SELF-EFFICACY OF FORMALLY AND NON-FORMALLY TRAINED PUBLIC SECTOR TEACHERS

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ABSTRACT

The main objective of the study was to compare the formally and non-formally trained in-service public sector teachers' Self-efficacy. Five hypotheses were developed describing no difference in the self-efficacy of formally and non-formally trained teachers to influence decision making, influence school resources, instructional self-efficacy, disciplinary self-efficacy and create positive school climate.

Teacher Efficacy Instrument (TSES) developed by Bandura (2001) consisting of thirty 9-point items was used in the study. 342 formally trained and 255 non-formally trained respondents' questionnaires were received out of 1500 mailed.

The analysis of data revealed that the formally trained public sector teachers are high in their self-efficacy on all the five categories: to influence decision making, to influence school resources, instructional self-efficacy, disciplinary self-efficacy and self-efficacy to create positive school climate.

Keywords: Self-Efficacy, Non-Formally Trained; in-service public sector teachers'

INTRODUCTION

Human development is the basis for national and economic development, and education is key to human development. Reform efforts have been enforced in every country through mandates and regulations to improve education to prepare all students to compete in a global society (Ahearn, 2002; Darling- Hammond, 2004; Hipp, 1996; Olson, 2002). Therefore, every country seeks to ensure that its investment in education is effectively targeted and efficiently utilized. But it cannot be orchestrated without committed and high efficacious teachers because studies have shown a positive correlation between teachers' perceived self-efficacy and student achievement. So, teachers are now finding it necessary to reflect on teaching practices, as well as knowledge and pedagogy in an effort to better meet the needs of students (Darling-Hammond & McLaughlin, 1995). The task of the development of cognitive competencies rests heavily on the talents and self-efficacy of teachers (Bandura, 1997).

Efficacy beliefs refer to judgments regarding the ability to perform actions required to achieve desired outcomes (Bandura, 1977, 1986, 1997).

Teacher efficacy has long been identified as a crucial construct in the research on teachers and teaching therefore, it has been considered as integral to the practice of education. Teacher efficacy refers to "the teacher's belief in his or her capability to

organize and execute courses of action required to successfully accomplishing a specific teaching task in a particular context" (Tschannen-Moran, Woolfolk Hoy, & Hoy, 1998, p. 233).

TEACHER EFFICACY

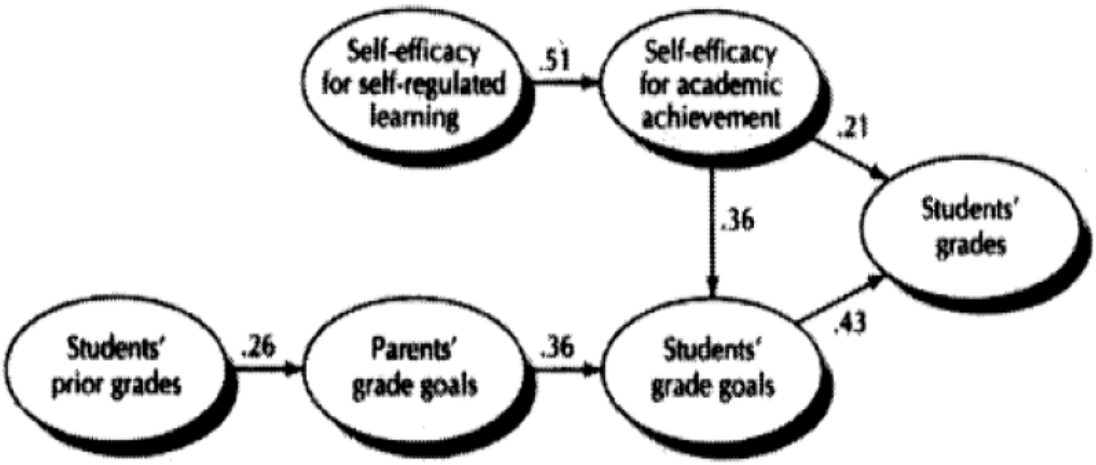
Tschannen-Moran, Woolfolk Hoy, & Hoy (1998) discussed and determine a definition and conceptual meaning of the teacher efficacy construct. Guskey and Passaro (1994) interpreted teacher efficacy from a locus of control foundation as proposed by Rotter (1966) in contrast to those (e.g., Tschannen-Moran et. al., 1998) who favour an understanding of this construct based on the work of Bandura's (1977) social cognitive theory.

