

# In-Service Training at Elementary School Level: Impact on Classroom Practices

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## Abstract

Teacher Education includes both pre-service and in-service training to the teachers (Trainees). Here, in the present study, in-service training for teacher at elementary education level has been taken for research to explore any Changes in Classroom Practices of Elementary Schools as a result of such training. Both multi-stage and incidental sampling techniques were followed for selection of sample. As the objective of the study was to assess effectiveness/ impact of in-service training for elementary school teacher, the classroom teaching processes were observed through a *Classroom Observation Schedule* from 90 (ninety) classes of both trained and un-trained teachers working in elementary schools. The analysis was made through simple percentage calculation on the activities of the teachers and critical ratios (CR) were calculated to find the significance of the difference between two percentages obtained from classes of trained (56 classes) and un-trained (34 classes) teachers. The results depict that in-service training has significant positive effects, in favour of trained teachers, on the skills of introducing the lesson, skills of teachers for presenting the lesson in the classroom teaching; explain the lesson by giving suitable example, skill of explanation in the classroom with demonstration, asking question and students participation for seeking more elaboration on the lesson taught.

**Keywords:** In-Service Training; Classroom Practices; Elementary Schools; Impact.

In-service teacher education updates teachers in issues concerning content, methodology and evaluation; upgrades serving teachers in tasks with which they are currently occupied; initiates and orients teachers to new roles and technologies,; and provides opportunities for unqualified or under qualified on-the-job teachers to update and upgrade their knowledge. Besides, in-service teachers' training programme at elementary education level helps in building the capacity of and infuses professionalism to elementary teachers; and developing of theme specific modules like NCF, RTE, CCE etc., for training of in-

service teachers of elementary level. The focus is on in-service training programme for elementary school teachers in Odisha (a state of India) where such programmes are organized every year under the Department of School and Mass Education, Government of Odisha through decentralized structure and controlled through Odisha Primary Education Programme Authority (OPEPA) and the Directorate of Teacher Education and State Council of Educational Research and Training (TE and SCERT) under Sarva Siksha Abhiyan (SSA) an intervention scheme for Universalisation of Elementary Education. The State Project office at the top at Bhubaneswar and Cluster Resource Centres at the bottom in the organizational structure makes the system transparent and each organization is accountable to its expected role/outcomes as per national goal. Names of in-service training schemes are: Induction Programme: For inducting to newly recruited teachers; Diploma in Elementary Education: For upgrading the untrained teachers; Samarthya: To train teachers in pedagogical concept as well as content; Samadhan: It is a teacher's handbook to facilitate classroom transaction; Sathi: It is a reflective teachers diary; and Samikhya: School monitoring tool for BRCC/CRCC/SI of Schools. Among these programmes, Samarthya is an integrated in-service training package for teachers focusing on a comprehensive training design based content, theme, hard spots and district specific need based topics for different categories of teachers working in primary, upper primary. The elementary level training is comprised of both content (two subjects and 05 days each) and theme (RTE-03 days, NCF-03 Days and CCE-04 days). These training programmes bring changes in classroom practices in schools pertaining to core teaching skills e.g., questioning, use of blackboard by teachers etc.; Use of technology/ TLM; Methods / approaches of teaching and Student participation in the classroom; Teachers' Response and Treatment; Pupil-Teacher Interaction; Interaction among pupils; Student's Evaluation Process and beautification of school environment. Here, the researcher has focused on core teaching skills e.g., introducing the lesson in classroom, presentation of topic with new concepts, explanation of new concepts, method of questioning and students' participation in the classroom.

## **Research Background**

The studies conducted on the area, selected here, were reviewed by the researcher vividly with the strengths and weaknesses with its relevance to the present study. Yadav (NCERT-2012) conducted a study at different states to assess impact of in-service teacher training in classroom transactions. The findings reported as in-service training had a positive impact on classroom transaction in terms of use of teaching skills, subject teaching, use of TLMs, development in teacher behaviors, curricular activities etc.. Changes were observed in the states such as, Bihar, Odisha, Rajasthan, Uttar Pradesh, Maharashtra and West Bengal; no changes were marked in Meghalaya, Nagaland and Haryana. The study reports that impact depends on quality of in-service training and its transaction inputs.

