Teacher Efficacy: A Comparative Study of Hong Kong and Shanghai Primary In-Service Teachers

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Abstract

Teachers beliefs about their ability to affect students' performance is an important part of professionalism. This study compared 725 Hong Kong and 575 Shanghai primary in-service teachers on their teacher efficacy. Two Chinese versions of the 12-item Teachers' Sense of Efficacy Scale were used in this study since some wordings of the Hong Kong version of the Scale (HK-TSE) were different from the Shanghai version (S-TSE) as a result of cultural differences. Basically, the Shanghai teachers reported significantly higher efficacy than did the Hong Kong teachers. After reviewing these quantitative results, 86 follow-up questionnaires from Shanghai in-service teachers who also participated in the first part of this study were collected. Results of this qualitative part showed that the three most commonly cited factors for the contribution of teacher efficacy were: respect and confidence placed in them by students and parents, the training they received from universities and the experience they gained from daily teaching practice. Though Hong Kong in-service teachers had lower efficacy scores than the Shanghai counterparts.

Introduction

There is no doubt that teacher efficacy is a very important factor for the improvement of education in every part of the world. Berman, McLaughlin, Bass, Pauly, and Zellman (1997) defined teacher efficacy as "the extent to which the teacher believes he or she has the capacity to affect student performance" (p. 4). Rizvi and Elliot (2005) believed that teacher efficacy is an important dimension of teacher professionalism, together with other dimensions such as teacher practice, leadership and collaboration. Recent studies have focused on why some teachers have higher efficacy than others, for example in-service teachers are significantly more efficacious than pre-service teachers (Mertler, 2004) and teachers' background, such as years of teaching experience, is also

found to be related to their level of efficacy (Imants & De Brabander, 1996; Kim & Corn, 1998; Trentham, 1995). Educators have been paying significant attention in measuring teacher efficacy and finding out factors for increasing it over the past two decades mainly because teacher efficacy has a great influence on a broad range of behavior in both students and teachers.

When teachers are highly efficacious, their students are found to have a high level of academic achievement, autonomy and motivation, and a firm belief in their own efficacy (Lin & Gorrell, 2002; Tschannen-Moran & Hoy, 2001). Teacher's level of aspiration, openness to new ideas, and persistence even when encountering difficulties can be influenced by teacher efficacy. Teachers who are efficacious are more likely to stay in their teaching careers, spend more time teaching, contribute greater efforts in classroom planning and organisation and demonstrate greater enthusiasm for teaching. In addition, highly efficacious teachers are more responsive to the needs of students. They are less critical of the mistakes of students, are willing to devote more time to working with students who are encountering problems, and show more involvement in students' learning experiences (Ho & Hau, 2004; Tschannen-Moran & Hoy, 2001).

Since the impact of teacher efficacy is so great, educators have developed instruments to measure it at different periods of time. However, most of these instruments were developed based on the suitability of Western participants. Only limited studies and instruments could be found for measuring the efficacy of Chinese teachers. This study focuses on comparing teacher efficacy of two important cities in China, namely Hong Kong and Shanghai, which are different in various aspects, such as language, culture, education system, ways of demonstrating Confuciansim to authorities (Bray & Koo, 2004; Lau, 1996; Li, 1999; Li & Rao, 2000). The sections below introduce the development of different teacher efficacy scales from the West, and review some of the teacher efficacy studies that have been undertaken with Chinese teachers.

The development of teacher efficacy scales in Western countries

In the 1970s, the RAND organisation conducted the first study of teacher efficacy, using only two items, known as general teaching efficacy and personal teaching efficacy. The first item was: '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 or her home environment'. Teachers who believed in this statement pointed out that environmental factors submerge the power that a teacher can exercise in school. The second item was: 'If I really try hard, I can get through to even the most difficult or unmotivated students'. Teachers believing in this statement demonstrated confidence in their

abilities to overwhelm factors that can make students' learning difficult (Tschannen-Moran et al., 1998). Both of these statements provided a score for teacher efficacy.

Bandura, who studied teacher efficacy after the late 1970s (Tschannen-Moran et al., 2001), concluded that teacher efficacy comprised personal teacher efficacy and professional teaching efficacy. Personal teacher efficacy is defined as the personal responsibility that a teacher accepts for a student's learning or behavior, and professional teaching efficacy is the belief that any teacher has the ability to overcome external factors (Wheatley, 2002). Based on RAND's items and Bandura's concepts of self-efficacy and outcome efficacy, Gibson and Dembo developed a 30-item measurement for teacher efficacy in 1980s (Tschannen-Moran et al., 1998). The 30 items were extracted into two factors called personal teaching efficacy and general teaching efficacy. Gibson and Dembo (1984) concluded that teacher efficacy comprised personal teaching efficacy and general teaching efficacy. Personal teaching efficacy is the confidence individual teachers have in their own teaching ability, while general teaching efficacy, is the global belief that educators can have an impact on student learning. Results of different studies demonstated the existence of personal and general teaching efficacies (Guskey & Passaro, 1994; Hoy & Woolfolk, 1993; Woolfolk & Hoy, 1990).

