Not significant	Significant (Instruction, total score)	

Preservice teachers who reported better relationships with their students with special needs reported significantly higher efficacy in all efficacy constructs compared to those preservice teachers who reported lower quality of relationships in the first placement. All interview participants also supported these findings; they mentioned that their self-efficacy improved as they built personal relationships with students with special needs, which helped them better understand their learning needs and interest. Interview participants also reported that their relationship with mentors and special education teachers enabled them to ask more questions about students and teaching strategies to support them. Better relationship with students and other teachers opened more opportunities for preservice teachers to access more knowledge and teaching practices to support their students, including students with special needs.

The quantitative findings revealed that students who took more special education courses reported higher efficacy in classroom management and instruction than those who took one or no special education courses. The emergent themes showed that the special education courses influenced preservice teachers' entry level knowledge and teaching skills in the area of instruction and classroom management for students with special needs. All interview participants took a limited number of special education courses; they hold positive disposition toward students with special needs, but expressed a lack of knowledge and teaching skills in instruction and classroom management.

The quantitative findings indicated that preservice teachers who worked with paraeducators reported lower efficacy score for professionalism in the first placement.

The qualitative findings revealed that lack of knowledge and skills in collaborating with

paraeducators might be one of the reasons. Furthermore, as the time went by, preservice teachers learned and gained more access about how to work with them, thus there were no efficacy differences in the second placement. The qualitative findings revealed other supports from student teaching programs that influenced preservice teachers' efficacy, namely program structure, quality of mentor teacher, and working atmosphere.

Quantitative findings revealed that preservice teachers with previous experience teaching students with special needs in their fieldwork significantly reported higher efficacy for professionalism. In addition, four interview participants reported that they connected their previous personal and professional experiences with their effort to build relationships with students with special needs, creating high expectations, understanding learning needs, and providing instruction.

The quantitative findings revealed that preservice teachers who reported more knowledge about their students with special needs significantly scored higher efficacy in instruction and all efficacy score. This is aligned with interviews. Interviewees mentioned that the more preservice teachers knew about their students' learning needs and their interests, the more they knew how to support them. The relationship between preservice teachers and their students as well as with a mentor and special education teachers widen preservice teachers' knowledge about students learning needs.

In conclusion, quantitative and qualitative findings revealed that the majority of preservice teachers reported higher self-efficacy in providing support and professionalism than instruction and classroom management. These findings might be due to the lack of

entry level knowledge and teaching skills in those two areas. However, preservice teachers' positive disposition toward students with special needs and their high efficacy enabled them to actively search and fulfill the gap of knowledge and teaching skills during student teaching program through building good relationships and accessing available resources at school. As a result, at the end of student teaching, all interview participants reported more confidence in teaching students with special needs.

Summary

The purpose of this study was to investigate the preservice teachers' perceived self-efficacy, how self-efficacy changed during and after student teaching, and the potential factors influencing the changes. The findings reported in this chapter indicate that preservice teachers' perceived efficacy was high in the area of professionalism and providing support but not in the area of instruction and classroom management due to the insufficient of their entry knowledge and teaching skills. Preservice teachers' perceived self-efficacy improved after student teaching in four areas (instruction, professionalism, providing support, and classroom management). These changes represent a continuum of changes in knowledge, skills, and dispositions throughout the participants' student teaching experiences. In addition, how preservice teachers develop their efficacy depended on teaching satisfaction, quality of relationship, previous coursework in special education, availability of support, previous experiences, and knowledge about their students with special needs.

CHAPTER 5

CONCLUSIONS, DISCUSSION, IMPLICATIONS, AND FUTURE RESEARCH

In this chapter, the major findings presented in Chapter 4 are discussed. An analysis of their significance has been made by referring to each research question guiding the study and by connecting them to the conceptual framework and literature review presented in Chapters 1 and 2 respectively. Implications for teacher preparation programs and future research are stated.

Conclusions

The primary purpose of this study was to examine preservice teachers' perceived self-efficacy and to explore potential influential factors. In this study, the first research question explored preservice teachers perceived self-efficacy in teaching students with special needs during the first six-week period of their field placement. Preservice teachers reported higher levels of self-efficacy in providing support and professionalism than instruction adjustment and classroom management. The second research question examined the changes in preservice teachers' efficacy during student teaching.

Qualitative and quantitative findings indicated improvement of efficacy in instruction, professionalism, providing support, and classroom management. The third research question examined self-efficacy differences based on various factors: successful experiences, quality of relationships with students and teachers, previous course works and experiences, and availability of support. The qualitative data explored how these

various factors affect preservice teachers' self-efficacy. In the next section, interpretation of the findings related to each research question is discussed.

Discussion

This study used quantitative and qualitative tools to explore preservice teachers perceived self-efficacy in teaching students with special needs during student teaching. Then, this study employed Bandura' (1997) sources of efficacy to understand how various factors differed preservice teachers' self-efficacy in teaching students with special needs.

Examination of Preservice Teachers' Self-Efficacy

In response to Research Question 1, preservice teachers reported a high sense of self-efficacy in teaching students with special needs on all areas. The majority of the survey participants reported higher self-efficacy in providing support and professionalism compared to instruction adjustment and classroom management in the first placement. This finding is reasonable given that the majority of the participants took only one course in special education. To have a high sense of efficacy in providing instructional adjustment and classroom management, participants would need advanced knowledge and teaching skills in special education. Even though preservice teachers reported higher sense of efficacy in supporting students with special needs almost in all areas, the qualitative data extended this finding for the four preservice teachers who took only one course in special education.

The four held positive dispositions concerning students with special needs, but felt that they lacked knowledge and skills to teach students with special needs and needed to collaborate with other teachers or paraprofessionals. Preservice teachers' interviews suggested that lack of entry level knowledge and teaching skills hindered them from meeting their expectations to work with students who struggle with their learning. They felt they were not adequately equipped to provide educational services to the students with learning problems. Therefore, teacher candidates with limited entry knowledge and teaching skills in special education cannot be expected to handle students with disabilities; they are unprepared as the impact of disability on student learning is too complex.

