

## **Pre-Service Teachers' Personal and General Teaching Efficacy Beliefs: A Pre-Test and Post-Test Design**

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### **Abstract**

The study was carried out to determine pre-service teachers' efficacy beliefs during a one year teacher education program. For this purpose 55 pre-service teachers were selected as a sample of the study. The Teacher Efficacy Beliefs scale developed by Gibson and Dembo (1984) was used for data collection purposes. This scale consisted of two factors: Personal Teaching Efficacy and General Teaching Efficacy beliefs. Data was collected at the beginning of the first semester and at the end of the last semester of the teacher education program. It is generally assumed that the pre-service teachers' beliefs tend to increase with the progression of coursework. However, results indicated that pre-service teachers' personal teaching efficacy increased, but general teaching efficacy beliefs decreased with the progression of coursework. The younger pre-service teachers

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held significantly high personal efficacy beliefs. No significant differences were found on gender and academic qualification.

*Keywords:* Personal teacher efficacy, general teacher efficacy, pre-service teachers, teacher education program.

Self-efficacy is the significant predictor of human behaviour. There is a strong relationship between self-efficacy beliefs, behavioural change and outcomes (Pajares & Schunk, 2001). Bandura (1977) proposed a theory of self-efficacy related to behavioural change. He mentioned two dimensions of self-efficacy in his theory. The first dimension is associated with efficacy expectations. Efficacy expectations build up an individual's belief that he or she is capable of performing a given behavior. The second dimension outcome expectations are an individual's belief that carrying out a particular behavior will result in a desirable outcome (Fortman & Pontius, 2000). The concept of self-efficacy is linked with the concept of agency, which is the fundamental personality trait with the help of which a person can make a difference in his own life and his surroundings (Bangs & Frost, 2012).

Teachers' actions and behaviors are associated with their beliefs and expectations. Teachers' beliefs in their capabilities to teach students and influence students' achievement scores are robust indicators of instructional success. According to Bandura (1977), individuals with a greater sense of efficacy embrace the control of the events affecting their lives, and show behavior permitting them to comprehend anticipated outcomes. For teachers, this idea may mean that teachers with higher efficacy beliefs exhibit behaviors which result in more educational activities in class and cause more learning by the students. Consequently, teachers' self-efficacy beliefs, which may absolutely affect classroom activities of teachers, have been an important subject for educational researchers (Cerit, 2010). A positive correlation is found between Teacher self-efficacy and students' achievement (Leithwood, 2006).

Prospective teachers' beliefs affect their way of teaching, observations, judgments and actions in the classroom. In this way, the effectiveness of teacher training can be measured in terms of the improvement of prospective teachers' teaching capability, a substantial part of which is founded on a personal sense of teaching efficacy (Woolfolk Hoy & Burke-Spero, 2005). Prospective teachers' self-efficacy beliefs are an important element of teacher education programs that is necessary to teach effectively and bring about positive changes in students' learning (Shaukat, 2011). Determining the level of prospective teachers' self-efficacy belief may contribute towards a prediction of how they will perform. Two factors are related to teacher efficacy beliefs, general teaching efficacy, which is the belief of teachers about their ability in general to overcome social and economic factors in their students' lives, and their personal teaching efficacy, which is a more explicit and individual belief about one's capability to influence learning (Guskey & Pasaro, 1994).

Teacher education programs play an important role in improving the self-efficacy of prospective teachers (Pendergast, Garvis & Keogh, 2011). Professional growth is defined as changes over time in the behavior, knowledge, images, beliefs, or perceptions of novice teachers (Kagan, 1992). A significant aspect of the teacher education program is to develop positive values, supportive ideas, high ethical principles and strong moral understandings for accepting their responsibility for the training and education of children. Prospective teachers need to gain both theoretical and practical knowledge about how to teach at school level (Forlin, 2010).

Training is an important element in shaping self-efficacy beliefs of prospective teachers. Thus, there is a need to measure the personal and teaching efficacy beliefs of pre-service teachers before and after the teaching profession. The specific objectives of this study were:

- To identify the pre-service teachers' personal and general teaching efficacy beliefs at the beginning and at the end of teacher education program.
- To identify the effect of gender and age on pre-service teachers' personal and general teaching efficacy beliefs.

