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COMPARATIVE STUDY OF THE EFFECTS OF IN-SERVICE TRAINING ON MOTIVATIONAL TECHNIQUES AND TEACHER CONTENT KNOWLEDGE OF SECONDARY SCHOOL TEACHERS OF PAKISTAN

ABSTRACT

The purpose of this study was to determine comparative effects of in-service training programs and teacher performance as self-perceived on the basis of gender, location, teaching experience, level of certification and service after training in two variables i.e motivational techniques and subject matter knowledge.

The design of the study was quantitative. The population of the study was the trained classroom teachers of Hyderabad District. The sample (n=300) for the study was selected by using random selection procedures. Survey research was used to determine the comparative effects of in-service training on the performance of randomly selected teachers in the application region. A survey instrument was designed to measure the effectiveness of teachers. The responses from the survey were analyzed statistically. Means and standard deviations were obtained from each of the item of the instrument. The T tests were used to test the twelve hypotheses, which were designed to guide the study. The .05 rejection level was used for all tests of the hypotheses.

It was concluded: that (1) teacher training has significant effect on the classroom performance of female teachers and they are better in teaching motivational techniques (2) that classroom performance as an art becomes more effective with the passing of time and experience. Teacher content knowledge like science has certain principles and time factor does not make any difference in those principles, (3) that teacher in-service training has much influence on the performance and teacher content knowledge. Effectiveness that a teacher gains by virtue of training remains

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with him for a short time. After some years they forget many principles and practices which they learn during their training period, (4) teachers with high academic qualifications perform well in teacher content knowledge and motivational techniques.

INTRODUCTION

Secondary education is an important level of education for the youth aged between ten and seventeen years. Most significant aspect of this level of education is that it draws its strength from the trained teachers. A trained teacher is equipped with sound professional knowledge and managerial skills. The rapidly changing socio-economic scenario lays down much more emphasis on the positive role that a teacher has to play. However concern is also expressed about the quality of training of teachers. According to Linda A. Dove (1986), the quality and value of training is at stake. There appears to be global anxiety, not just confined to the developing world, about the low quality of teacher training, particularly its future to equip teachers with sound pedagogical knowledge and skills.

Needless to say that a teacher can only effectively transmit the 'new values, ideas and skills when he is thoughtful, skillful, committed, and devoted to his profession. In fact this along with the role of teacher determines what goes on in the classroom and ultimately what filters down to students' minds is what a civilized society expects from a trained teacher. How far the teacher comes up to these expectations of the society is the major concern of the management, parents and society at large.

This phenomenon has generally given a rise to the misconceptions about the value of training. Some believe that a teacher takes trouble of going through the pains of formal training process merely for the sake of increments or promotions. The other point of serious concern relates to the performance appraisal on the part of management experts or the government itself. Does the teacher trainee extract as much as he/she can from the training facility made available to him/her? This type of appraisal/ evaluation is absolutely essential for the simple reason that training consumes valuable time and hard earned money.

Therefore, the anxiety of the society with regard to obtaining value of time and money is undoubtedly genuine.

On the other hand accurate measurement of that value is difficult to achieve without proper evaluation. Organizations seeking improvement in economy, efficiency and effectiveness will expect performance and results to be assessed regularly for the purpose of accountability. To seek fair justification of training expenses, a scientific evaluation of trained teacher performance is essential. Limited resources and general attitude of apathy and carelessness in investing of whatever meagre resources are available to our society makes it imperative to carryout this type of investigation. Noorani, Memon and Solangi have recommended changing attitudes of trained teachers after having the B, Ed vide "Impact of B. Ed program on secondary school teachers of Hyderabad Division (1997).

The situation therefore provides an opportunity to investigate effectiveness of teachers and calls for a scientific study of relationship between the in-service training and effectiveness of teachers. The situation also calls to examine what change does time make in the performance of those teachers. With this background present study was undertaken.

PURPOSE OF STUDY

The purpose of this study was to investigate the comparative effects of in-service training program and teacher performance of secondary school teachers. The conceptual framework of the investigation was based on teachers' self-perception of the teacher in training in two clusters of teacher content knowledge and classroom performance. The demographic classification included gender, work location, experience, academic qualification, service after training and type of training institution. The following research questions guided the development of the study.

1 What change does time factor bring in the performance of in-service trained teachers?

2 Are new teachers good teachers or more experienced teachers are efficient in certain areas?

3 Do the male teachers perform better than the female teachers?

4 Do teachers working in urban areas perform better than those who work in rural areas?

5 Do highly qualified teachers perform well?

6 Do newly trained teachers perform well in the classrooms?

7 Do those teachers perform well who get their training in a formal way or those who get their training in an informal way?