The first placement survey showed a high sense of efficacy in teaching students with special needs at the end of the first placement. In addition, the interview participants reported a lack of entry level knowledge and skills in teaching students with special needs and collaborating with other teachers at the beginning of the first placement.

The findings from current study supports previous research that showed preservice teachers had a limited entry level knowledge and teaching skills among preservice teachers which reflected inadequacy of their previous preparation program (Darling-Hammond & Youngs, 2002; DeSimone & Parmar, 2006; Markow & Cooper, 2008; Smith & Tyler, 2011). It supports previous studies which found that lack of preparation in teaching students with special needs causes confusion and a lack of confidence among preservice teachers' (Boling, 2007). Focus only on one course in special education was found to be inadequate to improve preservice teachers' self-

efficacy (Powers, 1992; Sharma, Simi, & Forlin, 2015). However, additional experiences in working with students with special needs was reported to increase preservice teachers' concerns (Forlin & Chambers, 2011). This study revealed that one course in special education might develop a positive attitude towards students with special needs, but did not clearly explain the causal relationship. Furthermore, how much previous coursework or specific content of that coursework might influence preservice teachers perceived efficacy is still unclear. Developing preservice teachers' positive disposition is insufficient without building high efficacy in teaching students with special needs before they start student teaching.

Examination of Changes in Preservice Teachers' Self-Efficacy

A combination of survey and interview methods were used to examine the preservice teachers' self-efficacy changes. The quantitative findings revealed significant improvement in classroom management and this is not aligned with previous studies of efficacy changes in student teaching (Fives et al., 2007; Hoy & Spero, 2005; Oh, 2010; Şahin & Atay, 2010) which found improvement in all areas (instructional strategy, classroom management, and student engagement). A possible explanation for the different result between this study and previous studies might relate to how preservice teachers analyze teaching demands and how they assess their personal teaching competence which influence their efficacy beliefs (Tschannen-Moran et al., 1998). The focus of this study was teaching students with special needs who require a different set of teaching skills, so preservice teachers might developed their self-efficacy gradually in selected areas based on how they assess the progression of their teaching skills. In line

with this, the qualitative data showed a gradual self-efficacy change in three areas, namely instructional, professionalism, and providing support.

In Mima's case, she indicated that she was not sure how to work with a paraprofessional in her first placement; her experience of working with a paraprofessional taught her about what collaborating with others involve. In this situation, she experienced efficacy change, i.e., from passive to more active collaboration with other teachers in the second placement. Mima's experience is aligned with a previous study that found a reduction concern about lack of knowledge and skills in teaching students with special needs in regular classrooms as a predictor of improved teaching efficacy (Forlin, Sharma, & Loreman, 2014). In addition, Tatum's case is an example of how she developed her efficacy in providing support for students with special needs from being nervous to feeling comfortable. Her experience is aligned with Wang and colleagues' (2017) study which revealed that teachers with higher self-efficacy tended to feel enjoyment and relaxation in classroom interactions, while teachers with lower self-efficacy level felt nervous and anxious.

These qualitative findings relate to the existing literature describing framework of learning how to teach (Darling-Hammond & Baratz-Snowden, 2007) which also applied in InTASC (2013) learning continuum trajectory for preservice teachers and practicing teachers. There are three dimensions in this framework that aligned with this study: disposition, knowledge, and practice/action. As suggested by Glackin and Hohenstein (2018), qualitative findings of efficacy changes were analyzed by "identifying multiple dimensions of self-efficacy, considering the interrelationship of self-efficacy dimensions,

and discussing the influence of the specific teaching context" (p.14). How preservice teachers experienced efficacy changed over time in teaching is integrated with the finding of this study in Table 13. This integration is the novel contribution of this self-efficacy development study.

Table 13: Continuum trajectory in teaching students with special needs.

Dimensions	Instructional adjustment	Professionalism	Providing Support
Dispositions	Neglecting→ willing to provide flexibilities	Being passive→willing to work collaboratively	Feeling nervous→feeling comfortable
Knowledge	Less → more knowledge about teaching strategies	Less→ More aware of teachers' role	Less→ deep understanding of students' needs, interests, and strengths
Practices	No specific support→ provide personal guidance	Waiting for invitation→ actively participate	No clue → Careful in referral processes, build personal connections

In support of previous studies that mostly focused on specifically designed coursework that improved preservice teachers' self-efficacy (Gao & Mager, 2011; Huber, 2009; Jobling & Moni, 2004; Lancaster & Bain, 2010; Peebles & Mendaglio, 2014), this study contributes to additional knowledge on how student teaching program influences self-efficacy changes in teaching students with special needs in addition to attitude changes (Huber, 2009). Undoubtedly, this study confirmed that the quantitative data did

not capture minor changes in preservice teachers' self-efficacy (Glackin & Hohenstein, 2018; Klassen & Durksen, 2014). Most importantly, context exploration through qualitative approaches is suggested (Gerges, 2001; Oh, 2011; Wheatley, 2005; Wyatt, 2014). Furthermore, potential factors that influenced the preservice teachers' changes in this study is discussed in the next section.

Factors Reported by Preservice Teachers Associated with Perceived Self-Efficacy

Differences on perceived self-efficacy emerged in the quantitative results due to varying levels of teaching satisfaction, quality of relationships, availability of paraeducator, previous coursework, previous teaching experiences in fieldwork, and knowledge about their students with special needs. The qualitative findings revealed that those factors influenced preservice teachers' self-efficacy beliefs. The qualitative findings provide empirical evidences of various sources of efficacy (Bandura, 1997), namely mastery experience, vicarious experience, verbal persuasion, and physiological arousal. Each of the factors that influenced preservice teachers' self-efficacy changes are discussed in the next section.

