

A Path Analysis for Factors Affecting Pre-service Teachers' Teaching Efficacy

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Abstract

Research was conducted on the predictors of teaching efficacy in a sample of pre-service teachers from a number of public universities in Thailand. A total of 899 pre-service teachers under the final year responded to scales that assessed teaching efficacy, attitudes toward the teaching profession, the preparation program effectiveness, and practicum experience. A hypothesized model was tested using LISREL analysis. According to path analysis, attitudes toward teaching profession, preparation program effectiveness, and practicum experience were significant predictors of teaching efficacy. The strongest predictor of teaching efficacy was the preparation program effectiveness.

Keywords: Teaching efficacy, attitudes toward teaching profession, preparation program effectiveness, practicum experience.

Introduction

Teachers are the key factors in determining the level of success of a given education system. Now, in the early part of the 21st Century, many countries have realized that teacher qualifications are very important, and have identified the policy of educational management required to produce good teachers.) Education systems are faced with the problems of keeping teachers in the profession as well as increasing the level of qualifications of teachers and learning achievement of students. Good policy has to be concerned with the quality of the teachers from the very moment they embark on their undergraduate degree in Education. Current policies relating to teacher production have to be concerned with the subject that the prospective teacher will teach as well as related knowledge, such as techniques and teaching strategies in the classroom, and school experience. These classroom skills and techniques can be learnt through work experience programs in schools as part of an undergraduate degree curriculum. This training should help in the provision of newly qualified teachers with good knowledge and teaching techniques that will help provide students with the necessary instruction and learning in order to meet certain criteria and testing.

Apart from teachers being knowledgeable and being able to apply effective teaching techniques, there is another indicator of a qualified teacher which educators see as important, namely, teaching efficacy. Teaching efficacy is an important variable that links knowledge, skills and the behaviour of teachers in order to produce efficient and effective teaching practice. As academic efficacy is essential for students, and so is teaching efficacy for teachers as well, hence; these two aspects are very important for the ones to be teachers (Chambers & Hardy, 2005). Research over the last 30 years has revealed that pre-service teachers who graduate from university may have knowledge

of their own subject matter and teaching pedagogies, but they do not necessarily have the ability to implement their skills and present their knowledge in the classroom. Some teachers who are highly opposed have left their teaching without the feeling of being teachers confidently that is called as teaching efficacy (Redmon, 2007).

In the case of Thailand, a large number of pre-service teachers who have graduated from faculties of Education eventually embark on careers in other unrelated fields. A disproportionate number of people who leave the teaching profession tend to be those with just a few years, or maybe just months, of service. One of the reasons for this is that while prospective teachers may have a good attitude toward teaching and the needs of their career while they are studying at undergraduate level, once they start teaching practice in the school they soon discover they have low teaching efficacy. This problem has been further highlighted in the findings from the supervision results and observation of pre-service teachers by their different universities during their teaching practice (in the final year of their degree program.) These observations revealed that most student teachers lacked self confidence and were unaware of how to manage learning and teaching, or how to manage the classroom properly. In particular, the ability of pre-service teachers to control the class and to motivate students did not meet the objectives of the preparation program. The study and testing of a model of variables that affect teaching efficacy of pre-service teachers would, therefore, be quite interesting and of benefit for teacher production. The importance of these variables must be emphasized and the recommendations used in order to pave the way for recruiting persons for the teaching profession.

Theoretical and Empirical Perspective on Teaching Efficacy

Teacher efficacy is derived from Bandura's social cognitive theory and self efficacy theory. Bandura (1997) defined self-efficacy as beliefs in one's capabilities to organize and execute the course of action required to produce given attainments. Bandura (1986; 1997) postulated four sources of self-efficacy that may contribute to teacher efficacy: mastery experiences, physiological and emotional arousal, vicarious experience, and social persuasion. Self-efficacy influences a person's choices, actions, the amount of effort they give, how long they persevere when faced with obstacles, their resilience, their thought patterns and emotional reactions, and the level of achievement they ultimately attain (Bandura, 1986). Self-efficacy also determines how well knowledge and skills are learned.

The teacher efficacy in teaching and learning continues to interest researchers and practitioners alike. Tshannen-Moran et al (1998) defined teacher efficacy as the teacher's belief in his or her capability to organize and execute courses of action required to successfully accomplish a specific teaching task in a particular context. Woolfolk (2001) added that teacher efficacy is the teachers' motivation to persist when faced with obstacles, and the willingness to exert effort to overcome those obstacles. Some of the most powerful influences on the development of teacher efficacy are mastery experiences during student teaching and the induction year. Previous research has found that some aspects of efficacy increase during student teaching while other dimensions may decline (Hoy & Woolfolk, 1990). According to Bandura (1997), mastery experiences are the most powerful source of efficacy information. The perception that a performance has been successful can raise efficacy beliefs and provide the source for the belief that future performances in a similar vein will also be successful. The level of physiological and emotional arousal that a teacher experiences with a successful performance can also enhance efficacy beliefs.