To satisfy the requirement of this design a teacher self-performance rating scale was developed with the title of Teacher Self Performance Rating Scale (TSPRS). The TSPRS was based on two Criterion Variables of motivational techniques and communication style, which are recognized by researchers as significant indicators of effectiveness, and performance.

RESEARCH HYPOTHESES

To provide direction to the proposed study, the twelve hypotheses were formulated to obtain self-perceived views of teachers about variables of teacher motivational techniques and teacher content knowledge.

METHODOLOGY

Instrument

A Teacher Self Performance Rating Scale (TSPRS), (Appendix A) was developed from competencies and performance factors drawn from the Florida Performance Measurement System, Personnel Performance Plans, best teaching practices research (Casey, 1992/1993; Stanely and Popham, 1988). The TSPRS is divided into three parts. In part I the demographic information was collected from the subjects. Part II and III have thirty statements each. A five point Likert type scale response model was employed. Numerical scores were assigned to

responses as follows: 5- strongly agree, 4-agree, 3- not sure, 4-disagree, 5-strongly disagree.

Reliability and Validity

The reliability and validity of instruments used in research are important. Reliability refers to whether an instrument consistently measures a phenomenon over time and populations (Gall, Borg, & Gall, 1996). One of the ways that the TSPRS has been examined, in terms of reliability is internal reliability. Internal reliability measures an instrument's degree of Interrelation among test items (Brown & Alexander, 1991). This ensures that an instrument accurately measures what it is intended to measure since the items were not scored dichotomously; Chronbach's coefficient alpha was selected to calculate the internal reliability of each category. Any coefficient at or above .80 is accepted as evidence of internal reliability (Gall et al., 1996).

Sampling

The sample of secondary school teachers (n = 300) was selected for this study using random selection procedures. The sample size was considered to be sufficient to generalize the findings of the study.

ANALYSIS OF DATA

The basic objective of this study was to investigate comparative effects of in-service training programs and the performance of teachers regarding their gender, working area, teaching experience, qualification, and service after training. Dependent variables used in this study were performance factors. Independent variables were training.

Data were collected from each usable Teacher Self Performance Rating Scale (TSPRS). Blank responses and items marked incorrectly were not included in the analysis. Where duplicate responses were given for one performance factor listed, the lowest response was recorded. Category scores for each respondent were obtained by calculating the mean for all items within the category. Means and standard deviations were

obtained from each of the item of the TSPRS. The T tests were used to test the hypothesis of this study. The .05 rejection level was used for all tests of the hypothesis. The SPSS 10.0 for Windows was used for all necessary Statistical calculations and hypotheses tests.

All statistical analyses used in this study were performed via SPSS software.

Test of Hypotheses

Hypothesis 1

There will be no significant difference in the mean scores of trained male and female secondary teachers in variable of motivational techniques as perceived by themselves.

Table 01

Computed t for male and female teachers on motivational techniques

	N	Mean	SD	Standard error of Mean	Computed t
Male	127	21.828	2.31301	0.205	2.194*
Female	111	22.518	2.5143	0.238	

* ($p < .05$)

Hypothesis 2

There will be no significant difference in the mean scores of trained male and female secondary teachers in variable of teacher content knowledge as perceived by themselves.

Table 02

Computed t for male and female teachers on Teacher Content knowledge

	N	Mean	SD	Standard error of Mean	Computed t
Male	127	15.0612	1.17925	0.1046	1.0651*
Female	111	15.2369	1.4397	0.1366	

* ($p > .05$)

Hypothesis 3

There will be no significant difference in the mean scores of trained teachers who have fifteen years or less teaching experience and those who have more than fifteen years teaching experience in variable of motivational techniques as perceived by themselves.

Table 03

Computed t for teachers who have fifteen years or less teaching experience and those who have more than fifteen years teaching experience in their classroom performance.

	N	Mean	SD	Standard error of Mean	Computed t
More	158	23.0812	1.9868	0.1580	3.0659*
Less	80	22.281	1.8950	0.2118	

* ($p < .05$)

Hypothesis 4

There will be no significant difference in the mean scores of trained teachers who have fifteen years or less teaching experience and those who have more than fifteen years teaching experience in variable of teacher content knowledge as perceived by themselves

Table 04

Computed t for teachers who have less than fifteen years teaching experience and those who have more than fifteen years teaching experience in teacher content knowledge.