A study on in-service training as contributory factor influencing teachers' performance conducted by Jahangir, Saheen and Kazmi (2012) to examine effect of Higher Education Commission's sponsored in-service teacher training on the trainee's concept about good teachers. The present study has brought a significant change in perception of the teacher about the knowledge category, due to the in-service training. In short the overall scenario of a good teacher has undergone tremendous change because of the said training programme. The imperial evidence in this study suggests that in-service training

is effective in improving perception of the trainees. The importance of the teacher training cannot be underestimated. The better a teacher is trained, the better he or she can educate tomorrow's generation. Naoreen, Arshad, Aslam, and Nausheen (2011) conducted a study on impact of in-service teacher training on students' learning achievement in mathematics; and the study was with the objectives that to compare the learning achievements of students in the subject of mathematics taught by male and female trained and untrained teachers and to compare learning achievement of students in rural and urban schools. It was concluded that trained male and female teachers are significantly better than untrained male and female teachers, rural schools are significantly better than urban schools. Jamil, Amer, Ali, Baloch and Ayaz (2011) found from their study a significant correlation among the in-service training and performance of teachers for the academic betterment of secondary class students. Key aspects observed for the effectiveness of training included expertise in the subject matter, improvement of latest knowledge, interaction with the students, teaching method, source of information, confidence, maintenance of discipline and getting feedback from the students. Abdullah, Samupwa, and Alzaidiyen (2009) conducted a study entitled "The Effects of Teacher Training Programme on Teachers' Productivity in Caprivi Region, Namibia" to determine the effect the Basic Education Teacher Diploma Programme (BETD) on teacher productivity as well as seeking to understand whether self-esteem can moderate the relationship between teacher training and productivity. The findings of this research indicate that teacher training has a partial relationship with productivity, while self-esteem partially moderates all the relationship between teacher training and productivity. Further, the best predictors for teacher productivity were teaching skills and responsibility. Eswaran and Singh (2008) (All India Primary Teachers' Federation) conducted a study on Effectiveness of In-service Education of Teachers on students drop out rate and effect of training on teachers' performance. The study revealed that in service training has positive impact on dropout rate and improvement of performance of teachers, particularly with reference to classroom transaction. Chakraborty, Das, Bagchi, Upadhyay and Bandyopadhyay (2005) conducted a study entitled "An Assessment of In-Service Teachers' Training Programmes in Five Districts of West Bengal". The study finds that, although by and large the training programmes have been successful in sensitizing the teachers about the need for learning modern pedagogical tools, they have not been as effective in orienting the teachers towards the need for closing inter-group disparities and weakening the close association between the student's innate social characteristics and her learning achievement. A study conducted by Raina (2005) on opinion of secondary school teachers on the effectiveness of in-service training programmes in enhancing their professional competencies. The study reported that the in-service training programmes were effective in developing professional competencies of teachers. Fifty one themes were listed in the questionnaire under the major areas viz., changes in the school curriculum, methods of evaluation, Knowledge in Educational Technology, Knowledge in Educational Psychology, Class Management and Developing Relationship with others, Motivating Teacher Performance, Developing Teacher Ethics, Leisure Utilization and Enhancing Job Satisfaction. It was reported that in-service training programmes were found to be not effective in the areas viz., knowledge in Educational Technology, Class Management and Enhancing Job Satisfaction. Joy and Manickam (2002) conducted a study among fifty primary school teachers who were undergoing an in-service teachers' training programme. The study found that the teachers' attitude towards the use of computer became more favorable with the increase in the awareness about use of computers in the

process of instruction. The study concluded with a suggestion that the contents that enrich positive attitude towards computer assisted instruction are to be included more in the future in-service training programmes for the teachers. Subrahmanian (2001) conducted a study on the impact of DIETs on the work efficiency of primary school teachers of Kerala State. The study assessed the work efficiency of teachers after undergoing in-service courses in DIETs with regard to content enrichment, class management, evaluation, and community participation. The study reported that after attending the in-service training programmes teachers have positive impacts on their work efficiency in schools. Based on the significance of the findings of the above studies, the researcher has taken an attempt to explore the impact of in-service training being provided to the elementary school teachers of Odisha in terms of classroom transactions through conducting a study with the objective and research question cited below:

### **Objective of the Study**

The objective of the study is as

1. To study the impact of in-service training programme for the elementary school teachers of Odisha in terms of changes in classroom practices as a result of such training.

