INVESTIGATING CONFIDENCE AND EFFICACY OF SPECIAL EDUCATION PRESERVICE TEACHERS IN TRADITIONAL AND ALTERNATIVE TEACHER EDUCATION PROGRAMS IN TAIWAN

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CHAPTER I

INTRODUCTION

Background

The purpose of this study is to compare the confidence and the efficacy of special education preservice teachers trained in traditional and alternative teacher education programs in Taiwan. Self-efficacy is the belief in one's capability to organize and execute the courses of action required to produce given attainments. In this study, teacher efficacy is referred to as a teacher's belief that his or her ability has a positive effect on student learning and is a characteristic related to student achievement. Confidence is the belief in one's ability under a specific condition. There are two components to a sense of teacher efficacy. Teaching efficacy is the more generalized belief about the relationship between teaching and learning; personal efficacy represents a teacher's belief that he or she has the personal skills and abilities to influence student learning (Ashton, Olejnik, Crocker, & McAuliffe, 1982; Gibson & Dembo, 1984; Kushner, 1993).

Teacher efficacy has been identified as a powerful variable in predicting program implementation success (Berman & McLaughlin, 1977). Teachers' talents and self-efficacy directly contribute to the task of creating an environment conducive to learning. Teacher efficacy is part of the determination of how teachers structure academic activities in their classrooms, how they evaluate their students' intellectual performance, how they shape students' evaluation of their intellectual capabilities, and how they form their classroom atmospheres (Bandura, 1977, 1995, 1997).

Another way to examine teaching efficacy is to examine confidence in teaching (Bolton, 1996). Bolton suggested self-efficacy could be measured by determined

subjects' perceived confidence and experience on specific tasks or abilities. In her study, she concluded that efficacy increases as a result of high confidence and/or experience. Effective teachers tend to have a high sense of efficacy in teaching (Vinson, 1995). They believe that they can help the majority of their students learn, including those who are the most difficult to teach (Berman & McLaughlin, 1977). Teachers who have a high sense of confidence in teaching special education create mastery experiences for their students, operate on the belief that difficult students are teachable via extra effort and appropriate techniques, and believe that they can obtain support from families and overcome negative community influences (Bandura, 1995, 1997; Gibson & Dembo, 1984). Teachers' self-efficacy beliefs affect their general orientation toward the educational process as well as their specific instructional activities (Bandura, 1995, 1997; Woolfolk & Hoy, 1990; Woolfolk, Rosoff, & Hoy, 1990).

Conceptual Framework – Efficacy Beliefs

Over the past decade in the literature on American schools, teachers' beliefs in their abilities to instruct students have been studied by educational researchers in studies of instructional effectiveness (Gorrell & Hwang, 1995; Guskey, 1987). Educators and researchers claim that beliefs of teachers may be the prominent determinants and predictors of teaching practices (Pajares, 1992). A growing number of studies on teacher efficacy beliefs and the conditions that affect them are based on Bandura's proposal (Bandura, 1977, 1986, 1995, 1997) of efficacy as a central mediator of effort (Gorrell & Hwang, 1995). Educational researchers have identified that in America teachers' perceived sense of efficacy in teaching and learning situations is a powerful variable in studies of instructional effectiveness (Guskey & Passaro, 1994).

Self-efficacy is an important personal characteristic or disposition (Housego, 1992) and has been described as the judgment of one's capacity to accomplish a certain level of performance (Bandura, 1986). Self-efficacy functions in a reciprocal relation to a specific behavior and the environment in which that behavior occurs (Bandura, 1978), which means that self-efficacy is related to a special context of situation. It seems to imply a degree of preparedness by virtue of training, experience, or talent (Housego, 1992). Thus, change in a personal factor, self-efficacy regarding a teaching behavior, would affect the teaching behavior, which in turn would alter the educational environment (Housego, 1992).

Efficacy is not a fixed ability that one does or does not have in one's behavioral repertoire, but rather, it is a generative capability in which cognitive, social, emotional, and behavioral subskills must be organized and effectively arranged to serve innumerable purposes (Bandura, 1995, 1997). Efficacy beliefs play a key factor in a generative system of human competence. Thus, different people with similar skills, or the same person under different circumstances, may perform unequally, depending on fluctuations in their beliefs of personal efficacy (Bandura, 1995, 1997). A resilient sense of efficacy enables individuals to do extraordinary things by use of their skills productively in the face of overwhelming obstacles. A sense of efficacy can be created through four approaches: mastery experience, vicarious experience, social persuasive, and physical and affective status (Bandura, 1982, 1995, 1997).

Teacher sense of efficacy accounts for individual differences in teaching effectiveness (Gibson & Dembo, 1984). In their study, Gibson and Dembo (1984) concluded that teachers with low efficacy are more likely to lack persistence when a

student gives an incorrect answer. On the other hand, teachers with high efficacy tend to be more effective in leading the students to the correct answer through repeating the question, providing a clue, or asking a new question. Teachers who are more successful in producing learning gains of students tend to have higher expectations and assume personal responsibility for making sure students learn (Brophy & Evertson, 1977).

Teacher Education Programs in Taiwan

The teacher education colleges and universities are funded by the Taiwan government and serve as the primary higher education schools providing education courses and degrees. These schools provide majors in both general education, as well as special education. In more recent years the number of students who major in special education ranges from 150 to 250 in each school, depending on the size of special education program of the school. For anyone who wants to teach in elementary or secondary levels, study in these schools resulting in an earned education degree is a necessity. These schools award degrees of bachelor, master, and doctor in various educational specialization areas.

Special education majors are in undergraduate and graduate programs. Before entering undergraduate programs, all high school graduates have to take the national university entrance examination in order to decide which university they can enter and which major they can study. The results of entrance examination are used to insure that students have a certain level of academic ability to study in universities. Students who choose to study in special education, must pass the national university entrance examination with relatively high scores and pass a university entrance interview that is held by each individual university. Once students get their university entrance permission

to study in special education program, they will be provided full scholarship through their four years of study and guaranteed a special education teaching position after graduation by the government. Students who major in a special education undergraduate program have to complete 128-148 credit hours in four years and one-year internship of student teaching in order to be awarded a bachelor's degree.

Because of the shortage of special education teachers and the increasing demands of special education services, alternative certificate teacher education programs have been provided in Taiwan since 1994. Students enter alternative programs after being awarded non-special education related bachelor degrees. However, they have to take the program entrance examination that is held by the individual university in order to determine their qualification for studying in a special education program. Students in alternative programs have to complete approximately 40 credit hours in the first year and an internship in the second year of the program, in order to apply for a special education teaching certificate. Reasons for people changing their careers to be special education teachers are: an interest in teaching students with special needs, teaching as a stable and fairly well paid job in Taiwan, and teaching as a career with high social value in the Taiwanese culture. Furthermore, for people in the special education major, there are more positions opening than being filled. General and special education courses required for both traditional and alternative programs are listed in Appendix A and B.

It is important to study preservice teacher's efficacy belief in Taiwan because educators, researchers, and policy makers will understand how preservice teachers' beliefs about themselves and their teaching beliefs are related. This knowledge leads to more effective evaluation of both general and alternative special education programs.

Significance of Study

Ashton and Webb (1986) suggested that preservice teachers' sense of efficacy may fluctuate during the undergraduate training program. They advocated that the exploration of preservice teachers' notions of teacher efficacy can help teacher educators to better understand the place of these beliefs in the development of future perspectives and teaching practices. Without a sense of efficacy among teachers, low achieving students will have little or even no chance (Vinson, 1995). Teacher preparation programs in universities need to evaluate efficacy levels of their preservice teachers and begin to find methods to enhance their sense of efficacy for teaching. Only after doing so can these programs begin to launch preservice teachers who are able to meet the needs of their students (Gorrell & Capron, 1990).

The quality of teacher education programs and the products of such programs as future teachers enter the professional education setting have been controversial issues over the years. Teacher education programs have been criticized as being academically weak (Walker, 1992). To prepare more effective teachers as well as to provide better educational services to students, consideration of how education majors feel about themselves concerning their abilities to teach effectively and their adequacies in handling professional procedures are important (Wood & Eicher, 1989).

Due to the dynamic nature of teaching, effective practice requires a sense of self-efficacy beyond knowledge and skills (Vinson, 1995). Teaching is a resolution of dilemmas and the authority conceptions of teachers can be investigated by assessing their sense of efficacy (O'Laughlin, 1991). In addition, it is necessary to assess preservice teachers' perceptions of dynamic situations in order to ensure that their university

programs address these areas and begin to develop confidence and efficacy in each (O'Laughlin, 1991). Research on the entering beliefs of preservice teachers would provide teacher educators with important information to help determine curricula and program direction (Pajares, 1992). The foundation in which teacher education programs should be built upon is the use of combining pedagogical skills that direct the future development of preservice teachers' capabilities, coupled with an attention to self-efficacy which shapes motivation, persistence, and attitude (Bolton, 1996).

Ganser (1996) stated that "the connection between efficacy and effectiveness demonstrates the expanding emphasis in research on teaching from a process-product orientation to one that recognizes the influence of teacher cognition and especially teacher beliefs on teaching" (p.1-2). In order to contribute to a better understanding of how teacher effectiveness and teacher efficacy is framed by that preservice teachers, beliefs and ideas about themselves as teachers, the children they teach and the setting in which they teach need to be explored (Ganser, 1996; Vinson, 1995). The ways to measure self-efficacy are determined by perceived sense of efficacy and by perceived confidence and experience of the subjects on specific tasks or abilities (Bolton, 1996).

Problem Statement

Although confidence and teacher efficacy have been studied in American schools, information on the differences between special education preservice teachers trained in traditional and alternative programs has been condensed in Taiwan. Because confidence and efficacy could be used to predict how effective those preservice teachers would be in their future teaching career, it was necessary to examine their confidence and efficacy. On one hand, there is a shortage of special education teachers in Taiwan and teachers

trained in alternative programs have fulfilled this need. On the other hand, the quality of teacher education programs and educational services for special need students must be assured. This study was expected to reveal information on the confidence and efficacy differences among special education preservice teachers from traditional and alternative programs.

Efficacy beliefs among preservice teachers, especially among pre-student-teaching novices, have not been extensively examined (Vinson, 1995). Only a few researchers, such as, O'Laughlin (1991) and Vinson (1995), have studied the beliefs of teacher education students. However, the research literature is very limited on the subject of preservice teachers prior to the student-teaching level with regard to teaching efficacy (Vinson, 1995). Therefore, it is necessary to study this topic in order to have more understanding about teaching efficacy of preservice teachers prior to student-teaching.

An individual's sense of efficacy has been argued as a situation specific variable (Bandura, 1977). Consequently, a preservice teacher's sense of efficacy may vary according to the specific teaching and learning experiences as well as contexts one has been exposed to at any particular time during the undergraduate program (Ashton & Webb, 1986). The importance of personal and teaching efficacy can be reflected in the concerns of preservice teachers about their competence as teachers or doubts about their students ability to learn (Ashton, Webb, & Doda, 1983).

The interviews conducted by Vinson (1995) reveal that pre-student-teaching novices have lower efficacy levels for special education students. They mentioned that those students who had problems with seeing, hearing, speaking, and attending to classroom stimuli would be most difficult to teach. However, the number of special

education courses general education teachers take or the amount or quality of experiences they receive increases their positive perceptions of educating students with disabilities in the general education classroom. Great numbers of quality experiences have been shown to increase teaching efficacy in applying more effective teaching instructions (Brownell & Pajares, 1996; Larrivee, 1981; Stoler, 1992).

The results from a study of efficacy beliefs among preservice teachers in Korea reveal that there may be common experiences and similar perceptions of self-efficacy among preservice teachers across national and cultural boundaries (Gorrell & Hwang, 1995). However, there was no information indicating whether efficacy theory and efficacy related research findings could be applied to preservice teachers who major in special education in Taiwan. This study expected to find out if the concepts of self-efficacy and the findings of related research could be generalized to the teacher education programs in Taiwan.

The purpose of this study was to compare the efficacy and confidence of special education preservice teachers in traditional and alternative teacher education programs in Taiwan.

Research Questions

The following research questions served as guides for this study.

1. What are the relationships among the perceptions of special needs confidence, personal efficacy, and teaching efficacy by preservice teachers?
2. What are the relationships among the perceptions of special needs confidence, personal efficacy, and teaching efficacy for preservice teachers trained in traditional and alternative programs?

3. What is the impact of the program membership (traditional or alternative) on preservice teachers' perception of special needs confidence?
4. What is the impact of the program membership (traditional or alternative) on preservice teachers' perception of personal efficacy?
5. What is the impact of the program membership (traditional or alternative) on preservice teacher's perception of teaching efficacy?

Definition of Terms

The followings are definitions of terms relevant to this study:

Preservice teacher: This term refers to those students who are studying in teacher education programs, from first entering a college to the completion of student teaching.

Self-efficacy: This term refers to beliefs in one's capabilities to organize and execute the courses of action required to produce given attainments.

Personal efficacy (PE): This term represents the teacher's belief that he or she has the personal skills and abilities to influence student learning.

Teaching efficacy (TE): This term represents more general beliefs about the relationship between teaching and learning, and is characterized by the notion that a teacher's ability to bring about change is limited by factors external to the teacher.

Self-confidence: This term refers to beliefs in one self's ability under a specific condition.

Traditional teacher education program: This term represents four-year special education undergraduate programs that students enter after graduation from high school.

Alternative teacher education program: This term refers to two-year special education program that students enter after awarded bachelor degrees in non-special education related majors.

CHAPTER II

REVIEW OF RELEVANT LITERATURE

This chapter contains a review of literature relevant to this study. Most predominately, it is a review of the conceptual framework of self-efficacy and the theory of teacher efficacy, with research related to both self-efficacy and teacher efficacy.

The Conceptual Framework of Self-Efficacy

People's belief of personal efficacy is the central agency when people make causal contributions to their own psychosocial functioning through mechanisms of personal agency (Bandura, 1995, 1997). Perceived self-efficacy refers to beliefs in one's capabilities to organize and execute the courses of action required to produce given attainments (Bandura, 1997). Efficacy beliefs have influence on thought processes, affective states, motivation, and actions. Such beliefs of efficacy affect the course of action people choose to pursue; how much effort they put in for given endeavors, and how long they will persevere in the face of obstacles and failures. Also affected is their resilience to adversity, whether their thought patterns are self-hindering or self-aiding, how much stress and depression they experience in coping with taxing environmental demands, and the level of accomplishments they realize (Bandura, 1997). Therefore, Bandura (1997) suggested that efficacy is a major basis of action.

Social cognitive theory encompasses a large set of factors. Through the anticipative mechanism of forethought, these factors operate as regulators and motivators of established cognitive, social, and behavioral skills (Bandura, 1997). Perceived self-efficacy plays a pivotal role in social cognitive theory, because it acts upon the other classes of determinants, such as motivation, self-evaluation, self-assurance, and self-

reference. The beliefs of self-efficacy make an important contribution to the acquisition of knowledge structures on which skills are founded by influencing the choice of activities and the motivational level. An assured sense of efficacy supports the kind of efficient analytic thinking that is needed for screening out predictive knowledge from causally ambiguous environments in which many factors combine to produce effects. Moreover, beliefs of self-efficacy regulate motivation by shaping aspirations and the outcomes expected for one's efforts (Bandura, 1997).

Beliefs of self-efficacy constitute the key factor of human agency. Furthermore, a sense of personal efficacy is represented as propositional beliefs in social cognitive theory (Bandura, 1997). Self-efficacy has been misused as interchangeable with other self-conception terms, such as self-appraisal (self-concept), self-esteem, self-motivation, self-control, and others. Thus, in the current study, self-efficacy is differentiated from those self-conceptual terms.

The Development of the Concept of Self-Efficacy

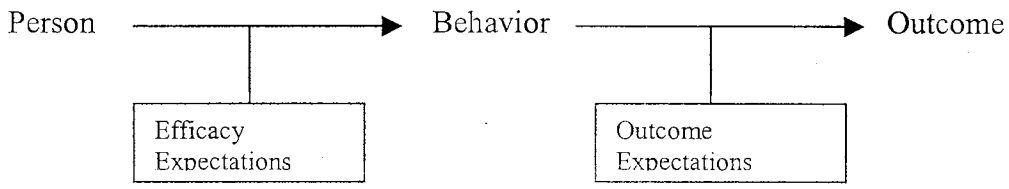
Albert Bandura is a psychologist of tremendous influence whose work in social learning theory places him in the company of Sigmund Freud, Jean Piaget, B.F.Skinner, and Carl Rogers (Bandura's Biography, 1997). As an extension of his research into the cognitive processes involved with learning, Bandura addressed the perception that an individual experiences regarding his/her self-efficacy to handle situations in specific domains.

Kirsch (1996) reports that "self-efficacy has a short history, but a long past" (p. 331). Studies, related to self-efficacy, conducted prior to 1970 reveal that (1) the debilitating effect of failure on self-efficacy is greater than the facilitating effect of

success, (2) spaced practice weakens the effect of the most recently experienced performance feedback on self-efficacy and strengthens that of prior feedback, (3) induced changes in self-efficacy for a particular task generalize to other tasks, and (4) self-efficacy is correlated across dissimilar tasks (Kirsch, 1986).