	N	Mean	SD	Standard error of Mean	Computed t
More	158	15.572	1.1384	0.0905	1.923*
Less	80	15.2520	1.2503	0.1397	

* ($p > .05$)

Hypothesis 5

There will be no significant difference in the mean scores of trained teachers who possess Bachelors degree and those who possess Masters Degree in variable of motivational techniques as perceived by themselves.

Table 05

Computed t for teachers who possess Bachelors degree and those who possess Masters Degree in their classroom performance.

	N	Mean	SD	Standard error of Mean	Computed t
Masters	173	23.0231	2.24171	0.170	3.204*
Bachelors	65	22.058	1.9998	0.2480	

* ($p < .05$)

Hypothesis 6

There will be no significant difference in the mean scores of trained teachers who possess Bachelors degree and those who possess Masters Degree in variable of teacher content knowledge as perceived by themselves

Table 06

Computed t for teachers who possess Bachelors degree and those who possess Masters Degree in teacher content knowledge.

	N	Mean	SD	Standard error of Mean	Computed t
Masters	173	15.386	1.47335	0.11201	2.378*
Bachelors	65	14.856	1.5559	0.192	

* ($p < .05$)

Hypothesis 7

There will be no significant difference in the mean scores of trained teachers who have teaching experience of ten years or less after their B.Ed training and those who have teaching experience of more than ten years after their B.Ed training in variable of motivational techniques as perceived by themselves.

Table 07

Computed t for teachers who have teaching experience of ten years or less after their B.Ed training and who have teaching experience of more than ten years after their B. Ed training, in the classroom performance

	N	Mean	SD	Standard error of Mean	Computed t
Mote than 10 years	148	23.153	1.7421	0.1432	
Less than 10 years	90	22.490	1.9543	0.2060	2.652*

* ($p < .05$)

Hypothesis 8

There will be no significant difference in the mean scores of trained teachers who have teaching experience of ten years or less after their B.Ed training and those who have teaching experience of more than ten years after their B.Ed training in variable of teacher content knowledge as perceived by themselves

Table 08

Computed t for teachers who have teaching experience of ten years or less after their B. Ed training and who have teaching experience of more than ten years after their B. Ed training, in teacher content knowledge.

		N	Mean	SD	Standard error of Mean	Computed t
More than 10 years		148	14.8758	1.5405	0.12663	2.604*
Less than 10 years		90	15.385	1.4167	0.1493	

* ($p < .05$)

Hypothesis 9

There will be no significant difference in the mean scores of trained teachers who work in rural area schools and those who work in urban area schools in variable of motivational techniques as perceived by themselves.

Table 09

Computed t for teachers who work in rural area schools and those who work in urban area schools in the classroom performance

N	Mean	SD	Standard error of Mean	Computed t
153	19.2239	2.5271	.2043	2.2434*
85	19.9167	2.1350	.2316	

* ($p < .05$)

Hypothesis 10

There will be no significant difference in the mean scores of trained teachers who work in rural area schools and those who work in urban area schools in variable of teacher content knowledge as perceived by themselves.

Table 10

Computed t for teachers who teachers who work in rural area schools and those who work in urban area schools in teacher content knowledge.

	N	Mean	SD	Standard error of Mean	Computed t
Urban	153	15.7298	2.0287	0.164	1.344*
Rural	85	15.356	2.0636	0.2238	

* ($p > .05$)

Hypothesis 11

There will be no significant difference in the mean scores of trained teachers who are trained from formal teacher training institutions and those who are trained from other than formal teacher training institutions in variable of motivational techniques as perceived by themselves.

Table 11

Computed t for teachers who were trained at formal teacher training institutions and those who were trained at other than formal teacher training institutions in the classroom performance.

	N	Mean	SD	Standard error of Mean	Computed t
Other than formal	139	22.3092	2.0474	0.17366	2.87014*
Formal	99	23.050	1.90185	0.19114	

* ($p < .05$)

Hypothesis 12

There will be no significant difference in the mean scores of trained teachers who are trained from formal teacher training institutions and those who are trained from other than formal teacher training institutions in variable of teacher content knowledge as perceived by themselves

Table 12.

Computed t for teachers who were trained at formal teacher training institutions and those who were trained at other than formal teacher training institutions in teacher content knowledge.