Emmer and Hickman (1991) continued Gibson and Dembo's scale by making it into a 36-item scale that produced three different variables, namely efficacy for classroom management/discipline, personal teaching efficacy and external influences. Furthermore, Bandura (1997) developed a 30-item teacher self-efficacy scale with seven subscales, including efficacy to influence decision making, efficacy to influence school resources, instructional efficacy, disciplinary efficacy, efficacy to enlist parental involvement, efficacy to enlist community involvement and efficacy to create a positive school climate. The reason for having seven subscales was that teachers' sense of efficacy is not uniform across the different subject matters or different types of tasks they are asked to perform.

Finally, Tschannen-Moran and Hoy (2001) developed their own Teacher Sense of Efficacy Scale. In an earlier work they had suggested that a valid measure of teacher efficacy must consider both personal competence and an analysis of the task with certain resources and constraints in particular teaching contexts. Therefore, a 24-item Teacher Sense of Efficacy Scale was developed extracting three variables, each with 8 items, namely efficacy for instructional strategies, efficacy for classroom management and efficacy for student engagement. To produce a more practical and cautious scale, the researchers selected 4 items with the highest loadings from each variable to construct the 12-item Teacher Sense of Efficacy Scale. The long and short versions were found to be valid and reliable in their studies.

Measuring the efficacy of Chinese teachers

The above studies have mainly focused on in-service teachers from the West, and only limited material has been found that deals with in-service teacher efficacy in the Hong Kong setting. A review of the literature shows, for example, Chan's study (2002) invited only 83 pre-service Hong Kong teachers to understand their stress, self-efficacy, social support and psychological distress. Yeung and Watkins (2000) investigated the personal sense of teaching efficacy of 27 student teachers in Hong Kong. In terms of in-service teachers, Shum and Cheng (1997) studied in-service teachers who were working under the leadership of female principals. Pang and Watkins (2000) emphasized only the Hong Kong teachers' commitment and efficacy in terms of working with parents.

Kennedy developed the Chinese version of the Teachers' Sense of Efficacy Scale (TSE) particularly for Hong Kong in-service teachers (Kennedy & Hui, 2006). The English version of the Scale was intended to have a better understanding of how well teachers deal with difficult tasks in school (Tschannen-Moran & Hoy, 2001; Tschannen-Moran et al., 1998). Kennedy and Hui's (2006) study only applied the Chinese version of the Scale to 228 Hong Kong in-service secondary teachers as pre- and post-tests in order to measure the effectiveness of a teacher-training program. This study demonstrated that the 12 items of the Scale were valid and reliable for assessing the change in teacher efficacy before and after the training program. In terms of validity, the 12-item Chinese version of the TSE was extracted into two factors by applying exploratory factor analysis. Eight items fell into the first factor and the rest of the 4 items fell into another factor. The two factors explained 59.6% of the total variance in which the first and second factors explained 48.3% and 11.3%, respectively. The two factors were known as efficacy in teaching and learning and efficacy in classroom management. In terms of reliability, the Scale had been administrated two times (pretest and posttest) for those teachers and similar results were generated at the two points of time. According to Bryman & Cramer (1997), external reliability or test-retest reliability is achieved by administering a test on two occasions to the same group of subjects. Overall, the 12-item Chinese version of the TSE was considered to be valid and reliable for this specific group of teachers. In fact, the same Scale could be valid for one group but not for another and this is why it is important to think of the process of validity (Wiliamn, 2003).

Aims of this study

Extending from the above study on Hong Kong teacher efficacy, this study aims to compare the efficacy of in-service primary school teachers of Hong Kong and Shanghai by first finding out if the Hong Kong and Shanghai versions of the Teacher Sense of Efficacy Scale (TSE) are valid and reliable when applied to specific locations. In

addition, an investigation into the factors that cause efficacy of Chinese teachers to be high would be meaningful and essential. Therefore, using some basic information and the background of these Hong Kong and Shanghai in-service teachers, and the responses to a follow-up questionnaire distributed to Shanghai in-service teachers, this study aims to examine the factors that could affect teacher efficacy. The background information included the teachers' age, gender, teaching experience, education level and the type of school in which they were working.