As teaching efficacy means teacher's belief related to self-efficacy on managing and operating teaching successfully through instructional strategies, classroom management, and the student engagement (Tshannen-Moran & Woolfolk Hoy, 2001). There have been many researchers who have studied the teaching efficacy of pre-service teachers or novice teachers later such as Robert, Harlin & Ricketts (2006) who studied on longitudinal examination and agricultural science student teacher and found that teaching efficacy was related to teaching practice experience of the student. Posnanski (2007) found that the constructivist framework of the course appeared to have an impact on the future teachers beliefs about their ability to teach effectively, including modeling of effective instruction and

practical experiences with school-based curricula activities serve to improve the teaching efficacy of pre-service teachers. Apart from those researchers, Caneton, Fitch and Krockover (2008) studied middle level science teachers (Grade 4-9) and found that changes in teacher efficacy and attitudes toward teaching were examined throughout a teacher education program as teachers worked to integrate new skills into their science curriculum. Bakar et al (2008) found that teaching efficacy, commitment to the teaching profession, and satisfaction with program effectiveness were related. Gurvitch and Metzler (2009) also found that practicum experience affected teaching efficacy of pre-service teachers.

Pre-service Teacher Preparation Program

Teacher education programs have increased clinical experiences, offered guarantees and warranties that novice teachers are prepared to meet the needs of diverse students when they graduate, and established more rigorous admissions process to the teacher education program (Kent, 2007). Teacher education programs are accused of graduating candidates that fall into the category of failing teachers or teachers who flee the profession when their career is only beginning (Haberman, 2005). Previous research suggested that more novice teachers in low-income schools would leave the profession at the beginning of their teaching career (Hare & Heap, 2001; Darling-Hammond & Sykes, 2003).

Allen (2003), Education Commission of the States (ECS) program director, mentioned that one of the most heated debates concerning teacher preparation is the extent to which pedagogical skills and knowledge are necessary in addition to a solid grasp of the subject matter. The research provides limited support for the conclusion that preparation in pedagogy can contribute significantly to effective teaching, particularly subject specific courses (focused, for example, on how to teach mathematics or science) and those designed to develop core skills, such as classroom management, student assessment and curriculum development. Less clear is how such knowledge and skills are best acquired through coursework, field experience (especially student teaching) or on the job. Also unclear is the impact, if any, of other kinds of pedagogical coursework, such as classes in child development or learning theory. Nor does the research provide much insight as to whether certain kinds of coursework might be particularly helpful for teaching racially or ethnically diverse students or students in low-performing schools.

However, to learn the extent to which preparation program influences the teaching efficacy of pre-service teacher candidates, Redmon (2007) found that teaching efficacy had become part of courses, instruction, and field experience in pre-service teacher preparation program. A cohort of students in a teacher preparation program completed questionnaires measuring their feelings of teacher self efficacy at three points in the program (pre-course, mid-course, and post-course). Results suggest that pre-service teachers' feelings of teaching efficacy do improve as a result of their participation in such programs.

Practicum Experience of pre-service Teacher

Various studies suggest that solid field experience can have an influence on the beliefs and attitude of teachers (Allen, 2003). Gurvitch and Metzler (2009) argued that authentic field experiences differ from the course work in their influence on pre-service teachers' practice levels as well as their teaching efficacy beliefs. Woolfolk-Hoy (2000) demonstrated that pre-service teachers had strong teaching efficacy throughout their course work and prior to the formal student teaching experience. Yet, their teaching efficacy weakened by the end of the student teaching experience. Woolfolk-Hoy explained that the pre-service teachers who participated in the study had a year-long practicum prior to the formal student teaching experience in which they were able to practice teaching in a supportive, protected environment. Once that support was taken away during the student teaching semester and teaching environments became more complex, efficacy levels dropped. Housego (1992) also found that practice

teaching had an effect on pre-service teacher confidence: scores on an instrument measuring feelings of preparedness to teach increased.

During pre-service teachers played an important role on teaching practice in school, Poole and Okeafor (1989) found that high efficacy teachers benefited from collaboration with other teachers and peer group, while low-efficacy teachers did not. According to Bandura (1997), vicarious experiences are those in which the skill in question is modeled by someone else. The degree to which the observer identifies with the model moderates the efficacy effect on the observer in school, teacher mentors are defined as experts who model practice for pre-service teachers, as teaching can be learnt more effectively through modelling (Hodson & Hodson, 1998; Carlson & Gooden, 1999). Modelling of practices can aid pre-service teachers towards understanding their own practices (Moran, 1990). Pre-service teachers enter professional experience programs to develop their knowledge, skills and teaching efficacy, and as Bandura (1981) argues, self-efficacy for teaching can be enhanced through modelling. The mentor-mentee perspective is also suggested by Clifford and Green (2004), they viewed the mentor-mentee relationship as a significant factor in pre-service teacher education. They pointed out the positive rapport of a good relationship can foster pre-service teachers' development of teaching competence and self efficacy beliefs.

