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Effectiveness of online teacher education program- A case study

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ABSTRACT

Teachers have to perform multiple roles like academic facilitators, transmitters of knowledge, organisers and guides. In order to enable teachers to meet these professional expectations, concerned stakeholders work hard to design teachers training course design, exposure about pedagogical practices is given, updation of knowledge and skills is ensured through in service teacher training programmes. In service teacher trainings help teachers to evolve and adapt to the fast changing global scenario. The spread of COVID 19 virus forced educators to design and opt for online ways of fostering professional capabilities of teachers to enable them to get connected to their students through various online modes. The present study focuses on the need and ways of online training for teachers so that they can reduce the learning deficit caused due to corona pandemic. The factors like course design, mode of transaction, hours spent, degree of participation, competence of teacher educators, exposure and expertise to use technology add to the effectiveness of any online programme. An effective online teacher training programme brings desirable behavioural changes in terms of knowledge, skills and beliefs of the participants.

Keywords: Online Teacher Education, Effectiveness, In Service Teacher Education.

1. INTRODUCTION

Providing quality education is a concern throughout the globe including underdeveloped, developing and developed countries. Quality education is not a privilege but the right of the child who attends the school. It is globally accepted that quality of education needs improvement. Many education conferences and reports have emphasized the need for quality education. Researches have shown that learner's participation and achievement in schools depends on number of factors related to family and school of the child. In school, teaching learning practices adopted by the teacher, teaching- learning material used and teacher's pedagogical and content knowledge influence the quality of education received by child. National Policy on Education (1986) has laid lots of importance to teachers. Role of teacher is crucial for shaping the destiny of any country as they are majorly responsible for bringing about qualitative improvement in school education and thus can be considered backbone of education system. They help in realising learning goals. We see that global and local needs are changing fast due to knowledge explosion and technology. In today's world teacher's teaching and learning has become very important. Teachers now perform new roles of facilitator, mentor etc. who is cognisant of behaviour of the child, learning needs of the child and societal developments, leading to new demands in learning. This requires broadening and deepening of the teachers' knowledge and understanding about changing nature of the ever evolving Indian society; the integral relationship between education and society with specific reference to the contemporary socio-cultural, political and economic issues; and also the multidimensional nature of teacher's role as a catalytic agent in the society. It can be said that a teacher is an organiser of learning and learning experiences, transmitter of culture, conveyer of moral and ethical values, builder of character and personality of the children, a guide and counsellor, inspirer for social change and an architect of future of the nation.

To perform all these roles successfully the teacher undoubtedly has to possess the following attributes:

- academic competence for teaching,
- updating themselves with changing needs of the society in this scientific age,
- knowledge of psychological bases of education,
- ability to evolve and adapt methods and techniques for teaching learning,

- positive attitude towards teaching,
- understanding of developmental needs of the children.
- appropriate professional behaviour
- patience, impartiality and fairness.

Courses of teacher education should be planned and designed to remould the attitudes, manners, the habits in a way to reconstitute the teachers' personality (AIOU, 2000, p.22).

So, teacher education can be considered as a programme to develop the knowledge, abilities and the skills, which are required by teacher. A teacher must keep his/her personality in the background so that the pupils become self-directing individuals, who undergo a series of educative experiences and are able to invest their usual childhood experiences with educational meaning. For achieving this, the teacher's capacity building has to be of a high order which extends beyond the technical skills of teaching a subject in a classroom.

Recognising the teachers' role in education system, teacher capacity building has assumed a lot of significance. Farooq & Shahzadi, 2006 conducted a study on teachers training and concluded that the trained teachers perform better than the untrained teachers. As teacher preparation and teacher performance are interlinked and share a symbiotic relationship, it becomes important to understand the role of teacher education programme in preparing teachers to perform their expected role in classrooms and schools. The quality of school education is directly related to professional development of teachers. Pre-service teachers' education and in-service teacher education both play instrumental role in professional development of teachers. In pre-service teacher education programme teachers learn a great deal of theories and implications, teaching situation concerns and student concerns, while in-service teacher education deals with the contemporary issues in education, the latest pedagogical changes in subjects and helps the teachers to refresh their knowledge. In-service teacher education also inculcates in teacher the habit of constant learning. In-service training acts as a catalyst for teacher effectiveness (Zulkefli, Mohd; 2014)

So, for the enhancement of quality of school education and improvement of learning levels of children a effective in-service teacher education becomes a necessity.