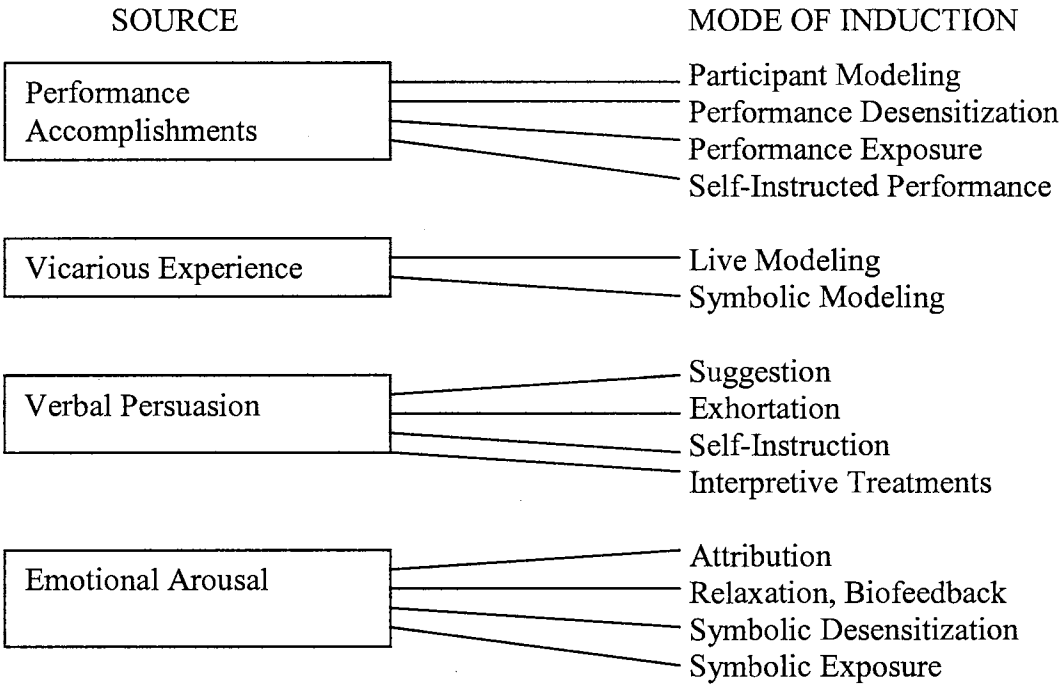
"Self-efficacy theory is concerned primarily with the role of personal cognitive factors in the triadic reciprocality model of social cognitive theory – with both the effect of cognition on affect and behavior and the effect of behavior, affect, and environmental events on cognitions." (Maddux, 1995, p. 7). Self-efficacy theory maintains all processes of psychological and behavioral change that operate through the alteration of the individual's sense of personal mastery or self-efficacy (Bandura, 1977, 1982, 1986). Since 1977 Bandura presented self-efficacy theory, numerous studies have been done based on the theory. The concept of self-efficacy has developed and modified over the past thirty years, which will be discussed in the following content from the perspective of Bandura and others in the field.

In 1977, Bandura proposed a theory that was based on the principal assumption that psychological procedures serve as means of creating and strengthening expectations of personal efficacy. Self-efficacy was originally defined as a rather specific type of expectancy concerned with one's beliefs in one's ability to perform a specific behavior or set of behaviors required to produce an outcome (Bandura, 1977). According to Bandura, "people process, weigh, and integrate diverse sources of information concerning their capability, and they regulate their choice behavior and effort expenditure accordingly" (p. 212). He stated efficacy expectations as a mechanism of operation, and they were distinguished from response-outcome expectancies.



In this conceptual system, expectations of personal mastery affect initiation and persistence of coping behavior. Perceived self-efficacy influences choice of behavioral settings. Given appropriate skills and adequate incentives, efficacy expectations are a major determinant of people's choice of activities, how much effort they will expend, and how long they will sustain effort in dealing with stressful situations (Bandura, 1977). Efficacy expectations vary on several dimensions that have important performance implications. These dimensions included magnitude, generality, and strength (Bandura, 1977). The major sources of efficacy information and the principal sources through which different modes of treatment operate are illustrated by this diagram (Bandura, 1977).

EFFICACY EXPECTATIONS



Bandura concluded that self-efficacy proved to be an accurate predictor of performance. However, he suggested that the operative process involved in the relationship between efficacy expectations and action required further investigation (Bandura, 1997).

The definition of self-efficacy has been expanded to as: "people's beliefs about their capabilities to exercise control over events that affect their lives" (Bandura, 1989, p. 1175), "people's judgments of their capabilities to organize and execute courses of action required to attain designated types of performances" (Bandura, 1997, p. 391), and "people's beliefs in their capabilities to mobilize the motivation, cognitive resources, and courses of action needed to exercise control over task demands" (Bandura, 1990, p. 316). By definition, self-efficacy concerned not with the skills one has, but with judgments of what one can do with whatever skills one possesses (Bandura, 1986). Moreover, expectations concerning mastery or efficacy have generative capability and determine choice of goals and goal-directed actions, expenditure of effort in the pursuit of goals, persistence in the face of adversity, and emotional or affective experiences (Bandura, 1986; Locke & Latham, 1990).

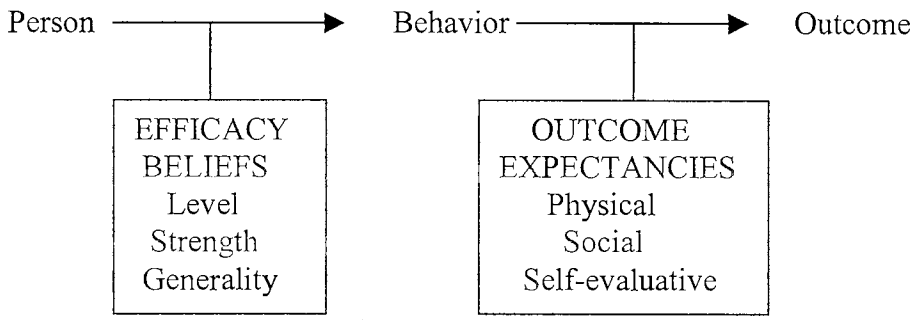
Function and diverse effects of self-efficacy judgment included (a) choice behavior, (b) effort expenditure and persistence, (c) thought patterns and emotional reactions, and (d) humans as producers rather than simply foretellers of behavior (Bandura, 1986). Bandura (1986) defined four main influences upon the development of efficacy (control beliefs): enactive attainment (personal successes, the most authentic and powerful means), vicarious experiences (provided by observing social models), verbal persuasion (positive verbal appraisals offered by others), and physiological states. These

beliefs affect human functioning through mental processing including cognitive processes, which determine visualization of goal-directed behavior and are generated and organized by appraisal of ones ability. Planning occurs as thought, and a resilient sense of efficacy maintains the thought processes by which perseverance in difficult tasks occurs. Moreover, Bandura (1986) proposed 3 related views of personal efficacy: self-concept, effectance motivation, and outcome-expectancy theories, which should be differentiated from self-efficacy.

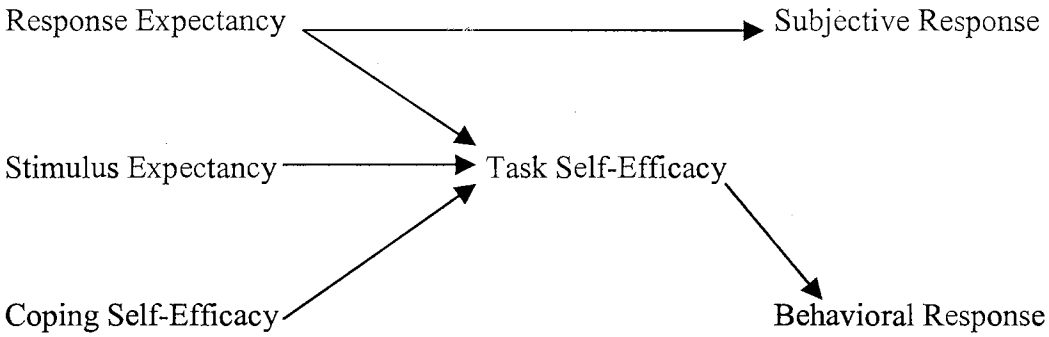
In Bandura's book Self-Efficacy: The Exercise of Control (1997), he discussed the concept of self-efficacy in a great detail. In this volume Bandura suggested that some more related views of personal efficacy should be differentiated from self-efficacy, which include self-concept, self-esteem, effectance motivation, the exercise of personal control, proxy control, inadvertent relinquishment of personal control, and outcome expectancy theories.

The research done by Stanley and Murphy (1997) presented that the concept of general self-efficacy, as it was measured in this study, seems to be the same construct as self-esteem. Even though Bandura (1997) suggested that self-efficacy and self-esteem refer to entirely different things – perceived self-efficacy is concerned with judgements of personal capability, whereas self-esteem is concerned with judgments of self-worth, Stanley and Murphy's study (1997) does not support this part of self-efficacy theory.

Some researchers have addressed the seeming ambiguity of the definitions of self-efficacy and outcome expectancy (Corcoran, 1991; Eastman & Marzillier, 1984; Kirsch, 1996; Lee, 1989). For instance, Bandura (1997) illustrated the relationships between efficacy beliefs and outcome expectancies in this diagram:



On the other hand, Kirsch (1996) proposed another integrative model to illustrate the relationship of expectancy variables to subjective and behavioral responses.



Conclusion

Self-efficacy theory is focusing on the cognitive aspects of mastery and effectiveness rather than on more affective constructs, such as needs, motives, values, and feelings of efficacy. Self-efficacy theory and research have contributed to the study of perceived control and competence in at least three ways (Maddux, 1995):

1. Self-efficacy theory emphasizes the distinction between three important variables concerned with personal control and motivation – self-efficacy expectancy, outcome expectancy, and outcome value.

2. Self-efficacy theory emphasizes the measurement of these variables, especially self-efficacy, with a great degree of behavioral and situational specificity than has been the case in other theories and bodies of research.
3. Self-efficacy theory provides a model to explain the origin and effects of perceptions of perceived control and guidelines for changing human behavior and enhancing adjustment and adaptation (p. 27).

However, more research related to self-efficacy theory is needed on clarifying the fuzziness of the boundaries of expectancy subtypes (Kirsch, 1996) and on differentiating self-efficacy from self-esteem.

The Nature and Structure of Self-Efficacy

People develop and manifest their competencies in many different forms. People are different both in the areas that they choose to cultivate their efficacy, as well as to the levels that they wish to develop. The particular patterns of competencies acquired are products of natural endowment, sociocultural experiences, and fortuitous circumstances that change the course of developmental paths (Bandura, 1986, 1997).

Self-efficacy theory acknowledges the diversity of human capabilities and, therefore, treats the efficacy belief system as a differentiated set of self-beliefs linked to distinct realms of functioning. Furthermore, efficacy beliefs are differentiated across major expressive systems with activity domains. Not only are efficacy beliefs concerned with the exercise of control over action, but also with the self-regulation of thought processes, motivation and affective and physiological states. (Bandura, 1997).

Perceived Self-Efficacy as a Generative Capability

Efficacy is not a fixed ability that one does or does not have in one's behavioral

repertoire. Rather, it is a generative capability in which cognitive, social, emotional, and behavioral subskills must be organized and effectively arranged to serve innumerable purposes. Perceived self-efficacy is not concerned with the number of skills someone has, but concerned with what that person believe he/she can do with what he/she has under a variety of circumstances (Bandura, 1997).

Efficacy beliefs play a key factor in a generative system of human competence. Thus, different people with similar skills, or the same person under different circumstances, may perform unequally, depending on fluctuations in their beliefs of personal efficacy (Bandura, 1995, 1997). A resilient sense of efficacy enables individuals to do extraordinary things by using their skills productively in the face of overwhelming obstacles. On the other hand, skills can be overruled by self-doubts. Hence, even highly talented individuals may poorly use their capabilities under circumstances that undermine their beliefs in themselves (Bandura & Jourden, 1991; Wood & Bandura, 1989). These studies reveal that perceived self-efficacy is an important contributor to performance accomplishments, no matter what the underlying skills might be. Furthermore, self-efficacy is not a measure of the skills an individual has but, rather, a belief about what one can do under different sets of conditions with whatever skills that individual possesses (Bandura, 1997).

Perceived Self-Efficacy as an Active Producer

Sociocognitive functioning in the relevant domains is enhanced by a resilient sense of efficacy in many ways. Individuals who have strong beliefs in their capabilities approach difficult tasks as challenges to be mastered. Such an orientation of affirmation fosters the individuals' interest and engrosses involvement in activities. They set

challenging goals to themselves and maintain strong commitment to those goals. They put a high level of effort in what they do and heighten their effort, when they confront failures or setbacks. They remain task-focused and think strategically in difficult situations. They recover their sense of efficacy quickly after failures or setbacks, and attribute failure to insufficient effort that supports a success orientation. They approach potential stresses or threats with great confidence in which they can exercise some control over them. Such an efficacious orientation reduces stress, lowers vulnerability to depression, and enhances performance accomplishments. These findings support the view that beliefs of personal efficacy are active contributors to human attainments (Bandura, 1997).

Multidimensionality of Self-Efficacy Belief Systems

Personal efficacy is a multifaceted phenomenon rather than a contextless global disposition assayed by an omnibus test. An individual with a high sense of efficacy in one activity domain doesn't necessarily mean with high self-efficacy in other domains (Bandura, 1997). Thus, measures of personal efficacy must be tailored to domains of functioning and must represent gradations of task demands within those domains in order to achieve explanatory and predictive power. This requires a clear definition of the activity domain of interest and a good conceptual analysis of its different facets, the types of capabilities it calls upon, as well as the range of situations in which these capabilities might be applied. Efficacy beliefs need to be measured in the particularized judgments of capability that may vary across realms of activity, under different levels of task demands within a given activity domain, and under different situational circumstances (Bandura, 1997).

Sources of Self-Efficacy

Self-efficacy beliefs are developed from four principal sources: enactive mastery experiences that serve as indicators of capability; vicarious experiences that change efficacy beliefs through transmission of competencies and comparison with the attainments of others; social persuasion (verbal persuasion and allied types of social influences) that is the possession of certain capabilities; and physiological and affective states that are partly human judgement of their capableness, strength, and vulnerability to dysfunction. Depending on its form, every given influence may operate through one or more of these four sources of efficacy information (Bandura, 1995, 1997).

Enactive Mastery Experience

Enactive mastery experiences are the most effective way of creating a strong sense of efficacy and the most influential source of efficacy information, because they provide the most authentic evidence of whether one can muster whatever it takes to succeed (Bandura, 1982, 1995, 1997; Biran & Wilson, 1981; Gist, 1989). Successes build a vigorous belief in one's personal efficacy. In contrast, failures undermine it, especially if failures occur before a sense of efficacy has been firmly established (Bandura, 1995, 1997). If people only experience easy successes, they tend to expect quick results and are easily discouraged by failure. Experience in overcoming obstacles through perseverant effort is required for building a resilient sense of efficacy. In human pursuits, some difficulties and setbacks serve a beneficial purpose in teaching that usually sustained effort is required for success. Enactive mastery experiences produce stronger and more generalized efficacy beliefs than those that solely rely on vicarious experiences, cognitive simulations, or verbal instruction (Bandura, 1997).

The process of building enactive mastery experiences to acquire a sense of self-efficacy is not only a matter of programming ready-made behavior, but it must involve the acquisition of the cognitive, behavioral, and self-regulatory tools for creating and executing appropriate action courses in order to manage the ever-changing life circumstances. Through enactive mastery experiences, the development of efficacy beliefs creates the facility of cognitive and self-regulation for more effective performance (Bandura, 1995, 1997).

People act on their efficacy belief and assess their self-appraisal according to the performances they manage to achieve. Successful performance increases beliefs of personal efficacy. In contrast, repeated failures on performance decrease them, especially if the failures occur in the early course of events and do not reflect the lack of effort. However, it does not mean that successful performance necessarily increases efficacy beliefs, or that performance failure necessarily decreases them. Changes in perceived efficacy result from cognitive processing of the diagnostic information that performances carry about capability. Therefore, the impact of performance on efficacy beliefs depends on what is made of for those performances (Bandura, 1995, 1997).

There is no simple performance equivalence to perceived self-efficacy. Other relative contributions of ability and nonability factors to performance successes and failures must be considered in appraisal of the personal efficacy process. Among other factors, the extent to which people will alter their perceived efficacy through performance experiences depends on their preconceptions of their capabilities, the perceptions of task difficulties, the amount of effort they expend, the amount of external help they receive, the circumstances in which they perform, the pattern of their successes and failures, and

the way of which enactive experiences are cognitively organized and reconstructed in memory. Usually, perceived self-efficacy is a better predictor under variable conditions than past performance, since efficacy judgment comprises more information than just the action execution (Bandura, 1997).

Vicarious Experience

This is the second influential way, provided by social models of creating and strengthening efficacy beliefs. People do not solely rely on enactive mastery experiences as the source of information about their capabilities. Mediated through modeled accomplishment, efficacy appraisals are partly influenced by vicarious experiences. Therefore, modeling serves as another effective tool for raising a sense of personal efficacy (Bandura, 1995, 1997).

For individuals to see other people who are similar to themselves succeed by constant effort raises these observing individuals' beliefs that they have the capabilities to manage comparable activities (Bandura, 1986, 1995, 1997; Schunk, 1987). On the other hand, to observe others' failures with devoting high effort lowers the observers' perceptions of their efficacy and also undermines their level of motivation (Bandura, 1995; Brown & Inouye, 1978). The impact of modeling on personal efficacy beliefs is highly influenced by perceived similarity to the models. The greater the perceived similarity the more convincing are the models' successes and failures. If observers perceive that the models are very different from themselves, their beliefs of personal efficacy are less influenced by the models' successes and failures (Bandura, 1995).

The influences of modeling do not merely provide a social standard to judge one's own capabilities. Individuals seek proficient models who possess the competencies that

aspire to them. Competent models transmit knowledge as well as demonstrate effective skills and strategies to observers for managing environmental demands through their behavior and their ways of thinking. Undiscouraged attitudes exhibited by proficient models when they cope with obstacles can be more enabling for observers to model than the particular skills (Bandura, 1995).