Attitude towards Teaching Profession

Teachers have greater job satisfaction when they believe they can teach and make positive impacts (Hoy & Miskel, 2001). One important variable put under investigation in a longitudinal study of teacher preparation program and professional development, is their attitude towards teaching. Teachers' attitudes towards teaching have an effect on their classroom performance. Smith (1993) summarized this cause and effect relationship as teachers' attitudes towards teaching have an effect not only on their teaching practice, but also on their students. Teachers have a significant role in their students in shaping their attitudes and achievement in the classroom. That's why they have a crucial role in making students have high or low attitudes towards any subject.

Pre-service teachers perceive teaching both as a science and as an art and should include creative and imaginative expression as well as the correct answer or solution to problems (White and Burke, 1992). Akkus (2010) discovered a significant relationship between teachers' attitudes towards the teaching profession and burnout levels of the teachers. For the pre-service teachers who have almost finished the required courses to become a teacher, they have yet to be exposed to the negative points of the profession, and therefore might have a more positive attitude.

In the previous research, many factors related to teachers' attitude towards teaching profession could be encountered. According to Bradley (1995), inadequate funding of schools, insufficient salaries were given as examples of those factors. Marchant (1992) added the role of experience to the factors influencing teachers' attitudes towards their profession. Flores (2001) reported that the workplace condition also plays a crucial role in shaping teachers' attitude towards teaching, especially behaviours of principals, and the nature of communication within the school. These findings indicated school experiences should be provided in which pre-service teachers can begin to develop attitudes towards the teaching profession. They need to have meaningful experiences with the students in order to get used to the profession and have an insight about being a teacher.

Methods

Participants

This study was taken under the form of survey research that yields descriptive information about factors related to the teaching efficacy of pre-service teachers. Direct and indirect predictors of teaching efficacy were investigated. The sample employed in this study consisted of 889 pre-service teachers in 26 public universities around Thailand, all of whom are in their final year, already having 2

semesters of teaching experience in the school. Data collected from the sample consisted of 208 males (23.1%), 691 females (76.9%) from combined majors and schools.

Measures

A test battery consisting of several instruments was administered to each respondent. All of the instruments were literature based, and aimed at exploring the pre-service teachers' attitudes and perceptions of their preparation program and teaching experiences in school. The specific instruments are in details as follows:

Teaching Efficacy. The participants of this study answered questions for teaching efficacy with a total of 24 items, self-report items divided into three broad categories: (1) student engagement, (2) teaching strategies, and (3) classroom management. This sub-scale was adopted from the tools created by Bandura (1982) ; Tschannen-Moran, Woolfolk Hoy & Hoy (1998) ; Bakar, et al (2008). It was a form of five-point Likert scale (4=the most, 3=more, 2=some, 1=least, 0=none) and overall Cronbach alpha reliability was .94.

Attitudes toward Teaching Profession. A sub-scale was literature based, and aimed at exploring the pre-service teacher attitudes toward teaching profession in three broad categories: (1) work conditions in school, (2) recognition of teacher profession, and (3) payment. Sub-scale items were Likert scales for each five-point response ranking from 1 (strongly disagree) to 5 (strongly agree) covering 12 items with Cronbach alpha reliability coefficient of .94.

Preparation Program Effectiveness. The participants answered questions aimed to measure satisfaction with preparation program effectiveness. It was conducted through the 19 items adopted from Erawan (2010) in the form of five-point Likert scale ranking from 1 (least reality) to 5 (most reality) to measure the program inputs, courses instructional process (teaching-learning activities, teaching techniques and teacher's suggestions, evaluation, classroom research), and achievement (teaching skills trained). The pre-service teachers compared what they had got from the program applying into the real classroom situations for more or less. The Cronbach alpha reliability of the sub-scale was .95

Practicum Experience. A sub-scale was literature based, and aimed at exploring the pre-service teacher perceptions of their mentors' modelled practices and collective learning in school. Sub-scale items were Likert scales for each response category, namely, "the most", "more", "some", "least", "none". This sub-scale contained a total of 6 items and overall Cronbach alpha reliability was .93.

Data Analysis

Correlation and path analyses were used to investigate the relationship between all variables as well as to assess the unique contribution of each predictor on the variability in teaching efficacy. To investigate relationships among the above variables, structural equation modeling (SEM) using path analysis in LISREL was conducted. A weighted least squares (WLS) method with data from polychoric correlation and asymptotic covariance matrices was used in the analyses. The WLS method was preferred because item data had five response categories, and polychoric correlations rather than Pearson product-moment correlations were computed (Jöreskog & Sörbom, 1993).