Teaching satisfaction. This study supported previous research which revealed that the higher the preservice teachers' teaching satisfaction, the higher were their self-efficacy belief (Hoy & Spero, 2005). Also, consistent with Wang and colleagues (2017), mastery experiences during the teaching process occurred, which indicated enjoyment, engagement, and mastery skills in learning. Successful collaborating experiences occurred when either mentor teachers or special education teachers provide positive

feedback or preservice teachers' idea. The other influential factors opened more possibility for preservice teachers to experience triumphant teaching moments in two ways: improving preservice teachers' knowledge and teaching skills; and providing opportunity for preservice teachers to practice and to receive feedback.

Quality of relationship. This study supported Wang and colleagues (2017) by showing that preservice teachers with higher quality of relationship with students with special needs tended to have a higher sense of efficacy in teaching students with special needs. The qualitative findings added more information, that better relationship between preservice teachers and students with special needs opened access to gain more knowledge about learning preference, and interest, so that preservice teachers knew and be able to support students with special needs. This study also supported Aydin and Hoy (2005), that preservice teachers with high sense of efficacy reported a positive relationship with their mentor teacher. Preservice teachers learned and fulfilled the gap of their insufficient entry level knowledge and teaching skills through observation as vicarious experience and shared ideas as verbal persuasions during interaction with students with special needs and mentor teacher.

Previous coursework in special education. Similar to previous research (Ahsan et al., 2013; Gao & Mager, 2011; Leyser et al., 2011; Loreman et al., 2013; Sharma, Shaukat, & Furlonger, 2015), this study revealed that the more training in special education preservice teachers had, the higher level of efficacy in teaching students with special needs. The reason for this is adequate of knowledge and skills is needed to perform teaching tasks (Bandura, 1997), so preservice teachers who took more special

education course had more knowledge and teaching skills to successfully support students with special needs. Moreover, integrated content in special education is suggested (K. S. Brown et al., 2008; Frey et al., 2012; Jobling & Moni, 2004; Voltz, 2003), so preservice teachers will have sufficient entry level of disposition, knowledge, and teaching skills to teach all learners including students with special needs that support the success of teaching practice.

Availability of support: Program structure, quality of mentor teacher, and working atmosphere. This study supported previous studies which found that preservice teachers with higher sense of efficacy reported that they received school support beyond their mentor teachers (Aydin & Hoy, 2005; Dickstein, 2013). David's school clearly showed how school program designated to support students with special needs in math and provided extra support for him that enabled him to adjust and expand his teaching expertise. However, this study also revealed that the availability of paraprofessional in the classroom seemed to be ineffective to support preservice teachers when preservice teachers did not know how to collaborate with them. The quantitative findings showed that preservice teachers who have paraprofessional(s) in the first placement rated lower self-efficacy than who had not a paraprofessional. In addition, Mima reported that her lack of knowledge and teaching skills in supporting students with special needs the first placement lead to some confusions of how to work with paraprofessional. When Mima received support from her mentor in interpreting her failures, she had motivation to fix them in the second placement. This moment is aligned with Wyatt's (2016) statement about previous experiences (negative or positive) will affect preservice teachers' efficacy

beliefs depends on how the preservice teachers interpret it through mentor teacher supervision. In addition, consistent with Coward and colleagues (2015) interview participants who experienced a positive self-efficacy changed reported freedom of choice in the decision-making process with their mentor teacher. This finding is aligned with previous studies which underline the critical role of preparing mentor teacher for student teaching (Aydin & Hoy, 2005; A. L. Brown et al., 2015; Cahill, 2016; Huber, 2009) especially in providing feedback (Darling-Hammond & Bransford, 2005; Hutchinson & Martin, 1999; Kozleski et al., 2002). Furthermore, these findings emphasized on careful selection of student teaching placement (Brownell et al., 2011; Forlin et al., 2007; Silverman, 2007) and quality of mentor teacher (Artzt & Amour-Thomas, 2002).

Previous personal and professional experiences. This study corroborated with previous studies that previous teaching experience and interaction with people and/or students with disabilities had a significant relationship to self-efficacy in teaching students with special needs (Ahsan et al., 2013; Atiles et al., 2012; Forlin et al., 2010, 2014; Leyser et al., 2011; Peebles & Mendaglio, 2014; Sharma, Simi, & Forlin, 2015; Shaukat et al., 2013; Sokal et al., 2013; Specht et al., 2016). These findings also supported Tuchman and Isaacs (2011) in previous informal experience contributes to student engagement. In this study, preservice teachers reported having more understanding of specific needs, realistic expectations, willingness to connect, and less concern toward behavior problems based on their previous experiences of interaction with students with special needs. These previous interactions came from personal

experiences of having relatives and friends with disabilities; and professional experiences through previous fieldwork and other teaching experiences outside the campus.

In summary, preservice teachers gained more knowledge and teaching skills during student teaching as they interacted and received feedback as verbal persuasions and vicarious experiences from their environment, such as: mentor teachers, students with special needs, school support. The opportunity for working with students with special needs and other teachers (e.g., special education teachers, paraprofessionals) opened more successful experiences as the dominant source of self-efficacy (Bandura, 1997).

<u>Limitation of the Study</u>

Four limitations needed to be considered for future studies: sample size, instrument selection which may not have covered students with minor behavior problems, restriction of external factors information, and the length of the study which only focused on efficacy changes from first placement to the second placement of student teaching.

Participants in this study were restricted to one university in the U.S, so more replication studies are needed. The limited number of sample size for quantitative phased needs to be considered for findings interpretation as a preliminary for further investigation (Morris et al., 2017). As mentioned previously, this study captured the efficacy dynamic of preservice teachers who have limited courses in special education content. Further investigation is needed exploring efficacy changes of preservice teachers who took more courses in special education because they might have different nuances.

Furthermore, a purposive sample needs to be considered for future studies with a qualitative design (Glackin & Hohenstein, 2018).

The items in the TSDES survey about classroom management focused on students who have tantrums and disruptive behaviors, so some of the participants may not have had those students in their classroom. Thus, response of participants may not be accurate represent their self-efficacy in classroom management. Furthermore, the use of mixed method studies to understand preservice teachers' self-efficacy is suggested (Berg & Smith, 2016; Deemer & Minke, 1999; Poulou, 2007; Tschannen-Moran et al., 1998). In addition, the selection of tools to measure preservice teachers' self-efficacy needed to consider different teaching tasks when working with students with special needs (Zhang et al., 2018).