Social Persuasion

The third way to strengthen people's efficacy beliefs that they have capabilities to achieve what they are seeking is through social persuasion (Bandura, 1995, 1997). When people are persuaded verbally that they possess the capabilities to master given activities, they are likely to mobilize greater effort and sustain it if they hold self-doubts in mind and dwell on personal deficiencies in the face of problems (Bandura, 1995, 1997; Litt, 1988; Schunk, 1989). When struggling with difficulties, it is easier for one to keep a sense of efficacy if significant others express their faith in one's capabilities rather than in their doubts.

The power of social persuasion to create enduring increases in perceived efficacy may be limited when it is used alone. However, social persuasion can support self-change if the positive appraisal is used within realistic bounds. To the extent that persuasive boosts in perceived self-efficacy would lead people to success by trying hard enough, it will also promote the development of skills and a sense of personal efficacy. On one hand, unrealistically social persuasion boosts in efficacy beliefs are quickly disconfirmed by disappointing results of one's efforts. On the other hand, people who have been persuaded that they lack the necessary capabilities tend to give up quickly from difficulties and tend to avoid challenging activities (Bandura, 1995, 1997).

Physiological and Affective States

The fourth way of altering efficacy beliefs is to enhance physical status, reduce stress and negative emotional proclivities, and correctly interpret bodily states (Bandura, 1995, 1997; Cioffi, 1991). People rely partly on somatic information carried by physiological and emotional states in judging their capabilities. Somatic indicators of efficacy beliefs are particularly relevant in domains involved with physical accomplishments, health functioning, and coping with stresses (Bandura, 1997).

People perceive their stress reactions and tension in stressful or taxing situations as signs of vulnerability to poor performance. Since high arousal can debilitate performance, people are more inclined to expect success when they are not stimulated by high arousal than when they are tense, stressful, or under aversive situations. Physiological indicators play an influential role in health functioning and activities that require physical strength and stamina. Physiological indicators of efficacy are not restricted in autonomic arousal. People interpret their fatigue, aches, pains, and windedness as signs of physical inefficacy in activities involving strength and stamina (Bandura, 1995, 1997; Ewart, 1992). Furthermore, affective states influence people's judgements of their personal efficacy as well. Affective states have widely generalized effects on self-efficacy beliefs in diverse extents of functioning. Positive affection enhances perceived self-efficacy and despondent affection diminishes it (Kavanagh & Bower, 1985).

The information, whether conveyed by enactive experiences, vicarious experiences, persuasion, or affection, is neither diagnostic of personal efficacy nor is it inherently instructive. Such information affects self-efficacy through cognitive

processing. Therefore, the information conveyed by the different modes of influence should be distinguished from cognitive processing. A number of factors, including personal, social, and situational, affect how efficacy related experiences are interpreted (Bandura, 1995, 1997).

Efficacy-Activated Processes

Efficacy beliefs impact human functioning through four major processes: cognitive, motivational, affective, and selection. In the ongoing regulation of human functioning, these four processes operate in concert, rather than in isolation (Bandura, 1995, 1997).

Cognitive Processes

People's performance can be enhanced or undermined by the thought patterns that are affected by efficacy beliefs. On cognitive process, the effects of efficacy beliefs take a variety of forms. People who have a high efficacy sense take a future time perspective in structuring their lives. Much human purposive behavior is regulated by forethought that embodies cognized goals. Self-appraisal of capabilities influences personal goal setting. People who have the stronger perceived self-efficacy set the higher goal challenges for themselves and have a firmer commitment to them. Moreover, challenging goals raise the level of motivation and performance attainments (Bandura, 1995, 1997; Locke & Latham, 1990).

Most courses of a person's action are initially organized in thought and their efficacy beliefs shape the types of anticipatory scenarios they construct and rehearse. Individuals who have a high sense of efficacy visualize success scenarios that can provide positive guides and supports for performance and vice versa. It is difficult for

those individuals who are fighting with self-doubt to achieve much (Bandura, 1995, 1997).

To enable people to predict events and to develop ways to control variables that affect their lives are the major functions of thought. Effective cognitive processing of information is required for problem-solving skills. For learning predictive and regulative rules, people have to draw on their knowledge to construct options, to assess and integrate predictive factors, to try and revise their judgments against their action results, and to remember which factors they have tried and how well those factors worked. A strong sense of efficacy is required to remain task oriented in front of pressing situational demands, failures, and setbacks that have significant personal and social impacts (Bandura, 1995, 1997).

Motivational Processes

Efficacy beliefs are a key element in the self-regulation of motivation. The root of the capability for self-motivation and purposive action is in cognitive activity. Most of human motivation is cognitively generated. By exercise of forethought, people motivate themselves and guide their actions. People form beliefs about what they can do and anticipate likely outcomes of prospective actions. People set goals for themselves, plan actions for valued futures, and mobilize the resources at the level of effort needed to succeed (Bandura, 1995).

There are three different forms of cognitive motivators: causal attributions, outcome expectancies, and cognized goals. These have been developed with the corresponding theories, attribution theory, expectancy-value theory, and goal theory. Efficacy beliefs are operating in each of these types of cognitive motivation.

Causal attributions are influenced by efficacy beliefs (Alden, 1986; Bandura, 1995). Through personal efficacy beliefs, causal attributions affect motivation, performance, and affective reactions (Bandura, 1995; Chwalisz, Altmaier, & Russell, 1992; Relich, Debus, & Walker, 1986; Schunk & Gunn, 1986).

Motivation is regulated by the expectation, in expectancy-value theory, which certain outcomes of behavior are anticipated and the value is placed on those outcomes. However, people act on both their beliefs about what they can do and on their beliefs about the likely performance outcomes. Thus, the motivating impact of outcome expectancies is partly governed by efficacy beliefs. Perceived self-efficacy enhances the prediction of expectancy-value theory considerably (Bandura, 1995; Schwarzer, 1992).

A major cognitive mechanism of motivation is provided by the capacity to exercise self-influence by goal challenges and evaluative reaction to one's own performances. Research has shown that explicit, challenging goals can enhance and sustain motivation (Bandura, 1995; Locke & Latham, 1990). Based on goal setting, motivation involves a process of cognitive comparison of perceived performance to an adopted personal standard. People give direction to their behavior and create incitement to persist in their efforts until they achieve their goals by making self-satisfaction conditional on matching the standard. Efficacy beliefs contribute to motivation in the following ways: motivation determines the goals that people set for themselves, how much effort they spend, how long they persist under difficulties, and how resilient they are to failures. People who have strong beliefs in their efficacy exert greater effort when they fail to master the challenge (Bandura, 1995).

Affective Processes

The self-efficacy belief plays a central role in the self-regulation of affective states. People's beliefs in their coping capacities and their level of motivation affect how much stress and depression they experience in difficult or threatening situations. Perceived self-efficacy to exercise control over stresses relates to anxiety arousal in several ways. Efficacy beliefs affect awareness toward potential threats and how they are perceived and cognitively processed. The power of efficacy beliefs to cognitively transform threatening situations into favorable ones has been evident (Bandura, 1995). Under the same environmental stresses, individuals who believe they can manage them remain without being perturbed, but, in contrast, individuals who believe they cannot control the stresses personally view them in debilitating ways. In coping with adaptation to new environmental demands, people with a high sense of efficacy treat it as a challenge, but others who do not trust their coping capacities view it as a threat (Bandura, 1995; Jerusalem & Mittig, 1995).

Another way in which efficacy beliefs regulate anxiety arousal and depression is through the exercise of control over disturbing thoughts. The major source of distress is the perceived inability to turn disturbing thoughts off, but not their frequency (Kent & Gibbons, 1987). Both perceived coping self-efficacy and thought control efficacy work together to reduce anxiety and avoidance behavior (Ozer & Bandura, 1990).

The other way in which efficacy beliefs reduce or eliminate anxiety is through supporting effective modes of behavior that change threatening environments into safe ones. By their impact on coping behavior, efficacy beliefs can regulate stress and anxiety.

Through the exercise of efficacy collectively, major changes in aversive social condition are usually achieved (Bandura, 1995).

A low sense of efficacy to exercise control can breed depression and anxiety. There are three paths to depression. One is through unfulfilled aspiration. People who are driven to depression by judging themselves cannot attain the standards of self-worth that they impose on themselves (Bandura, 1995; Kanfer & Zeiss, 1983). The second path to depression is through a low sense of social efficacy to develop social relationships, which bring satisfaction to life as well as cushion the adverse effects of chronic stresses. Social support can reduce vulnerability to stress, depression, and physical illness. People have to go out and find supportive social relationships for themselves, which requires a strong sense of social efficacy. Thus, a low sense of efficacy to develop satisfying and supportive relationships contribute to depression directly by cutting off the development of social supports (Bandura, 1995; Holahan & Holahan, 1987). In contrast, supportive relationships can enhance personal efficacy to reduce vulnerability to depression (Bandura, 1995; Cutrona & Troutman, 1986).

The third path to depression is by the way of thought control efficacy. Most of human depression is cognitively generated by thought of dejection. The lower the perceived efficacy to turn off dejecting thought the higher the depression. Mood and perceived efficacy have great influence on each other. Thus, people act according to their mood-altered efficacy beliefs (Bandura, 1995).

Selection Processes

People are partly a part of product of their environment, and contribute to what they become by selecting their environment. Thus, beliefs of personal efficacy form the

patterns of people's lives by influencing what types of activities and environments they choose to participate. Choices are influenced by people's beliefs of their personal capabilities. Through choice processes, destinies are shaped by selection of environments known to cultivate certain potentialities and lifestyles. People choose challenging activities and select environments that they judge themselves capable to manage, but avoid activities and environments that they perceive to exceed their coping capabilities. Through the choices they make, people cultivate variety of interests, capabilities and social networks (Bandura, 1995, 1997).

The higher the personal efficacy a person has, the more challenging the activities are selected. People with high efficacy not only prefer more difficult activities, but also show high persisting power in those pursuits. Any factor that influences one's choice of behavior can seriously affect the direction of personal development, because the social influences continue to promote certain interests, capabilities, and values long after the efficacy decisional determinant has presented its special and beginning effect (Bandura, 1995, 1997).

Theory of Teacher Efficacy

Teachers' talents and self-efficacy directly contribute to the task of creating a learning environment conducive to learning. Teachers' beliefs in their teacher efficacy are a part of determination of how they structure academic activities in their classrooms, how they evaluate their students' academic performance, how they shape students' evaluation of their academic capabilities, and how they form their classroom atmospheres (Bandura, 1977, 1995, 1997). There are two components to a sense of teacher efficacy. Teaching efficacy is the more generalized belief about the relationship between teaching

and learning. Personal efficacy is the belief of a teacher about his or her own effectiveness in teaching (Ashton, Olejnik, Crocker, & McAuliffe, 1982; Gibson & Dembo, 1984; Kushner, 1993).

Teachers who have a high sense of teacher efficacy create mastery experiences for their students know that difficult students are teachable via extra effort and appropriate techniques and believe that they can obtain supports from families and overcome negative community influences (Bandura, 1995, 1997; Gibson & Dembo, 1984). In contrast, teachers who have a low sense of instructional efficacy generate negative classroom environments that are likely to undermine students' sense of efficacy and cognitive development. They believe that there is little they can do if students are unmotivated and that the influence they can exert on students' intellectual development is severely limited by the influences from an unsupportive home environment or contrary neighborhood environment (Bandura, 1995, 1997).

Teachers' self-efficacy beliefs affect their general orientation toward the educational process as well as their specific instructional activities. Teachers with a low sense of teacher efficacy tend to use a heavily custodial orientation that relies on extrinsic rewards and negative sanctions to get students to study. They take a pessimistic view of students' motivation and emphasize using strict regulation to control students' behavior (Bandura, 1995, 1997; Woolfolk & Hoy, 1990; Woolfolk, Rosoff, & Hoy, 1990). Furthermore, teachers with low self-efficacy are easily troubled by classroom problems, distrust their ability to manage their classrooms, are stressed and angered by students' misbehavior, and focus more on the subject matter than on students' development (Bandura, 1995). Teachers who have an insecure sense of teacher efficacy spend less

time on subject matters in their areas of perceived efficacy, devote less overall time to academic matters, show weak commitment to teaching, are especially vulnerable to occupational burnout, and would not choose teaching profession if they had to do it all over again (Bandura, 1995; Evans & Tribble, 1986; Gibson & Dembo, 1984).

On the other hand, teachers with high self-efficacy beliefs tend to support the view of student development, intrinsic interests, and academic self-directedness (Bandura, 1995; Woolfolk & Hoy, 1990). Teachers with high efficacy manage academic stresses by directing their effort at solving problems (Chwalisz, Altmaier, & Russell, 1992), and they tend to rely on persuasive means instead of authoritarian control in managing their classrooms and students' behavior (Bandura, 1997).

With the developmental concept of children intellectual capabilities, the early school years are a very important period of formation. In a large part, children's beliefs about their intellectual efficacy are a social construction that is based on appraisals of their performances in different academic areas, social comparisons with the attainments of their peers, expectations of academic achievement, and evaluations of ability conveyed by their teachers in both direct and indirect ways. A teacher's sense of efficacy is especially influential on young children because their beliefs about their capabilities are still unstable, their peer structures are informal, and they use very little social comparison information in evaluating their capabilities (Bandura, 1997).

Literature Related to Self-Efficacy and Teacher Efficacy

A study of efficacy beliefs among preservice teachers in Korea has been conducted by Gorrell and Hwang (1995). Subjects in this study included 90 early childhood and elementary teacher-education students at beginning (first-year) and ending

points (fourth-year) in preservice teacher-education programs at two colleges in South Korea. The results of study reveal that the advanced preservice teachers perceive themselves with higher levels of efficacy than those beginning their teacher-education program. Overall, there is a trend for the fourth-year preservice teachers to show higher beliefs in their abilities to make a difference with their own students (Gorrell & Hwang, 1995). These results are consistent with Bandura's self-efficacy theory (1986) suggesting that an individual's performance influences a person's efficacy beliefs. As preservice teachers advance in their education programs, their experiences in preparing for their own teaching needs to increase their personal perceptions that they can make a difference (Gorrell & Hwang, 1995). Moreover, the finding of differences in personal efficacy, but not only in teaching efficacy for first- and fourth-year preservice teachers, also supported the notion of two dimensions of efficacy for preservice teachers (Ashton & Webb, 1986; Gibson & Dembo, 1984; Gorrell & Hwang, 1995; Hoy & Woolfolk, 1993; Woolfolk & Hoy, 1990).

In Walker's (1992) study on perceptions of preservice teacher efficacy, 34 preservice teachers had participated in the study by using a self-rating scale of student teacher efficacy in the classroom. Walker concluded that preservice teachers tend to rate themselves highly on their efficacy and that preservice teachers are idealistic about their expectations of their performance in the classroom. By comparing preservice teachers and classroom teachers, the results of a study by Benz, Bradley, Alderman, and Flowers (1992) indicated that preservice teachers have a higher sense of efficacy than do the classroom teachers.

Teacher sense of efficacy accounts for individual differences in teaching effectiveness (Gibson & Dembo, 1984). They studied the relationship between assessed teacher efficacy and observable teacher behaviors related to academic focus and teacher feedback. Results indicated that teachers with high efficacy spent more time in whole group instruction than did teachers with low efficacy. Teachers with low efficacy were more likely to lack persistence when a student gave an incorrect answer. These teachers tended to go on to another student who could supply the answer, or allow another student to call out the answer. On the other hand, teachers with high efficacy tended to be more effective in leading the students to find the correct answer through repeating the question, providing a clue, or asking a new question.

Teacher effectiveness has been related to teachers' efficacy beliefs about their work (Ganser, 1996). A positive sense of efficacy is a critical component of effective teaching (Bolton, 1996). Effective teachers have a high sense of efficacy about their own teaching. They believe that they are effective and can affect the learning of students (Berman & McLaughlin, 1977; Ganser, 1996). Teachers with high sense of efficacy believe that they are capable of motivating and instructing students successfully. In contrast, teachers with low sense of efficacy believe either that no teachers can have important effects or that they personally cannot have such effects but others can (Ashton & Webb, 1986). Ganser (1996) reported two sides of opinions related to preservice teacher's efficacy. On the one hand, teachers are in control of their effectiveness and efficacy. On the other hand, the teacher's personality and intelligence are linked to teacher effectiveness and efficacy. The study results of Enochs, Schaarmann, and Riggs (1995) reveal that preservice teachers with higher science teaching self-efficacy scores

also had more humanistic orientations toward control or management in the classroom, which is consistant with previous literature. Thus, the study of Enochs et al. concluded that, if preservice teachers felt they would be effective in providing science instruction, they were also more likely to believe their future students would be responsible, cooperative participants in the classroom. If teachers felt they would be less effective in providing science instruction, they were more apt to believe in the need to be more authoritative-based science teaching.

Mastery experiences have been recognized as one important resource of efficacy beliefs (Bandura, 1981, 1995, 1997). In the study conducted by Ginns and Watters (1990), the research data provided evidence which supports the suggestion that self-efficacy can be enhance through modeling and successful mastery experiences.

Research on the efficacy of practicing teachers has reported strong and significant relationships between teachers' sense of efficacy and increases in students' scores on achievement tests (Ashton, Webb, & Doda, 1983). Thus, teachers with high levels of personal efficacy are more likely to expect that all students can learn and to feel responsible for that learning than are teachers with low efficacy measures (Ashton & Webb, 1986). Teachers who are more successful in producing learning gains of students tend to have higher expectations and assume personal responsibility for making sure that students learn. These teachers view obstacles or difficulties that can be overcome by discovering appropriate teaching methods (Brophy & Evertson, 1977).