### **Research Question pertaining to Objective**

The research question of the study based on the objective stated above is as:

- RQ: What kinds of changes have taken place in classroom practices of elementary education, in the following core teaching skills, as a result of in-service training organized for teachers?

*Core teaching skills such as:*

- Introducing the lesson in classroom,
- Presentation of topic with new concepts,
- Explanation of new concepts,
- Method of questioning and
- Students' participation

### **Methodology**

The methodology includes design of the study; sample; tools used for collection of data; and techniques of data analysis which are summarised as under:

### **Design of the Study**

The present study comes under the survey design of descriptive research. The findings of the study

pertaining to the impact of in-service teacher training on classroom transaction are mostly based on the observation of classroom process of both trained and untrained teachers.

## **Sample**

The population of the study comprised of all the elementary school teachers of Odisha who received in-service training organized by SSA-OPEPA. Both multi-stage and incidental sampling techniques were followed for selection of sample. Twenty one (21) CRCs spread over three (03) districts of Odisha were selected for the purpose following multi-stage sampling technique; and key informants such as elementary schools teachers (trainee) were selected through incidental sampling procedure. In the present context, classroom teaching processes were observed from 90 (ninety) classes of both trained and un-trained teachers working in elementary schools under these CRCs.

## **Tool Used**

A *Classroom Observation Schedule* (COS) was used to study impact of in-service training programme for elementary school teachers of Odisha in terms of changes in classroom practices pertaining to core teaching skills e.g., introducing the lesson in classroom, presentation of topic with new concepts, explanation of new concepts, method of questioning and students' participation in the classroom.

## **Techniques of data Analysis**

The analysis was made through simple percentage calculation on the activities of the teachers and critical ratios (CR) were calculated to find the significance of the difference between percentages (Refer to: Garrett, H.E, 1981; pp. 235-236) obtained from classes of trained (56 classes) and un-trained (34 classes) teachers on the above aspects of classroom practices stated under 'tools used'.

## **Results and Discussion**

The classroom practices of teachers of both categories (56 classes of trained and 34 classes of un-trained teachers) were observed along a schedule, with reference to the aspects, *inter alia*, core teaching skills e.g., introducing the lesson in classroom, presentation of topic with new concepts, explanation of new concepts, method of questioning and students' participation as per the objective and research question stated above. The classroom activities of both trained and un-trained teachers were compared to assess the impact of in-service training they attended. The findings have been generalized to the population i.e. elementary school teachers of Odisha who receive in-service training and the quality of such training have been generalized as there is one single mode of such training is organized.

### ***Core Teaching Skills***

The data pertaining to major teaching skills like introducing the lesson; presentation of new concepts / ideas; explanation of new concepts/ ideas; method of addressing questions etc. are presented as follows:

**Table 1: CR in Respect of Percentage of Trained and Untrained Teachers on the Aspects of Introducing the Lesson in Classroom**

Sl. No.	Classroom Activities	Percentage of Teachers		Critical Ratio
		Trained (N=56)	Untrained (N=34)	
1	Stating the topic directly	28.59	94.12	6.04**
2	Asking questions on previous knowledge	42.89	20.59	2.14*
3	Engaging the students/ Posing a problem	32.14	14.71	1.84

\*Significant at 0.05 level ( $p < 0.05$ ) \*\*significant at 0.01 level ( $p < 0.01$ )

The results of Table 1 show that 28.59% of trained teachers, as against 94.12% of their untrained counterparts, introduce the lesson by stating topic directly. These results indicate that in-service teacher training has significant effect on the skill of teachers in introducing lesson through various techniques (CR=6.04;  $p < 0.01$ ). The results further reveal significant difference in the percentage of trained and untrained teacher with regard to their skill of asking questions on previous knowledge at the time of introducing the lesson (CR= 2.14;  $p < 0.05$ ;  $P_1=42.89$ ,  $P_2=20.59$ ), which indicate the significant positive effect of in-service teacher training too on this skill of teachers. The results pertaining to the skill of engaging the students (CR=1.82) at the time of introducing the lesson, did not show significant effect of in-service teacher training.