Model fit was assessed through a number of indices, including Chi-square Index, Goodness-of-Fit Index (GFI), Adjusted Goodness-of-Fit Index (AGFI), Normed Fit Index (NFI), Comparative Fit Index (CFI). Of the many indices available to report model fit, model comparison and model parsimony in structural equation modeling, the three indices were reported in these articles: the Root Mean Square Error of Approximation (RMSEA), the Tucker-Lewis Index (TLI), and the Parsimony Normed Fit Index (PNFI). Whereas the RMSEA assessed model fit, the TLI and PNFI assessed model comparison and model parsimony respectively. To interpret these indices, the following rules which are generally accepted in SEM literature as reflecting good models were adopted: RMSEA should be below .05 with perfect fit indicated by an index of zero, TLI should be above 0.90 with perfect fit

indicated when TLI = 1.00, and PNFI should be above 0.50 with indices above 0.70 unlikely even in a very sound fitting model. Mean and standard deviations of the variables were reported. Alpha levels were set at $p < 0.05$.

Results

The LISREL analysis of the full (initial) model shown in Figure 1 revealed a sound but not outstanding fit to the data. Table 1 presented the means and standard deviations for all variables in the study. Relations between the variables in our conceptual model were first examined with Pearson product-moment correlations between variables. The correlation analysis was completed in order to examine the relational patterns of the variables of interest. Table 2 presented the correlations between all variables in the study. All of the teaching efficacy constructs showed significant correlations with each other.

Figure 1: Full Path Model Tested with Standardized Path Coefficients

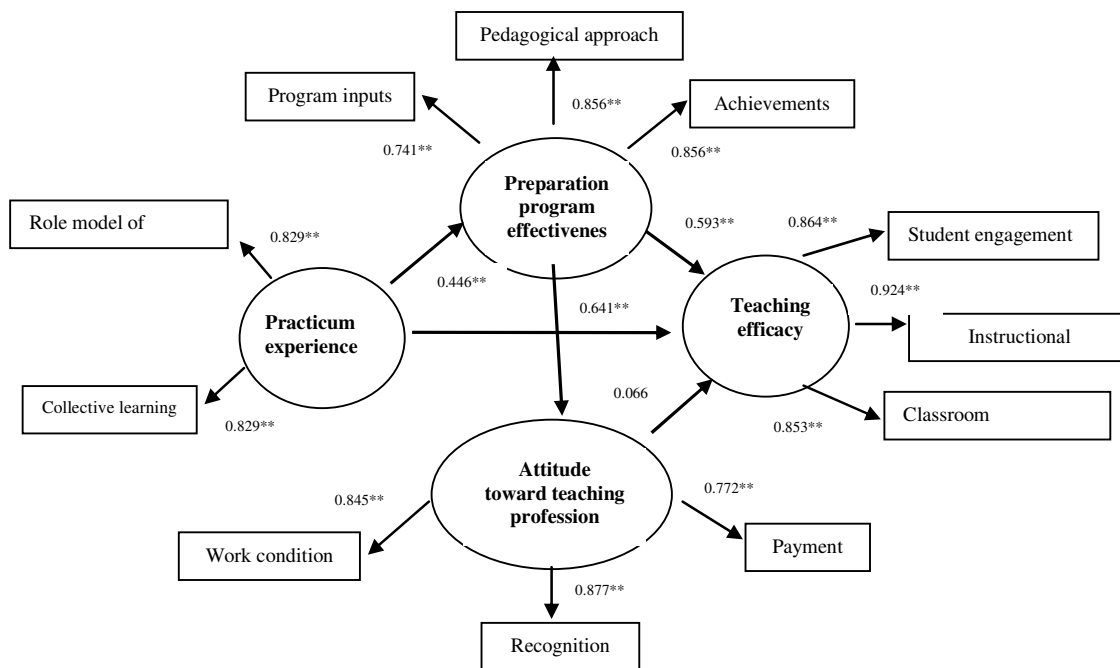


Table 1. Means and standard deviations of measured variables

Variables	Mean	Standard Deviation
E3: Teaching Efficacy		
Y1 student engagement	3.8952	0.4260
Y2 instructional strategies	3.9192	0.4472
Y3 classroom management	3.8915	0.4881
E2: Attitudes toward Teaching Profession		
Y4 work conditions	4.1082	0.6088
Y5 recognition	4.2423	0.6171
Y6 payment	4.1650	0.6803
E1: Preparation program effectiveness		
Y7 program input	3.7927	0.6159
Y8: pedagogical approach	4.0282	0.5320
Y9: achievement	3.9621	0.5062
K1 : Practicum Experience		
X1 role model of mentors	4.1184	0.5724
X2 collective learning	3.9737	0.5507

Table 2: Correlations among Measured Variables

Variables	Y1	Y2	Y3	Y4	Y5	Y6	Y7	Y8	Y9	X1	X2
student engagement	1.000										
Instructional strategies	0.670**	1.000									
classroom management	0.598**	0.735**	1.000								
work conditions	0.459**	0.511**	0.559**	1.000							
recognition	0.426**	0.496**	0.505**	0.814**	1.000						
payment	0.393**	0.439**	0.455**	0.718**	0.814**	1.000					
program input	0.430**	0.465**	0.532**	0.467**	0.389**	0.382**	1.000				
pedagogical approach	0.464**	0.502**	0.577**	0.402**	0.361**	0.367**	0.741**	1.000			
Achievement	0.414**	0.410**	0.531**	0.406**	0.353**	0.323**	0.648**	0.681**	1.000		
role model of mentors	0.227**	0.246**	0.251**	0.192**	0.185**	0.190**	0.266**	0.193**	0.207**	1.000	
Collective learning	0.304**	0.295**	0.299**	0.270**	0.227**	0.246**	0.365**	0.311**	0.263**	0.518**	1.000