Literature Related to Efficacy Beliefs in Taiwan

Efficacy beliefs have been studied in different fields for years in Taiwan. Lin and Wang (1997) studied perceived self-efficacy for weight control and related factors among

obese junior high school students and found that perceived self-efficacy related to subjects' exercise behaviors and diet control. Subjects with higher self-efficacy had better exercise behaviors and diet control behavior. Similar results had been found in the studies by Chang and Lin (1997), and Chen, Yeh, and Lin (1998) in diabetes mellitus patients. They suggested that diabetes mellitus patients who had highest scores of self-efficacy also had highest scores in self-care behavior. Self-efficacy had been found related to the principles and techniques of fundamental nursing skills performance as well (Lin, 1997).

In the education field, there are several studies of teacher efficacy that had been done in Taiwan. Sun (1995) had examined the relationship of teacher demographic characteristics and school organizational conditions to teacher efficacy. He concluded: (1) elementary teachers exhibit a mixture of low and moderate levels of efficacy beliefs, and (2) teachers' years in teaching, grade assignment, and location of school are significantly related to teacher efficacy, but teachers' genders, school size, and classroom size are not. The finding of gender difference on teacher efficacy confirmed the study done by Showers (1980). Showers proposed that there was no significant difference on teachers' efficacy in their teaching based on gender effect. However, other research findings suggested that female teachers had higher efficacy beliefs than did male teachers (Cavers, 1988; Frankin, 1989; Greenwood, Olejnik, & Parkay, 1990).

In a survey of elementary school teachers self-efficacy, Shieh (1995) found that teachers who had more teaching experience tended to have higher sense of efficacy than those teachers who had less experience in teaching and there was no significant relationship between teacher gender and perceived self-efficacy. Teachers who have a higher sense of efficacy will tend to be more committed to teaching and more successful

in using teaching methods (Shieh, 1995). They also tend to manage their classrooms in humanistic ways and are more likely to accept innovative practices (Shieh, 1995; Sun, 1995). A later research conducted in Taiwan also supported these findings. The more teaching experience teachers have, the higher their teacher efficacy (Hsu, 1998). Again, that there was no significant difference in teacher self-efficacy for male and female teachers in Taiwan had been supported (Hsu, 1998; Mao, 1995).

Summary

Personal efficacy is a multifaceted phenomenon. An individual with a high sense of efficacy in one activity domain does not necessarily mean high self-efficacy in other domains (Bandura, 1997; DiClemente, 1986; Hofsteteer, Sallis, & Hovell, 1990). Thus, measures of personal efficacy must be tailored to domains of functioning and must represent gradations of task demands within those domains in order to achieve explanatory and predictive power (Bandura, 1997).

Teachers' self-efficacy directly contributes to the task of creating an environment conducive to learning. Currently teacher efficacy is an important concept in teaching research. Teachers' self-efficacy will influence their teaching performance and students' academic achievement. Teachers with a higher sense of efficacy will tend to be more committed to teaching and more successful in using different teaching methods than will others. Moreover, teachers with a higher sense of efficacy tend to manage the classroom in humanistic way, and be more likely to accept the practice of innovation (Shieh, 1995; Sun, 1995). There are two components to a sense of teacher efficacy. Teaching efficacy is the more generalized belief about the relationship between teaching and learning.

Personal efficacy is the belief of a teacher about his or her own effectiveness in teaching (Ashton, Olejnik, Crocker, & McAuliffe, 1982; Gibson & Dembo, 1984; Kushner, 1993).

Efficacy beliefs have been studies in different countries and in different fields. According to the research studied in Korea by Gorrell and Hwang (1995), the results suggested the idea that there may be common experiences and similar perceptions of self-efficacy among preservice teachers across national and cultural boundaries. In Taiwan, efficacy beliefs have been applied in fields of sports, medicine, nursing, and education. Research in Taiwan has revealed that gender did not significantly impact teachers' perceptions of teacher efficacy. Teachers who have a higher sense of efficacy will tend to be more committed to teaching and more successfully in using teaching methods (Shieh, 1995). They also tend to manage their classrooms in a humanistic way and be more likely to accept the innovative practices (Shieh, 1995; Sun, 1995).

This literature review explored the controversy related to the gender effect on teacher efficacy and revealed the lack of studies on preservice teachers in special education programs. Gorrell and Hwang (1995) suggested that common experiences and similar perceptions of self-efficacy may cross national and cultural boundaries. However, studies with preservice teachers both in the United States and in other countries would profit from closely examining the growth of teaching and personal efficacy as they expand their teaching orientations and experiences. The purpose of this study was to compare the confidence and efficacy of special education preservice teachers trained in traditional and alternative teachers education programs in Taiwan.

CHAPTER III

METHODOLOGY

The purpose of this study is to compare the efficacy and the confidence of special education preservice teachers in traditional and alternative teacher education programs in Taiwan. This chapter contains a description of the subjects who participated, the instrumentation used, procedure followed, research design, and data analyses utilized for this study.

Subjects

With 120 subjects invited to participate from selected teacher education universities and colleges in Taiwan, 107 completed the study. The participation rate was 89%. The subjects of this research consisted of 107 preservice teachers who were majoring in special education, 53 from traditional teacher preparation programs, and 54 from alternative certificate programs. Recruitment was among those students who were between the last semester of course work and the beginning of student teaching; therefore, the practicum experience would not be a confounded variable for this study. In Taiwan, students have a principle classroom in which all classes are held. Furthermore, students have classes with the same classmates for their school years since the first day of schooling. Therefore, getting the information about the classrooms from the school office facilitated the recruitment process. All students had the same ethnic background of Chinese.

In Taiwan, the Republic of China, teacher preparation education is mainly provided by teacher education universities and colleges supported by the government. These colleges provide both traditional and alternative certificate teacher education

programs. Students who wish to study in these colleges take the nationwide university entrance examination before they enroll into the programs. The nationwide university entrance examination in Taiwan is a very competitive and a highly selective threshold for entering higher education. Therefore, students who studied in teacher education colleges have a relatively high academic performance and high entrance scores.

The traditional teacher education program for special education is a four-year teacher preparation program. Students enter the program after being graduated from formal high school. In the traditional programs, students study general required courses, education-related courses, general special education courses, and special education courses in specialized areas. On the other hand, an alternative teacher education program for special education is a two-year program. Students enter the program after being awarded non-special education related bachelor degrees and only study basic special education courses as well as special education courses in specialized areas. They do not get the concentration of general education courses. General and special education courses required for both traditional and alternative programs are listed in Appendix A and B.

The subjects were selected by using purposive sampling. Three universities/colleges were selected, according to availability of programs, from the teacher colleges in the north and south parts of Taiwan. Sixty preservice teachers from traditional programs and seventy preservice teachers from alternative programs were invited to participate in the research. From this group fifty-three preservice teachers from traditional program and fifty-four preservice teachers from alternative program chose to complete the packages of research materials. Selected demographics for these subjects are presented in Table 1.

Table 1

Numbers of Preservice Teachers by Program, Gender, Work Experience, and Worked with Children with Disabilities

	Traditional Programs				Alternative Programs				
	Male		Female		Male		Female		
	Worked with children with disabilities								
	Yes	No	Yes	No	Yes	No	Yes	No	Total
Work Experience									
None	8	1	22	3	0	1	3	2	40
Non-Education	2	0	3	0	0	1	3	21	30
Education	4	1	8	1	1	1	11	10	37
Total	14	2	33	4	1	3	17	33	107

Instrumentation

Two instruments were used for the purposes of this study, Teacher Efficacy Scale (TES) (Guskey & Passaro, 1994; Kushner, 1993) and Special Needs Confidence Scale (SNCS) (LePage, Lewis, & Casella, 1995). Teacher Efficacy Scale contained two subscales, personal efficacy (PE) and teaching efficacy (TE).

The Teacher Efficacy Scale

The Teacher Efficacy Scale was used to measure personal teaching efficacy and

teaching efficacy. TES was originally developed by Gibson and Dembo in 1984, based on Bandura's social cognitive theory (1977, 1978) as well as building on the work of Ashton and Webb (1982). This version of TES contained 16 items in order to measure two dimensions of teacher efficacy, personal teaching efficacy (PE), and teaching efficacy (TE).

In a later investigation, Woolfolk and Hoy (1990) revised the version of the TES, when they added 4 other items, including 2 original Rand items, to bring the total number of items in their scale to 20. Even though Woolfolk and Hoy used this version of the scale to measure perceived efficacy to preservice teachers, the wording of the twelve items for measuring PE was expressed in a manner that assumes that the respondent was currently teaching. Therefore, the wording of this scale may not be suitable for use with preservice teachers (Guskey & Passaro, 1994; Kushner, 1993).

The revised version of the TES (see Appendix C) that was used in this study had been modified by Kushner in 1993. Kushner re-worded 12 PE items of TES from the version of Woolfolk and Hoy (1990), and made the scale suitable for specific use with preservice teachers.

The revised TES for preservice teachers (Kushner, 1993) is a 20-item self-report instrument using a 6-point Likert-type scoring system (1 = Strongly disagree, 2 = Very disagree, 3 = Disagree, 4 = Agree, 5 = Very agree, 6 = Strongly agree). It contains a two-factor structure of teacher efficacy, indicating that the construct of TES is stable to modifications and generalizable to preservice teachers, for measuring two dimensions of teacher efficacy, 12 modified items for personal efficacy (PE) and 8 unmodified items for teaching efficacy (TE) (Kushner, 1993). The respondents were asked to read each

statement and to decide how much they agree with each statement. TES enabled every respondent to complete the questions individually in terms of his or her perceptions of the present teaching efficacy level. It was easy to administer and simple to score.

Reliability

Kushner (1993) estimated the internal consistency of the two scales by using Cronbach's Alpha. The reliability coefficients were .65 for the unmodified TE scale and .79 for the modified PE scale, in the first administration in which 197 subjects participated. Results from the second administration in which 162 subjects participated established that Cronbachi's Alpha was .84 for the unmodified TE scale and .70 for the modified PE scale.

Chinese Version of TES

In order to meet the different reading and comprehension abilities of participants, TES was translated into a version of Chinese by the researcher. The researcher consulted school teachers and professionals in Taiwan to assure that the translation could be used appropriately for participants with different programs. In order to enhance accuracy, translation was reviewed and revised through cooperation between the researcher and professionals of education in English. Moreover, by incorporating a procedure of backward translating (involving having Chinese-English speakers translate the Chinese version back to English), the researcher was able to check the accuracy of the translation from English to Chinese. A sample question was included as following. Original English version: The amount a student can learn is primarily related to family background. Translated back to English version from Chinese version: How much a student can learn is primarily related to family background. 90% of words were matched for original

English version and translated back to English version from Chinese version. The internal reliability was 0.7605. The researcher did not rearrange those different words, neither English nor Chinese, since the order did not change meanings of questions.

Special Needs Confidence Scale

Special Needs Confidence Scale (SNCS, see Appendix D) was developed by LePage, Lewis, and Casella (1995) to measure the teachers' confidence of teaching special learners. The confidence measured by this scale is a generic confidence to teach special needs students. This instrument was used to assess preservice teachers' confidence in their ability to teach exceptional students.

This confident inventory uses a 5-point Likert-type scoring system (1 = Least, 5 = Most). SNCS consists of 46 items that measure overall confidence when teaching special learners. The respondent was asked to read each statement and decide his or her confidence level. SNCS enabled each respondent to complete the scale individually in terms of his or her perceptions of the confidence level. It was easy to administer and simple to score.

Reliability

Alpha coefficients were used to test for reliability. The reliability for SNCS was determined to be r = .97. In addition, a split half reliability measure was used to check the internal consistency of the SNCS. Related questions were paired together and compared using a Pearson product-moment correlation coefficient. The internal consistency reliability was r = .82.

Validity

Construct validity for SNCS was obtained through factor analysis by using a

sample of 40 students. A Pearson product-moment correlation coefficient was used to compare scores from both scales. These scores correlated at r = .82.

Chinese Version of SNCS

In order to meet the different reading and comprehension abilities of participants, SNCS was translated into a version of Chinese by the researcher by following the same process as translating Teacher Efficacy Scale. A sample question was included as following. Original English version: I feel confident in my ability to teach students with disabilities. Translated back to English version from Chinese version: I am confident in my abilities to teach students with disabilities. 86% of words were matched for original English version and translated back to the English version from the Chinese version. The internal reliability was Alpha .09544. The researcher did not rearrange those different words, neither English nor Chinese, since the order did not change meanings of questions.

Participant Demographic Information Sheet

The Participant Demographic Information Sheet (see Appendix E) was designed to obtain information on participants' background information. Demographic information was asked from the participants.

Procedure

Three colleges were selected from the 11 teacher education schools. These colleges were located in the northern and southern parts of Taiwan. The researcher contacted college administrators, explained the nature of the research, and sought assistance and cooperation. As college administrators consented to cooperate, the

researcher made appointments with professors in special education departments to visit classrooms.

The researcher visited those classrooms with people who were going to participate in this study during the class periods provided by professors. The researcher explained the nature of the study and invited preservice teachers who were in the classroom at that time to participate in the study. The script for administrator is included in Appendix F. First the consent forms (see Appendix G) were passed out. The consent forms were collected by the researcher after participants had signed them. Then, packets of materials were passed out to participants who agreed to participate. Each packet included a Participant Demographic Information Sheet (see Appendix E), a copy of translated TES (see Appendix C), and a copy of translated SNCS (see Appendix D). The participants had been required to read through and complete all of materials in the packets, and return the whole packet to the researcher after they had finished. The time of administration for a class of participants was approximately 20-30 minutes. In order to ensure confidentiality, no name or number was coded.

The research material and information were collected by the researcher and kept in the researcher's office. The researcher was the only person who had access to all of the data collected during the study period. After the data analyses were accomplished, all of raw data and information were shredded.

Research Design

This study explored confidence and efficacy beliefs among special education preservice teachers between traditional and alternative programs in Taiwan. Preservice

teachers' perceptions of efficacy beliefs were described. Preservice teachers' scores of personal efficacy, teaching efficacy, and special needs confidence were correlated.

Differences between preservice teachers of traditional and alternative programs were investigated. Preservices teachers were grouped according to program (traditional or alternative), gender (male or female), work experience (none, non-education related, or education related), and work with children with disabilities (yes or no). Preservice teachers' perceptions of personal efficacy, teaching efficacy, and special needs confidence, as influenced by program, were determined.

Statistical Procedures

Bivariate Pearson correlations were computed to determine the relationship among variables on demographic information sheet and to determine which variable should be included in the further analysis. Moreover, bivariate Pearson correlations were computed to determine the relationship among personal efficacy, teaching efficacy, and special needs confidence scores of preservice teachers from traditional and alternative programs. Thus, the interrelationships between the programs on efficacy beliefs and confidence were determined, and the following hypotheses were tested at the significance level of .05:

1. There is no relationship among preservice teachers' perceptions of special needs confidence, personal efficacy, and teaching efficacy.
2. There is no relationship among the perceptions of special needs confidence, personal efficacy, and teaching efficacy for preservice teachers trained in traditional and alternative programs.

Differences between preservice teachers trained in traditional and alternative programs were explored by using analyses of variance (ANOVA). Three four-factor between-subjects ANOVAs were conducted to explore differences between preservice teachers trained in traditional and alternative programs. In each analysis, subjects were nested in four independent variables program (traditional and alternative), gender (male and female), work experiences (None; Yes, non-education related; and Yes, education related), and worked with children with disabilities (no and yes). The dependent variables used across the three separate ANOVAs were: (1) special needs confidence, (2) personal efficacy, and (3) teaching efficacy. Based upon this structure, the following three hypotheses were tested at the significance level of .05:

3. Program would not differentially affect preservice teachers' perceptions of special needs confidence scores.
4. Program would not differentially affect preservice teachers' perceptions of personal efficacy scores.
5. Program differentially affects preservice teachers' perceptions of teaching efficacy scores.

Summary

Subjects in this study were 107 preservice teachers trained in traditional and alternative programs in Taiwan. Subjects were recruited from 3 teacher preparation colleges located in different areas of Taiwan. Procedures for the administration of instruments and collection of data were described. Instruments used in this study included Chinese versions of TES (Kushner, 1993), SNCS (LePage, Lewis, & Casella, 1995), and Participant Demographic Information Sheet. Descriptive statistics were used to describe

perceptions of special needs confidence, personal efficacy, and teaching efficacy of the two major groups as preservice teachers trained in traditional and alternative programs. Pearson correlations were calculated to determine which variables on participant demographic information sheet should be included in the further analysis, and to determine the relationships of special needs confidence, personal efficacy, and teaching efficacy between preservice teachers trained in traditional and alternative programs. A series of four-way ANOVAs were utilized to investigate the effects of program, gender, work experience, and worked with children with disabilities on special needs confidence, personal efficacy, and teaching efficacy of preservice teachers.

CHAPTER IV

RESULTS

The purpose of this study is to compare the efficacy and the confidence of special education preservice teachers in traditional and alternative teacher education programs in Taiwan. This chapter presents descriptive statistics and the results of the statistical analyses utilized to test the hypotheses. The statistic computer program used for data analysis in this research was SPSS 9.0 (SPSS Base 9.0 Applications Guide, 1999).

Descriptive Statistics

Score means and standard deviations of special needs confidence (SNCS), personal efficacy (PE), and teaching efficacy (TE) of preservice teachers trained in traditional and alternative programs are presented in Table 2. Descriptive statistics and t-test results of variables on participant demographic information sheet by programs are presented on Table 3. T-test for variable of current work did not reach statistical significance ($t = .097$, $p = .923$). T-test for variable of child with disabilities cannot be computed because the standard deviations of both traditional and alternative programs were 0. Therefore, these two variables were not included in correlation analysis. Pearson Correlations of demographic variables that reached statistical significance are presented on Table 4. Because of the high correlations among the variables which mean that they were measuring the same factors, therefore, only the correlations among variable gender, work experience, and worked with children with disabilities were included in the further statistical analysis.