The current work is grounded in Bandura's (1977) social cognitive theory of self-efficacy, which has come to play a dominant role in the teacher efficacy literature. Bandura (1993) presents the construct of self-efficacy as the beliefs one has about his or her ability to perform the actions required to achieve specific outcomes. This construct is expected to serve as the key mediator between knowledge and action. For instance, teacher efficacy plays a key role in the setting goals and it tells how motivated teachers are to create a positive learning environment, how much effort they expend in teaching students, and how teachers react when faced with difficult situations (Bandura, 1993).

Based on the works of Bandura, Pajares (1992) concluded that beliefs are the best indicators of the decisions individuals make throughout their lives. Thus, it follows that teachers' beliefs about their personal teaching abilities are a key indicator of teacher behavior, decisions, and classroom organization. Therefore, in the teaching context, teacher efficacy is expected to affect the goals teachers identify for the learning context as well as to guide the amounts of effort and persistence given to the task. Pajares (1992) also remarked that while much research has been done on how teachers think. "Sense of Personal Efficacy" is a thinking intervening variable influencing teachers' actions, consequent student actions and learning success. In fact, "Teacher Efficacy" research has demonstrated the relationship between the teacher's "Self-efficacy" perceptions and the quality of teachers' interactive performance (Gibson & Dembo, 1984).

Teacher efficacy has been found to be related to such variables as student achievement (Anderson, Greene, & Loewen, 1988), student motivation (Midgley, Feldlaufer, & Eccles, 1989), teachers' willingness to adapt innovations (Smylie, 1988), teacher effectiveness (Gibson & Dembo, 1984; Woolfolk & Hoy, 1990), and teacher stress (Parkay, Greenwood, Olejnik, & Proller, 1988). The relationship between efficacy and experience is more positive. For example, Gorrell and Dhamadasa (1994) found that Sri Lankan teachers have distinctly different levels of efficacy for particular tasks, however, were found to have higher efficacy for classroom management, organization of instruction, and having a positive impact on students. Cambell (1996) found higher efficacy among teachers who were experienced, older, and who had higher education.

In another somewhat more complicated study by Bandura and others, represented by the figure below, it is important to see that efficacy beliefs have both direct and indirect (through raising personal goals) effects on achievement.



Tt is the numbers above the lines connecting the variables shown indicate correlation between the variables. For example, the correlation between self-regulated learning and self-efficacy for academic achievement is .5 1; between self-efficacy for academic achievement and student's grade goals is .36 and so on. Guskey (1987) reported that there is a significant positive correlation between teacher efficacy and responsibility for student success and failure. He stated that the positive and negative outcomes indicate different dimensions, and independent from each other in causing effects on sense of efficacy.

Formal and Non-formal Systems of Teacher Education in Pakistan: A Comparison
To acquire the skills, knowledge and values, two well-known worldwide modes of education system are formal and non-formal systems of education. Coombs and Ahmad (1973) stated that by formal education, we refer, of course, to the hierarchically structured, graded "educational system", running from primary school through the university and including in addition to general academic studies, a variety of specialized programmes and institutions for all technical professional training.Formal education means organization of education through institutional infrastructure like schools, colleges and universities, etc. It involves sequential learning structure, which are graded and standardized leading to certification to achieve predetermined objectives in terms of some desirable changes in learners (UNESCO, 1986). Whereas UNESCO (1986) stated that non-formal system differs from formal system in the sense that it takes place outside the traditional framework of the formal system.

However, like formal system, non-formal system is organized and has pre-determined objectives. It also has certain sequential learning structures which are not necessarily graded.