Methodology

Instrument for the Hong Kong quantitative study (1)

The Hong Kong and Shanghai versions of the 12-item Teachers' Sense of Efficacy Scale (TSE) were used in this study. From the 12 items originally found in the English version of the TSE the following three factors were extracted for application to in-service teachers in the United States: efficacy in student engagement, efficacy in instructional strategies and efficacy in classroom management. These three factors were found to produce high alpha results ranging from .81 to .86 (Tschannen-Moran & Hoy, 2001). As mentioned, the 12-item Chinese version of the TSE two factors found in Kennedy and Hui's study (2006) were extracted into 2 factors, namely efficacy in learning and teaching and efficacy in classroom management.

In the current study, the Chinese version of the TSE developed by Kennedy was applied in Hong Kong, renamed as the Hong Kong version of the Teachers' Sense of Efficacy Scale (HK-TSE), to examine the general level of teacher efficacy of Hong Kong in-service teachers. Since the HK-TSE had been applied to 228 Hong Kong in-service teachers in Kennedy and Hui's (2006) study and had produced acceptable results in terms of validity and reliability, it was considered that it would be reasonable to apply the scale to the subjects of this current study. As stated, the same Scale could be valid for one group but not for another group. Therefore, it is necessary to find out if the Scale would also be appropriate for another larger group of Hong Kong primary in-service teachers. According to Wiliamn (2003), there are different kinds of validity, such as content validity, predictive validity and concurrent validity. The HK-TSE, which had been applied to Hong Kong in-service teachers in Kennedy and Hui's study, had demonstrated the content validity since the items seemed appropriate for examining the efficacy of in-service teachers in Hong Kong. Further investigation on the factor analysis has to be done to confirm the validity of the Scale applying to both Hong Kong and Shanghai in-service teachers. In addition, unlike Kennedy and Hui's (2006) study in which the subjects filled in the Scale twice, the subjects of this study only answered the items once. Therefore, reliability of the factor(s) generated by the 12 items would investigate if the Cronbach alpha results were over 0.70 (Bryman & Cramer, 1994).

Instrument for the Shanghai quantitative study (2)

On the other hand, a Shanghai version of the Teachers' Sense of Efficacy Scale (S-TSE) was also developed specifically for Shanghai in-service primary teachers. The HK-TSE was reviewed by a group of Shanghai in-service teachers and it was found that they had some difficulties in understanding the 12 items. Therefore, the S-TSE had to be refined. First, the major difference found between HK-TSE and S-TSE was that in Hong Kong, traditional Chinese characters were used while simplified Chinese characters were used in Shanghai. Based on the English version of the Teachers' Sense of Efficacy Scale, the S-TSE was translated into simplified Chinese by a Shanghai teacher (who studied in Hong Kong for several years and was able to speak Cantonese) and then back translated into English. After translating and back translating, the Shanghai teacher tried to modify the sentence structure and wording of the items on S-TSE to be as similar to HK-TSE as possible in order to ensure the comparability of the two Chinese versions. In fact, the sentence structure of the items in both HK-TSE and S-TSE was alike except some of the terms used in Shanghai might be somewhat different than the terms used in Hong Kong. The final version of the S-TSE was reviewed by several in-service teachers in Shanghai in order to ensure that respondents in Shanghai would understand the items clearly. A back-translation was done again by the Shanghai teacher for S-TSE, which was very similar HK-TSE, to make sure that the items matched the English version closely. The process was complicated but necessary in order to ensure that the two versions would be comparable.

Overall, both Hong Kong and Shanghai respondents were asked to rank the 12 items using a Likert scale of 1 to 9 similar to Kennedy and Hui's (2006) study. Based on the groundwork of Kennedy and Hui's study, applying the scale of 1 to 9 in this study could enable comparison between the quantitative results of this study with Kennedy and Hui's results for future studies of the TSE Scale with Hong Kong participants. The respondents were asked how much they could do according to the 12 items. For example, for Item 1: How much can you do to control disruptive behavior in the classroom? If respondents selected 1, it indicated that they could do *nothing* to control disruptive behavior in the classroom. If they selected 3, it meant they could only control *very little*. Answer 5 meant they had *some influence* and 7 meant they could control *quite a bit*. Finally, Answer 9 meant they could control disruptive behavior in the classroom *a great deal*. The interpretation of the meanings of each gradation was given on the questionnaire and also verbally explained to participants before they started. Background information on the teachers, such as the type of school in which they were teaching, their gender, age, years of teaching experience and the highest educational qualification obtained, was also collected. Figure 1 shows the 12 items in English.