Table 2

Means and Standard Deviations of SNCS, PE, and TE of Preservice Teachers (N=107)

	SNCS		PE		TE	
Program	Mean	SD	Mean	SD	Mean	SD
Traditional (n=53)	174.038	19.980	51.717	6.888	26.321	4.159
Alternative (n=54)	139.352	30.782	63.944	6.473	33.852	3.367

SNCS = Special Needs Confidence Scale

PE = Personal Efficacy

TE = Teaching Efficacy

Table 3

Means, Standard Deviations, and t-tests by Programs for Variables on Demographic Sheet

	Traditional (n=53)		Alternative (n=54)		
Variables	Mean	SD	Mean	SD	t (p-value)
Age	1.13	.34	4.46	.77	-28.83 (.000)
Gender	1.70	.46	1.93	.26	-3.13 (.002)
Work Experience	1.62	.88	2.31	.67	-4.58 (.000)
Work in Education	1.36	.48	2.17	1.48	-3.79 (.000)
Current Work	1.51	.50	1.50	.50	.097 (.923)
Work with Disabilities	1.89	.32	1.33	.48	7.05 (.000)
Previous Degree	1.02	.14	2.09	.35	-20.75 (.000)
Marital Status	1.02	.14	1.37	.49	-5.06 (.000)
Children	1.00	.00	1.46	.86	-3.91 (.000)
Child with Disabilities	1.00	.00	1.00	.00	---

Note. Categories for variable are listed in Appendix E.

Table 4

Matrix of Correlations among Variables on Demographic Sheet

	Age	Gender	Work Expe.	Work in Edu.	Work with Disability	Previous Degree	Marital Status	Children
Age	1.000	.275** (p=.004)	.408** (p=.000)	.406** (p=.000)	-.540** (p=.000)	.859** (p=.000)	.518** (p=.000)	.437** (p=.000)
Gender		1.000	.069 (p=.480)	.130 (p=.181)	-.140 (p=.151)	.289** (p=.003)	.116 (p=.233)	.062 (p=.528)
Work Expe.			1.000	.665** (p=.000)	-.162 (p=.095)	.381** (p=.000)	.183 (p=.059)	.080 (p=.414)
Work in Edu.				1.000	-.063 (p=.521)	.362** (p=.000)	.382** (p=.000)	.233* (p=.016)
Work with Disab.					1.000	-.526** (p=.000)	-.277** (p=.004)	-.271** (p=.005)
Previous Degree						1.000	.480** (p=.000)	.408** (p=.000)
Marital Status							1.000	.728** (p=.000)
Children								1.000

** Correlation is significant at the 0.01 level (2-tailed)

* Correlation is significant at the 0.05 level (2-tailed)

Test of Research Hypotheses

Hypotheses Exploring Relationships

Hypothesis One (1)

Hypothesis 1: There is no relationship among preservice teachers' perceptions of special needs confidence, personal efficacy, and teaching efficacy.

Bivariate Pearson correlations were utilized to investigate the relationships of preservice teachers' perceptions of special needs confidence (SNCS), personal efficacy (PE), and teaching efficacy (TE) for Taiwanese preservice teachers. Table 5 presents descriptive statistics of SNCS, PE and TE. Table 6 presents the results of correlational analysis used to test the hypothesis stated above.

The intercorrelations among preservice teachers' perceptions of special needs confidence, personal efficacy, and teaching efficacy were significant. Preservice teachers' perceptions of special needs confidence was negatively and significantly correlated to their personal efficacy ($r = -.215$, $p = .026$). The common variance shared between these two dimensions for preservice teachers was 4.62% ($r^2 = .0462$). Preservice teachers' perceptions of special needs confidence was negatively and significantly correlated to their teaching efficacy ($r = -.442$, $p = .000$). The common variance shared between these two dimensions was 19.5% ($r^2 = .195$). Preservice teachers' perceptions of personal efficacy and teaching efficacy were significantly correlated ($r = .459$, $p = .000$). These two dimensions share 21.1% ($r^2 = .211$) of the common variance.

Table 5

Means and Standard Deviations of SNCS, PE, and TE for Preservice Teachers (N=107)

	Mean	SD
SNCS	156.533	31.196
PE	57.888	9.053
TE	30.122	5.335

Table 6

Correlation Matrix of SNCS, PE, and TE for Preservice Teachers (N=107)

	SNCS	PE	TE
SNCS	1.000	-.215*	-.442**
		(p=.026)	(p=.000)
PE		1.000	.459**
			(p=.000)
TE			1.000

** Correlation is significant at the 0.01 level (2-tailed)

* Correlation is significant at the 0.05 level (2-tailed)

Hypothesis Two (2)

Hypothesis 2: There is no relationship among the perceptions of special needs confidence, personal efficacy, and teaching efficacy for preservice teachers trained in traditional and alternative programs.

Separate bivariate correlations matrices were constructed to investigate the relationships of special needs confidence, personal efficacy, and teaching efficacy for preservice teachers trained in traditional and alternative programs. Descriptive statistics and correlation matrix of SNCS, PE, and TE for preservice teachers trained in traditional programs are presented in Table 7 and Table 8. Descriptive statistics and correlation matrix of SNCS, PE, and TE for preservice teachers trained in alternative program are presented in Table 9 and Table10.

A similar intercorrelation pattern among the perceptions of SNCS, PE, and TE for preservice teachers trained in traditional and alternative programs was presented. There were no significant correlations among the perceptions of SNCS, PE, and TE for preservice teachers trained in traditional programs. However, only the correlation of SNCS and PE for preservice teachers trained in alternative programs reached statistical significance ($r = .3357$, $p = .013$), with the common variance of 11.3% ($r^2 = .113$). There were no significant correlations between SNCS and TE, as well as none between PE and TE for preservice teachers trained in alternative programs.

Table 7

Means and Standard Deviations of SNCS, PE, and TE for Preservice Teachers Trained in Traditional Programs (n=53)

	Mean	SD
SNCS	174.038	19.980
PE	51.717	6.888
TE	26.321	4.159

Table 8

Correlation Matrix of SNCS, PE, and TE for Preservice Teachers Trained in Traditional Programs (n=53)

	SNCS	PE	TE
SNCS	1.000	.1896	-.0853
		(p=.174)	(p=.544)
PE		1.000	-.0209
			(p=.882)
TE			1.000

Table 9

Means and Standard Deviations of SNCS, PE, and TE for Preservice Teachers Trained in Alternative Programs (n=54)

	Mean	SD
SNCS	139.352	30.782
PE	63.944	6.473
TE	33.852	3.367

Table 10

Correlation Matrix of SNCS, PE, and TE for Preservice Teachers Trained in Alternative Programs (n=54)

	SNCS	PE	TE
SNCS	1.000	.3357*	-.0801
		(p=.013)	(p=.565)
PE		1.000	-.0705
			(p=.612)
TE			1.000

* Correlation is significant at the 0.05 level (2-tailed).

Hypotheses Exploring Differences

Hypothesis Three (3)

Hypothesis 3: Program membership would not differentially affect preservice teachers' perceptions of special needs confidence.

A four-way analysis of variance was conducted in which special needs confidence was the dependent variable and program (traditional, alternative), gender (male, female), work experience (none; yes, not-education related; yes, education related), and worked with children with disabilities (yes, no) were independent variables. The summary table for this analysis is presented in Table 11. As noted in the table, only main effects and two-way interactions were computed. Due to empty cells or a singular matrix, higher order interactions were suppressed.

The main effect of program on preservice teachers' perceptions of special needs confidence was statistical significant [F (1, 92) = 6.892, p = .010]. Therefore, the hypothesis 3 was rejected. Moreover, the main effect of worked with children with disabilities also reached statistical significance [F (1, 92) = 9.391, p = .003]. Special needs confidence of preservice teachers trained in alternative programs (M = 139.352, SD = 30.782) was lower than of preservice teachers trained in traditional programs (M = 174.038, SD = 19.980). Preservice teachers who had experience of working with children with disabilities perceived higher special needs confidence (M = 172.031, SD = 21.000) than others who had no experience of working with children with disabilities (M = 132.458, SD = 29.284). Preservice teachers trained in traditional programs had more experiences of working with children with disabilities (M = 1.887, SD = .320) than those trained in alternative programs (M = 1.333, SD = .476). On the other hand, preservice

teachers trained in traditional programs had less worked experience (M = 1.623, SD = .882) than those trained in alternative programs (M = 2.315, SD = .668). There were more male preservice teachers in traditional program (N=16) than were in alternative programs (N=4).

Furthermore, the two-way interaction effect, gender and worked experience reached a level of significance [F (2, 92) = 3.988, p = .022]. The marginal means for interactions of gender and work experience are presented in Table 12. The perception of special needs confidence of male preservice teachers with no work experience was highest than in other subgroups. Male preservice teachers with non-educational related work experience had the lowest mean of special needs confidence than did other subgroups. Figure 1 presents the interaction effect of gender and work experience of all subgroups.

Table 11

Summary Table of Analysis of Variance of Preservice Teachers' Perceptions of Special Needs Confidence (N=107)

SOURCE	SS	DF	MS	F	P
PROGRAM	3747.608	1	3747.608	6.892	.010
GENDER	930.068	1	930.068	1.710	.194
WORKEXP	1561.734	2	780.867	1.436	.243
WORKDIS	5106.300	1	5106.300	9.391	.003
PRO*GEND	607.307	1	607.307	1.117	.293
PRO*WORKEXP	17.808	2	8.904	.016	.984
PRO*WORKDIS	104.544	1	104.544	.192	.662
GEND*WORKEXP	4337.430	2	2168.715	3.988	.022
GEND*WORKDIS	200.717	1	200.717	.369	.545
WORKEXP* WORKDIS	104.636	2	52.318	.096	.908
RESIDUAL	50025.136	92	543.751		
TOTAL	103158.64	106	973.195		

Note. PRO = Program. GEND = Gender. WORKEXP = Work Experience.

WORKDIS = Worked with Children with Disabilities.

Due to empty cells or a singular matrix, higher order interactions were suppressed.

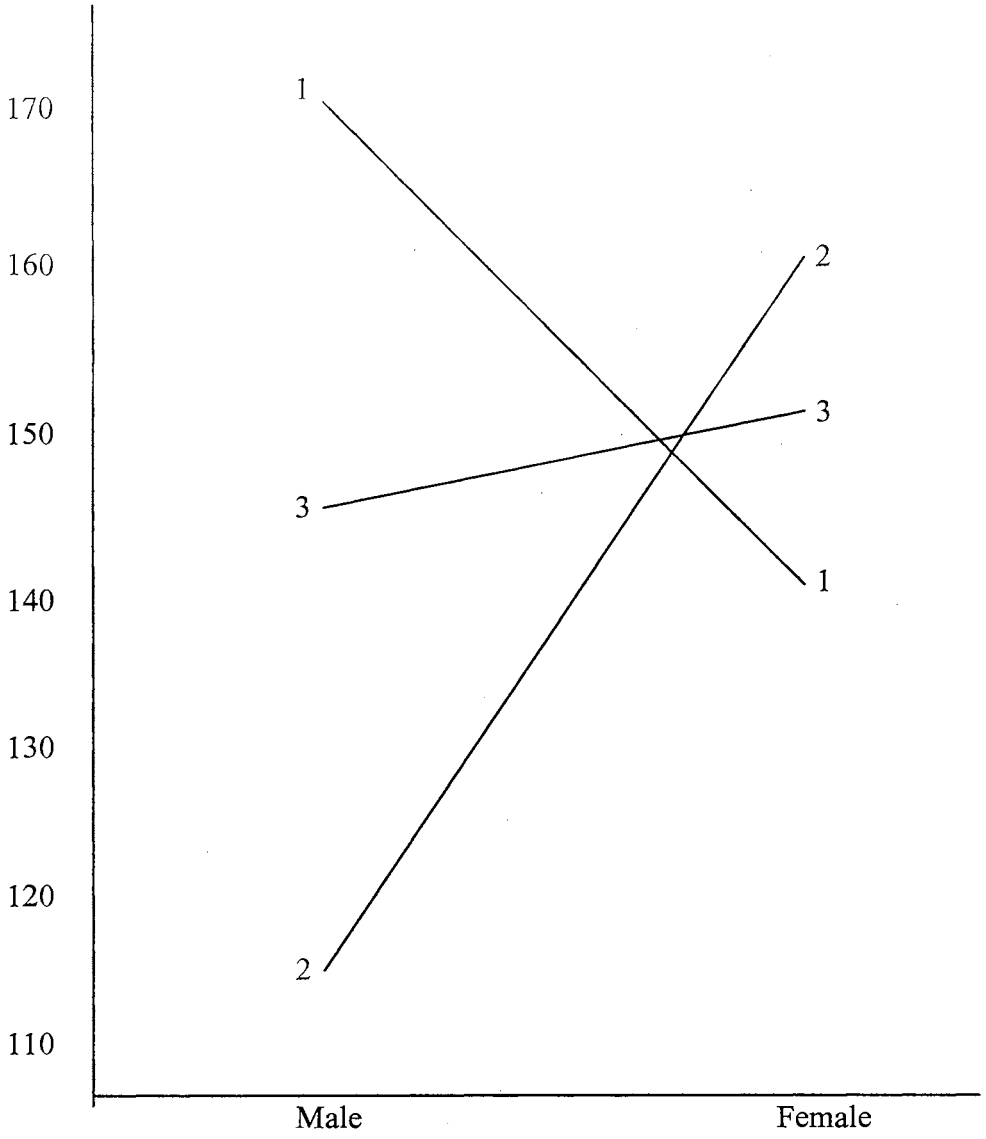
Table 12

Marginal Means of Interaction of Gender and Work Experience

Gender	Work Experience	Mean
Male	None	174.125
	Yes, non-educational related	113.750
	Yes, educational related	147.250
Female	None	142.920
	Yes, non-educational related	160.317
	Yes, educational related	154.231

Figure 1

Interaction Means of Perceptions of Special Needs Confidence by Gender and Work Experience



Note. 1 = no work experience

2 = non-educational related work experience

3 = educational related work experience

Hypothesis Four (4)

Hypothesis 4: Program would not differentially affect preservice teachers' perceptions of personal efficacy.

A four-way analysis of variance was conducted (see Table 13) in which personal efficacy was the dependent variable and program (traditional, alternative), gender (male, female), work experience (none; yes, not-education related; yes, education related), and worked with children with disabilities (yes, no) were independent variables.

The main effect of program reached a level of significance [F (1, 92) = 10.852, p = .001]. Therefore, the hypothesis 4 was rejected. Furthermore, the main effects of gender [F (1, 92) = 10.571, p = .002], and work experience [F (2, 92) = 35.477, p = .000] reached statistical significance too. Preservice teachers trained in traditional programs had lower personal efficacy (M = 51.717, SD = 6.888) than did others trained in alternative programs (M = 63.944, SD = 6.473). Male preservice teachers had a lower level of personal efficacy (M = 53.400, SD = 8.623) than female preservice teachers (M = 58.920, SD = 8.878). Preservice teachers who had work experiences related to education had the highest average personal efficacy score (M = 64.973, SD = 5.475) of those who had work experiences not related to education (M = 60.900, SD = 6.651) or having had no work experience (M = 49.075, SD = 5.284).

Since the main effect of work experience that contained three levels had been found, a post-hoc test, Tukey HSD test, was computed in order to examine which level was significant. Table 14 presented the results of post-hoc analysis. Mean differences among three levels (none; yes, non-educational related; and yes, educational related) of work experience were all significant at the $p < .01$ level.

The two-way interaction effect, gender and work experience, was the only interaction effect that reached statistical significance [F (2, 92) = 8.243, p = .001]. The marginal means of interaction effect of gender and work experience are presented in Table 15 and Figure 2. The perception of personal efficacy of female preservice teachers with educational related work experience was higher than were other subgroups. Male preservice teachers with non-educational related work experience had the lowest personal efficacy scores compared to other subgroups.

Table 13

Summary Table of Analysis of Variance of Preservice Teachers' Perceptions of Personal Efficacy (N=107)

SOURCE	SS	DF	MS	F	P
PROGRAM	208.498	1	208.498	10.852	.001
GENDER	203.098	1	203.098	10.571	.002
WORKEXP	1363.265	2	681.632	35.477	.000
WORKDIS	4.816	1	4.816	.251	.618
PRO*GEND	7.130E-02	1	7.130E-02	.004	.952
PRO*WORKEXP	103.421	2	51.710	2.691	.073
PRO*WORKDIS	.145	1	.145	.008	.931
GEND*WORKEXP	316.755	2	158.378	8.243	.001
GEND*WORKDIS	8.802	1	8.802	.458	.500
WORKEXP* WORKDIS	59.279	2	29.640	1.543	.219
RESIDUAL	1767.644	92	19.214		
TOTAL	8686.654	106	81.950		

Note. PRO = Program. GEND = Gender. WORKEXP = Work Experience.

WORKDIS = Worked with Children with Disabilities.

Due to empty cells or a singular matrix, higher order interactions were suppressed.