While formal education is rigid and is characterized by uniformity to a large extent, the hallmark of non-formal system is its flexibility in terms of time and duration of learning, content, methodology of instruction and evaluation procedures.

According to Commonwealth (1993), in Pakistan, there are different programs of teacher training offered in colleges, Institutes and Departments of Education for the training of primary school teachers, secondary school teachers and supervisors, as Colleges of Education for Elementary Teachers offer two main training programs; the Primary Teaching Certificate (PTC) and the Certificate in Teaching (CT).

There are two main training programs offered for secondary school teachers in colleges of Education: a one-year B.Ed programme (14 + 1 model) and a three-year B.A./B.Sc. + B.Ed programme (12 + 3 model). Supervisors and administrators are trained in the Institutes of Education and Research and Departments of Education in the universities. These Institutes/Departments offer B.Ed leading to M.Ed, M. Phil. and Ph.D. degrees.

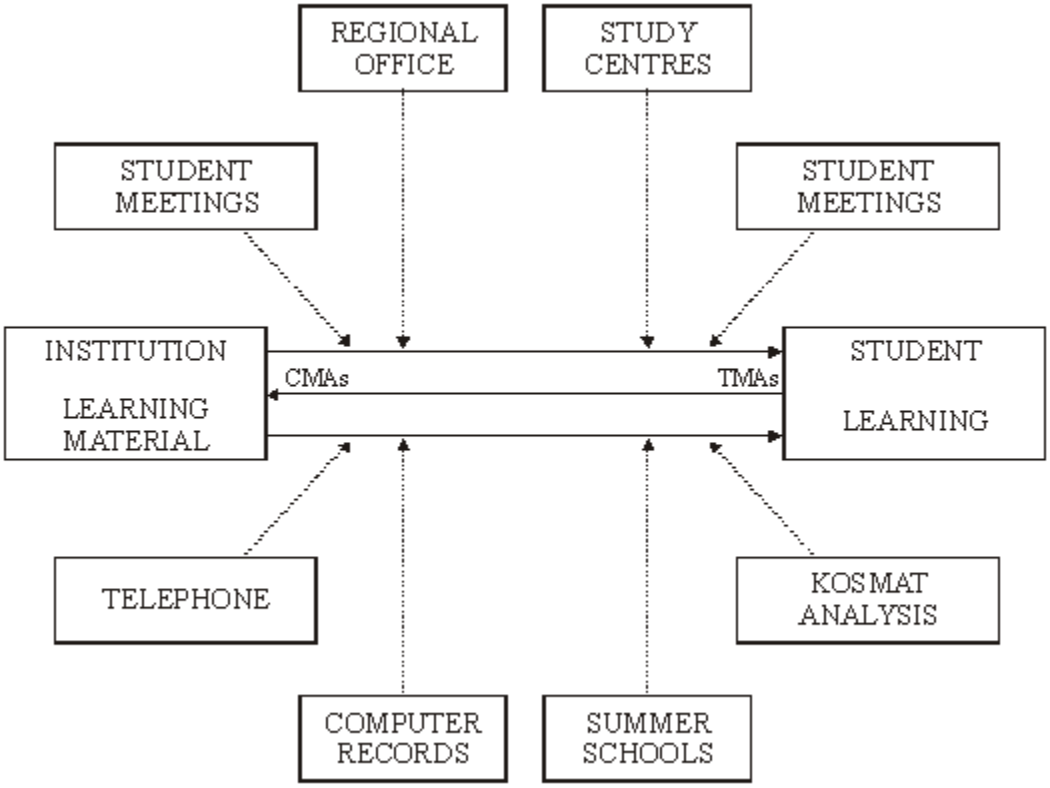
Moreover, various other factors of formal system like overcrowded classrooms, high rate of increasing population, lack of basic educational and physical facilities, high drop out rate, poor quality of education, due to which major population is deprived of availing chances to be enrolled in schools, colleges, and universities. Khan (1986) stated that the demand for education in the developing world, through the formal system, has consistently overrun its resources in Pakistan, such an alternative system commonly known as non-formal system or distance learning model is successfully being used by Allama Iqbal Open University, a multi-media, multilevel, multi-method teaching institution. Sewart *et al.,* (1983) presented a non-formal model as shown below:

Pakistan's model of non-formal system, a distance and non-formal teacher education model, has been successfully used by AIOU with its system of reaching the preserve and in-service teachers at their homes or work places and the concept of openness. Implying life long education, the AIOU is filling the gaps left by formal system and taking teacher education to the area and groups enable to benefit from the formal system of education.