This study only gathered information from preservice teachers' point of view about their student teaching experiences. This information did not represent the student teaching program because the focus of this study did not include how support from student teaching program and schools were provided by design. The information collected is solely based on preservice teachers' perceptions. However, the results of this study informed both student teaching programs and schools to design a better support system for preservice teachers especially when preservice teachers taught students with special needs in two areas. First, the focus was on access for learning through observation and discussion with both mentor teachers and special education teachers, as well as opportunities to teach students with special needs in different settings (from small

settings to larger settings) under supervision; second, the focus was on access for practices with positive and meaningful feedback from highly qualified mentor teacher.

This study compared preservice teachers' self-efficacy in six-week period and employed interviews to capture the first placement and their entry level of knowledge, disposition, and teaching skills. The missing data of pre-survey before student teaching might not comprehensively depict the efficacy changes before and after student teaching because the pre-survey was distributed in the middle of the student teaching program. Furthermore, future longitudinal studies will be needed to capture the efficacy changes during preservice programs as suggested by Zee and Koomen (2016). Also, this study might not represent preservice teachers with lower efficacy in teaching as well as those with negative dispositions toward students with special needs because all interview participants held positive disposition toward students with special needs, so they had internal motivation to provide educational services for students with special needs.

Recommendations

The main findings of the study were that preservice teachers' efficacy changed throughout the student teaching program. Even though preservice teachers had a lack of entry level knowledge and skills in teaching students with special needs, they actively learned from their student teaching experiences through observation and discussion. Also, they improved their teaching skills as they had the opportunity to practice and receive feedback. Furthermore, improvement of preservice teachers' self-efficacy in teaching students with special needs was found in a different continuum. How these findings will

be of use to other scholars and teacher preparation programs are discussed in the following sections.

Recommendation for Scholars

Some future research agendas are needed to follow up this study with focus on efficacy changes in teacher preparation programs. This study invites more longitudinal studies (before and after taking special education course(s); during first placement, during second placement, after student teaching; and until one year after graduation) to have a better understanding of the dynamic efficacy during and after teacher preparation program. More specifically, longitudinal studies should explore the efficacy changes in selected areas, for example classroom management to better understand how to support preservice teachers in this area. Hoy and Spero's (2005) study focused on efficacy changes in a broad area with a quantitative approach. Future studies are needed to explore various efficacy changes for teaching specific populations including students with special needs. Considerations with regard to various preservice teachers' previous levels of efficacy and disposition toward students with special needs are needed to understand more patterns of how preservice teachers develop their efficacy and what kind of supports are needed. Another consideration is to compare different teaching roles either as a classroom teacher or a subject teacher who might have different teaching tasks that change the pattern of their self-efficacy development.

This study provides a potential reciprocal relationship between sources and teaching efficacy as suggested by Poulou (2007) in teaching students with special needs

but it was solely based on case studies of four participants which might not be appropriate for causal relationship generalization to other preservice teachers that had different contexts. Furthermore, future research experiment design can provide a stronger causal relationship between efficacy sources and efficacy changes. Further studies are also needed to examine the interrelationship between sources of efficacy with preservice teachers' efficacy changes. By collecting more information from preservice teachers and other sources of information such as documentation (student teaching guidebook), interviews crosschecking available and accessible support from university supervisors and mentor teachers, and observation of working environment, a comprehensive understanding of preservice teachers' efficacy changes can be gathered. This information will clarify how the programs are designed to develop and maintain high preservice teachers' self-efficacy.

The selection of an efficacy tool needs to consider the teaching competencies which might differ across subject, context, and culture. In this study, the questions to measure efficacy in classroom management did not reflect the preservice teachers' experiences as they did not have students with tantrum behavior. Bandura (1986) suggests that assessment selection need to be specific and consistent; otherwise, the measurement will weaken the predictive effects. The general teacher competence to deal with students with special needs is integrated in the main teachers' competence, thus fewer guidelines about what specific competencies that are required for teacher candidates to be able to master exist. For example, the ability to refer students for special education evaluation rely on general teachers, and TSDES do not include the item for

referral purpose. Furthermore, the use of mixed method study is useful for a greater understanding of preservice teachers' self-efficacy changes which contributes to the improvement of teachers' competence overtime.

Future studies need to consider attribution theory as a theoretical framework to understand different trends of preservice teachers' self-efficacy changes. As I analyzed the data, the result consisted of different trends among interview participants' self-efficacy which might relate to how they perceive their challenges and the support they received from school(s) and the university.

More studies also are needed to continue to better understanding of how to support teacher candidates to deal with diverse learners including students with special needs. Previous studies revealed efficacy changes in teaching students with special needs for practicing teachers related to reduction in concerns in teaching (Forlin et al., 2014), while for preservice teachers aligned to decreasing stress (Klassen & Durksen, 2014), and this study provided a different point of view about self-efficacy changes based on three dimensions (disposition, knowledge, and practices) in teaching competencies. The idea to identify how efficacy changes still needs more investigation to provide useful information about what and how support needs to be provided in student teaching program.

Recommendation for Teacher Preparation Programs

Although specific to the results of this study, teacher preparation programs should also explore restructuring the curriculum to address the factors that could positively

influence both preservice and in-service teachers' perceptions of self-efficacy in teaching students with special needs. These dimensions would include expanding success experience, enhancing the quality of teacher-student and teacher-mentor teacher relationships, and exploring the structure of the student teaching experience.

Curriculum changes to enhance success experiences. Preservice teachers with adequate knowledge and skills in supporting students with special needs will have more chances for success experiences. Furthermore, a strong foundation of special education content through various strategies (see Bain et al., 2009; B. G. Cook, 2002; Gehrke & Cocchiarella, 2013; Van Laarhoven et al., 2007) which integrated with the general education content is suggested. In addition, alignment between coursework and fieldworks (Bain et al., 2009; Gao & Mager, 2011) might need to be considered. During student teaching, successful experiences also can be increased through expanded teaching assignments with students with disabilities in sequence from limited setting such as one-on-one teaching, small group teaching and larger class teaching.

