

Self-efficacy Beliefs of Chinese Primary School Teachers

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The study was conducted to explore the primary school teachers' (PSTs) self-efficacy beliefs with respect to gender and subjects (Chinese and Math) taught during practicum in the primary schools. Using random sampling, 103 PSTs (women 68 and men 35) were selected from the teacher education faculty who had just finished their practicum. Descriptive survey study design was used to investigate the problem. Teachers' Sense of Efficacy Scale (Tschannen-Moran & Woolfolk-Hoy, 2001) was used to collect data from the participants. Findings revealed that overall the female prospective teachers had higher level of self-efficacy than that of male PSTs. The difference between the cohorts was significant for each of students' engagement and instructional strategies, but it was marginally significant for classroom management. There was nonsignificant difference between the groups on the basis of subjects taught (Math and Chinese) in the cooperating schools. The findings of the study have implications for the researchers, teacher educators, curriculum developers for teacher education programmes, and all the stake holders of teaching practice.

Keywords. Primary school teachers, self-efficacy, teacher education, teaching practice

For the last twenty five years the researchers have been studying teachers' efficacy beliefs and their influence on teachers' teaching and students' achievement (Cakiroglu, Cakiroglu, & Boone, 2005; Gencer & Cakiroglu, 2007; Tschannen-Moran & Woolfolk-Hoy, 2007). There

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is relationship between teachers' actions and behaviors and their ideas, beliefs, views, trust level, and motivational levels (Cerit, 2010). So, if we want to know about the understanding of teachers' teaching, then studying their self-efficacy beliefs may play a pivotal role.

Teachers' efficacy is believed to be one of the influential factors for the teaching and learning process (Chaco'n, 2005). Bandura (1997) and Swars (2005) asserted that the teachers' self-efficacy is a vital measure for the effectiveness of instruction. The efficacious teachers' performance is high even in team work and at organizational level (Somech & Drach-Zahavy, 2000). The teachers having high efficacy can get hold of their environment and can behave towards getting required results (Bandura as cited in Witcher et al., 2002). It is also reported that higher self-efficacy has relationship with emotional intelligence (Nikoopour, Farsani, Tajbakhsh, & Kiyaie, 2011). The higher the self-efficacy of the teachers, the higher are the objectives set by them, and harder they work for the goal achievement (Petrides & Furnham, 2001).

The literature reports that different kinds of self-efficacy that is students' self-efficacy, teachers' self-efficacy, and collective efficacy of school have relation with students' performance (Goddard, Hoy, & Woolfolk-Hoy, 2000; Pajares, 1997). The teachers' self-efficacy also has positive effect over their classroom management behaviours. Highly efficacious teachers employ management techniques which are more conducive to learning (Britta, Morris, & Brassard, 2006; Brouwers & Tomic, 2000), focus of their endeavors is student centered (Ross & Bruce, 2007), and they expect their students more positively (Tournaki & Podell, 2005).

As far as China, especially, the mainland China, is concerned the self-efficacy of prospective teachers has been investigated rarely. Some of the researchers studied this concept in Hong Kong, as in a study, Chan (2008) investigated the self-efficacy of prospective teachers and in-service teachers and Leung (2012) studied the beliefs of kindergarten teachers. Cheung (2008) designed the study to compare the efficacy of primary teachers of Hong Kong and Shanghai. In mainland China, recently, Malinen, Savolainen, and Xu (2012) explored the in-service teachers' self-efficacy and attitudes for inclusive education in Beijing. In mainland China, little has been done to explore the teachers' self-efficacy, particularly, to explore prospective teachers' self-efficacy. Not to speak of China, but globally also, there is no empirical evidence about the comparison of self-efficacy of math and language prospective teachers, in particular, the Chinese language prospective teachers and math prospective teachers. To the best of researchers' knowledge, there is no such study which

found differences between Chinese primary school teachers' (PSTs') self-efficacy beliefs with respect to gender and subjects taught during practicum, particularly, Chinese language and mathematics. Chinese language and mathematics both are very important and compulsory subjects at primary level in China. Because of the implications of teachers' self-efficacy for teachers, mentors, coordinators, teacher educators, and policy makers, there was a dire need to study the phenomenon in Chinese context. Hence, the researcher deemed it necessary to study the problem, which may help to provide the feedback for teacher education programme; particularly, the preservice teacher education programme. This study may also provide the basic information about the comparison of language and math prospective teachers. This study might initiate new discussion among the educators and researcher to explore the phenomenon further.