There are different programs of teacher training offered through non-formal system is for the training of primary school teachers, secondary school teachers and educational administrators.

Pre-service and/or in-service teachers are offered training programs; like Primary Teaching Certificate (PTC), Certificate in Teaching (CT), Bachelor of Education (B.Ed), Matster Education (M.Ed), and Master of Education (M.A Education).

Non-formal system of education also striving for supplying research orientated teachers by offering M. Phil. and Ph.D. degrees in teacher education.



Gorrell & Hwang (1995, p. 101) have argued that there is a research trend towards "understanding teaching and teacher education in terms of teacher efficacy beliefs." They suggested that teacher efficacy is an important topic for comparative studies. Therefore, this study provides a comparison of the self-efficacy of teachers got their professional education from formal and non-formal teacher preparation programs and working in Government high schools in Pakistan.

OBJECTIVE

The main objective of the study was to find-out the significant differences in the in-service teachers' efficacy that passed their professional bachelor degree (B.Ed.) from formal or non-formal teacher education systems.

HYPOTHESIS

On the basis of Bandura's Self-efficacy instrument, following null hypothesis has been formulated for present study:

H1: **There is no significant difference between formal and non-formal passed professional graduate (B.Ed.) in-service teachers' in the self-efficacy to influence decision making.**

H2: **There is no significant difference between formal and non-formal passed professional graduate (B.Ed.) in-service teachers' in the self-efficacy to influence school resources.**

H3: There is no significant difference between formal and non-formal passed professional graduate (B.Ed.) in-service teachers' in the instructional self-efficacy.

H4: There is no significant difference between formal and non-formal passed professional graduate (B.Ed.) in-service teachers' in the disciplinary self-efficacy.

H5: There is no significant difference between formal and non-formal passed professional graduate (B.Ed.) in-service teachers' in the self-efficacy to create positive school climate.

METHODOLOGY

Population

All bachelor degree (B.Ed.) holders from formal or non-formal teacher education programs working Government Schools in Punjab Province.

Sample

The total sample was consisted of 1000 in-service teachers. Out of which 500 teachers are graduate from formal and 500 are graduate from non-formal system of teacher education programs.

Instrument

Many researchers presented different types of instruments for measuring teachers' self efficacy, for instant, first one is the Teacher Efficacy Scale developed by Gibson and Dembo (1984). It is a 30-item 6-point Likert scale ranging from "strongly disagree" to "strongly agree." Through factor analysis of 208 elementary teachers' responses, they reported a two factor model that accounted for 28.8% of the total variance. Gibson and Dembo noted that Factor 1 represents a teacher's sense of personal teaching efficacy, and corresponds to Bandura's self-efficacy dimension.

On the other hand, the second dimension stands for teacher's sense of teaching efficacy, and corresponds to Bandura's outcome expectancy dimension. They called these dimensions "personal teaching efficacy" and "general teaching efficacy" respectively. They presented internal consistency reliability alpha coefficients of 0.78 for personal teaching efficacy, 0.75 for the general teaching efficacy, and 0.79 for the total 16 items. They recommended the use of the revised scale of 16-20 items for further research.

There are other instruments that are adapted based on Gibson and Dembo measure for specific subjects-matter. One of them is the Science Teaching Efficacy Belief Instrument (STEBI), developed by Riggs and Enochs (1990). Results of factor analysis yielded two uncorrelated factors, personal science teaching efficacy and science teaching outcome expectancy. The other one is in the context of special education. Coladarci and Breton (1997) developed a 30-item 6-point instrument. Principal component analysis of the data yielded two factors, resource teacher's sense of personal efficacy and general efficacy, accounting for roughly 28% of the total item variance. Another instrument was developed by Emmer and Hickman (1990) in order to assess teacher efficacy for particularly classroom management. The resulting 36-item instrument has three factors: efficacy for classroom management and discipline, external influences, and personal teaching efficacy.