## **Method**

### **Sample**

About 55 B.ED students (pre-service teachers) from a public university responded to the questionnaire. This public university is a specialized university that prepares students for future teaching and it offers specific teacher education courses with effective teaching styles and pedagogies. Courses both on content and pedagogical skills are offered to enable these graduating students to teach according to the latest pedagogical challenges. B. Ed students after completing their one year teacher education are regarded as suitable teachers to work at the school level. There were 45 females and 10 male pre-service teachers in the sample. The majority of the participants were aged 20-25 years and only few were in the age group of 25-30 years. More than half of the participants were holding a degree of Bachelor in Arts; a few participants had backgrounds with a Bachelors in Science degree. A small number of participants had Masters in Arts, whereas only two participants had Masters in Science degree.

A summary of demographic variables is given below.

**Table 1**

*Demographic Information about Participants*

No Variables	n	Percentage
1 Gender		
Male (pre-test)	10	18.2
Females (pre-test)	45	81.8
Male (post-test)	10	18.2
Females (post-test)	45	81.8
2 Age		
20-25	39	70.9
25-30	16	29.1
3 Qualification		
B.A	29	52.7
B.Sc	10	18.2
M.A.	14	25.5
MSc	2	3.6

**Measures**

*Demographic information*

Part one of the survey instrument sought information about demographical variables (e.g, gender, academic qualification and age of the participants).

*Teacher Self-Efficacy scale (TSE)*

The Teacher self-efficacy scale originally developed by Gibson and Dembo (1984) was used in the present study to measure the pre-service teachers' self-efficacy beliefs. Before administering the

scale on the final sample, it was pilot tested on 20 teachers to make sure that the language of the statements was appropriate. After pilot testing, the English version of the scale was found to be appropriate. The scale comprised of 22 statements. It was a six-point rating scale, ranging from 'strongly agree (6)' to 'strongly disagree (1)'. It contains two factors: personal efficacy and teacher efficacy beliefs. An example of each factor is as follows:

When I really try, I can get through to most difficult students (Personal efficacy, factor 1)

The amount a student can learn is primarily related to family background (Teacher efficacy, factor 2).

### Reliability of the Questionnaire

Table 2

#### *Reliability of Personal Efficacy Scale*

	Cronbach's Alpha	Number of items
PES		
Pretest	0.619	13
Posttest	0.743	13
Combined	0.689	26

Table 3

#### *Reliability of General Teaching Efficacy Scale*

TES	Cronbach's Alpha	Number of items
Pretest	0.614	9
Posttest	0.651	9
Combined	0.672	18

## Procedure

Questionnaire forms were distributed to 60 pre-service teachers of a one year pre-service teacher education program at a public university. In the event, 55 questionnaire forms were completed by the teachers at the beginning of the first semester and at the end of the last semester. Prior to the administration of the scale, participants were informed about the nature of the study and their right to refuse to participate. A pre-test and post-test design was adopted for the study. Instructions were given for completing the demographic information like gender, academic background and age, and how the responses to the scale items should be checked. Respondents were asked to answer each item as accurately as they could, and they were informed that their confidentiality shall be maintained strictly. The researchers were available during the completion of the questionnaire to respond any of their queries. The pre-service teachers were given one full class period, approximately 60 min, to fill up the questionnaires. Incomplete questionnaire forms were discarded before data entry.

## Results

Data were analyzed by using the paired sample t-test. Mean scores and standard deviations were also used to interpret the results.

Table 4

*Mean Scores Difference between Pre-Test and Post –Test of Pre-service Teachers' Personal Efficacy Factor (N=55)*

PEF				SE	Effect size	Mean difference	t	P
	M	N	SD					
Pretest	56.59	55	5.53	.74	0.38			
						2.36	2.22	0.03
Posttest	58.95	55	6.73	.91				

Table 4 indicates that pre-service teachers' personal-efficacy was significantly improved in posttest (M = 56.59, SE = .74; M= 58.95, SE = .91 for pre and posttest respectively). The effect size was medium (d = 0.38).