Self-Efficacy: The Concept

Bandura (as cited in Nikoopour et al., 2011) defined self-efficacy as "the belief in one's capabilities to organize and execute the courses of action required managing prospective situations" (p. 9). Social cognitive theory, which provides basis for the construct, self-efficacy focuses on variables like attitudes, actions, and contexts (Schunk & Meece, 2006). Self-efficacy is not same universally, but it varies with the various contexts, so the self-efficacy of the same individual will differ in different contexts (Bandura, 1997).

Resources of Self-Efficacy

Bandura (1997) describes four main resources for efficacy including mastery experiences, vicarious learning, social persuasion, and affective states. Mastery experience is thought to be a vital information source for self-efficacy and is determined through individual's past achievements. Vicarious experiences are the ones which are learnt through observing others' actions and behaviours. These kinds of experiences help in enhancing the self-efficacy of those who do not have past experience of doing something or are not confident enough to do it (McCoach & Colbert, 2010). Encouragement, motivation, and persuasion also influence self-efficacy. Affective states like increase in heartbeat, sweating in a particular situation, and tiredness are also indicators of self-efficacy beliefs. These four sources are directly related to school experiences, particularly, these are pertinent in state mandated achievement scores

(Colbert & Colbert, 2003; Colbert, Vernon-Jones, & Pransky, 2006; McCoach & Colbert, 2010).

Prospective Teachers and Self-Efficacy

The educators had defined the term teacher's self-efficacy as "teacher's judgment of his or her capabilities to bring about desired outcomes of students' engagement and learning, even among those students who may be difficult or unmotivated" (Tschannen-Moran & Woolfolk-Hoy, 2001, p. 12). Literature has a lot of evidence that the self-efficacy directly influences teacher's actions and attitudes (Palmer, 2006). The research also reveals that the teachers' self-efficacy has a relationship with students' performance (Chambers & Hardy, 2005). Prospective teachers' cognitive construction of teaching competence, which is based mostly on self-efficacy beliefs, is a strong indicator of the effectiveness of any teacher training programme (Yeung & Watkins, 2000). Moreover, the increase in the self-efficacy belief increases the resistance against change (Woolfolk-Hoy & Spero, 2005); this problem has been studied on preservice teachers by many researchers (Cerit, 2010). Prospective teachers' self-efficacy might predict their performance during in-service training and it may also contribute to know the effectiveness of teacher education programmes (Hamurcu, 2006).

Self-Efficacy and Gender

Numerous studies (Anderson, 2011; Cheung, 2008; Karimvand, 2011; Tabak, Akyildiz, & Yildiz, 2003) found that female teachers have higher self-efficacy. Specifically, at elementary level schooling the female teachers perform better, like a recent study by Wood (2012) explored that the male teachers were negative in their attitude and behaviour at elementary level and female teachers were more encouraging and concerned regarding students' necessities. According to some of the researchers, the female teachers are greater in number at primary level (Mills, Martino, & Lingard, 2004; Wilkins & Gamble, 2000) and higher self-efficacy of female teachers might be because of larger number of female teachers in the schools.

Conversely, Pajares and Miller (1994) and Imants and De Brabander (1996) found that male teachers were more self-efficacious than female teachers. The study by Pajares and Miller (1994) was regarding mathematical problem solving, which may be exclusive for

mathematics, because some other studies also supported that the men have more aptitude, higher performance, and higher self-efficacy in mathematics (Liu, 2009). For discipline also the men are assumed to be more effective as Green, Shriberg, and Farber (2008) concluded that female teachers feel behavior problems more challengeable than that of their counterparts.

Additionally, studies reported no difference between the self-efficacy beliefs of male and female teachers (Akkuzu & Akcay, 2012; Çubukçu, 2008; Piskin & Durmus, 2010; Senemoglu, Demirel, Yagci, & Ustundag, 2009; Üstüner, Demirta, Cömert, & Özer, 2009; Yilmaz & Cavas, 2008). The study by Klassen and Chiu (2010) also endorsed the findings of the aforementioned studies and found no difference between teachers on gender basis except for the classroom management, where male teachers had higher self-efficacy. However, Sarvan and Cakiroglu (2003) found nonsignificant difference on gender basis for classroom management; which is further endorsed by additional findings (Piskin & Durmus, 2010).

The teachers' self-efficacy is much investigated topic, but the results are still conflicting and researchers could not establish any final conclusion about teachers' self-efficacy with respect to their gender. The Western researchers have done a lot of work on self-efficacy of teachers, but in Chinese context the research work over teachers' self-efficacy is scarce. Therefore, the objectives of the study were to find out differences between PSTs' self-efficacy beliefs with respect to their gender. It was also intended to explore differences between PSTs' self-efficacy beliefs with respect to subjects taught during practicum.

Hypotheses

1. Female primary school teachers will reflect more teacher related self-efficacy than male teachers.
2. Primary school teachers teaching Chinese language will reflect higher teachers' self-efficacy than those teaching math classes during practicum.