	How much can you do? 1 = Nothing 3 = Very little 5 = Some influence 7 = Quite a bit 9 = A great deal								
1. How much can you do to control disruptive behavior in the classroom?	1	2	3	4	5	6	7	8	9
2. How much work can you do to motivate students who show low interest in school work?	1	2	3	4	5	6	7	8	9
3. How much can you do to get students to believe they can do well in school work?	1	2	3	4	5	6	7	8	9
4. How much can you do to help your students value learning?	1	2	3	4	5	6	7	8	9
5. To what extent can you craft good questions for your students?	1	2	3	4	5	6	7	8	9
6. How much can you do to get children to follow classroom rules?	1	2	3	4	5	6	7	8	9
7. How much can you do to calm a student who is disruptive or noisy?	1	2	3	4	5	6	7	8	9
8. How well can you establish a classroom management system with each group of students?	1	2	3	4	5	6	7	8	9
9. How much can you use a variety of assessment strategies?	1	2	3	4	5	6	7	8	9
10. To what extent can you provide an alternative explanation or example when students are confused?	1	2	3	4	5	6	7	8	9
11. How much can you assist families in helping their children do well in school?	1	2	3	4	5	6	7	8	9
12. How well can you implement alternative strategies in your classroom?	1	2	3	4	5	6	7	8	9

Figure 1: The English version 12-item Teachers' Sense of Efficacy Scale (TSE)

Instrument for the qualitative study (3)

Moreover, after analyzing both the Hong Kong and Shanghai datasets, follow-up questionnaires were sent out to 100 Shanghai in-service primary teachers who had also participated in the first stage of the enquiry, and 86 were completed and returned for analysis. The major open-ended question posed in this questionnaire asked respondents to "List 3 factors that contributed to your teacher efficacy". The term teacher efficacy in Putonghua is *JiaoShi XiaoNeng* and this term may not be unfamiliar in Mainland China, especially in Shanghai (Earley, 1994; Earley, Gibson, & Chen, 1999; Hampton, 2000; Tong & Song, 2004). Basically, the term teacher efficacy used in studies of primary and secondary school teachers in Mainland China is the same as the one from the western studies (Wu & Huang, 2002; Huang & Huang, 2003). Almost all of the Shanghai in-service primary school teachers in this study held a bachelors degree (as stated in the Sample Section below) and the term *JiaoShi XiaoNeng* would be understandable for them. In addition, the Shanghai teachers who did the translation / back-translation believed that in-service teachers in Shanghai could understand the term. However, to further assist teachers to answer the question, the 12 statements, which were used in the S-TSE, were also given to the teachers as

a reminder or an indication of what teacher efficacy could include. As seen in Figure 2, the follow-up questionnaires had the major question written on it and also space for these Shanghai in-service teachers to provide their answers.

List 3 factors that contributed to your teacher efficacy: (such as efficacy on the statements below)

Teaching efficacy
Motivate students who show low interest in school work
Get students to believe they can do well in school work
Help your students value learning
Craft good questions for your students
Establish a classroom management system with each group of students
Use a variety of assessment strategies
Provide an alternative explanation or example when students are confused
Assist families in helping their children do well in school
Implement alternative strategies in your classroom
Discipline efficacy
Control disruptive behavior in the classroom
Get children to follow classroom rules
Calm a student who is disruptive or noisy

Factor 1

Factor 2

Factor 3

Figure 2: Follow-up Questionnaire for Shanghai Primary In-service Teachers

In Hong Kong, 725 in-service primary school teachers from 28 different primary schools participated in this study. These teachers came from schools ranging from government, aided, private and direct subsidy schools. Schools were selected randomly amongst the 18 districts in Hong Kong. Forty-six teachers were from government schools, 509 were from aided schools, 136 were from private schools and 34 were from direct subsidy schools. Of these 610 were female and 115 were male, and the average age and years of teaching for this group were 35.92 and 11.83 respectively. The highest educational qualifications reported were 68 who had a masters degree, 502 who had a bachelors degree, 152 who had a teacher certificate and 3 who had a secondary degree. Cantonese is the spoken language of these teachers and they used traditional Chinese for writing.