Online Teaching Learning and COVID-19

The in-service teacher education can be done both through offline and online mode. The global pandemic situation has necessitated the need for Online teaching and learning. The largest disruption caused by COVID-19 pandemic has created feelings of insecurity and uncertainty in human mind. Education and teaching learning process were also influenced by the spread of this pandemic. Almost 1.6 billion learners across 200 countries were affected by the spread of the virus. The pandemic resulted in the closures of educational institutes and schools, apart from that other learning places have also impacted more than 94% of global students. The contemporary situation has brought unprecedented changes in almost all spheres of our lives. COVID protocols like social distancing, refrained movement have highly disturbed the traditional teaching learning practices and educational norms.

The teacher educators and teachers are empowering themselves technologically to adjust in the new norm of online teaching. In the present scenario online in-service teacher education can be a helpful tool for teachers in honing their professional skills and building a strong pupil teacher connect.

2. REVIEW OF RELATED LITERATURE

The investigators have tried to review the related studies in context of online teacher education programme. Many research studies have been conducted to study the importance of online teaching and the impact of this pandemic on teaching-learning situations. This also created the need to think, plan and experiment innovative and alternative educational practices and strategies. This paved the way for introduction of digital learning teaching learning process. This part of the study aims to analyse and discuss the importance of online teaching and impact of the COVID-19 pandemic on online teaching and learning.

Simon Edwige, (2012) in their study concluded that teachers made significant changes in their professional identities, through adjustment in their beliefs and practices and by becoming more technologically engaged. The study also found that the transformation was facilitated by an institutional community which supports online education and which further allowed them to fully integrate online teaching into their teaching selves.

Kuensel, (2020) stated that Bhutan took this preventive measure and declared reduction in working hours and closure of school to prevent the spread of the virus.

According to Dhawan (2020) the pandemic paved way to think about innovation in learning and offered opportunity to opt and implement digital learning in place of traditional approaches.

Research studies have highlighted the implications and challenges of online learning. The pertinent reasons of learning deficit through online mode were dearth of facility including physical infrastructure, absence of conducive environment at home. Lack of orientation and professional proficiency of teachers for online learning, information gaps, lack of equity and academic excellence for all, limited exposure of concerned stakeholders.

Petrie, (2020) states that the impact of this global pandemic was experienced by all including students, educators as well as parents. All frontline workers as well as Government tried hard to cope up the difficult time. Many people including students experienced

emotional and psychological disturbance that reduced their productivity. Even after trying hard the best pedagogical practices or say home schooling strategies are yet to be explored. He further added that the selection and implementation of online pedagogy which is relevant and effective mainly depends upon the exposure and expertise of educators as well as learners. He found that teachers used various platforms like Teams, Zoom, Google Meet, Canvas and Blackboard for imparting course content, trainings and for developing desirable skills. The pandemic also demanded them to use audios, videos, PDF, Word file, PowerPoint presentations, Excel sheet etc. to work efficiently and to perform their professional obligations more efficiently.

The review helped the investigators to analyse the contemporary situation more comprehensively and the need to train newly recruited teachers to enable them to meet the challenges of the current situation. If the newly recruited teachers are well versed with knowledge about content, pedagogy, use of ICT etc. only then they would be able to do justice with their professional obligations. The investigators being in the capacity of planning and organizing Induction Programme for newly recruited teachers decided to do so. After getting administrative approval the programme was done. Other details are discussed in the Methodology part of the paper.

3. METHODOLOGY

The contemporary situation prevented the stakeholders to organize capacity building programme for newly recruited teachers in offline mode so the need to facilitate the professional skills of all such teachers were fulfilled by organizing online induction programme for all newly recruited primary teachers working in the schools of Directorate of Education(DoE) Delhi, local bodies and aided schools of Delhi.

Design of the Study

The programme was initiated by analyzing the needs of teachers through online meeting with teachers and experts. After need analysis the course design for Master Trainers who would be training the primary teachers, was finalized. The course design included topics like implications of NEP2020, Multilingualism, Teacher as Reflective Practitioner, use of ICT in education, Art Integrated Learning, sports integrated pedagogical practices, innovative practices of teaching. The master trainers were trained through offline mode for five days. These master trainers then acted as resource persons for the training of newly recruited primary teachers

Sampling and Sample

Purposive sampling technique was used as the study was confined only to newly recruited primary teachers. All the teachers who filled the online registration form were part of the study. The study included responses from 2100 teachers from all the districts of Delhi.

The Tools

The study attempted to find the effectiveness of online induction programme for newly recruited primary teachers. The qualitative and quantitative tools used for collecting data are discussed below:

- Pre test and Post test scores-The participants were supposed to take the Pre test before the programme. After the intervention(online training) they took Post test. The variation/ difference of pre test and post test scores was treated with suitable data analysis technique to find the effectiveness of the online induction programme.
- The investigators conducted focus group discussions in which the participants were sharing their reflections on various session, course content, approaches opted by master trainers etc. The use of qualitative and quantitative tools substantiated each other and the investigators got comprehensive data.