Although the Gibson and Dembo instrument has been widely used or adapted, there are still both conceptual and statistical problems (Tschannen-Moran et al., 1998). Bandura developed his own teacher efficacy instrument and same has been used in this study without making any amendment and change. The instrument consists of 30-items and the index have seven dimensions: efficacy to influence decision making (2-items), efficacy to influence school resources (1-item), instructional self-efficacy (9-items), disciplinary self-efficacy (3-items), efficacy to enlist parental involvement (3-items), efficacy to enlist community involvement (4-items), and efficacy to create a positive school climate (8-items). Each item is measured on a 9-point scale anchored by the following: "nothing, very little, some influence, quite a bit, a great deal" (Bandura, 2001).

Procedure

250 Government High Schools were randomly selected from Punjab province in the Pakistan. 6 Questionnaires were mailed to headmasters of each sample school along with request to cooperate in the study and hand out 3 questionnaires to those teachers who had been passed their professional bachelor degree (B.Ed.) from Allama Iqbal Open University, Islamabad, and 3 to those teachers who had been passed their professional bachelor degree (B.Ed.) from any formal university. Respondents were assured of keeping their responses confidential by a letter explaining the nature and general aim of the study. Self addresses envelop that accompanied with stamps also mailed to each headmaster. Follow up of mailing were used to increase the return rate.

In this way 1500 questionnaires were mailed and 813 were received back, out of which 677 were proper filled in and considered useful for the analysis. Among them 255 were those who had been passed their professional bachelor degree (B.Ed.) Allama Iqbal Open University and rest i-e 342 were those have got B.Ed from other than Allama Iqbal Open University.

SCORING AND ANALYSIS

Scoring was done as per instruction given in the instrument developed by Bandura (2001) in which each item is measured on a 9-point scale anchored by: "nothing, very little, some influence, quite a bit, a great deal" and raw scores were tabulated. The focus of this study is on score of the individual teachers. The analysis was performing on the individual teacher mean scores for each instrument and seven dimension wise. t-test along with Mean and SDs has been used for testing the hypothesis.

RESULTS AND DISCUSSIONS

The main objective of the study was to find out the significant differences in the in-service teachers' efficacy that passed their professional bachelor degree (B.Ed.) from formal or non-formal teacher education systems. The mean scores were used to identify the level of self efficacy of teachers and to compare the sub-sample variation. The values of standard deviation were used to measure the spread or dispersion of scores in the distribution (Garret, 1979). The *t-test* was calculated to test the significant difference in the means of the sub-sample of each variable.

To test the validity of hypothesis, the mean of the teacher's self efficacy score was calculated and presented in Table: 1 to 6.

Table: 1
Comparison of formal and non-formal in-service teacher's efficacy regarding to influence decision making

Systems of Education	Sample Size	Mean	S.D	Mean difference	SE_m	*t*
Formal	342	11.22	4.05	0.68	0.32	2.11
Non-formal	255	10.54	3.78			

df = 595 **Table: value at 0.05 = 1.960**

Table: 1 indicates the significance difference between formal and non-formal passed professional graduate (B.Ed) in-service teachers' in the self-efficacy to influence decision making ($t = 2.11$, $p < 0.05$).

Also the mean difference (i-e 0.68) shows that the in-service teachers who got professional degree (B.Ed) from formal system of teacher education exhibit somewhat high level of self efficacy to influence decision making.

Table: 2
Comparison of formal and non-formal teachers' efficacy to influence school resources

Systems of Education	Sample Size	Mean	S.D	Mean difference	SE_m	*t*
Formal	342	5.44	1.80	0.33	0.15	2.17
Non-formal	255	5.11	1.90			

df = 595 **Table: value at 0.05 = 1.960**

Table: 2 indicates the significance difference between formal and non-formal passed professional graduate (B.Ed) in-service teachers' in the self-efficacy to influence school resources ($t = 2.17$, $p < 0.05$).