**Table 2: CR in Respect of Percentage of Trained and Untrained Teachers on the Aspects of Presentation of Topic with new Concepts/Ideas**

Sl. No.	Classroom Activities	Percentage of Teachers		Critical Value
		Trained (N=56)	Untrained (N=34)	
1	Only teacher talking	30.36	85.29	5.01**
2	Discussion with explanation	87.50	29.41	5.62**

\*\*significant at 0.01 level ( $p < 0.01$ )

Table 2 reveals that 30.36% of trained teachers, as against 85.29% of their untrained counterparts, present the lesson by only teacher talks. It indicates the in-service training has a significant effect on the skills of teachers for presenting the lesson in the classroom teaching (CR=5.01;  $p < 0.01$ ). Further, it is revealed from the result presented in the table, that there is significant difference in the percentage of trained and untrained teachers with regard to their skill of presentation of lesson through discussion with explanation (CR= 5.62;  $p < 0.01$ ;  $P_1=87.50$ ,  $P_2=29.41$ ), which indicate the significant positive effect of in-service teacher training too on this skill of teachers as performance goes in favour of trained teachers.

**Table 3: CR in Respect of Percentage of Trained and Untrained Teachers on the Aspects of Explanation of new Concepts/ Ideas**

Sl. No.	Classroom Activities	Percentage of Teachers		Critical Value
		Trained (N=56)	Untrained (N=34)	
1	Without example	21.43	73.53	4.87**
2	Giving appropriate examples	91.07	47.06	4.64**
3	With demonstration	85.71	35.29	4.92**

\*\*significant at 0.01 level ( $p < 0.01$ )

The results of Table 3 depict that 21.43% the trained teachers explain the lesson without example whereas 73.53% of untrained teachers do the same. It indicates, there is significant effect of in-service training on classroom practices ( $CR=4.87$ ;  $p < 0.01$ ). The in-service training has the same significant effect as 91.07% trained teachers explain the lesson by giving suitable example as compared to untrained teachers (47.06%). The critical ratio 4.64 is significant at 0.01 levels. Further, it is revealed from the table, that there is significant difference in the percentages of trained and untrained teachers with regard to skill of explanation in the classroom with demonstration ( $CR=4.92$ ;  $p < 0.01$ ;  $P_1 = 85.71$ ,  $P_2 = 35.29$ ), which indicate significant positive effect of in-service teacher training too on this skill of teachers.

**Table 4: CR in Respect of Percentage of Trained and Untrained Teachers on the Aspects of Method of Questioning**

Sl.No	Classroom Activities	Percentage of Teachers		Critical Value
		Trained (N=56)	Untrained (N=34)	
1	Asks to the whole class for answer from many	21.43	67.65	4.36**
2	Asks to specific attentive students	35.71	52.94	1.60
3	Asks questions to non-attentive students	69.64	47.06	2.13*
4	Asks to anyone who would volunteer to answer	80.36	52.94	2.75**

\*Significant at 0.05 level ( $p < 0.05$ ) \*\*significant at 0.01 level ( $p < 0.01$ )

Table 4 depicts CR in respect of percentage of trained and untrained teachers on the aspects of method of questioning. The both group of teachers differ significantly in methods of questions such as asking to the whole class for answer from many ( $P_1 = 21.43$ ,  $P_2 = 67.65$ .); asking questions to non-attentive students ( $P_1 = 69.64$ ,  $P_2 = 47.06$ ,  $p < 0.05$ ); and asking questions to anyone ( $CR = 2.75$ ;  $P_1 = 80.36$ ,  $P_2 = 52.94$ ,  $p < 0.05$ ). The 67.65% of untrained teachers ask questions to the whole class for answer from many, which differ in case of trained teacher (21.43%), that means in-service training bears a positive effect on the trained teachers as there is less performance in the negative skill of questioning in the classroom ( $CR = 4.36$ ;

$p < 0.01$ ). The results pertaining to the skill of asking questions to specific attentive students ( $CR = 1.60$ ) did not show significant effect of in-service teacher training.