Bartlett's Test of Sphericity = 5,987.131 df = 55 p = .000
 Kaiser-Meyer-Olkin Measure of Sampling Adequacy = 0.867

Figure 2: Path Model with Significant Path Coefficients

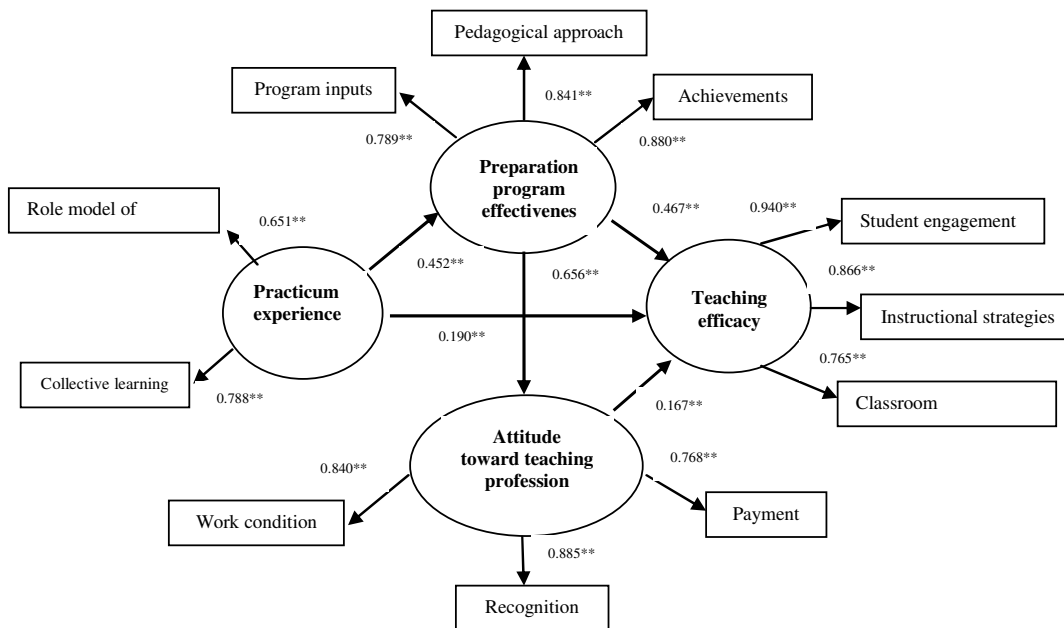


Table 3: Standardized effects of predictor variables on teaching efficacy

Effect Variables	Preparation program effectiveness			Attitudes toward teaching profession			Teaching Efficacy		
	TE	DE	IE	TE	DE	IE	TE	DE	IE
Practicum Experience	0.452 (0.061)	0.452 (0.061)	-	0.296 (0.051)	-	0.296 (0.051)	0.450 (0.047)	0.189 (0.039)	0.261 (0.051)
Preparation program effectiveness	-	-	-	0.656	0.656	-	0.577	0.468	0.109

Table 3: Standardized effects of predictor variables on teaching efficacy - (Continued).

Attitudes toward teaching profession	-	-	-	(0.043)	(0.043)	-	(0.032)	(0.040)	(0.023)
	-	-	-	-	-	-	0.167	0.167	-
	-	-	-	-	-	-	(0.104)	(0.104)	-

Table 4: Fit index of the path model

Chi-Square	Df	Chi-Square/df	GFI	AGFI	NFI	CFI	RMSEA	TLI	PNFI
18.787	24	0.763	0.996	0.990	0.998	1.00	0.00	1.00	0.54

The relationship between the predictor constructs and teaching efficacy was shown in Figure 1. The direct effects of practicum experience and preparation program effectiveness on teaching efficacy were significant, but attitudes toward the teaching profession showed no significant predictive value for teaching efficacy, suggesting that its presence in the model did not fit. Therefore, the model was adjusted. The revised model (Figure 2) showed the same relationships among variables and provided a significantly better fit, based on model fit index criteria. The pathways from practicum experience ($\beta = 0.45$), preparation program effectiveness ($\beta = 0.577$) and attitudes toward teaching profession were all statistically significant ($\beta = 0.167$). Model fit index criteria, including goodness of fit index (GFI=0.996), chi-square/df (0.763), root mean square residual index (RMR=0.00413) and root mean square error of approximation (RMSEA=0.0), comparative fit index (CFI=1.00) and normed fit index (NFI=0.998) are reported in Table 4.