Table 5

*Mean Scores Difference between Pre-Test and Post -Test of pre-service Teachers' Teacher Efficacy Factor (N=55)*

TEF				SE	Effect size	Mean difference	t	P
	M	N	SD					
Pretest	26.22	55	4.63	.62				
Posttest	23.34	55	4.16	.56	-0.65	2.87	4.23	.000

Table 5 shows that pre-service teachers' teacher -efficacy was significantly decreased in the posttest (M = 26.22, SE = .62; M= 23.34, SE = .56 for pre and posttest respectively). The effect size was high and negative (d = -.65)

Table 6

*Effect of Pre-Service Teachers' Training Program on Pre-Service Teachers' Personal Efficacy across Age Groups (N=55)*

Age group	Test				SE	Effect size	t	P
		M	N	SD				
20-25	Pretest	57.36	39	5.23	.84	0.54	2.235	0.031
	Posttest	60.26	39	5.57	.89			
25-30	Pretest	54.69	16	5.93	1.48	0.15	.570	.577
	Posttest	55.75	16	8.34	2.08			



Table 6 shows that in Personal Efficacy Factor, the scores of both age groups (20-25 and 25-30) were significantly higher in posttest (M = 60.26, SE = .89; M= 55.75, SE = 2.08 respectively) than in pretest (M = 57.36, SE = .84; M= 54.69, SE = 1.48 respectively). Effect size was medium in first and small in second case (d = 0.54 & d = 0.15).

Table 7

*Effect of Pre-Service Teachers' Training Program on Pre-Service Teachers' Teacher Efficacy across Age Groups (N=55)*

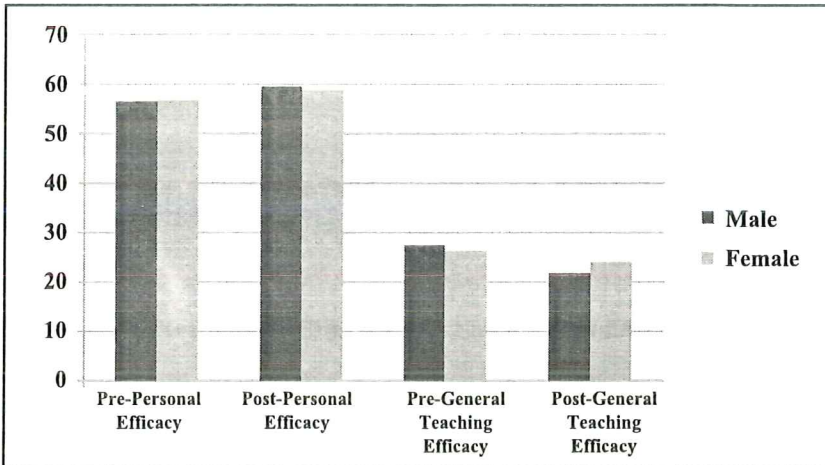
Age group	Test	M	N	SD	SE	Effect size	t	P
20-25	Pretest	26.15	39	4.40	.70	-0.59	3.1	0.003
	Posttest	23.72	39	3.85	.62			
20-25	Pretest	26.37	16	5.27	1.32	-0.78	2.8	.013
	Posttest	22.44	16	4.84	1.21			

Table 7 shows that in Teacher Efficacy Factor, the scores of both age groups 20-25 and 25-30 were significantly lower in posttest (M = 23.72, SE = .62; M= 22.44, SE = 1.21 respectively) than in pretest (M = 26.15, SE = .70; M= 26.37, SE = 1.32 respectively). Effect sizes were high and negative in both cases (d = -0.59 & d = -0.78).

### Comparison of Gender

The t-test revealed that there was no significant difference between the scores of male and female on pre-personal efficacy, post-personal efficacy, pre-general teaching efficacy and post-general teaching efficacy scale. Mean score values showed that personal efficacy of both male and female prospective teachers improved in post-test whereas their general teaching efficacy decreased in posttest.