Table 14

Summary Table of Post-Hoc Test (Tukey HSD Test) on Variable of Work Experience for Preservice Teachers' Perceptions of Personal Teaching

COMPARISON	MEAN DIFFERENCE	P
None VS. Non-Educational Related	-11.825	.000
None VS. Educational Related	-15.898	.000
Non-Educational Related VS. Educational Related	-.4073	.001

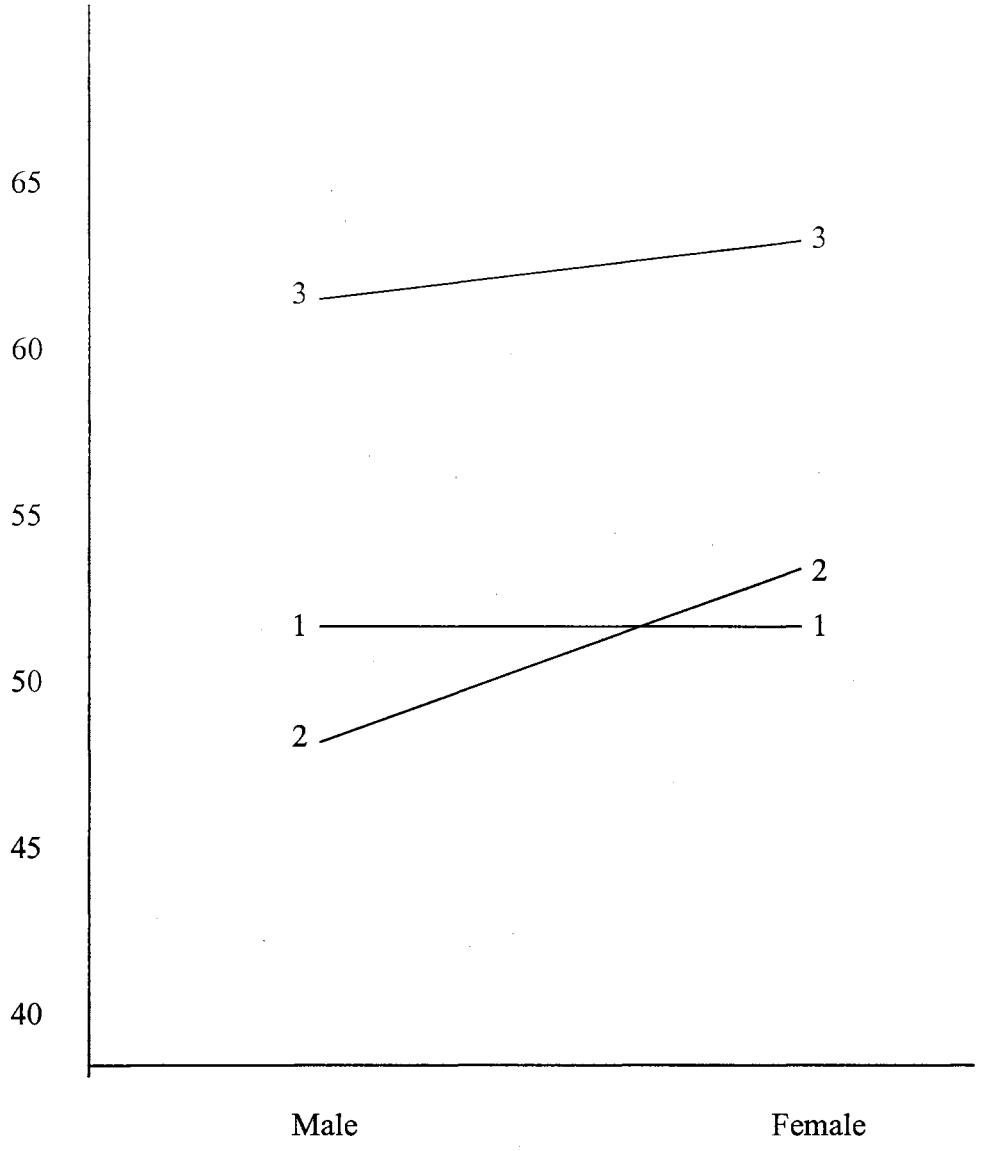
Table 15

Marginal Means of Interaction of Gender and Work Experience

Gender	Work Experience	Mean
Male	None	51.125
	Yes, non-educational related	47.000
	Yes, educational related	62.750
Female	None	51.121
	Yes, non-educational related	52.079
	Yes, educational related	63.810

Figure 2

Interaction Means of Perceptions of Personal Efficacy by Gender and Work Experience



Note. 1 = no work experience

2 = non-educational related work experience

3 = educational related work experience

Hypothesis Five (5)

Hypothesis 5: Program would not differentially affect preservice teachers' perceptions of teaching efficacy.

A four-way analysis of variance was conducted in which teaching efficacy was the dependent variable and program (traditional, alternative), gender (male, female), work experience (none; yes, not-education related; yes, education related), and worked with children with disabilities (yes, no) were independent variables. The summary table for this analysis is presented in Table 16.

The main effect of the program was the only variable that reached statistical significance [F (1, 92) = 24.760, p = .000]. The hypothesis 5 was rejected. No interaction effect was statistically significant. Preservice teachers trained in traditional programs perceived lower teaching efficacy (M = 26.321, SD = 4.159) than did those trained in alternative programs (M = 33.852, SD = 3.367).

Table 16

Summary Table of Analysis of Variance of Preservice Teachers' Perceptions of Teaching Efficacy (N=107)

SOURCE	SS	DF	MS	F	P
PROGRAM	350.581	1	350.581	24.760	.000
GENDER	11.878	1	11.878	.839	.362
WORKEXP	35.118	2	17.559	1.240	.294
WORKDIS	2.648	1	2.648	.187	.666
PRO*GEND	24.892	1	24.892	1.758	.188
PRO*WORKEXP	12.185	2	6.092	.430	.652
PRO*WORKDIS	.749	1	.749	.053	.819
GEND*WORKEXP	75.746	2	37.873	2.675	.074
GEND*WORKDIS	1.393	1	1.393	.098	.754
WORKEXP* WORKDIS	12.621	2	6.310	.446	.642
RESIDUAL	1302.650	92	14.159		
TOTAL	3017.421	106	28.466		

Note. PRO = Program. GEND = Gender. WORKEXP = Work Experience.

WORKDIS = Worked with Children with Disabilities.

Due to empty cells or a singular matrix, higher order interactions were suppressed.

Summary

Means and standard deviations of special needs confidence, personal efficacy, and teaching efficacy for preservice teachers trained in traditional and alternative programs were described. Significant differences in perceptions of special needs of confidence, personal efficacy, and teaching efficacy were found between preservice teachers trained in the two different programs. Based on program membership, preservice teachers trained in traditional programs had higher special needs confidence, but lower personal and teaching efficacies, than teachers trained in alternative programs. Based on gender, male preservice teachers perceived lower level of personal efficacy than did female preservice teachers. Based on work experience, preservice teachers who had work experiences related to educational field had highest average personal efficacy scores of did those who had work experiences not related to education, or no work experience. Based on worked with children with disabilities, preservice teachers who had experience of working with children with disabilities perceived higher special needs confidence than others who had no experience of working with children with disabilities.

In the hypotheses exploring relationship, significant correlations among special needs confidence, personal efficacy, and teaching efficacy of preservice teachers were found. SNCS and PE were negatively correlated. SNCS and TE were also negatively correlated. However, PE and TE were positively correlated, with a similar intercorrelation pattern among the perceptions of SNCS, PE, and TE for preservice teachers trained in traditional and alternative programs. There were no significant correlations among the perceptions of SNCS, PE, and TE for preservice teachers trained in traditional programs. However, only the correlation of SNCS and PE for preservice

teachers trained in alternative programs reached statistical significance. There were no significant correlations between SNCS and TE, as well as none between PE and TE for preservice teachers trained in alternative programs.

In the hypotheses exploring differences, the main effect of the program had significant impact on preservice teachers' perceptions of SNCS, PE, and TE. Preservice teachers who were trained in traditional programs, and who had worked with children with disabilities perceive higher level of special needs confidence than those who did not have similar training and experience do. Female preservice teachers, who were trained in alternative programs and who had work experiences related to educational field, had higher levels of personal efficacy. Preservice teachers trained in traditional programs had lower teaching efficacy than preservice teachers trained in alternative program. Furthermore, gender and work experience had an interaction effect on SNCS and PE of preservice teachers.

CHAPTER V

SUMMARY, DISCUSSION, LIMITATIONS, AND RECOMMENDATIONS

The purpose of this study was to compare the confidence and efficacy of special education preservice teachers in traditional and alternative teacher education programs in Taiwan. This chapter summarizes the findings, discusses conclusions based on the findings, reviews limitations of the study, and offers recommendations for practice, theory and further research.

Subjects in this study consisted of 107 preservice teachers trained in traditional (N = 53) and alternative (N = 54) programs in Taiwan. The subjects were selected by using purposive sampling. Three universities/colleges were selected, according to availability of programs, from the teacher colleges in the north and south parts of Taiwan.

Special Needs Confidence Scale (SNCS) (Lepage, Lewis, & Casella, 1995), Teacher Efficacy Scale (TES) (Kushner, 1993), and Participant Demographic Information Sheet were the instruments used to assess preservice teachers' perceptions of confidence and efficacy beliefs. TES contains two major factors for measuring two dimensions of teacher efficacy, personal efficacy (PE) and teaching efficacy (TE). Both SNCS and TES were translated into Chinese versions. Validity of both versions of translated SNCS and TES was established through cooperation of the researcher and professionals during the process of translation. Data collected provided significant information for data analyses.

The data consisted of scores of SNCS, PE, and TE of preservice teachers trained in traditional and alternative programs. Variables on participant demographic sheet had

been analyzed. Four variables, program, gender, work experience, and worked with children with disabilities, were included in the final data analysis. The statistic program SPSS 9.0 was utilized in the procedures of data analysis.

Bivariate Pearson correlations were used to investigate the relationships of preservice teachers' perceptions among special needs confidence, personal efficacy, and teaching efficacy. A series of four-way ANOVAs were utilized to explore differences of special needs confidence, personal efficacy, and teaching efficacy between preservice teachers trained in traditional and alternative programs.

Summary of Findings

Descriptive statistics revealed that significant differences in perceptual special needs confidence, personal efficacy, and teaching efficacy existed between preservice teachers trained in traditional and alternative programs. Preservice teachers trained in traditional programs presented higher scores of SNCS, but lower scores of PE and TE. Preservice teachers' perceptions of special needs confidence were negatively and significantly correlated to their personal efficacy and their teaching efficacy. Preservice teachers' perceptions of PE and TE were significantly correlated. A similar intercorrelation pattern was presented among the perceptions of SNCS, PE, and TE for preservice teachers trained in traditional and alternative programs. There were no significant correlations among the perceptions of SNCS, PE, and TE for preservice teachers trained in traditional programs. However, only the correlation of SNCS and PE for preservice teachers trained in alternative programs reached statistical significance. There were no significant correlations between SNCS and TE, or between PE and TE for preservice teachers trained in alternative programs.

Since all of the main effects of program memberships tested in ANOVAs were significant, the hypotheses were rejected. Furthermore, the main effect of worked with children with disabilities significantly affected preservice teachers' perception of special needs confidence. Both the main effects of gender and work experience significantly affected preservice teachers' perception of personal efficacy. The two-way interaction effect of gender and worked experience significantly affected both preservice teachers' perception of special needs confidence and personal efficacy. Due to empty cells or a singular matrix, higher order interactions having suppressed during data analysis, there were no three-way or four-way interactions presented. In short, preservice teachers trained in traditional programs had a higher perception of special needs confidence but lower personal efficacy and teaching efficacy than preservice teachers trained in alternative programs. The perception of personal efficacy of male preservice teachers was lower than was for female preservice teachers. The perceptions of personal efficacy of preservice teachers with work experience related to the education field were higher than were for preservice teachers with no work experience or with work experience not related to the education field.

Discussion

Based on the literature review and finding in this study, discussions on perceptions of special needs confidence, personal efficacy, and teaching efficacy between special education preservice teachers trained in traditional and alternative programs in Taiwan were held.

Relationships among Study Variables of Special Needs Confidence, Personal Efficacy, and Teaching Efficacy were Examined

As suggested by Bolton (1996), self-efficacy can be measured by determining the subjects' perceived confidence and experience on specific tasks or abilities. One way to examine teaching efficacy is to examine confidence in teaching. Self-efficacy is related to a special context of situation (Bandura, 1978). These statements imply that efficacy belief correlates with confidence levels and experiences.

The perceptions of special needs confidence, personal efficacy, and teaching efficacy of preservice teachers trained in special education programs were significantly correlated in this study. Personal efficacy and teaching efficacy presented a positive relationship. However, special needs confidence presented negative relationships with personal efficacy and with teaching efficacy. Special needs confidence scale was designed to measure the teachers' confidence of teaching special learners, which was measuring the teachers' confidence in a situation of special context. The revised version of teacher efficacy scale was designed to measure preservice teachers' personal efficacy and teaching efficacy, which were represented preservice teachers' belief of their personal skills and abilities to influence student learning and more general beliefs about the relationship between teaching and learning.

A preservice teacher's sense of efficacy may vary according to the specific teaching and learning experiences as well as contexts one has been exposed to at any particular time during the undergraduate program (Ashton & Webb, 1986). Preservice teachers trained in special education programs were prepared to teach students with special needs, which they had more experiences working with special needs students and who also took more special education courses. According to Bandura (1997), an individual with a high sense of efficacy in one activity domain does not necessarily mean

high self-efficacy in other domains. These statements of efficacy theory by Ashton with Webb (1986) and Bandura (1997), might explain the occurrence of which subjects' special needs confidence was negatively correlated with their personal efficacy and teaching efficacy.

The finding that personal efficacy and teaching efficacy positively correlated supports Hoy and Woolfolk's study finding (1993) that personal efficacy (as personal teaching efficacy in their study) and teaching efficacy (as general teaching efficacy) were correlated positively. However, results of studies (Ashton & Webb, 1982; Gibson & Dembo, 1984; Hoy & Woolfolk, 1990, 1993; Woolfolk & Hoy, 1990) have consistently found that there are two dimensions of teacher efficacy and that these two dimensions are independent. Some teachers may believe that teaching is a potentially powerful factor in students' learning, but they may or may not lack the personal ability to affect their own students. Still yet other teachers may believe that teaching in general has little impact on students and that they are or are not exceptions to this rule. Other patterns are possible as well (Guskey & Passaro, 1994; Hoy & Woolfolk, 1990).

There was no significant finding of correlation among special needs confidence, personal efficacy and teaching efficacy for preservice teachers trained in traditional programs. However, special needs confidence and personal efficacy for preservice teachers trained in alternative programs presented a significantly positive correlation. These findings support that personal efficacy and teaching efficacy can operate independently (Ashton & Webb, 1982; Hoy & Woolfolk, 1990, 1993) and efficacy belief correlates with confidence level in a specific and active domain.

Program Membership Differences

The effect of program membership on preservice teachers' perceptions of special needs confidence, personal efficacy, and teaching efficacy was significant. Preservice teachers trained in traditional programs had higher special needs confidence than preservice teachers trained in alternative programs. In contrast, preservice teachers trained in traditional programs had lower personal efficacy and teaching efficacy than preservice teachers trained in alternative programs. The results of this study support findings of other research of efficacy belief.

Self-efficacy can be measured by determining the subjects' perceived confidence and experience in specific tasks or abilities (Bolton, 1996). Self-efficacy is related to a situation of special context (Bandura, 1978). Preservice teachers trained in traditional programs had higher special needs confidence than did preservice teachers trained in alternative programs. The occurrence may be explained by which preservice teachers trained in traditional programs had more experiences of working with children with disabilities and took more special education courses (approximate 70 credit hours) than did preservice teachers trained in alternative programs (approximate 30 credit hours).

Preservice teachers trained in alternative programs had higher personal efficacy and teaching efficacy than did preservice teachers trained in traditional programs. Recall that personal efficacy represents the teacher's belief that he or she has the personal skills and abilities to influence student learning. Preservice teachers trained in traditional programs had lower personal efficacy, perhaps because they had less working experiences in education field, even though they had more experiences in working with children with disabilities than their counter group. However, the findings of Weinstein's

study (1988) suggested that students who are about to begin their student teaching might have an unrealistic sense of efficacy, especially personal efficacy, and they are more likely to have unrealistic optimism about dealing with the problems of teaching in general and efficacy in particular. This may support why special education preservice teachers trained in alternative programs in this study were more competent of teaching in personal efficacy, since they had less work experience with children with disabilities than did their counter group, even though they had more work experience in the educational field.

Teaching efficacy represents more general beliefs about the relationship between teaching and learning and is characterized by the notion that a teacher's ability to bring about change is limited by factors external to the teacher. Since preservice teachers trained in alternative programs had more working experience in the education field and they had higher previous degrees (beyond bachelor's degree) as well, they were more competent in their teaching efficacy. As proposed by Ashton and Webb (1986), a preservice teacher's sense of efficacy may vary according to the specific teaching and learning experiences as well as contexts one has been exposed to at any particular time during the program. However, the findings of this study are in contrast with the study findings by Guyton, Fox and Sisk (1991). Their study found no significant differences in efficacy for first year teachers prepared by alternative (fifth-year) certification programs and traditional programs, as measured by the Teacher Efficacy Scale.

Personal efficacy and teaching efficacy can operate independently (Ashton & Webb, 1982; Hoy & Woolfolk, 1990, 1993) and personal efficacy is clearly different from teaching efficacy; moreover, factors that nurture personal efficacy seem likely to have limited effects on teaching efficacy and vice versa (Hoy & Woolfolk, 1993).

Furthermore, Hoy and Woolfolk (1993) proposed that characteristics that explained personal efficacy were different from the ones that explained teaching efficacy, and that often variables were related to personal and teaching efficacy in opposite ways. These research results do not support the findings of this study in which preservice teachers trained in traditional programs had lower personal efficacy and lower teaching efficacy as well than did preservice teachers trained in alternative programs. These findings are in contrast with the suggestion by Hoy and Woolfolk (1993). They suggested that teaching experience was positively related to personal efficacy and negatively related to teaching efficacy.

The occurrence of the results in the present study may be explained by the nature of the program. The alternative program for special education teacher preparation in Taiwan is prepared for people who at least have a bachelor's degree and pass a program entrance examination. Naturally, preservice teachers trained in alternative programs had a higher educational level and more working experience either in the educational field or non-educational field. In contrast, preservice teachers trained in traditional programs had a lower educational level and less working experience. In the study of Hoy and Woolfolk (1993), it was proposed that the educational level was the only personal variable of the study that uniquely predicted personal efficacy. As preservice teachers had more experience in preparing for their own teaching, their perceptions that they can make a difference personally would increase. Therefore, preservice teachers trained in alternative education had higher personal efficacy and teaching efficacy. However, they had lower special needs confidence since they had less experience of working with children with disabilities than preservice teachers trained in traditional program.