Hong Kong	18 Districts			
28 schools	Government	Aided	Private	Direct Subsidy
	46 Teachers	509 Teachers	136 Teachers	34 Teachers
Education Level	68 Masters Degree	502 Bachelors Degree	152 Teacher certificate	3 Secondary Degree
Gender	610 Female	115 Male		
Average Age of Teachers	35.92	Average Year of Teaching	11.83	

Table 1: In-service teachers selected in Hong Kong (n = 725)

In Shanghai, 575 in-service primary teachers from 22 different primary schools participated in this study. Amongst these 575 teachers, 430 were from public schools and 145 were from private (*minban*) schools. The schools were selected randomly from 5 different districts in Shanghai. Of these, 510 were female and 65 were male. The average age and years of teaching for this group were 34.97 and 14.52 respectively. Three teachers reported that they had a master degree as their highest education level, 195 had a four-year bachelor degree, 369 had a three-year bachelor degree and 5 had a secondary degree only. Three subjects did not answer this question. Teachers in Shanghai speak in Putonghua and Shanghainese and used simplified Chinese characters for writing. Overall, the culture or even the wording and the sentence structure that Shanghai teachers use in speaking and writing is different from those used by the Hong Kong counterparts (Bray & Koo, 2004; Li & Rao, 2000).

Shanghai	5 Districts			
22 Schools	Government	Private (minban)		
	430 Teachers	145 Teachers		
Education Level: 3 With No Answers	3 Masters Degree	195 4-year Bachelors Degree	369 3-year Bachelors Degree	5 Secondary Degree
Gender	510 Female	65 Male		
Average Age of Teachers	34.97	Average Year of Teaching	14.52	

Table 2: In-service teachers selected in Shanghai (n = 575)

Results

Quantitative results

In order to examine the validity and reliability of the HK-TSE and S-TSE when applied to two large groups of in-service teachers, factor analysis and Cronbach alpha analyses were run. First of all, both the Hong Kong and Shanghai datasets were combined to examine the factor analysis result. Table 3 shows that only 1 factor was extracted by using principal components and varimax. The Cronbach alpha result for the 12 items was .95 and the factor was named as general teacher efficacy.

Items	General Teacher Efficacy Alpha = 0.95
12. How well can you implement alternative strategies in your classroom?	.87
6. How much can you do to get children to follow classroom rules?	.85
10. To what extent can you provide an alternative explanation or example when students are confused?	.84
11. How much can you assist families in helping their children do well in school?	.82
3. How much can you do to get students to believe they can do well in school work?	.82
7. How much can you do to calm a student who is disruptive or noisy?	.81
8. How well can you establish a classroom management system with each group of students?	.81
9. How much can you use a variety of assessment strategies?	.80
4. How much can you do to help your students value learning?	.80
2. How much work can you do to motivate students who show low interest in school work?	.79
5. To what extent can you craft good questions for your students?	.77
1. How much can you do to control disruptive behavior in the classroom?	.76
Eigenvalue (% of variance explained)	7.90 (65.86%)

Note: Only values of 0.70 or above are shown in the table

Table 3: Factor analysis for HK-TSE and S-TSE

When the two datasets were treated separately (as seen in Table 4), one factor was still extracted from the 12-item HK-TSE and had a Cronbach alpha result of .93. However, for the S-TSE, two factors were extracted and the Cronbach alpha results for factors 1 and 2 were .87 and .71 respectively. As seen in Table 5, the first factor included items related to the general teaching of students and this factor was therefore renamed as teaching efficacy. For the second factor, the 3 items related to the issue of discipline and therefore was referred to as discipline efficacy.

An independent t-test was run to examine the teacher efficacy levels of Hong Kong and Shanghai in-service primary school teachers. In addition, the years of teaching experience, the highest educational qualification obtained, and age were compared between the Hong Kong and Shanghai in-service teachers. Table 6 shows that Shanghai in-service teachers had a significantly higher score than their Hong Kong counterparts. Moreover, Shanghai in-service teachers seemed to have longer teaching experience than did their counterparts in Hong Kong. There were no significant differences with respect to the highest educational qualification or age.

Since there was a significant difference between Hong Kong and Shanghai in-service primary teachers with respect to general teacher efficacy, it would be worthwhile to examine the scores of each individual item on the scale. Table 7 shows that Shanghai in-service teachers generally had higher scores on all 12 items than their Hong Kong counterparts.