Improving quality of the preservice teacher's relationships with students with special needs and special education teachers. These interactions can be integrated as part of coursework and fieldwork that include serving students with students with special needs. Various ways to increase the quality of relationship between preservice teachers and students with disabilities involve structured activities and non-structured activities. For example, early "buddy" opportunities that provide opportunities for preservice teachers interviewing students with special needs and tutoring as after-school program, such as in reading (see Jobling & Moni, 2004). Also, how preservice teacher build

relationships with other teachers especially special education teachers might be enhanced through early and expanded field experiences. Communication logs, weekly scheduled dialogues are some tools that can be used for further improvement through reflection.

Developed structured student teaching experience to support the development of self-efficacy and provide opportunities to learn how to address the learning needs of students with special needs. Attention should be paid to carefully selecting school placements, providing professional training to improve and maintain the quality of mentor teachers, and enhancing opportunities for successful teaching experiences. Selection of school and classroom placements need to be assured direct experiences with students with disabilities as inclusive programs instead of "pull out" programs.

Teacher preparation programs should provide training to mentor teachers and supervisors to assist student teachers in their placement. This training could include modeling by the mentor teacher and providing feedback for further insightful discussion with preservice teachers. For example, mentor teacher could modelling how to implement behavior modification techniques and providing feedback after preservice teachers follow up the behavior intervention. Also differentiating expectation for preservice teachers in each placement might create initial success and build higher self-efficacy. Identifying the progress for each preservice teachers in various dimensions (disposition, knowledge, and practice) will personalize the support needed for their learning how to teach.

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APPENDIX A

EMAIL INVITATION

Dear (first name)

Hello! My name is Pujaningsih. This year, I am collecting data for my dissertation, which explores preservice teachers self-efficacy belief in teaching students with special needs during student teaching program. You have been selected as one of the students in the teacher education program to complete the survey two times during your second placement of student teaching. More information is needed about how to prepare high quality teachers for all learners and the findings from this research can address the need of support for teacher candidates to improve and maintain higher self-efficacy in teaching students, including students with special needs.

This online survey is confidential and you will be invited to take an online survey two times (pre and post), and each time will take about 15 minutes to complete.

Participants are eligible if (1) you are currently doing student teaching and (2) teaching students including students with special needs in the classrooms. Participants who complete the pre and post tests will be entered into a drawing for one of five \$25 Amazon gift cards. Participants may also be invited to participate in a follow-up interview, for which they would be compensated. For contact information, please see the informed consent below and the end of the survey. After reading and, if you consent, indicate YES to proceed to the survey.

Please review informed consent form below. After reading and, if you consent, indicate YES to proceed to the survey.

Sincerely,

Puja

APPENDIX B

INTERVIEW QUESTIONS

A. Introduction

- Thank you so much for taking the time to speak with me today.
- My name is Pujaningsih. I am originally from Indonesia and working as a faculty member and supervise preservice teachers. As you know, I am conducting research with UNI student teaching program to better understand how the program affects your self-efficacy belief.
- Your experiences will provide many important information to improve the quality of preservice program. So, I want to hear about what you feel during your student teaching experiences, and what support you feel you 'need' in order to be an effective teacher for all learners including students with special needs.
- There is no right or wrong answer so there will no judgement for your stories. Your identity will be anonymous. I will be speaking with you two-three times for follow up on topics or issues in our initial conversation.
- If this sounds okay with you, we can get started! Would you mind if I record our conversation?

B. A grand tour questions

- 1. Tell me about how you got in to the teaching profession?
- 2. Tell me about your student teaching in general?
 - Where is the location?
 - What grade level?
 - How many students did you teach in your first and second placement?
 - Did you have students with special needs in your classroom? Would you elaborate more about their learning needs? Can you provide an example about those needs?

C. Semi-Structured Main Question

Cognate 1:

- 3. What is it like to teach students with special needs during your student teaching?
 - What did you do?
 - What did you feel?
- 4. Have you taught students with disabilities before? If yes, summarize your teaching experience? How about any previous interaction with people with disabilities?

Cognate 3 + theoretical framework:

- 5. Tell me about challenges that you found yourself experiencing when you taught students including students with special needs at your student teaching?
- 6. How prepared do you feel to meet these challenges?
 - How in particular does your program help you feel prepared?
- 7. How prepared do you feel others, perhaps your mentor teacher or other colleagues, are to meet similar challenges?
 - How do you know and/or why do you feel this way?
- 8. Can you talk to me about the time when you felt successful during your student teaching to teach students with special needs in your class? Why did you feel successful?
- 9. What about the time when you felt unsuccessful?
 - What made this experience unsuccessful for you?
 - Do you feel your goals were unachieved? Do you feel students did not understand your instruction?
 - What did you do after that moment? How did you cope? To whom did you turn?
- 10. What support did you find to help you work with students with disabilities?
 - Which part did you find unsupported?

Cognate 2:

- 11. How do you define your teaching tasks during your student teaching? How about teaching students with disabilities?
- 12. Did you find certain skills that you needed to meet the needs of all students including students with special needs?
- 13. At the end of the student teaching, has anything changed (minor, moderate or major) your confidence to teach a student with special needs? (Please explain)

Last question:

14. How this learning experience beneficial for your learning to teach your students?

Thank you so much for sharing your experiences, let's discuss the possible date for future meeting. I might follow our today conversation and confirm some of the key points from your experiences.

APPENDIX C

INFORMED CONSENT FORM FOR SURVEY

Research Participation Information and Consent Form

Study Title: Investigation of the Changes of Preservice teachers' Efficacy Belief to Teach Student with Special Needs

You are invited to participate in a research study. Researchers are required to provide a consent form to inform you about the research study, to convey that participation is voluntarily, to explain the risks and benefits of participation, and to empower you to make an informed decision. You should feel free to ask the researcher any questions you may have. The following information is provided to help you make an informed decision about whether or not to participate.