Discussion

The results of this study underscored the important role teacher education programs had in establishing teaching efficacy of pre-service teachers. One primary objective of this research was to examine the effect of practicum experience in predicting teaching efficacy. As predicted, the direct and indirect effects of practicum experience demonstrated a relationship to teaching efficacy. The parameter between practicum experience and teaching efficacy was a strong positive parameter. A possible interpretation is that role model of mentor and collective learning between groups of pre-service teachers can influence their teaching efficacy by increasing their student engagement, instructional strategies, and classroom management. This result is also in accordance with Ashton (1984) and Tschannen-Moran, Woolfolk and Hoy (1998), who suggested that teacher training programmes need to provide pre-service teachers more opportunities to conduct teaching practices that includes instructing and managing classroom in a variety of contexts. A mentor-mentee relationship with guidance from experienced teacher should help to promote positive teaching efficacy among prospective teachers. Similarly, performance analysis such as encouraging and supportive comments from mentor will have a positive and significant effect on the development of efficacy beliefs. A good mentor-mentee structure could also provide opportunities to share knowledge and learn from experienced teachers.

Results of this study support Bandura's theory that strong efficacy levels can be established through experiences that allow authentic challenges to be offered and found. Bandura (1997) suggested a framework of four main sources of information and experiences that contribute to the development of efficacy beliefs: mastery experience, vicarious experience, social persuasion, and physiological state. The mastery experience has been identified as the most powerful source of efficacy beliefs. According to Bandura (1997), Bandura's social cognitive theory provides the theoretical framework underlying both teacher and collective efficacy. A fundamental assumption of social cognitive theory is human agency. When humans and organizations (through the collective actions of group members) make

choices, they exhibit agency. According to social cognitive theory, efficacy is key to the operation of agency because individuals and collectives are more likely to pursue activities for which they believe they have the capability to succeed.

According to previous research, effective ways to encourage assimilation of teaching skills is to model skills (Carlson and Gooden, 1999). Mentoring practices (variables that involve modelling: enthusiasm, teaching, effective teaching, a rapport with student, hands-on lessons, well-designed lesson, classroom management, and syllabus language) were identified with “modelling” effective primary science teaching. This research supports that the role model of mentor allows the mentee to experience the teaching beliefs of the mentor and provides the mentee with a reference point and an immersion of practice.

In this model found that the indirect effect of practicum experience to predict the teaching efficacy through preparation program. Meaningful field experiences seem essential. As explained earlier, Bandura (1997), pre-service teachers have benefit from more authentic teaching practice experiences in classroom and learn from mentor. If pre-service teachers experience success only in protected (i.e., less authentic) settings, they may come to falsely expect success in every lesson they teach, and may be easily discouraged when confronted with their first authentic school settings (Bandura, 1997). Pre-service teachers need real teaching successes in order to build strong feelings of teacher efficacy and the earlier students can begin enjoying these successes, the more resilient their self efficacy will become. Successes build feelings of self efficacy; failures lower them (Redmon, 2007). Building a false sense of self efficacy by simply encouraging students or telling them they will be good teachers without providing them opportunities for authentic success in real teaching situations is a recipe for failure (Bandura, 1977). However, strong efficacy levels may be established through a sequence of authentic experiences over time, which offer opportunities to face challenges and to cope with and overcome adversity. Perhaps, only after pre-service teachers face some challenging experiences and prove to themselves that they can be successful, might they establish stronger teaching efficacy beliefs (Gurvitch & Metzler, 2009).

Preparation program effectiveness constructions were the strongest predictor in the model. The path analysis showed that there were direct and indirect effects on teaching efficacy of pre-service teachers. The results suggest that teacher preparation programs such as the one studied might influence the growth of teaching efficacy amongst its pre-service teacher. Similarly, Bakar et al (2008) found that self-efficacy was also related to satisfaction with program effectiveness in a sample of teacher students. In addition to providing pre-service teachers with the knowledge, skills, and dispositions necessary to be successful as a teacher, each stage in the teacher preparation program described by Redmon (2007), has an impact on teacher preparation and upon teacher self efficacy. He also exposes the pre-service candidate to real classroom with real students. Throughout, their feelings of efficacy are challenged by students, by mentors, teachers, and professors, and by their own self-doubt. Without systematic social support, adequate resources, and structured success, many new teachers will enter the profession believing that some students are beyond their ability to teach and that any efforts they may make to change would be fruitless (Tschannen-Moran & Woolfolk Hoy, 2001).

Though field experience is becoming an increasingly important component of teacher education programs (Pilard, 1992), it seems prudent that steps be taken to focus more of the energy devoted to developing coursework and field experiences within such programs to developing the social support and structured success that leads research has shown to encourage self efficacy (Bandura, 1977). Further, though teacher preparation programs traditionally offer coursework that provides pre-service candidates with the knowledge and skills needed to succeed as classroom teachers, many do not address critical dispositions that define a teacher’s performance in a classroom. Teacher efficacy is more than a frame of mind; from it emerges many of the most critical dispositions that guide teaching behaviors and separate exemplary teachers from the rest (Redmon, 2007). However, high-quality field experiences also appear to share several characteristics but, there is no evidence demonstrating that the presence of these characteristics results in greater teacher effectiveness.