Items	General Teacher Efficacy Alpha = 0.93
12. How well can you implement alternative strategies in your classroom?	.84
6. How much can you do to get children to follow classroom rules?	.84
10. To what extent can you provide an alternative explanation or example when students are confused?	.81
8. How well can you establish a classroom management system with each group of students?	.81
4. How much can you do to help your students value learning?	.80
3. How much can you do to get students to believe they can do well in school work?	.79
11. How much can you assist families in helping their children do well in school?	.78
5. To what extent can you craft good questions for your students?	.74
7. How much can you do to calm a student who is disruptive or noisy?	.71
9. How much can you use a variety of assessment strategies?	.68
2. How much work can you do to motivate students who show low interest in school work?	.67
1. How much can you do to control disruptive behavior in the classroom?	.63
Eigenvalue (% of variance explained)	6.95 (57.90%)

Note: Only values of 0.60 or above are shown in the table

Table 4: Factor analysis for HK-TSE

Items	Teacher Efficacy Alpha = 0.87	Discipline Efficacy Alpha = 0.71
2. How much work can you do to motivate students who show low interest in school work?	.78	
4. How much can you do to help your students value learning?	.71	
5. To what extent can you craft good questions for your students?	.68	
3. How much can you do to get students to believe they can do well in school work?	.67	
8. How well can you establish a classroom management system with each group of students?	.63	
10. To what extent can you provide an alternative explanation or example when students are confused?	.58	
12. How well can you implement alternative strategies in your classroom?	.56	
11. How much can you assist families in helping their children do well in school?	.56	
9. How much can you use a variety of assessment strategies?	.56	
1. How much can you do to control disruptive behavior in the classroom?		.83
7. How much can you do to calm a student who is disruptive or noisy?		.77
6. How much can you do to get children to follow classroom rules?		.60
Eigenvalue (% of variance explained)	5.40 (45.00%)	1.03 (8.62)

Note: Only values of 0.50 or above are shown in the table

Table 5: Factor analysis for S-TSE

A closer look at the 12 items in the Shanghai dataset from Table 7 shows that the scores on Items 1, 6 and 7 seem to be higher than for the rest of the items, and these 3 items constitute the factor of discipline efficacy as seen in Table 5. It seems that

discipline efficacy has a higher rating than teaching efficacy. In order to find out if there is actually a significant difference between the rating of teaching efficacy and discipline efficacy amongst Shanghai in-service primary teachers, a pair sample t-test was run. Table 8 shows that the score on discipline efficacy was significantly higher than that for teaching efficacy.

Variables	Program	N	Mean	Std. Dev.	Sig.
General teachers efficacy	Hong Kong Shanghai	725 575	6.97 8.37	.97 .61	.00
Year of teaching experience	Hong Kong Shanghai	717 531	11.83 14.52	8.52 7.25	.00

Table 6: Independent t-test between Hong Kong and Shanghai in-service teachers

	Hong Kong = 725		Shanghai = 575	
Items	**Mean**	**SD**	**Mean**	**SD**
1	6.89	1.48	8.62	.73
2	6.60	1.11	8.19	1.02
3	7.10	1.22	8.37	.94
4	7.01	1.21	8.18	1.10
5	6.98	1.18	8.04	1.06
6	7.40	1.27	8.61	.71
7	6.90	1.34	8.55	.76
8	7.06	1.34	8.13	1.05
9	6.44	1.30	8.37	.95
10	7.40	1.30	8.64	.73
11	6.82	1.29	8.31	1.05
12	7.08	1.21	8.44	.85

Table 7: Mean score on the 12 items rated by in-service teachers

A regression analysis model was run to find out what factors could predict the general teacher efficacy of Hong Kong and Shanghai in-service primary school teachers. Different independent variables were included, namely, location, gender, age, years of teaching experience and educational level. The method 'stepwise' from SPSS was applied and the results shown in Table 9 indicate that 42% of the variance of general teacher efficacy was predicted by location, years of teaching experience and gender. When data were entered, 1 was entered as Hong Kong location and 2 was entered as Shanghai location. Therefore, results in Table 9 show a positive regression for location indicating a significant higher rating on teacher efficacy could be predicted by Shanghai in-service teachers. In terms of years of teaching experience, Table 9 shows that for both Hong Kong and Shanghai teachers, longer teaching experience could predict higher teacher efficacy. Similar to the situation of location, when data

were entered, 1 was entered as male teacher and 2 was entered as female teacher. Thus, a positive regression for gender indicated a significantly higher rating on teacher efficacy could be predicted by female teachers.