Nature and Purpose of the research:

In the survey, questions will be asked about 30 items include the Teaching Students with Disabilities Efficacy Scale (TSDES), demographic information, and additional questions about your student teaching experiences. Participation in this survey will help in better understanding about how you perceive your self-efficacy belief to teach student with special needs during and after a student teaching program and how you perceive various learning experiences during student teaching. This information help make improvements in teacher preparation program.

Procedure:

You will complete pre and post-test online survey administered through Qualtrics. You will be asked questions about **your belief about your ability to perform some task during student teaching to teach students** and demographic information relevant to the study. Also, you will be asked to recall your previous courses and experiences with people with disabilities. You may skip any question that you do not wish to answer or that makes you feel uncomfortable. Your ID number is needed to compare pre-test and post-test result, but no individual names will be identified in the questionnaire or in reports. The completed questionnaire will not be associated with your name and confidential. Results will be reported in terms of group summarizations. All surveys will be destroyed after the data have been summarized into group form.

Time required:

The survey will take approximately 10 minutes at pre-test, and 12 minutes at post-test to complete depending on the level of detail provided.

Potential benefits:

You might not benefit personally from being in this study. However, I hope that, in the future, other people might benefit from this study because it will allow the researcher to better understand the learning experiences may lead to higher self-efficacy changes. This information is beneficial to improve the quality of student teaching and teacher preparation program in general.

Potential risks:

There are no anticipated risks associated with participation in this study.

Privacy and confidentiality:

Confidentiality will be maintained to the degree permitted by the technology used. No guarantees can be made regarding the interception of data via third parties. Your participation will remain confidential in this study so your identity will not be stored with your data. Your responses will be assigned a code number, and the list connecting your identity to this number will be kept electronically in a password-protected document, separate from the data. Data and consent form will be kept for approximately 1 year in a secure online database. All names you provide will be kept confidential and only I will have access and authority to review your data. Results of this study may be used for journal publication, presentation at educational meeting and your identity will be protected and code number will be used

Your rights to participate, say no, or withdraw

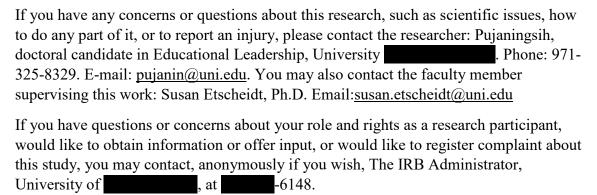
You have the right to say no to participate in the research. You can stop at any time after it has already started. There will be no consequences if you stop and you will not be criticized. You will not lose any benefits that you normally receive.

Costs and Compensation for being in the study

Participants will be entered into a drawing for one of 5 \$25 Amazon gift cards. The participant pool will be divided into equal number and prizes will be drawn at random, on the first week of May 2018. Odds of winning will vary depending on the number of participants. You will be given the option to enter your contact information at the end of the survey if you wish to be considered for this drawing. If you are selected for the gift card, your name, contact information, and student's ID# will be sent to the Office of Business Operations and you will receive a tax form from the university at the end of the year. The business office has careful procedures in place to keep such information

confidential, and that you may elect not to receive payments if you prefer not to have your identifying information provided to anyone outside the research team.

Contact information:



Documentation of Informed consent

Your electronic consent below means you voluntarily agree to participate in this research study.

You may print a copy of this page to keep a record of your participation in this study.

APPENDIX D

ONLINE INFORMED CONSENT FORM FOR INTERVIEW

You are invited to participate in an interview session. Please consider this information carefully before deciding whether to participate in this research.

Your email
Email address *
* Required

Nature and purpose of the research:

In the interview, questions will be asked about your teaching experiences during your second placement of student teaching program. Your participation in the interview will help in better understanding two main areas: 1) how you perceive your self-efficacy belief to teach student with special needs during and after a student teaching program? 2) How you perceive various learning experiences during student teaching.

Procedure:

You will be interviewed two to three times about your experiences after student teaching. With your permission, I will record the interviews.

Time required:

Interviews may last between 45 and 60 minutes in May 2018. You will be interviewed one to two times after student teaching. Third session as a short session might be added for confirmation purposes based on agreement.

Potential Benefits:

You will receive written summaries of my research findings. I hope that, in the future, other people might benefit from this study because it will allow the researcher to better understand the learning experiences may lead to higher self-efficacy changes. These information is beneficial to improve the quality of student teaching. If you wish, you can send an email to me at pujanin@uni.edu and I will send you a copy of any manuscripts based on the summary of my research.

Potential Risks:

You will receive written summaries of my research findings. I hope that, in the future, other people might benefit from this study because it will allow the researcher to better understand the learning experiences may lead to higher self-efficacy changes. This information is beneficial to improve the quality of student teaching. If you wish, you can send an email to me at pujanin@uni.edu and I will send you a copy of any manuscripts based on the summary of my research.

Confidentiality:

Confidentiality will be maintained to the degree permitted by the technology used. No guarantees can be made regarding the interception of data via third parties. Your participation will remain confidential in this study so your identity will not be stored with your data. Your responses will be assigned a code number, and the list connecting your identity to this number will be kept electronically in a password-protected document, separate from the data. By March 2019, I will have completed the recording transcription of the interviews and, I will destroy the audio recordings. All names you provide will be kept confidential and only I will have access and authority to review your data. The records will be stored in personal computer and will be destroyed once all data have been collected and analyzed, which will most likely be in May 2019. Results of this study may be used for journal publication, presentation at educational meeting.

Costs and Compensation for being in the study

You will receive \$25 Amazon gift cards at the end of the interview session and it will sent through email. Your name, contact information, and student's ID# will be sent to the Office of Business Operations and you will receive a tax form from the university at the end of the year. The business office has careful procedures in place to keep such information confidential, and that you may elect not to receive payments if you prefer not to have your identifying information provided to anyone outside the research team.