Also the mean difference (i-e 0.33) shows that the in-service teachers who got professional degree (B.Ed) from formal system of teacher education exhibit a little bit high level of self efficacy to influence school resources.

Table: 3
Comparison of formal and non-formal teachers' instructional self-efficacy

Systems of Education	Sample Size	Mean	S.D	Mean difference	SE_m	*t*
Formal	342	47.08	22.17	6.08	1.84	3.28
Non-formal	255	41.00	22.49			

df = 595 **Table: value at 0.05 = 1.960**

Table: 3 indicates the significance difference between formal and non-formal passed professional graduate (B.Ed.) in-service teachers' in instructional self-efficacy (t = 3.28, p < 0.05). Also the mean difference (i-e 6.08) shows that the in-service teachers who got professional degree (B.Ed.) from formal system of teacher education exhibit very high level of instruction self efficacy.

Table: 4
Comparison of formal and non-formal teachers' disciplinary self-efficacy

Systems of Education	Sample Size	Mean	S.D	Mean difference	SE_m	t
Formal	342	14.59	6.98	1.14	0.53	2.10
Non-formal	255	13.45	6.15			

df = 595 **Table: value at 0.05 = 1.960**

Table: 4 indicates the significance difference between formal and non-formal passed professional graduate (B.Ed.) in-service teachers' in the disciplinary self-efficacy (t = 2.10, p < 0.05). Also the mean difference (i-e 1.14) is showing that the in-service teachers who got professional degree (B.Ed.) from formal system of education exhibit high level of disciplinary self efficacy.

Table: 5
Comparison of formal and non-formal teachers' efficacy to create positive school climate

Systems of Education	Sample Size	Mean	S.D	Mean difference	SE_m	t
Formal	342	34.77	19.17	3.31	1.45	2.27
Non-formal	255	31.46	16.23			

df = 595 **Table: value at 0.05 = 1.960**

Table: 5 indicates the significance difference between formal and non-formal passed professional graduate (B.Ed) in-service teachers' in the self-efficacy to create positive school climate (t = 2.27, p < 0.05). Also the mean difference (i-e 3.31) shows that the in-service teachers who got professional degree (B.Ed) from formal system of education exhibit high level of self efficacy in creating positive school climate.

Table: 6 indicates the overall significance difference between formal and non-formal passed professional graduate (B.Ed) in-service teachers' in the self-efficacy (t = 2.05, p < 0.05). Also the mean difference (i-e 10.60) is showing that the in-service teachers who passed their professional degree (B.Ed) from formal system of teacher education exhibit extremely high level of self efficacy than those who passed their B.Ed from non-formal system of teacher education.

Table: 6
Comparison of formal and non-formal teachers' self efficacy

Systems of Education	Sample Size	Mean	S.D	Mean difference	SE_m	*t*
Formal	342	186.09	59.18	10.60	5.16	2.05
Non-formal	255	175.49	64.81			

df = 595 **Table: value at 0.05 = 1.960**

There are two teacher education systems in Pakistan: formal and non-formal. These systems have many differences; perhaps teachers are educated through graduate and post graduate programs. All of the teacher education programs throughout Pakistan are required to offer core coursework for teachers that is suggested by the Higher Education Commission. They are intended to educate prospective and/or in-service teachers for the schools. In present study, a comparative analysis has been made to study the significant differences in the self efficacy of formal and non-formal passed professional graduate (B.Ed) in-service teachers.

It was seen that all the null hypotheses have been rejected, therefore, in-service teachers who passed their professional graduate (B.Ed) from formal teacher education system have stronger self efficacy than those who did professional graduation (B.Ed) from non-formal system of teacher education. There were also significant differences on the responses to different aspects in the teacher's efficacy scale. For example, in-service teachers, passed their professional graduation (B.Ed) from formal system of teachers education had significantly higher teaching self-efficacy on themselves for influence decision making (Table: 1), influence school resources (Table: 2), instructional (Table: 3), disciplinary self-efficacy (Table: 4) and create positive school climate (Table: 5). Overall, comparison shows that the self-efficacy of in-service teachers got B.Ed degree from formal system of teacher education is at higher level in comparison of their peer who got passed their B.Ed from non-formal system (Table: 6).