Method

Participants

In total, 103 PSTs, who had completed their practicum experiences just one week ago, responded to the survey. Most of the

PSTs were between 21-23 years of age ($M = 22.0$, $SD = 2.14$). The 52 PSTs taught Chinese and 51 taught mathematics to primary students. Among the participants, 55 (53%) taught to the 3rd and 4th grades; and 48 (47%) taught to the 5th and 6th grades. The sample comprised of 68 (66%) female and 35 (34%) male PSTs.

The participants were enrolled in four year undergraduate teacher education programme. The practicum component is offered in the seventh semester of the four year teacher education programme in Chinese universities. The PSTs are sent in groups of 10-15 members per group in a cooperating school for practicing teaching. The participants of the study were selected from 10 randomly selected cooperating schools.

Measures

Teachers' Sense of Efficacy Scale (TSES). The long form of TSES developed by Tschannen-Moren and Woolfolk-Hoy (2001) has been used by many researchers and its validity has been reported in different cultures (Klassen et al., 2009). There are 24 items in total with 8 items for each of the subscales: Students' Engagement, Instructional Strategies, and Classroom Management. The respondents were asked to rate their responses on 5-point Likert scale. The responses ranged from *strongly disagree* to *strongly agree* with 1 to 5 weightage scores; respectively. The authors reported the value of .94 for Cronbach's Alpha of the overall instrument, while for this study, overall reliability coefficient of .92 was achieved.

Results

Pearson Product Moment Correlation illustrated a strong association among all the subscales, which was statistically significant. It has been found that students' engagement was significantly positively associated with classroom management ($r = .72$, $p < .00$) and instructional strategies ($r = .74$, $p < .00$). Similarly, classroom management was significantly positively related with instructional strategies ($r = .75$, $p < .00$).

Bivariate group differences revealed that the female PSTs had higher self-efficacy beliefs than male teachers. These findings provide support for the first hypothesis.

Table 1
Gender Differences on PSTs' Self-Efficacy Beliefs (N = 103)

Variables	Women (n = 68)		Men (n = 35)		<i>t</i> (101)	<i>p</i>	95%CI		Cohen's <i>d</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			<i>LL</i>	<i>UL</i>	
Students' Engagement	30.82	4.25	28.00	4.25	3.19	.00	1.07	4.58	.66
Classroom Management	29.54	3.71	28.03	3.95	1.98	.06	0.50	3.08	.32
Instructional Strategies	31.07	4.40	28.03	4.29	3.16	.00	0.93	4.57	.65

Table 1 illustrates significant difference on students' engagement and instructional strategies, but marginally significant difference is found for classroom management on the basis of participants' gender. The female PSTs have significantly higher self-efficacy beliefs for students' engagement, instructional strategies, and classroom management which was marginally significant.

On the basis of subjects taught during practicum, there was nonsignificant difference ($t = .98, p > .06$) between the self-efficacy beliefs of the cohorts. Factor-wise analysis is given as follows:

The analysis of data for **students' engagement** revealed that both the genders had significant difference in their beliefs of self-efficacy. Results showed that overall the female PSTs were more efficacious than male PSTs (see Table 1). However, for two items; dealing with difficult students and assisting families for children's guidance, the difference was nonsignificant. On the basis of subjects taught in the schools the only significant difference $t(101) = 2.09, p < .03$ was found regarding the item "*Help critical thinking*", related to students' engagement. The PSTs, who taught Chinese during practicum were more confident ($M = 4.23, SD = .70$) than the PSTs who taught mathematics ($M = 3.92, SD = .80$).

The analysis showed that overall the female PSTs had higher level of self-efficacy than their counterparts for implementing **instructional strategies**. Findings indicated that female PSTs showed better self-efficacy beliefs than male PSTs for three items, which were related to assessment ability (women: $M = 4.21, SD = .61$; men: $M = 3.31, SD = .80$; $t = 5.80, p < .00$); questioning ability (women: $M = 4.12, SD = .74$; men: $M = 3.54, SD = .78$; $t = 3.65, p < .00$); and using alternative classroom strategies (women: $M = 3.82, SD = .73$; men: $M = 3.51, SD = .78$; $t = 1.99, p < .05$). However, nonsignificant difference $t(101) = 1.56, p > .06$ was found between the self-efficacy

beliefs of PSTs teaching the subjects of Chinese or mathematics during practicum regarding instructional strategies.

The analysis for the data about **classroom management** disclosed that the female PSTs were more confident than male PSTs in managing classroom except for the two items; controlling disruptive behavior and responding defiant students. For these two items, the male students showed higher self-efficacy, but the difference was not significant statistically. Among the other six items where female PSTs were more efficacious, for two items; clarity of expectations about students' behavior and protecting classroom from problem students, the difference was significant at $p = .05$. Conversely, for the other four items the difference was not statistically significant. On the basis of subjects taught during practicum, there is nonsignificant difference among the participants for the factor classroom management.