Contact:

If you have any concerns or question	ons about this research, s	such as scientific issues, how
to do any part of it, or to report an i	injury, please contact the	e researcher: Pujaningsih,
doctoral candidate in Educational I	Leadership, University	. Phone: 971-
325-xxxx. E-mail:	. You may also contact	t the faculty member
supervising this work	. <u>E-mail:</u>	
If you have questions or concerns a	about your role and right	ts as a research participant,
would like to obtain information or	offer input, or would li	ke to register complaint about
this study, you may contact, anony	mously if you wish,	as
Human Participants Committee at		

Documentation of Informed consent

Your electronic or consent form below means that you voluntarily agree to participate in this research study. You might print a copy of this page to keep a record of your participation in this study.

Please fill out the consent form by pushing the button 'YES' or 'NO'. By submitting this form, you are indicating that you have read the description of the study, are over the age of 18, and that you agree to the terms as described.

I agree to participate in the research study. I understand the purpose and nature of this study and I am participating voluntarily. I understand that I can withdraw from the study at any time, without any penalty or consequences *

- o Yes
- o No

I grant permission that direct quotes from my interview can be used anonymously for data analysis and dissemination. *

- Yes, I agree that direct quotes from my interview, without my name or other direct identifiers, can be used in the result.
- o No

I grant permission for the interview session to be recorded and saved for purpose of review by the researcher *

- o Yes
- o No

A copy of your responses will be emailed to the address you provided.

APPENDIX E

SCRIPT FOR RECRUITING SURVEY PARTICIPANTS

Dear preservice teachers,

My name is Pujaningsih, a graduate student majoring in Educational Leadership. Some of you might be aware that I sent you an email invitation to participate in my research project. Please accept my apologies for the inconvenience.

I am so grateful to have an opportunity to join in your seminar. Before the seminar is started, I will distribute the survey and invite you again to participate, especially for those who might not be able to participate in an online survey. My study is exploring preservice teachers' self-efficacy belief in teaching students including students with special needs during student teaching program. Your information is valuable to provide better support for future teachers at UNI and other teacher preparation programs.

I need your help. I would like to invite you to take a survey two times (pre and post), and each time will take no more than about 10 minutes to complete. The pre-survey is in a paper format while the post survey will be sent online through your email. All information will remain anonymous, and your participation is voluntary. Your cooperating teacher and university supervisor will not know your response, so please be honest as you can.

Participants are eligible if (1) you are currently doing student teaching and (2) teaching students including students with special needs in the classrooms. Participants who complete the pre and post-surveys will be entered into a drawing for one of five \$25 Amazon gift cards. You may also be invited to participate in a follow-up interview, for which you would be compensated.

Your participation is not required. If you do not care to complete the survey, please leave it blank and turn it back in the envelope provided. If you would like to help out, please enter your student ID number on the survey, rather than your name. And if you would like to do the post-survey also and be entered into the drawing, write your email address on the sheet provided.

Thank you for your time and your consideration of participating in this study. I really couldn't do it without you! Sincerely,

Pujaningsih

APPENDIX F

SCRIPT FOR RECRUITING INTERVIEW PARTICIPANTS

Dear,
How are you? I hope your job searching run smoothly!
As you may recall from my previous email about participation in survey for my research about preservice teachers' self-efficacy belief in teaching students with special needs, I am going to studying in-depth about your teaching experiences during student teaching. Thank you so much for your participation in pre and post survey and your willingness to be involved in the follow up interview.
I would love to set up one to two times to speak with you in more depth for next week, to hear more about your student teaching experiences. We can also set up a skype or videochat interview through zoom if your schedule is too packed.
Your identity will remain confidential. I am happy to explain more about how this will work, feel free reach me via email or phone. My phone is 971-325-xxxx.
I include the <u>link</u> for the consent form for you to read and sign electronically.
Thank you so much!
I look forward hearing from, and seeing, you soon.
Best,
Puja

APPENDIX G

SCRIPT FOR EXIT CHECKING

Happy New Year 2019!
Hello again! The last time I met you I said that the next month I will contact you to share
the results of our interview. But the process took longer than I expected. I hope you
enjoyed your long break and starting this year with plans toward your career.
After finishing all the transcriptions of our previous interview sessions about your student
teaching experiences at , I would like to ask you to confirm whether my findings
represent the information you shared with me.
The main research questions and my findings are:

a. How do you perceive your self-efficacy in teaching students with special needs during your first placement of student teaching?

Positive disposition toward student with special needs

Lack of skills in teaching students with special needs.

Lack of experiences in collaborating with other teachers.

- b. How was your self-efficacy in teaching students with special needs changed over the student teaching experience?
 - Improvement in self-efficacy in delivering instruction, providing support and professionalism in supporting students with special needs. However, your perceived efficacy in classroom management was not as strong due to:
 - 1. Limited opportunity to address behavior problem of students with special needs
 - 2. Limited success in dealing with behavior problems
- c. What do you identify as factors influencing your efficacy to teach students with disabilities in student teaching?
 - 1. Successful experiences with students
 - 2. Building Personal Relationship with students with special needs
 - 3. Building Relationship with Other Teachers
 - 4. Program Structure, such as: whether school provided support in collaborative teamwork and opportunity to teach students with special needs or not.
 - 5. Working Atmosphere at school, such as: whether school creating enough space for you actively participate in teamwork or not.
 - 6. Quality of Mentor Teachers
 - 7. Previous Experience, such as: Your previous interactions with individual with disabilities influence your efficacy in teaching students with special needs.

Thank you for your time for sharing your valuable experiences with me. It's highly appreciated.

Puja

Dear

APPENDIX H

PRESERVICE TEACHERS' EFFICACY BELIEF SCALE

Direction: Please check the option that best represents your belief about your ability to perform these particular skills during student teaching **in your first placement.** Your answers are confidential.