In-service teachers who passed their B.Ed from non-formal system of teacher education, on the other hand, had lower score on teachers self efficacy scale. There may be various reasons for this difference. Every system as an organization has its own culture and it is possible that some statements in the questionnaire are not suiTable: when applied to differing cultural perspectives. Similarly, Lin and Gorell (2001) suggested that the concept of teacher's efficacy may be culturally oriented and thus need to be carefully examined when applied in different cultures. Another reason of such a difference may be the coursework that teachers in both systems are required to complete. In terms of the amount and the type of courses, there are not clear differences between the two programs.

However, pedagogical courses in the teacher education program of the formal institutions may have some differences in terms of the goals and the learning experiences they provide.

This may result in less relevant understanding of the teaching issues by the teachers got their B.Ed degree from non-formal, which in turn may bring about lower efficacy. Interaction with teachers on regular basis enhances and updated the knowledge of learners and creates competencies in them. One of the reasons of such a difference may be lack of interaction of students with teachers. Ramzan (2002) suggested that teacher education enhances and updated the knowledge and competencies of teachers.Lack of incentives, encouragement, guidance and cooperation are the key causes of failure of teacher education. Student teachers were not being properly guided and assisted which is very crucial for improving the status of teacher education. Joseph (1989) stated that teacher trainers should provide help to student teachers to meet adequately the problems they will encounter as they approach maturity.

Another reason of such a difference may be the inadequate arrangement for ppractice teaching that leads to helpful in creating confidence in teachers. Anees (2005) stated that in non-formal system of teacher education practical preparation of teachers is neglected during practice teaching because of short duration for adequate supervision. Pre-service teachers' conceptions of their workplace may also contribute to their personal efficacy beliefs. These beliefs are partly formed through student teaching experiences. Some researchers have suggested that fieldwork may influence sense of efficacy (Huniker and Madison, 1997; Ramey-Gassert *et al.*, 1996, Crowther & Cannon, 1998). Both of the samples investigated in this study had completed the student teaching experiences with different atmosphere and regulations.

IMPLICATIONS AND SUGGESTIONS

The issue of teachers' efficacy is of importance as teacher preparation programs throughout the world attempt to address shortages of qualified, competent teachers. In the field of education, monitoring and reacting to the issue of efficacy seems to be one way in which teacher preparation programs are evaluating the structure of programs.

There is an immediate need for qualified and innovative instruction as governments attempt to insure that a pool of scientists, engineers and computer specialists are trained for business and academic research and citizens are provided and retain.It is conceivable that the successful implementation of teacher education programs may depend on teachers' self-efficacy, that is, their personal beliefs regarding their ability to teach and their ability to produce positive outcomes. Therefore, teachers' self efficacy gives a measure of the sense of how the teachers perceived their strengths and preparedness as potential teachers. Due to the vital role teachers will play in educating younger generation, teacher education programs need to evaluate efficacy levels of their teacher education students and begin to find ways to enhance their efficacy regarding teaching. Then these teacher education programs can begin to launch future teachers who are ready, willing, and able to meet the needs of their students. To help struggling in-service teachers with low self-efficacy, and get them to invest sufficient effort and persist on challenging tasks, teachers must systematically develop high self efficacy within them by:

- **linking new work to recent success,**
- **Reinforcing effort and persistence,**
- **Stressing peer modeling, and**
- **Teaching struggling learners to make facilitative.**

As the world is becoming increasingly globalized, it has become necessary for institutions to emphasize on field experiences, fostering technology literacy, and providing teaching methods for subject matter courses in order to increase their self efficacy towards teaching. The researcher considered that this is a general comparative study of formal and non-formal systems of teacher education. It is expected that this study will provide base for future researches.

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