Hoy and Woolfolk (1990) found that efficacy beliefs of pre-service teachers have been linked to attitudes towards children and control. Undergraduates with a low sense of teaching efficacy tended to have an orientation toward control, taking a pessimistic view of students' motivation, relying on strict classroom regulations, extrinsic rewards, and punishments to make students study. Once engaged in teaching, efficacy beliefs also have an impact on behavior. Student interns with higher personal teaching efficacy were rated more positively on lesson presenting behavior, classroom management, and questioning behavior by their supervising teacher on their practicum evaluation (Saklofske, Michaluk, & Randhawa, 1988). There is some evidence that course work and practice have differential impacts on personal and general teaching efficacy. General teaching efficacy appears to increase during college coursework, then decline during student teaching (Hoy & Woolfolk, 1990) suggesting that the optimism of young teachers may be somewhat tarnished when confronted with the realities and complexities of the teaching task. Student teaching provides an opportunity to gather information about one's personal capabilities for teaching. However, when it is experienced as a sudden, total immersion, sink-or-swim approach to teaching, it is likely detrimental to build a sense of teaching competence. Student teachers sometimes engage in self-protective strategies, lowering their standards in order to reduce the gap between the requirements of excellent teaching and their self-perceptions of teaching competence (Woolfolk Hoy, 2000).

The three variables of attitude towards teaching profession, work conditions, recognition, and payment were all predictors of teaching efficacy. However, attitude towards teaching profession has only a significant direct effect on teaching efficacy. These effects are highly plausible. Clearly, teachers with a positive attitude towards teaching profession tended to have teaching efficacy. Pearson and Moomaw (2005) found that teacher empowerment (self efficacy) was closely related to job satisfaction and professionalism. Accordingly, pre-service teachers who develop strong feelings of teacher efficacy early in their pre-service professional education are better prepared to retain those feelings and cope with the inevitable set-backs and failures that beset most beginning teachers. The issue of attitude towards teacher profession is very important to schools and school systems. For too long, teacher burnout has been explained largely in terms of attitude towards teaching profession.

Conclusion and Recommendations for Further Research

Based on the findings from this study, the factors found to have a significant effect on teaching efficacy were practicum experience, preparation program effectiveness, and attitude towards the teaching profession. The evidence suggests that the process of teacher programs has an impact on teaching efficacy among Thai university students. Overall, the results from this study are congruent with the previous findings in western countries and therefore, this study supports the external validity of the model for teaching efficacy. In summary, the model is a logical and coherent explanation of teaching efficacy of pre-service teachers in Thailand universities. Future studies should explore the effects of course design and activity intervention developed in reference to teaching efficacy among preparation program studies using randomized controlled trials.

References

- [1] Akkus, O. (2010). Teachers' burnout levels and their attitudes towards teaching profession. Paper presented at EABR & ETLC Conference, Dublin, Ireland
- [2] Allen, M. (2003). Eight questions on teacher preparation: What does the research say?. Education Commission of the States (ECS), www.ecs.org/tpreport.
- [3] Ashton, P. (1984). Teaching efficacy. *Journal of Teacher Education*, 25(2), 41-54.
- [4] Bakar, A.R., Konting, M.M., Jamian, R., & Lyndon, N. (2008). Teaching efficacy of Universiti Putra Malaysia Science student teachers. *College Student Journal*. 42(2), 493-509.
- [5] Bandura, A. (1977). Self efficacy: Toward a unifying theory of behavioral change. *Psychological Review*, 84(2), 191-215.