Differences between Special Education Preservice Teachers on Other Factors

There were three more main effects that had influenced preservice teachers' special needs confidence and personal efficacy found in this study, beside the main effect of program membership. Preservice teachers who had experience of working with children with disabilities perceived higher special needs confidence than others who had no experience of working with children with disabilities. Female preservice teachers had a higher level of personal efficacy than did male preservice teachers. Moreover, preservice teachers with work experiences related to the education field had the highest average personal efficacy than those with work experience not related to the education field, and others without work experience. Furthermore, two two-way interactions of gender and work experience had been presented in special needs confidence and personal efficacy.

The relationship between teaching experience and personal efficacy has been found in Hoy and Woolfolk's study (1993). Teaching experience was positively related to personal efficacy and negatively related to teaching efficacy (Hoy & Woolfolk, 1993). Preservice teachers became significantly more confident in their abilities to get through to difficult students, when their sense of personal teaching efficacy became significantly greater as a result of teaching experiences (Hoy & Woolfolk, 1990). Similar findings had been found in the present study. Preservice teachers who had experience working with children with disabilities were significantly competent on meeting the special needs of students. This may be explained by other research findings as well. The subjects' perceived confidence is related to their experience on specific tasks or abilities (Bolton, 1996) and their self-efficacy is related to a special context of situation (Bandura, 1978). A

preservice teacher's sense of efficacy may vary according to the specific teaching and learning experience as well as contexts to which one has been exposed to at any particular time during the program (Ashton & Webb, 1986). These same evidences support another finding of the present study as well in which preservice teachers with work experiences in the education field were found to have the highest personal efficacy. In contrast, the factors of work experience with children with disabilities and work experience in the education field did not significantly impact preservice teachers' perception of teaching efficacy. This finding supported the theory of which personal efficacy and teaching efficacy can operate independently (Ashton & Webb, 1982; Hoy & Woolfolk, 1990, 1993) and of which personal efficacy is clearly different from teaching efficacy (Hoy & Woolfolk, 1993). Moreover, factors that nurture personal efficacy seem likely to have limited effects on teaching efficacy and vice versa (Hoy & Woolfolk, 1993).

Gender difference had been found as a factor that influenced preservice teachers' perception of personal efficacy in the present study. Female preservice teachers had higher personal efficacy than did male preservice teachers. This finding confirmed the results of other research. A strong gender effect on teaching efficacy had been revealed in the study of Evans and Tribble (1986). They suggested that gender difference in teacher efficacy favored females in their study, which was consistent with analyses of attributions for sex-typed tasks (Rosenfeld & Stephan, 1978). Moreover, study results concluded by Cole (1995) indicated that female student teachers had higher efficacy scale, as measured by Teacher Efficacy Scale (Gibson & Dembo, 1984), than did male student teachers.

Two two-way interactions of gender and work experience have been revealed in

the present study. Female preservice teachers with work experience in education related field had highest perception of personal teaching. This finding confirmed the results of other studies. Female preservice teachers tended to have higher efficacy (Evans & Tribble, 1986; Cole, 1995), and teaching experience was positively related to personal efficacy (Hoy & Woolfolk, 1993).

Male preservice teachers without work experience had highest perception of special needs confidence than did other subgroups. No particular theory and research have been found to support this finding. However, in contrast to the findings that female teachers had a higher sense of efficacy than did male teachers (Cavers, 1988; Frankin, 1989; Greenwood, Olejnik, & Parkay, 1990), Showers (1980) found no significant difference in teacher efficacy based on gender effect. Furthermore, several self-efficacy studies conducted in Taiwan had found that there was no gender difference effect on teacher efficacy (Hsu, 1998; Mao, 1995; Shieh, 1995; Sun, 1995). This occurrence may be explained by the culture differences. Traditionally, teaching was a male's job in Chinese culture for thousands of years, even though there were more and more female teachers in the present century. Still, male teachers have their particular position and advantage in education field in Taiwan. In the present study, a majority of male preservice teachers without working experience were located in traditional programs. Not only had these male preservice teachers passed a competitive national university entrance examination but also a university entrance interview. Usually these preservice teachers had high confidence in themselves because of their high academic performance. As Weinstein (1988) suggested that students who are about to begin their student teaching might have an unrealistic sense of efficacy, and they are more likely to have unrealistic

optimism about dealing with the problems of teaching in general and efficacy in particular. Collectively, these discussions may provide some evidences for the finding of which male preservice teachers without working experience had highest special needs confidence than did other subgroups.

Limitations of the Research

It must be remembered that while the subjects of preservice teachers were recruited from widely differing geographic locations of teacher education colleges in Taiwan, this represents but a limited sampling of the overall population of special education preservice teachers in that country. Since preservice teachers entered universities and programs according to their scores of university entrance examinations, academic performance might impact their confidence and self-efficacy beliefs. There was not much information revealed how academic performance influence students' confidence and self-efficacy beliefs in this study. Moreover, the researcher did not find studies in particular that studied the relationship between students' confidence levels and self-efficacy beliefs and Taiwan's educational system. However, the researcher needed to assume that there was no significant difference on preservice teachers' efficacy beliefs when they entered special education teacher preparation programs.

One of the limitations of this research is the lack of specific information on subjects' working experiences and experiences of working with children with disabilities, even though subjects had answered these two questions: 1. Do you have any working experience? (None; Yes, non-educational related; Yes, educational related). 2. Have you ever worked with children with disabilities? (No, Yes). According to the literature review, teaching experiences would influence preservice teachers' efficacy beliefs either

positively or negatively. The researcher only could assume that the working experiences of subjects were general types of experiences.

This study compared the differences between preservice teachers trained in traditional programs and alternative programs, and explored relationships of special needs confidence, personal efficacy, and teaching efficacy among preservice teachers. Thus, any speculations about intraprogram difference are unavailable.

Although the research tried to maintain the accuracy and validity of the translation versions of TES and SNCS through cooperating with many professionals, it was unavoidable to have paraphrase differences between the translations and the original because of different language systems.

Implications and Recommendations

Implications for Theory

The findings of the present study have been supported by the efficacy theory. The finding that special needs confidence and teacher efficacy belief of subjects were negatively correlated, was supported by the evidence that efficacy sense of preservice teachers may vary according to the specific teaching and learning experience of individuals (Ashton & Webb, 1986), and that the efficacy sense rests in a specific domain (Bandura, 1997). There are two dimensions of teacher efficacy and these two dimensions are independent (Ashton & Webb, 1982; Gibson & Dembo, 1984; Hoy & Woolfolk, 1990, 1993; Woolfolk & Hoy, 1990). The finding that personal efficacy and teaching efficacy positively correlated confirms the study result of Hoy and Woolfolk (1993). However, there is no information revealed in the present study that identifies which

specific factors that nurture personal efficacy have limited effects on teaching efficacy and vice versa (Hoy & Woolfolk, 1993).

In a similar finding, teaching experience was positively related to personal efficacy, had been found in the present study and in the study of Hoy and Woolfolk (1993). Furthermore, the perceived confidence of individuals is related to their experience on specific tasks or abilities (Bolton, 1996) and their self-efficacy is related to a special context of situation (Bandura, 1978). These findings of Bandura (1978), Bolton (1996), and Hoy with Woolfolk (1993) support the conclusion of this study that preservice teachers with experience working with children with disabilities were significantly competent on meeting the special needs of students.

Gender difference was found as a factor that influenced the perceptions of personal efficacy of preservice teachers in the present study. Female preservice teachers had higher personal efficacy than did male preservice teachers. This finding confirmed that gender difference in teacher efficacy favored female teachers (Evans & Tribble (1986) and that female student teachers had higher efficacy than did male student teachers (Cole, 1995).

Implications for Practice of Special Education Teacher Preparation Programs in Taiwan

Based on the literature review and results of this research, educators of special education teacher preparation programs in Taiwan can apply the results of this study from different perspectives. The results and literature indicated that teaching experiences are positively related with personal efficacy, and that positive teaching experience can increase preservice teachers' perceptions of personal efficacy. Therefore, more positive teaching experiences should be offered to special education preservice teachers trained in

traditional programs in order to help those preservice teachers to develop their personal efficacy.

The experiences of working with children with disabilities are positively correlated with preservice teachers' perceptions of special needs confidence. Therefore, more positive experiences of teaching students with special needs should be provided and more special education courses should be required for special education preservice teachers in alternative programs, including emphases in areas of mental retardation and learning in order to develop their special needs confidence.

Recommendations for Future Research

Since there is little information exploring the relationship among the elements of confidence, efficacy belief of preservice teachers, and in the educational system in Taiwan, future research on this topic is necessary for gaining an understanding of the teacher efficacy of preservice teachers in that country. Some further studies suggested are as follows.

The results of the present research have agreed with the theory of efficacy belief and confirmed the findings of related studies of efficacy belief, which implies that the theory of efficacy belief can be applied without a culture boundary. However, the factor of culture differences impacts the role of gender in a society, and the factor of gender differences influences the efficacy belief and confidence of preservice teachers. As showed in this study, male preservice teachers without work experience had highest perceptions of special needs confidence than did other subgroups. There is a lack of information supporting the findings of this study. Therefore, further research on the

findings is needed in order to gain an understanding of the relationship between factors of culture and gender differences.

In the present study, the special needs confidence and efficacy belief of in-service teachers trained in special education programs were examined. Studies with preservice and in-service teachers trained in special education program in the United States and in other countries will profit from examining closely the change of special needs confidence, personal efficacy, and teaching efficacy as they expand their teaching orientations and their experiences.

Since the present study only examined the preservice teachers at a certain stage (after finishing all course work and before student teaching) there is no information to reveal how efficacy belief and confidence of preservice teachers changed through the special education programs. Therefore, future studies for preservice special education teachers in different program stages will explore how efficacy belief and confidence of preservice special education teachers changed through the program. Furthermore, studies before and after student teaching will provide information on how student teaching experience impacts confidence and efficacy belief of preservice special education teachers.

Conclusion

This research examined the relationships between special needs confidence, personal efficacy, and teaching efficacy of preservice special education teachers trained in traditional and alternative programs in Taiwan, and revealed the differences of program membership on special needs confidence, personal efficacy, and teaching efficacy. The variables of gender, work experience, and work experience with children with disabilities were explored as well. Preservice teachers trained in traditional programs

presented higher special needs confidence but lower personal efficacy and teaching efficacy compared to preservice teachers trained in alternative programs. Female preservice teachers had higher personal efficacy than did male preservice teachers. Female preservice teachers with work experience in the education related field had highest perceptions of personal efficacy than did other subgroups. However, male preservice teachers without work experience had highest perception of special needs confidence than did other subgroups.

The results of the present research supported the findings of previous studies on efficacy beliefs. However, there is a lack of information on the findings of why male preservice teachers without work experience had highest perceptions of special needs confidence than did other subgroups. This unexplained factor might be due to cultural differences and the nature of the program. Further research on this finding is necessary in order to gain understanding variables of gender difference. Implications for theory, practice and recommendations for future research are included in this study as well. Future research based on the recommendations of this study will help researchers to have a better understanding on the perceptions of confidence and efficacy beliefs of preservice special education teachers.

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APPENDIXES

APPENDIX A

SPECIAL EDUCATION COURSE LIST

FOR TRADITIONAL PROGRAM

Required Courses for Special Education Program

Course Title	Credit Hours
* Introduction to Special Education	3
* Introduction to Psychology	3
*Developmental Psychology	3
*Techniques of Behavioral Modification	2
*Psychological & Educational Statistics	2
*Curriculum Development in Special Education	2
*Educational Assessment for Exceptional Children	3
*Counseling & Consultant for Exceptional Children	2
*Study of the Mentally Retarded	2
* Life Skill Training	2
*Occupational Training for Mentally Retarded	2
*Materials & Methods of Teaching Mentally handicapped Students	4
*Practicum in Teaching the Mentally Handicapped Students	4
Total	34

Required Courses for Emphasizing in Learning Disabilities

Course Title	Credit Hours
* Introduction to Learning Disabilities	2
* Resource Program Planning	2
* Teaching Strategies for Learning Disabilities	2
* Teaching Materials & Methods for the Learning Disabilities	4
* Practicum in Teaching Students with Learning Disabilities	2
Total	12

Required Courses for Emphasizing in Giftedness

Course Title	Credit Hours
* Introduction to Giftedness	2
* Counseling for Gifted & Talented Students	2
* Teaching of Creative Thinking	2
* Study of Creativity	2
* Teaching Materials & Methods for the Talented & Gifted	4
* Practicum in Teaching the Gifted & Talented Students	2
* Lesson Plan for Gifted & Talented Students	2
* Leadership Training for Gifted & Talented Students	2
Total	18

Note. Information of course list was from the National Koahsiung Normal University.

APPENDIX B

SPECIAL EDUCATION COURSE LIST

FOR ALTERNATIVE PROGRAM

Required Special Education Courses

Course Title	Credit Hours
* Introduction to Special Education	3
* Assessment & Evaluation for Exceptional Children	4
* Teaching Design of Special Education	2
* Practicum of Teaching	8
* Life Skill Training	2
* Materials & Methods of Teaching the Mentally Handicpped Students	4
* Remediation for Students with Learning Disabilities	2
* Teaching Materials & Methods for Learning Disabilities	4
Total	29

Elective Courses for Special Education

Course Title	Credit Hours
* Counseling for Gifted & Talented Students	2
* Techniques of Behavioral Modification	2
* Language Development & Therapies	2
* Perceptual-Motor Training	2
* Management of Resource Programs	2
* Case Study	2

Note. Students need minimum 40 credit hours for graduation.

Information of course list was from the Taipei City Teacher College.

APPENDIX C

TEACHER EFFICACY SCALE

ENGLISH AND CHINESE VERSIONS

APPENDIX C

TES

Please respond to every statement.	
KEY	
1: Strongly disagree	4: Agree
2: Very disagree	5: Very agree
3: Disagree	6: Strongly agree

ITEM						
1. If a student does better than usual, many times it will be because I will have exerted a little extra effort.	1	2	3	4	5	6
2. The time spent in school has little influence on students compared to the influence of the home environment.	1	2	3	4	5	6
3. The amount a student can learn is primarily related to family background.	1	2	3	4	5	6
4. If students aren't disciplined at home, they aren't likely to accept any discipline.	1	2	3	4	5	6
5. I will have enough training to deal with almost any learning problem.	1	2	3	4	5	6
6. If a student has difficulty with an assignment, I will be able to adjust it to his/her level.	1	2	3	4	5	6
7. If a student gets a better grade than he/she usually gets, it will be because I will have found better ways of teaching that student.	1	2	3	4	5	6
8. If I really try, I will be able to get through to most difficult students.	1	2	3	4	5	6
9. A teacher is very limited in what he/she can achieve because a student's home environment is a large influence on his/her achievement.	1	2	3	4	5	6
10. Teachers are not a very powerful influence on student achievement when all factors are considered.	1	2	3	4	5	6

11. If the grades of my students improve, it will usually be because I found more effective teaching approaches.	1 2 3 4 5 6
12. If a student masters a new concept quickly, it might be because I will have known the necessary steps in teaching that concept.	1 2 3 4 5 6
13. If parents would do more for their children, I could do more.	1 2 3 4 5 6
14. If a student does not remember information I gave in a previous lesson, I will know how to increase his/her retention in the next lesson.	1 2 3 4 5 6
15. If a student in my class becomes disruptive and noisy, I will know some techniques to redirect him/her quickly.	1 2 3 4 5 6
16. Even a teacher with good teaching abilities may not reach many students.	1 2 3 4 5 6
17. If one of my students can't do a class assignment I will be able to accurately assess whether the assignment is at the correct level of difficulty.	1 2 3 4 5 6
18. If I really try hard, I will be able to get through to even the most difficult or unmotivated students.	1 2 3 4 5 6
19. When it comes right down to it, a teacher really can't do much because most of a student's motivation and performance depends on his/her home environment.	1 2 3 4 5 6
20. My teacher training program and/or experience will give me the necessary skills to be an effective teacher.	1 2 3 4 5 6

教師自我效能評估表

請回答下列各項敘述, 並圈選適當的數字:

1. 極為不同意　　4. 同意
2. 非常不同意　　5. 非常同意
3. 不同意　　6. 極為同意

1.	如果一個學生表現得比平常好, 那大部份是因為我將會付出額外的努力.	1	2	3	4	5	6
2.	和家庭環境的影響力比較起來, 在學校的時間只對學生們有少許的影響力.	1	2	3	4	5	6
3	一個學生能學習多少, 主要是和他的家庭背景有關.	1	2	3	4	5	6
4	如果學生們在家沒有受到管教, 那他們就較不會接受其他任何管教.	1	2	3	4	5	6
5	我將會有足夠的訓練去解決幾乎任何的學習問題	1	2	3	4	5	6
6	如果一個學生對一份作業有困難, 我將能夠調整那份作業到適合那學生的程度.	1	2	3	4	5	6
7	如果一個學生得到一份比他平常還要好的成績, 那會是因為我找到較好的方法去教那學生.	1	2	3	4	5	6
8	如果我真的去試, 我將能夠能夠教那些, 甚至是最最難教的學生.	1	2	3	4	5	6
9	一個老師所能教的是有限制的, 因為學生的家庭環境對學生的成就有很大的影響力.	1	2	3	4	5	6
10	當將所有因素列入考慮時, 老師們對學生並不是一個很強的影響力.	1	2	3	4	5	6
11	如果我的學生成績有進步, 通常那將會是因為我有發現更有效的教學方法.	1	2	3	4	5	6
12	如果一個學生能很快的熟練一個新觀念, 那是因為我將會知道教那觀念的必要步驟.	1	2	3	4	5	6