Variables	N	Mean	Std. Dev.	Sig.
Teaching Efficacy	575	8.29	.68	.000
Discipline Efficacy	575	8.60	.58	

Table 8: Paired sample t-test for Shanghai in-service teachers

Qualitative results

According to the quantitative results described above, the 86 follow-up questionnaires returned were subjected to further investigation on why Shanghai in-service primary teachers had such high general teacher efficacy. As seen in Figure 2, one open-ended question posed in the follow-up questionnaire asked respondents to: List 3 factors that contributed to your teacher efficacy. Content analysis was used to interpret responses (Brantlinger, Jimenez, Klingner, Pugach, & Richardson, 2005). All of the answers provided by the 86 follow-up questionnaires were reviewed and classified by the researcher of this study together with the Shanghai teacher who did translation and back-translation for the S-TSE. Based on the experience of the researcher and the Shanghai cultural background of the teacher, it was apparent that some answers could be grouped under the same themes. The majority of the answers could be classified into the following three categories: respect or confidence placed in them by students and / or parents, the training they received from universities and the experience they gained from daily teaching practice. The above factors were the three most common answers given, however, some of the in-service teachers also provided other factors that just occurred once or twice from the 86 follow-up questionnaires and thus could not be classified into one of the above major factors. For example, 'it comes naturally', 'self encouragement', or 'commitment makes efficacy'. Though it was requested that the in-service teachers should provide 3 factors, most subjects provided one or two factors only.

Variables	B	SE B	ß
Location	1.37	.05	.62***
Year of Teaching Experience	9.95E-03	.00	.07**
Gender	.23	.07	.07**

Note. R≈ = .42; R≈ = .42 (*** p = .000; **p = .001)

Table 9: Regression analysis for variables predicting general teacher efficacy

Discussion

In this study, the factor analysis and Cronbach alpha results for both the HK-TSE and the S-TSE were acceptable when the datasets were combined and when they were run separately. As stated earlier, validity of a scale should be seen as a process rather than a property of a scale, and this study has demonstrated that the HK-TSE could be applied to a larger number of in-service teachers in Hong Kong. Overall, the general teacher efficacy level was significantly higher for Shanghai in-service teachers than for Hong Kong in-service teachers both as a whole and for each individual item on the scale. Based on the results of this study, there is no doubt that the general teacher efficacy of Shanghai in-service teachers was higher. A score of 8.37 out of 9 was achieved for Shanghai in-service teachers.

Though Shanghai in-service teachers were found to have higher teacher efficacy, the results of this study showed that some aspects might be practicable for both locations. The regression analysis model showed that female in-service teachers have a higher teacher efficacy than male in-service teachers. In many different regions, the number of female teachers surpassed the number of male teachers at the primary level (Mills, Martino, & Lindgard, 2004; Wilkins & Gamble, 2000). Misperception may occur that primary teaching is a 'feminine' career and that female teachers are better at teaching young children. The results of this study showed that education in both Hong Kong and Shanghai should encourage more men to teach in primary schools and provide more chances for primary male teachers to demonstrate their competence in handling different school activities.

Another factor indicating teacher efficacy of in-service primary school teachers in Hong Kong and Shanghai was the number of years of teaching experience. Similar to other studies (Imants & De Brabander, 1996; Lin et al., 2002), this study demonstrated that teaching experience related to teachers' perceived self-efficacy and school efficacy. The number of years of teaching experience appeared to have a significant relationship to teacher efficacy. Mertler (2004) compared pre-service and in-service teachers on 'assessment literacy' and in-service teachers scored significantly higher than pre-service teachers. Such results might be due to the experiences that in-service teachers have accumulated in handling different challenging situations in schools and classrooms. Studies on experiential learning showed that learning occurs through both concrete experiences and critical reflection on these experiences (Hui & Cheung, 2004; Zuber-Skerritt, 2002). As mentioned, with more years of teaching experience, teachers are able to see, experience and handle different situations and thus critically reflect on these situations, which can help them grow and handle similar situations better or in more mature ways the next time they occur.

Contributions of the qualitative results of this study

Based on the independent t-test between and the mean score on the 12 items between Hong Kong and Shanghai in-service teachers, Shanghai in-service teachers had higher ratings on all aspects. A follow-up qualitative questionnaire was used in order to understand the factors that contributed to this high score. Factors such as (i) respect and confidence placed in them by students and parents, (ii) the training they received from universities, and (iii) the experience they gained from daily teaching practice were important in contributing to the efficacy of teachers in Shanghai.

In terms of the respect and confidence placed in teachers, China has a long tradition of respecting teachers and the Chinese government continues to work at building up the nation's respect for teachers (Li, 1999). Influenced by the concept of Confucius, teachers in China are still highly respected by students and parents, because teachers are seen by students as being knowledgeable authorities, especially at the primary school level. As explained by a Shanghai in-service primary teacher, when parents and students showed trust and strong respect for teachers, the teachers demonstrated more confidence and power when managing and disciplining students. Moreover, Chinese students have always been expected to be obedient in the classroom since Confucianism perceives that the right of a teacher to exert control and dominance over students is acceptable (Lau, 1996; Dooley, 2001).