	N	Mean	SD	Standard error of Mean	Computed t
Other than formal	139	15.189	1.59951	0.13566	1.1984*
Formal	99	14.9511	1.44597	0.1453	

* ($p > .05$)

SUMMARY

The focus of this study was to trace relationship between teacher training and teacher performance. Such a focus might help teacher educators in improving the quality of in-service teacher education. Naturally, irrespective of the context, data on teachers and students should be incorporated in policy and practice of teacher education. When teacher educators design collegiate programs for teachers, they must make decisions that will have far ranging consequences for teachers and the students they serve (Murray, 1996). Further, there has been extraordinary need in the accountability of teacher education programs (Carter & Anders, 1996). As well, there are compelling needs to assess the trained teachers' effectiveness. (Lambdin, 1996). Thus, this study with its emphasis on in-service teachers, investigated their effectiveness and classroom performance. More specifically, the study has

brought to fore the comparative effects of in-service training programs and teacher performance as perceived by themselves on the basis of gender, working location, experience, academic qualification, service after training and type of training, in two clusters i.e. teacher content knowledge and classroom performance.

DISCUSSION AND FINDINGS

(i) Gender and motivational techniques (Hypothesis 1)

The statistical part of the study involved two-sample *t*-test to test the hypothesis to find difference (if any), in the mean scores of male and female teachers in the motivational techniques.

The computation of t-test indicate that there is significant difference between the mean scores of male and female trained teachers in motivational techniques. The mean scores show that female teachers have rated themselves higher than the male teachers.(table 01)

This situation favors common idea in Pakistani society that female teachers have good motivational techniques. They are effective in their teachings particularly in primary and pre-primary classes. This study supports the idea and confirms that trained female teachers can perform well in certain areas in high schools.

(ii) Gender and teacher content knowledge (Hypothesis 2)

The computation of t-test shows that there is not any significant difference between the mean scores of male and female trained teachers in teacher content knowledge. The mean scores show that trained female teachers have rated themselves slightly higher than the male teachers. (table 02)

(iii) Teaching experience and motivational techniques (Hypothesis 3)

The computation of t-test had demonstrated that there is significant difference between the mean scores of trained teachers

who have fifteen years or less teaching experience and those who have more than fifteen years teaching experience in the classroom performance. The mean scores show that trained teachers who have more than fifteen year teaching experience have rated themselves higher than the trained teachers who have less than fifteen year teaching experience. (table 03)

(iv) Teaching experience and content knowledge (Hypothesis 4)

The computation of t-test shows that there is no significant difference between the mean scores of trained teachers who have less than fifteen years teaching experience and those who have more than fifteen years teaching experience in the classroom performance. The mean scores show that trained teachers who have more than fifteen year teaching experience have rated themselves higher than the trained teachers who have less than fifteen year teaching experience. (table 04)

With the acceptance of this hypothesis it is proved that teaching experience has not any significant influence on teacher content knowledge this situation is totally different from the result of previous hypothesis, which showed that teacher experience has significant effect on the motivational techniques.

(v) Academic qualification and motivational techniques (Hypothesis 5)

The computation of t-test demonstrates that there is significant difference between the mean scores of trained teachers with Bachelors degree and those with Masters degree in the classroom performance. The mean scores show that teachers have Master degree have rated slightly higher than those teachers who have Bachelor degree. (table 05)

(vi) Academic qualification and content knowledge (Hypothesis 6)

The computation of t-test demonstrates that there is significant difference between the mean scores of trained teachers

who have Bachelors degree and those who have Masters degree in teacher content knowledge. The mean scores show that teachers who have Master degree have rated themselves slightly higher than those teachers who have Bachelor degree. (table 06)

(vii) Experience after training and motivational techniques (Hypothesis 7)

The computation of t-test reveals that there is significant difference between the mean scores of trained teachers who have teaching experience of less than ten years after their B. Ed training and those who have teaching experience of more than ten years after their B. Ed training. The mean scores show that teachers who have less than ten years teaching experience after their B. Ed training have rated themselves higher than the teachers who have more than ten years teaching experience after their B. Ed training. (table 07)

The inverse relation between experience and motivational techniques draws attention. It can be assumed that teachers who are still fresh with their teacher training have maintained their knowledge and practices, which they had acquired during their training period. On the contrary, teachers who have spent more time, after their training, may develop a routine approach to the performance of duty. Secondly in the early part of service young teachers are very active and enthusiastic with expectation for up gradation.

(viii) Experience after training and content knowledge (Hypothesis 8)

The computation of t-test had showed that there is significant difference between the mean scores of trained teachers who have teaching experience of less than ten years after their B. Ed training and those who have teaching experience of more than ten years after their B. Ed training. The mean scores show that teachers who have less than ten years teaching experience after their B. Ed training have rated themselves higher than the teachers who have more than ten years teaching experience after their teaching experience. (table 08)

The higher rating of teachers with lesser teaching experience also needs explanation. It can be assumed that those teachers who are still fresh with their teacher training have retained their knowledge and practices of subjects, which they studied during their training period.