**Students’ Participation**

The results pertaining to participation of students in respect of seeking more elaboration and information from the teacher in the class; sharing their experiences with teacher and other students; giving suggestions or raising any issue related to the topic/lesson taught by the teacher, are presented in the Table 5 as following:

**Table 5: CR in Respect of Percentage of Trained and Untrained Teachers on the Aspects of Students Participation in the Discussion**

Sl. No.	Students’ activities on Participation	Percentage of Teachers		Critical Value
		Trained (N=56)	Untrained(N=34)	
1	Seeking more elaboration	75.00	44.12	2.95**
2	Seeking more information on the topic	53.57	29.41	2.22*
3	Sharing their own experience	39.29	26.47	1.24
4	Giving suggestions	26.79	14.71	1.34
5	Raising issues relating to topic	19.64	14.71	0.59

\*Significant at 0.05 level ( $p < 0.05$ ) \*\*significant at 0.01 level ( $p < 0.01$ )

The results of Table 5 describe about significance of difference between the percentages of trained and untrained teachers on the aspects of students participation in the discussion. As the case, the students participated for seeking more elaboration on the lesson taught in 75.00% of the classes of trained teachers where as it was 44.12% in the classes of untrained teachers. Thus there was significant difference between two groups which indicate a positive effect of in-service training result was in favour of trained teachers ( $CR = 2.95$ ;  $p < 0.01$ ). Further the results revealed that; through participation students seek more information on the topic taught. The percentage of classes of trained and untrained teachers differ significantly in this aspect; and there was a positive effect of in-service training of teachers ( $CR = 2.22$ ;  $p < 0.05$ ;  $P_1 = 53.57$ ,  $P_2 = 29.41$ ). Further, the results obtained from Table 5, pertaining to student participation with regard to sharing their own experience ( $CR = 1.24$ ); giving suggestions ( $CR = 1.34$ ); and raising issues relating to topic taught ( $CR = 0.59$ ), did not show significant difference between the classes of trained and untrained teachers. It was concluded, the in-service training did not have any effect on these aspects of students participation.

**Research Speaks in Gist**

The findings from the above analysis based on classroom practices pertaining to impact of in-service training are as follows:

- (i) In-service training has significant positive effects, in favour of trained teachers, on the skills of introducing the lesson, particularly with reference to the use of various techniques rather than stating topics directly (CR= 6.04;  $p<0.01$ ); and asking questions on previous knowledge (CR= 2.14;  $p<0.05$ ;  $P_1=42.89$ ,  $P_2=20.59$ ). The training, however, has no significant effect with reference to engaging students (CR=1.84) at the time of introducing the lessons.
- (ii) It indicates the in-service training has a significant effect on the skills of teachers for presenting the lesson in the classroom teaching (CR=5.01;  $p<0.01$ ).
- (iii) There is a significant positive effect of in-service teacher training on skill of presentation of lesson through discussion with explanation (CR= 5.62;  $p<0.05$ ;  $P_1=87.50$ ,  $P_2=29.41$ ).
- (iv) The in-service training has a significant effect as 91.07% trained teachers explain the lesson by giving suitable example as compared to 47.06% of untrained teachers (CR=4.64).
- (v) There is significant difference in the percentages of trained and untrained teachers with regard to skill of explanation in the classroom with demonstration (CR=4.92;  $p<0.01$ ;  $P_1= 85.71$ ,  $P_2=35.29$ ), which indicate significant positive effect of in-service teacher training too on this skill of teachers.
- (vi) The both trained and untrained teachers differ significantly in methods of questions such as asking to the whole class for answer from many ( $P_1=21.43$ ,  $P_2=67.65$ ); asking questions to non-attentive students ( $P_1=69.64$ ,  $P_2=47.06$ ,  $p<0.05$ ); and asking questions to anyone (CR=2.75;  $P_1=80.36$ ,  $P_2=52.94$ ,  $p<0.05$ ).
- (vii) More untrained teachers as compared to trained, ask questions to the whole class for answer from many, bears a positive effect on the trained teachers as there is less performance in the negative skill of questioning in the classroom (CR= 4.36;  $p<0.01$ ,  $P_1=67.65$ ,  $P_2=21.43$ ).
- (viii) In-service training has a significant positive effect in favour of trained teachers in case of students participation for seeking more elaboration on the lesson taught (CR CR=2.95;  $p<0.01$ ;  $P_1=75.00$ ,  $P_2=44.12$ ). Also trained teachers differ significantly in case of students participation for seeking more information on the topic taught, which tells a significant positive effect of in-service training in favour of trained teachers (CR=2.22;  $p<0.05$ ;  $P_1= 53.57$ ,  $P_2=29.41$ ).

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