Regarding the second factor, the qualitative results of this study show that the training in-service teachers received from universities both before and while they were working as teachers was an important factor contributing to their high teacher efficacy. Similar to other places around the world, teacher education in China covers both pre-service education and in-service training (Zhou & Reed, 2005). Pre-service training is provided for students who are aiming for a teaching post in kindergarten, elementary, junior or senior secondary schools. This pre-service training, also known as professional training, is provided in China by various specialized institutions, such as secondary teacher schools, teacher professional colleges and teacher colleges and universities. Teacher universities or colleges offer a 4-year bachelor degree course to pre-service teachers who want to teach in senior secondary schools. Junior teachers' colleges provide a 2-year certificate program for pre-service junior secondary school teachers. Secondary teacher schools offer a 3-year program to pre-service teachers who want to teach in elementary or kindergarten schools (Guo, 2005).

In-service training in China is provided through training programs for schoolteachers and administrators. These programs are usually offered by educational institutions established by provinces, autonomous regions, and municipalities and teachers' further training colleges (Chapman, Chen, & Postliglione, 2000). According to Ding's (2001) study, in-service teachers must continuously improve their qualifications in order to

keep their professional development up to a satisfactory level. Many of these in-service teachers are hoping to become outstanding key teachers or head teachers. Shanghai has paid a great deal of attention to in-service training with a view to improving performance. The Chinese government is trying hard to build up the professional image of teachers by continuously improving training for both in-service and pre-service teachers (Ding, 2001; Lin & Xun, 2001; Zhu & Zhu, 2001). Training teachers in China to be high quality teachers has been a critical issue since the issuance of "The Law of Compulsory Education of the People's Republic of China" in 1986 (Xie, 2001). To further promote the professionalism of teachers, 'The Law of Teachers of the People's Republic of China" issued in 1993 clearly defined in legal terms the role of teachers as professionals performing the jobs of education and teaching.

Based on the qualitative results of this study, high quality pre-service training for teachers seems to help in-service teachers to demonstrate high teacher efficacy. Different but specific programs are provided for in-service teachers, for example, training for moral, politics and citizenship education (Mak, 1998; Karsten, Cogan, Grossman, Liu, & Pitiyanuwat, 2002; Zhu & Liu, 2004). All of these programs could help not only to raise the professional image of in-service teachers, but also to actually increase their efficacy.

Finally, in terms of the third factor, the in-service primary school teachers claimed that their teaching experience was a major factor contributing to their efficacy. In line with the quantitative results, such as the regression analysis model, the length of teaching experience was a variable that predicted the general efficacy score of teachers. Similar to the results of some other studies (Imants & De Brabander, 1996; Lin, Gorrel, & Taylor, 2002), teaching experience was found to be related to the teachers' perceived self-efficacy and the school efficacy. The number of years of teaching experience and the age of the teacher seemed to have low but significant relationships with teacher efficacy. In a study by Mertler (2004), pre-service and in-service teachers were compared on 'assessment literacy'. Basically, in-service teachers were found to score significantly higher than pre-service teachers. Such results might be due to the experience that in-service teachers had accumulated in handling different challenging situations in schools and classrooms. With more years of experience, teachers are able to see, experience and handle different situations and critically reflect on those situations (Zuber-Skerritt, 2002; Hui & Cheung, 2004). This can help them to grow in confidence and to handle similar situations better or in a more mature way the next time they come across them.

Conclusion

Teacher efficacy is an important issue in the field of education, especially when a society wants to increase its quality of education and the future of its citizens in the long run. By comparing the teacher efficacy of the in-service primary school teachers of Hong Kong and Shanghai, this study concluded that Hong Kong in-service primary teachers rated their efficacy lower than did their counterparts in Shanghai. This might be because they had a cultural preference for being modest when selecting the answers, or because they actually felt they had weaker teacher efficacy. In fact, if the Hong Kong in-service teachers rated their teacher efficacy as being moderate, this would leave them room for continuous improvement. On the other hand, this study also identified three major factors that could have contributed to the high efficacy score for Shanghai in-service primary teachers. Knowledge of these factors could be of benefit to educators in other locations.

Based on results of this study, it is hoped that a more in-depth qualitative study could be done to understand more about the links between specific variables and teacher efficacy. Simply comparing the differences between the efficacy levels of various cultures or regions is just the first step to investigate teacher efficacy. Interviewing teachers and reviewing the education system and teacher education curriculum in universities would provide a more holistic view of the issue.

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