Discussion

The purpose of the study was to investigate the self-efficacy of PSTs. The paper explored the differences of self-efficacy beliefs between the participants on the basis of gender and subjects taught during practicum in the schools. The study showed that the female PSTs were more self-efficacious than their counterparts. There were significant differences between the groups over students' engagement and instructional strategies, but a marginal significant difference was found on the basis of classroom management. The reason may be the large number of female teachers at primary level (Mills et al., 2004; Wilkins & Gamble, 2000), hence, the higher level of self-efficacy of female prospective teachers may be just because of their large number (Ross, Cousins, & Gadalla, 1996). However, nonsignificant difference was found on the basis of subjects taught.

For the factor of students' engagement, the difference is significant for six items which means this factor is overall different for both the genders. This difference might imply that at primary level the female participants are more effective. The female PSTs are more confident and psychologically they may be more suitable to teach primary students. The students may have more attachment to female teachers. Especially, the factor of students' engagement may be an indicator that the female teachers have the ability to engage primary students in the lesson (Wood, 2012). While, the male PSTs may not have such kind of attachment to the young children as that of female PSTs. Still this question should be further studied by the researchers. We can see the least difference is over the aspect of classroom

management, which may be also the psychological reason, because the male teachers are little strict than female teachers, hence, they may have higher self-efficacy for classroom management as compared to other two factors. The literature also supports this finding that male teachers have higher self-efficacy for classroom management (Klassen & Chiu, 2010).

The difference on the basis of subject taught was found significant regarding one question which was related to students' engagement. Here, the language teaching PSTs were more self-efficacious than that of math teaching ones. Here also the gender may have played a role. There is a common thinking that usually women are more interested to language teaching and men are towards math teaching; in this study also, 54.4% female teachers taught language and 45.6% taught math and in the case of male teachers 42.9% taught language and 57.1% taught maths. This factor needs further research to generalize the results including a vast sample taken from a vast population.

The female PSTs had higher self-efficacy beliefs to implement instructional strategies. As we have discussed earlier that it might be the factor of gender which is related to teaching at primary level. This factor might also be correlated to the gender. Analyzing the factor of classroom management, only for two items male PSTs showed higher self-efficacy than their counterparts. These items were regarding students' disruptive behavior and responding defiant students. Still the difference was not statistically significant. Therefore, this difference might be because of sampling error or it might be because of the fact that men are good managers. Moreover, literature also reports that female teachers are less effective in managing behavior problems of the students (Green et al., 2008). So, this issue is still worth studying that whether the male PSTs have higher ability of managing the classroom or not. According to findings of the study, the female PSTs had higher self-efficacy beliefs than that of male PSTs; whereas empirical evidence has shown that higher efficacy of classroom management has positive relationship with job satisfaction (Klassen & Chiu, 2010).

Limitations

The study has been conducted in a Normal University in Northeast area of the China, so the results may not be generalizable to the PSTs of other universities of China. The participants of the study were selected only from four year undergraduate teacher education programme, hence, the results may not be generalizable to teachers of

master programmes. As mentioned earlier, the study was conducted in northeast region of China, which may be a limitation for application of results to other regions. The study may be verified in other parts of China, but still its findings have implications for policy makers, researchers, and practitioners.

Implications

The findings have implications for the teacher educators, teacher education institutions, and administrators of teacher education faculties. The curriculum developers of teacher education may also consider the findings of the study, while selecting contents and experiences for the PSTs. They may study the interest of male PSTs and then provide them with the learning experiences according to their interests and learning styles. The teacher educators can incorporate the findings of the study to consider the gender differences, while, instructing or giving assignments. They can modify their teaching practices accordingly. The findings of the study imply that the researchers can study the effectiveness of primary teachers with respect to gender. It also have implications for policy makers, because after studying this question, they can be in a better position whether female teachers should be given preference in primary schools over male teachers or not. The researchers can further study differences in the learning styles of male and female PSTs and can be considered during instruction in the teacher education institutions.

Conclusion

The study concluded that the female PSTs had higher self-efficacy than that of their counterparts. The differences were significant statistically for all the three factors; students' engagement, classroom management, and instructional strategies. Findings further showed nonsignificant difference between self-efficacy beliefs of the PSTs teaching Chinese or mathematics during practicum. However, on the basis of subjects taught in the schools during practicum, significant difference was found only for one item which was regarding students' engagement, where the PSTs teaching Chinese language had higher self-efficacy than those of math teachers.

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