**Figure 1.** Personal and General Teaching Efficacy of Male and Female Prospective Teachers at Beginning and End of Teacher Education Program



### Discussion

The present study was carried out to determine the pre-service teachers' personal and teaching efficacy beliefs during a teacher education program. This study did not reveal gender differences between the two factors of Teacher Efficacy Scale (TES). There was no significant difference in male and female pre-service teachers' personal and teaching efficacy beliefs on pre-test and post-test.

This study revealed that pre-service teachers' personal teaching efficacy beliefs improved with the progression of coursework, whereas teachers' general teaching efficacy beliefs declined and significantly decreased in posttest. Further it was found that the reason might be that teacher training program is not effective in developing the professional knowledge and teaching skills to improve general teaching efficacy beliefs and hence they were not confident for future teaching. Prospective teachers' self-beliefs might be turned down as a result of their coursework. According to some research studies; coursework does not play a significant role in improving pre-service teachers' self-efficacy beliefs (Lin &

Gorrell, 2001). A similar research finding was also found in the study by Hoy and Woolfolk (1990).

The other possible reason for this may be that the pre-service teachers are not completely aware about the realities of teaching situation and students' attitudes, behaviors and performance at school (Witcher et. al., 2008). Some other research studies also support the view that pre-service teachers have inappropriate or unrealistic expectations about the students they are going to teach after finishing their coursework (Gomez & Comeaux, 1990; Kagan, 1992).

Pendergast, Garvis and Keogh (2011) suggested that possible reason of this decline might be that prospective teachers overestimate their teacher efficacy before they have any experience of classroom teaching. When they experience classroom teaching during their practicum, they know the reality of their role as teacher and their teacher self-efficacy is declined by this.

At the age variable, it was found in this study that pre-service teachers in the younger age group of 20-25 years held significantly higher personal efficacy beliefs than those of older 25-30 group. Surprisingly no significant difference was found between young and older age group of pre-service teachers' general teaching efficacy beliefs. Although the younger group of pre-service teachers held greater mean scores on general teaching efficacy factor than older group but this difference was not significant. There may be some reasons behind this finding; the younger group of pre-service teachers faced a lack of information about the ground realities of the teaching situation (instructional strategies; classroom management; and knowledge of learners and learning) and/or they were more enthusiastic and internally motivated to bring about a change in students' learning. According to Skaalvik & Skaalvik (2010), teacher self-efficacy may decrease if teacher believes that external factors like ability and background of students etc. are more important for the learning of the students than the teaching of the teacher.

Pendergast, Garvis and Keogh (2011) also reported a similar finding that gender, age, and program have no significant effect on the teacher efficacy. Hence teacher self-efficacy is dependent on the content and context of teacher education program and the variables like gender, age, and program were not predictive of teacher self-efficacy.

### **Implications for Future Study**

There are implications in the low reliabilities found in this Pakistani study for the use of the Gibson and Dembo scales. These issues are referred to elsewhere in some detail (Shaukat, 2011), and confirm the need for factor analysis of the data when an attitude measure is used out of its cultural context. It is recommended that such analyses precede the use of the Gibson and Dembo scales when used outside North America.

The teacher education program plays a significant role in enhancing the professional knowledge self-efficacy beliefs of pre-service teachers to make difference in students' learning (Cerit, 2010). In this study pre-service teachers faced a lack of general teaching efficacy beliefs to teach students. For this reason, the teacher education program should be reviewed to develop teaching skills and professional abilities to improve their general teaching efficacy. Improving pre-service teachers' efficacy beliefs through teacher training programs is an imperative in terms of developing self-confidence to endorse students' learning when they enter in teaching and contribute positively to make a difference in students' learning.

In Pakistan, teacher trainers generally may not have practice and experience of teaching in schools while they are preparing a pre-service teacher; that is why teacher trainers tend to coach in a theoretical way. Generally in Pakistan more emphasis is given on traditional methods for teaching. Teacher educators also use lecture methods of direct instruction rather than learner centered interactive teaching, so they do not fulfill the needs of future teachers and don't

represent themselves as role model for them. There is a dire need that teacher educators be made aware of the importance of teacher efficacy beliefs and develop concepts and skills among future teachers.

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