(ix) Teacher workplace and motivational techniques (Hypothesis 9)

The computation of t-test demonstrates that there is significant difference between the mean scores of teachers who work in schools located in urban or rural area in teacher performance. The mean scores show that teachers who work in urban area schools have rated themselves slightly higher than those who work in rural areas. (table 09)

The situation reflects the secure and comfortable position of urban society where teachers have more salaries and other benefits than rural area schools. Another factor of effective teacher performance can be attributed to the positive effect of greater involvement of parents and supervisors in urban area schools.

(x) Teacher work place and content knowledge (Hypothesis 10)

The computation of t-test shows that there is no any significant difference between the mean scores of teachers who work in urban schools and in rural schools in teacher content knowledge. The mean scores show that teachers who work in urban area have rated themselves higher than those teachers who work in rural. (table 10)

The situation indicates that there is no significant difference in the content knowledge of those teachers who work in rural or urban schools. The reason lies in the location of teacher training institutions, situated in urban areas. The teachers who work in rural or in urban areas get their teacher training in the same institution, that's why any statistical difference in the mean scores has not been found. It also suggests that interaction of rural and urban teachers during training does not influence in changing their professional traits.

(xi) Type of training institution and motivational techniques (Hypothesis 11)

The computation of t-test demonstrates that there is significant difference between the mean scores of teachers who are trained from formal teacher training institutions and those who are trained from other than formal teacher training institutions in motivational techniques. The mean scores show that teachers who are trained in formal teacher training institutions have rated themselves higher than the teachers who are trained from other than formal training institutions. (table 11)

The situation supports the view of educators that teacher training must be taught scientifically in regular classroom situations. In formal teacher training institutions proper theory has been taught by experience teacher educators as well as practice of teaching has been conducted with strict check and balance. On the contrary in other than formal institutions there are not regular classes. In some cases weekly or fortnightly classes are conducted for only one hour for student guidance. In distance education programmes most of the study is conducted through correspondence. In this situation students do not avail proper chance to attend regular classroom environment which is necessary for learning moreover they do not get opportunities to go in nearby schools for clinical teaching. This position does not allow developing potentials of a teacher in the area of classroom performance.

(xii) Type of training institution and content knowledge (Hypothesis 12)

The computation of t-test shows that there is not any significant difference between the mean scores of teachers who are trained from formal teacher training institutions and those who are trained from other than formal teacher training institutions in teacher content knowledge. The mean scores show that teachers who are trained in formal teacher training institutions have rated themselves higher than the teachers who are trained from other than formal training institutions (table 24). In this situation it can

be assumed that those teachers who get their degree from other than formal institutions get enough knowledge and facts related to teaching, but that knowledge does not help them to become an effective teacher in the classroom.

RECOMMENDATIONS

This study led to draw specific conclusions. Based on these considerations following recommendations are given:

- After every five to seven years of service a short term refresher training programme should be made compulsory for every teacher for consolidating their knowledge and performance.
- Practice teaching being an essential component of teacher training programme, its duration should be extended as much as possible. It should take place under the strict supervision of faculty supervisor and classroom teacher. During this practice student teachers should be given every possible opportunity to teach effectively in the classroom and do away the obstacles, which create problems in smooth acquisition of learning.
- Almost all the countries of Asian region have extended the duration of various teacher-training programmes. This duration should be extended gradually according to the needs and resources available in Pakistan.
- Teachers in classrooms should be constantly evaluated to assess their improvement in various areas of classroom teaching.
- To examine the weaknesses and strengths of teacher training programme, follow up studies should be designed.
- Teacher performance standard at National level should be designed and every successful candidate of teacher training institution should be evaluated against National performance standard.

- Curriculum of teacher training programme should be evaluated and necessary changes should be brought according to the needs of present day.
- Teacher educators should be given incentives to learn emerging methodologies and techniques of essential processes.
- The curriculum of the subject 'child psychology' should be updated to enable student teachers to solve problems of their students.
- Student teachers should be trained to apply discussion, demonstration, problem solving and discovery methods to inculcate in them high order skills.

FURTHER RESEARCH

During the conduct of this study the researcher felt the need or further studies in the following areas:

1 A comparison of effectiveness of formal teacher education programmes and distance education programmes.

2 A comparative study of classroom performance between teachers of science, arts and commerce graduate.

3 Comparative effectiveness of teachers in teaching specific subjects at secondary school level.

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