SA: Strongly agree A: Agree SMA: Somewhat Agree

SMD: Somewhat Disagree **NAO:** Neither agree nor disagree

D: Disagree **SD:** Strongly Disagree

		SD	D	SMD	NAO	SMA	A	SA
1.	I can adapt the curriculum to help							
	meet the needs of a student with							
	disabilities in my classroom							
2.	I can adjust the curriculum to meet							
	the needs of high-achieving							
	students and low-achieving							
	students simultaneously							
3.	I can use a wide variety of							
	strategies for teaching the							
	curriculum to enhance							
	understanding for all of my							
	students, especially those with							
	disabilities							
4.	I can adjust my lesson plans to							
	meet the needs of all of my							
	students, regardless of their							
	ability level							

		SD	D	SMD	NAO	SMA	A	SA
5.	I can break down a skill into its							
	component parts to facilitate							
	learning for students with							
	disabilities							
6.	I can be an effective team							
	member and work collaboratively							
	with other teachers,							
	paraprofessionals, and							
	administrators to help my							
	students with disabilities reach							
	their goals							
7.	I can model positive behavior for							
	all students with or without							
	disabilities							
8.	I can consult with an intervention							
	specialist or other specialist							
	when I need help, without							
	harming my own morale							
9.	I can give consistent praise for							
	students with disabilities,							
	regardless of how small or slow							
	the progress is.							
10	. I can encourage students in my							
	class to be good role models for							
	students with disabilities.							
11	. I can effectively encourage all of							
	my students to accept those with							
	disabilities in my classroom.							

	SD	D	SMD	NAO	SMA	A	SA
12. I can create an environment that							
is open and welcoming for							
students with disabilities in my							
classroom.							
13. I can establish meaningful							
relationships with my students							
with disabilities.							
14. I can effectively deal with							
disruptive behaviors in the							
classroom, such as tantrums.							
15. I can remain in control of a							
situation that involves a major							
temper tantrum in my classroom.							
16. I can manage a classroom that							
includes students with							
disabilities.							

17. What grade (s) that apply)	do you teach d	uring your fi	rst placement in student teaching? (click all
Pre-K	K-4	K-7	K-10

K-1 K-5 K-8 K-11 K-2 K-6 K-9 K-12 K-3

18.	. How many students are in your classroom (or on your caseload) in your first
	placement of student teaching?
10	How many students with disabilities (hove IED documents) are in your students.

19. How many students with disabilities (have IEP documents) are in your student teaching classroom in first placement? _____

20. What ar	e disabiliti	es of the s	students	in your	first 1	placem	ent of stu	ıdent	teaching
	om (if any)			•	_				J
	Emotion disorder				o A	utism s	pectrum	disor	der
0	 Sensory impairment (hearing or vision impairment) 								
0			.7		o O1	ther he	alth imna	irme	ent
	 Intellectual disability Other (please describe): 								
0	 Multiple disability 								
21. Rate yo the first	ur rapport placemen		studen	ts with s	pecia	l needs	s in your	class	room in
Extre ly go		ly	tht Ne er d goo or bac	ly l	ad o	Modera ely bad	ely b		Not applica ble
22. Rate yo classroo	om (i.e., str	_	-		_	_	-		first
	rledge kı	ery nowledg able	Modes tely knowl dgeab	knov e dgea				lot pplic	able
23. Rate yo special r	ur satisfacti leeds during	-					ding stud	ents v	vith
Extremel y satisfied	Modera tely satisfied	satisfi ed	Neith er satisfi ed or dissat isfied	Slight ly dis satisfi ed	ely	atisfi	Extrem ely dissatisf ied		olica

24.	Was there paraprofessional assigned to provide instruction to the students durin	g
	your first placement of student teaching?	

- o Yes
- o No

25. How did you work with other teachers to teach students with special needs during your first placement of student teaching?

	How often did you work with them?				How did you collaborate with them (check all that apply)			
	alway s	sometim es	neve r	Not applica ble	Share student inform ation	Co- teac h	Prepare differentia te instruction	Not applicabl e
Special educatio n					ation		instruction	
Classroo m teacher								

26. Indicate the source(s) from which you have receive training/course (s) on students with disabilities

	None	One	2-5	More than five
		course/training	courses/training	courses/training
College course work				
Professional				
conference/meetings				
Workshops				
Other (please				
specify)				

	-		ation that you	u have taken (such as law and policies			
20 W	That was your provious	ovnorion o	a tagahina w	ith students with disabilities before			
	udent teaching?	experience	e teaching w	rith students with disabilities before			
		None	Some	High (more than 30 days)			
	Field experiences	1					
	Volunteer						
	Mentoring						
20 T	1:1 1 1	1	4.C 0				
	o which gender do you Male	most iden	tiry?				
0	Female						
0	Prefer not to answer						
0	rielei not to answer						
30. W	hat is your age?						
	11.00 10 J 0 011 0.00 1						
31. H	ow do you describe yo	ur ethnicit	y/cultural ba	ckground?			
O	Asian/Asian American						
o	African-American						
o	Caucasian/White						
O	Hispanic/Latino						
o	Middle Eastern/Middle Eastern-American						
O	Native American/Alaskan Native						
O	Two or more races						
O	Prefer not to answer						
o	Other: (please specify)						
22. 1	1 4 '11 1	. •					
	what area will you ob	•	primary cer	tification to teach:			
0	Early Childhood Education						
O	Elementary Education						
О	Secondary Education (please specify content area)						
O	Middle grades educa	ation (pleas	se specify co	ontent area)			
33. W	hich of the following	best descri	bes vour sch	nool's location in your first placement			
0	Rural	- 22. 300011	- 50 j 0 011 0 0 11	Journal III Jour III prince prince			
0	Suburban						
0	Urban						

34.	What previous experience (if any) do you have individuals with disabilities (describe) before the student teaching?
De	ar teacher candidates, I greatly appreciate your assistance in this project. The online
pos	st survey will be sent on April $15^{ ext{th}}$, 2018 . Please check your e-mail. At the end of the
pos	st survey you will be entered into a drawing of five \$25 Amazon gift cards. I am
hap	ppy to answer questions or send you information about the completed study once it
is f	inished. You may contact me at any time: Pujaningsih, Department of Educational
Lea	adership, University Email: puianin@uni.edu