13	如果家長們能為他們的孩子多做一些, 那我也能多做一些.	1	2	3	4	5	6
14	如果一個學生不記得我上一堂課所教的內容, 那在下一堂課我將會知道如何去增加他對教授內容的記憶.	1	2	3	4	5	6
15	如果有個學生在我的課上變得分心和吵鬧, 我將會有些技巧去很快的重新引導他.	1	2	3	4	5	6
16	就算一個有好的教學能力的老師仍無法延攬很多學生.	1	2	3	4	5	6
17	如果我有學生無法完成作業, 我將能夠正確的評估那份作業的困難度是否合適.	1	2	3	4	5	6
18	如果我真的努力試, 我將能夠教那些甚至是最難教的或最缺乏學習動機的學生.	1	2	3	4	5	6
19	認真追究起來, 一個老師真的無法做太多, 因為一個學生的學習動機和表現與其家庭環境有關	1	2	3	4	5	6
20	我的教師訓練課程及經驗將會使我獲得必需的技巧法, 成為一個有效度的老師.	1	2	3	4	5	6

APPENDIX D

SPECIAL NEEDS CONFIDENCE SCALE

ENGLISH AND CHINESE VERSIONS

APPENDIX D

Special Needs Confidence Scale

Circle the number on the scale which most accurately reflects your relative confidence with the issues below. (#1 represents the lowest level of confidence and #5 represents the highest level of confidence)

	Least				Most
1. I feel confident in my ability to teach students with disabilities.	1	2	3	4	5
2. I feel confident that I can develop materials that will meet the needs of special students.	1	2	3	4	5
3. I feel confident that I can use different media to enhance individual learning styles.	1	2	3	4	5
4. I have a large repertoire of teaching strategies that assist my teaching efforts with diverse styles.	1	2	3	4	5
5. I feel confident that I can write meaningful and appropriate educational goals.	1	2	3	4	5
6. I feel confident that I can provide my students with opportunities for success.	1	2	3	4	5
7. I am confident that I can adapt a learning environment so that special needs students can participate.	1	2	3	4	5
8. I feel comfortable with the terminology used in special education.	1	2	3	4	5
9. I know what types of assessment instruments are available.	1	2	3	4	5
10. I feel confident that I can implement assessment procedures.	1	2	3	4	5
11. I feel confident that I can adapt materials to meet the needs of students with different learning speeds.	1	2	3	4	5
12. I feel confident that I can accurately evaluate the effects of instruction.	1	2	3	4	5

	Least				Most
13. I feel confident that I can use new technologies with special needs students to enhance classroom participation and instruction.	1	2	3	4	5
14. I feel confident that I can use new assistive technologies to help students adapt their environment.	1	2	3	4	5
15. I feel confident that I can create a cooperative classroom environment.	1	2	3	4	5
16. I feel confident that I can make a change in my student's academic achievement level.	1	2	3	4	5
17. I feel confident that I can make a student more competent.	1	2	3	4	5
18. I feel confident that I can make a student more productive.	1	2	3	4	5
19. I am confident that I can make a positive change in a student's quality of life.	1	2	3	4	5
20. I am confident that I can make a positive change in a student's self-esteem.	1	2	3	4	5
21. I am confident that I can provide accurate information to parents about opportunities for their children.	1	2	3	4	5
22. I feel confident when evaluating the effectiveness of educational media for special needs students.	1	2	3	4	5

I know current teaching methods and strategies for working with students who are:

23. physically challenged	1	2	3	4	5
24. severely handicapped	1	2	3	4	5
25. developmentally disabled	1	2	3	4	5
26. hearing impaired	1	2	3	4	5
27. visually handicapped	1	2	3	4	5

	Least				Most
28. speech disabled	1	2	3	4	5
29. autistic	1	2	3	4	5
30. seriously emotional disabled	1	2	3	4	5
31. learning handicapped	1	2	3	4	5
32. at-risk	1	2	3	4	5
33. culturally diverse	1	2	3	4	5
34. regular education	1	2	3	4	5

I am confident that I can effectively teach students who are:

35. physically challenged	1	2	3	4	5
36. severely handicapped	1	2	3	4	5
37. developmentally disabled	1	2	3	4	5
38. hearing impaired	1	2	3	4	5
39. visually handicapped	1	2	3	4	5
40. speech disabled	1	2	3	4	5
41. autistic	1	2	3	4	5
42. seriously emotional disabled	1	2	3	4	5
43. learning handicapped	1	2	3	4	5
44. at-risk	1	2	3	4	5
45. culturally diverse	1	2	3	4	5
46. regular education	1	2	3	4	5

針對特殊需要的信心評估表

請思考下列各情況, 並請圈選最能正確反應你的相對信心之數字 (數字 1代表最低程度的信心, 而數字5則代表最高程度的信心).

	最低				最高
1 我對自己教殘障學生的能力有信心.	1	2	3	4	5
2 我有自信能發展適合的教材給有特殊需要的學生	1	2	3	4	5
3 我有自信能使用不同的媒體來加強各別不同的學習方式	1	2	3	4	5
4 我有很多的教學策略能幫助我去嘗試各種不同的教學方式	1	2	3	4	5
5 我有自信能擬訂出有意義且恰當的教學目標	1	2	3	4	5
6 我有自信能提供學生成功的機會	1	2	3	4	5
7 我有自信能調整一個讓有特殊需要的學生能參與的學習環境	1	2	3	4	5
8 我對特殊教育中所使用的專門術語感到合適	1	2	3	4	5
9 我知道有那些評量工具可以使用	1	2	3	4	5
10 我有自信能完成評量程序	1	2	3	4	5
11 我有自信能調整教材去符合不同學習速度的學生的需要	1	2	3	4	5
12 我有自信能準確的評值教學成效	1	2	3	4	5
13 我有自信能使用新的科技去加強有特殊需要的學生在教室裏的參與和教學	1	2	3	4	5
14 我有自信能使用新的輔助科技去幫助學生適應環境	1	2	3	4	5
15 我有自信能創造一個互相合作的教學環境	1	2	3	4	5
16 我有自信能改變學生的學業成就程度	1	2	3	4	5
17 我有自信能使一個學生更有能力	1	2	3	4	5

	最低				最高
18 我有自信能使一個學生更具生產力	1	2	3	4	5
19 我有自信能對學生的生活品質有正向的改變	1	2	3	4	5
20 我有自信能對學生的自尊感有正向的改變	1	2	3	4	5
21 我有自信能爲家長提供與其小孩的機會有關的正確資料	1	2	3	4	5
22 我有自信能評量有特殊需要的學生所使用的教學媒體效度	1	2	3	4	5

我目前所知道的方法和策略是關於有[在]下列情況的學生:

23 肢體障礙	1	2	3	4	5
24 重度障礙	1	2	3	4	5
25 發展障礙	1	2	3	4	5
26 聽覺障礙	1	2	3	4	5
27 視覺障礙	1	2	3	4	5
28 語言障礙	1	2	3	4	5
29 自閉症	1	2	3	4	5
30 嚴重情緒障礙	1	2	3	4	5
31 學習障礙	1	2	3	4	5
32 邊緣性學生	1	2	3	4	5
33 有文化差異性	1	2	3	4	5
34 普通 [一般] 教育	1	2	3	4	5

我有自信能有效的教導有[在]下列情況的學生:

	最低				最高
35 肢體障礙	1	2	3	4	5
36 重度障礙	1	2	3	4	5
37 發展障礙	1	2	3	4	5
38 聽覺障礙	1	2	3	4	5
39 視覺障礙	1	2	3	4	5
40 語言障礙	1	2	3	4	5
41 自閉症	1	2	3	4	5
42 嚴重情緒障礙	1	2	3	4	5
43 學習障礙	1	2	3	4	5
44 邊緣性學生	1	2	3	4	5
45 有文化差異性	1	2	3	4	5
46 普通 [一般] 教育	1	2	3	4	5

APPENDIX E

PARTICIPANT DEMOGRAPHIC INFORMATION SHEET

ENGLISH AND CHINESE VERSIONS

APPENDIX E

PARTICIPANT DEMOGRAPHIC INFORMATION SHEET

1. Please check one of the following categories to indicate your age range:
   ____ 20-21 ____ 22-23 ____ 24-25 ____ 26-27 ____ 28 or older

2. Please indicate your gender: ____ male ____ female

3. Please indicate your program: ____ traditional ____ alternative certificate

4. Do you have any working experiences? ____ None (Skip to question 6)
   ____ Yes, but not related to education (Skip to question 6)
   ____ Yes, related to education

5. How long have you been working in education area? ____ less than 1 year
   ____ 1-2 years
   ____ 3-4 years
   ____ 4-5 years
   ____ more than 5 years

6. Are you holding a job in education currently? ____ Yes ____ No

7. Have you ever worked with children with disabilities? ____ Yes ____ No

8. What was your previous degree? _____

9. What is your marital status? ____ Single ____ Married ____ Divorced
   ____ Separated ____ Widowed

10. How many children do you have (please circle)? None 1 2 3 4 5 6 or More

11. Do you have any children identified as having a disability? ____Yes ____ No

參與者基本資料單

1 請在適合你的年紀範圍打 X:
_____ 20-21 _____ 22-23 _____24-25 _____26-27 _____ 28 和以上

2 性別: _____ 男 _____ 女

3 就讀學系: _____ 傳統大學特教系 _____ 學分班特教系

4 你有任何工作經驗嗎? _____ 無 [請直接回答第6題]
_____ 有, 但與教育無關 [請直接回答第6題]
_____ 有, 與教育有關

5 你在教育界服務多久?
_____ 少於1年
_____ 1-2年
_____ 3-4年
_____ 4-5年
_____ 超過5年

6 你目前的工作是教育性質嗎? _____ 是 _____ 否

7 你曾教過障礙兒童嗎? _____ 是 _____ 否

8 你的上一個學位是: _____

9 婚姻狀況: _____ 未婚 _____ 已婚 _____ 離婚 _____ 分居 _____ 喪偶

10 你有小孩嗎? 幾個? [請圈選] 無 1 2 3 4 5 6 和以上

11 你有小孩被診斷為有障礙嗎 _____ 有 _____ 無

APPENDIX F

SCRIPT FOR ADMINISTRATOR

ENGLISH AND CHINESE VERSIONS

APPENDIX F

SCRIPT FOR ADMINISTRATOR

Dear Students,

I am asking your help in completing a study about preservice teachers' self-efficacy, teaching efficacy and confidence of teaching students with disabilities. Each participant will complete a survey on teachers' efficacy and confidence of teaching students with disabilities. It should take you no longer than 20 minutes. Confidentiality of the results and procedures will be maintained as follows: no names will be assigned to completed questionnaires, and I will be the only person who has accessed to all of information you provided.

There should be no discomforts or risks to you as you complete this assessment. You may stop at any time.

If you are willing to assist in this study designed to better understand how to prepare teachers to meet the needs of students with disabilities, please sign the consent form that I'm going to pass in a few seconds. After you sign it, please pass it back to me.

Then I will give you a package that includes one participant demographic information sheet, a survey on teacher's efficacy and confidence of teaching students with disabilities. Please do not put your name or identification cord on any sheet of the package. After you complete all of sheets, return the whole package at one time to me.

Thank you for your help and cooperation.

Script for Administrator

親愛的同學們:

我正在做一項調查“未來特教老師教導殘障學生的自信度和自我效能度”的研究,我需要你們的合作與協助. 所要做的是回答一份調查老師教導殘障學生的效能和自信的問卷. 這份研究大約需要花 20 分鐘的時間便可完成. 研究的程序和結果將會用以下的二個方法來保密,沒有任何 的名字或辨認號碼會被寫在問卷上,並且我將會是唯一可使用你所提供資料的人 .

在你填寫這份問卷時, 你將不會有任何的危險性或不舒適感 ,你隨時可以中止你的合作 .

如果你願意幫助我做這項研究, 我將會傳下一份同意書, 請在同意書上簽名並填上日期, 然後將這份同意書傳回給我 . 接下來我給願意參與者一份資料, 包括參與者的基本資料單和問卷 . 請不要寫上你的名字或任何可辨識的號碼在這份資料上 . 當你填上完整資料後,請將整份資料一併交回給我 . 非常謝謝你的幫助與合作 .

APPENDIX G

CONSENT FORM

ENGLISH AND CHINESE VERSIONS

APPENDIX G

CONSENT FORM

I, _____, hereby authorize Tzu-Ying Lee to perform the following procedure:

1. I'll have to complete one demographic information sheet and a survey on confidence and teacher's efficacy of teaching students with disabilities.
2. Approximate 20 minutes will be needed for participating in this study.
3. Confidentiality of the results and procedures will be maintained as follows: no names will be assigned to completed survey and the researcher Tzu-Ying Lee will be the only person who has assessed to all of information I provided.
4. There should be no discomforts or risks to me as I complete this study.
5. The results of this study will help teacher educators to have more understandings about preservice teachers' confidence and teaching efficacy of teaching students with disabilities, in order to provide the quality education for students with disabilities through modifying special teacher preparation program.

This is done as part of an investigation entitled AN INVESTIGATION OF CONFIDENCE AND EFFICACY OF SPECIAL EDUCATION PRESERVICE TEACHERS IN TRADITIONAL AND ALTERNATIVE TEACHER EDUCATION PROGRAMS IN TAIWAN.

The purpose of the procedure is to collect data that is needed for this study.

I understand that participation is voluntary, that there is no penalty for refusal to participate, and that I am free to withdraw my consent and participation in this project at any time without penalty after notifying the researcher.

I may contact Tzu-Ying Lee at telephone number (02) 228-88514. I may also contact Sharon Bacher, IRB Executive Secretary, 203 Whithurst, Oklahoma State University, Stillwater, OK 74078; telephone number: (405) 744-5700.

I have read and fully understand the consent form. I sign it freely and voluntarily. A copy has been given to me.

Date: _____ Time: _____ (a.m./p.m.)

Signed: _____
Signature of Subject

Witness(es) if required: _____

I certify that I have personally explained all elements of this form to the subject before requesting the subject to sign it.

Signed: _____
Researcher

同 意 書

我 _____, 授權李姿瑩執行下列程序：

1. 我將需要填寫一份基本資料表和一份與教師自信度有關的問卷調查 。
2. 這份研究大約需要花20分鐘的時間填寫 。
3. 研究的程序和結果將會用以下的二個方法來保密：沒有任何的名字或辨認號碼會被寫在問卷上，並且研究者 -- 李姿瑩將會是唯一可使用此份資料的人 。
4. 在填寫這份問卷時, 我將不會有任何的危險性或不舒適感 。
5. 這份研究的結果將可幫助師資教育家對未來特教老師教導特殊學生的自信度和自我效能度有更多的了解, 藉由調整師資教育, 我們將可提供較高品質的教育給特殊學生 。

這份問卷是下列研究的一部份：未來特教老師教導特殊學生的自信度和自我效能度研究 。這份問卷的目的是為了搜集研究所需的數據 。

我了解參與這份研究是自願 的 。不論參與這份研究與否, 絕不會對我有任何影響, 並且我隨時可以中止研究合作 。

如果我有任何問題, 我可打電話至 (02) 2288-8514 (李姿瑩) 查 詢；我也可以聯 絡 Sharon Bacher, 奧克拉荷馬州州立大學研究部秘書, 靜水城, 奧克拉荷馬州 74078; 電話 (405) 744-5700 。

我已讀了並充份了解這份同意書, 我在自由和自願的情況下簽名, 我並已收到一份副本 。

日期：_____ 時間：_____ (上午/下午)

簽名：_____
(參 與 者)

見證人 (如果需要) : _____

我確認在要求參與者簽名前, 我本人已親自為參與者解釋這份同意書的內容。

簽名 : _____
(研 究 者)

APPENDIX H

IRB FORM

APPENDIX H

IRB FORM

OKLAHOMA STATE UNIVERSITY
INSTITUTIONAL REVIEW BOARD

Date:	April 30, 1999	IRB #:	ED-99-115
Proposal Title:	"AN INVESTIGATION OF CONFIDENCE AND EFFICACY OF SPECIAL EDUCATION PRESERVICE TEACHERS IN TRADITIONAL AND ALTERNATIVE TEACHER EDUCATION PROGRAMS IN TAIWAN"		
Principal Investigator(s):	Diane Montgomery Tzu-ying Lee		
Reviewed and Processed as:	Exempt		

Approval Status Recommended by Reviewer(s): Approved

Signature:

Carol Olson, Director of University Research Compliance

April 30, 1999
Date

Approvals are valid for one calendar year, after which time a request for continuation must be submitted. Any modification to the research project approved by the IRB must be submitted for approval. Approved projects are subject to monitoring by the IRB. Expedited and exempt projects may be reviewed by the full Institutional Review Board.

VITA

Tzu-Ying Lee

Candidate for the Degree of

Doctor of Philosophy

Thesis: INVESTIGATING CONFIDENCE AND EFFICACY OF SPECIAL EDUCATION PRESERVICE TEACHERS IN TRADITIONAL AND ALTERNATIVE TEACHER EDUCATION PROGRAMS IN TAIWAN

Major Field: Applied Behavioral Studies

Biographical:

Personal Data: Born in Taipei County, Taiwan, ROC, on December 19, 1968, the daughter of Mr. and Mrs. Meng-Hsiung Lee

Education: Graduated from Te-Yu Junior College of Nursing, Keelung, Taiwan in June, 1989; received Bachelor of Science degree in Psychology and Master of Science degree in Special Education Teaching from Pittsburg State University, Pittsburg, Kansas in December 1995 and December 1996, respectively. Completed the requirements for the Doctor of Philosophy with a major in Applied Behavioral Studies at Oklahoma State University in May, 2000.

Professional Experience: Employed by Oklahoma State University, School of Curriculum and Educational Leadership as a teaching assistant, August 1997 to present.

Professional Memberships: Council of Exceptional Children (CEC).