- [6] Bandura, A. (1981). Self referent thought: A development analysis of self-efficacy. In J. H. Flavell and L. Ross (eds.). *Social cognitive development frontiers and possible futures*. Cambridge, MA: Cambridge University Press.
- [7] Bandura, A. (1982). Self-efficacy mechanism in human agency. *American Psychologist*, 37,122-147.
- [8] Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory*. Englewood Cliffs, NJ: Prentice Hall.
- [9] Bandura, A. (1997). *Self-efficacy: The exercise of control*. New York: W. H. Freeman.
- [10] Bradley, A. (1995). Nation's teachers feeling better about jobs, salaries, survey finds. *Education Week*; 12/6/95, 15(14),
- [11] Carleton, L. E., Fitch, J. C., & Krockover, G. H. (2008). An In-service teacher education program's effect on teacher efficacy and attitudes. *The Education Forum*, 72: 46-62, 2008.
- [12] Carlson, R. D., & Gooden, J. S. (1999). Mentoring pre-service teachers for technology skills acquisition. Society for Information Technology & Teacher Education International Conference, San Antonio, TX.
- [13] Chambers, S. M., & Hardy, J. C. (2005). Length of time in student teaching: Effects on classroom control orientation and self efficacy beliefs. *Educational Research Quarterly*, 28(3), 3-9.
- [14] Clifford, G., & Green, H. (2004). Teacher efficacy and beliefs. *The Journal of Educational Research*, 22(1), 30-41.
- [15] Darling-Hammond, L., & Sykes, G. (2003). Wanted: A national teacher supply policy for education: The right way to meet the "Highly Qualified Teacher" challenge. *Education Policy Analysis Archives*, 11(33).
- [16] Erawan, P. (2010). A comparison of teaching efficacy, commitment to teaching profession and satisfaction with program effectiveness of teacher students under the 5 year-program curriculum and those under the 4+1 year-program curriculum. *European Journal of Social Sciences*, 14(2), 250-261.
- [17] Flores, M. A. (2001). Person and context in becoming a new teacher. *Journal of Education for Teaching*, 27(2): 135-148.
- [18] Gurvitch, R., & Metzler, M. W. (2009). The effects of laboratory-based and field-based practicum experience on pre-service teachers' self-efficacy. *Teaching and Teacher Education*, 25, 437-443.
- [19] Haberman, M. (2005). Raising teacher salaries: The funds are there. *Education*, 125(3), 327-342.
- [20] Hare, D., & Heap, J.L. (2001). Effective teacher recruitment and retention strategies in the Hodson, D., & Hodson, J. (1998). Science education as enculturation: Some implications for practice. *School Science Review*, 80(290), 17-24.
- [21] Housego, B. (1992). Monitoring student teachers' feeling of preparedness to teach, personal teaching efficacy, and teaching efficacy in a new secondary teacher education program. *Alberta Journal of Educational Research*, 38(1), 49-64.
- [22] Hoy, W. K., & Miskel, C. G. (2001). *Educational administrator: Theory, research, and practice* (6th ed.). Boston: McGraw-Hill.
- [23] Hoy, W. K., & Woolfolk, A. E. (1990). Socialization of student teachers. *American Educational Research Journal*, 27, 279-300.
- [24] Jöreskog, K. G., & Sörbom, D. (1993). *LISREL 8: User's reference guide*. Chicago, IL: Scientific Software International.
- [25] Kent, A. M. (2007). Powerful preparation of preservice teachers using interactive video conferencing. *Journal of Literacy and Technology*, 8(2), 41-58.
- [26] Marchant, G. J. (1992). Attitudes toward research-based effective teaching behaviours. *Journal of Instructional Psychology*, 19(2), 119.

- [27] Moran, S. (1990). Schools and the beginning teacher. *Phi Delta Kappan*, 72(3), 210-213.
- [28] Pearson, C. L., & Moomaw, W. (2005). The relationship between teacher autonomy and stress, work satisfaction, empowerment, and professionalism. *Education Research Quarterly*, 20(1), 37-53.
- [29] Pilard, D. (1992). *The socialization process of student teaching: A descriptive study*. East Lansing, MI : National Center for Research on Teacher Learning. (ERIC Document Reproduction Service No. ED 479 865).
- [30] Poole, M., & Okeafor, K. (1989). The effects of teacher efficacy and interactions among educators on curriculum implementation. *Journal of Curriculum and Supervision*, 4, 146-161.
- [31] Posnanski, T. J. (2007). A redesigned Geoscience content course's impact on science teaching self-efficacy beliefs. *Journal of Geoscience Education*, 55(2), 152-157.
- [32] Redmon, R. J. (2007). Impact of teacher preparation upon teacher self-efficacy. Paper present at the Annual Meeting of the American Association for Teaching and Curriculum at Cleveland, Ohio.
- [33] Robert, T. G., Harlin, J. F., & Ricketts, J. C. (2006). A longitudinal examination of teaching efficacy of agricultural science student teachers. *Journal Agricultural Education*, 47(2), 81-92.
- [34] Saklofske, D., Michaluk, B., & Randhawa, B. (1988). Teachers' efficacy and teaching behaviors. *Psychological Report*, 63, 407-414.
- [35] Smith D. M. (1993). *Preservice elementary teachers' attitudes towards mathematics and the teaching of Mathematics in a constructivist classroom*, PhD dissertation, The Oklahoma State University:USA.
- [36] Tschannen-Moran, M., & Hoy, A.W. (2001). Teacher efficacy capturing an elusive construct. *Teaching & Teacher Education*, 17(7), 783-850.
- [37] Tschannen-Moran, M., Woolfolk Hoy, A. & Hoy, W. K. (1998). Teacher efficacy: Its meaning and measure. *Review of Educational Research*, 68(2), 202-248.
- [38] White, W. F., & Burke, C. M. (1992). Critical thinking and teaching attitude of pre-service teachers. *Education*. 112(3), 443.
- [39] Woolfolk, A. (2001). *Educational psychology* (8th ed.). Boston: Allyn & Bacon.
- [40] Woolfolk Hoy, A. (2001). Changes in teacher efficacy during the early years of teaching. Paper presented at the annual meeting of the American Educational Research Association, New Orleans, LA. Stone, (1998).