Techniques for Data Analysis

Various descriptive, graphical and inferential techniques were used for analysis of the data.

4. ANALYSIS

In order to find the effectiveness of the programme the scores of pre test and post test were compared(using mean scores of pre test and post test) and it was found that there was a huge difference in the scores of pre test and post test which proves the effectiveness of the online training programme. The detailed description of the same is given below:



Fig-1 Insights of pre-test



Fig-2 Insights of post-test

Fig. 1 and Fig. 2 reflect the difference in mean scores of pre test and post test . there is visible difference in the mean score of pre test(7.21) and post test(8.35) which proves the effectiveness of the capacity building programme for primary teachers.

To substantiate the findings of the present study Chi square was also applied to the data. The ten items of pre test and post test were taken as ten variables and the scores of pre test and post test were considered as observed value and expected value of the intervention.

Item no	No of correct responses in pre test E	No of correct responses in pre test	O-E	(O-E) ²	(O-E) ² /E
1	1957	2032	75	5625	2.874297
2	978	1227	249	62001	63.39571
3	1339	1672	333	110889	82.81479
4	1693	1862	169	28561	16.87005
5	1864	1972	108	11664	6.257511
6	1324	1730	406	164836	124.4985
7	1320	1741	421	177241	134.2735
8	1380	1644	264	69696	50.50435
9	1804	1881	77	5929	3.286585
10	1178	1450	272	73984	62.80475
Value of chi square					547.58
degree of freedom=9					

The findings of Chi square test proved the effectiveness of the online training programme as the obtained value of Chi square was 547.58 at 9 degree of freedom, which is very high.

Item wise performance analysis

Item-1 Multilingual classroom is a resource for teacher.

95% of the newly recruited primary school teachers were of the view that multilingual classrooms can act as a resource for the teacher in the pre test ,while 98.6% of them responded the same in Post test.The results indicate that the teachers are very well aware of the benefits of multilingual classrooms.

Table-1 Item-1(Pre-Test)

S.No	Options	% of responses
1	Yes	95
2	No	0.3
3	Sometimes	4
4	Cannot Say	0.2

Table-2 Item-1(Post-Test)

S.No	Options	% of responses
1	Yes	98.6
2	No	0.1
3	Sometimes	1.2
4	Cannot Say	0

Item 2 Concept of Language Across the Curriculum promotes integration of Language Learning with _____.

47.2% of the teachers answered correctly in pre test while 59.6% of the teachers answered correctly in post test.This indicates that however the percentage in pre test and post test has increased but still teachers need more conceptual understanding on concept of language across the curriculum.

Table-3 Item-2(Pre-Test)

S.No	Options	% of responses
1	Subject Specific Concept	47.2
2	Policies in education	5.5
3	Sometimes	35.5
4	Cannot Say	11.8

Table-4 Item-2(Post-Test)

S.No	Options	% of responses
1	Subject Specific Concept	59.6
2	Policies in education	2.1
3	Sometimes	32.4
4	Cannot Say	5.9

Item-3The Happiness TRIAD describes three levels of happiness. The apex level is_____.

65% of the teachers answered correctly in pre test. This indicates that more than 50% of the teachers were aware of the Happiness TRIAD while 81.2% of the teachers answered correctly in post test which shows that more number of teachers were able to know about the happiness TRIAD in the training.

Table-5 Item-3(Pre-Test)

S.No	Options	% of responses
1	Deeper Happiness	20.1
2	Momentary Happiness	13.8
3	Sustainable happiness	65
4	None of the above	1.2

Table-6 Item-2(Post-Test)

S.No	Options	% of responses
1	Deeper Happiness	10.8
2	Momentary Happiness	7.8
3	Sustainable happiness	81.2
4	None of the above	0.3

Item-4 Skimming, an important sub-skill of reading is done to_____.

82% of the teachers answered correctly in pre test. This indicates that more than 80% of the teachers were aware of the Skimming as important sub skill of reading while 90.4% of the teachers answered correctly in post test which shows that more number of teachers were able to know about skimming as important sub skill of reading, during the training.

Table-7Item-3(Pre-Test)

S.No	Options	% of responses
1	answer textbook questions	2.5
2	complete a graph	4.3
3	get general idea of the text	82.2
4	search with a purpose	11

Table-8 Item-4(Post-Test)

S.No	Options	% of responses
1	answer textbook questions	1.4
2	complete a graph	2.1
3	get general idea of the text	90.4
4	search with a purpose	6.1

Item-5 The reflective process of progressive problem solving leads to_____.

90.5% of the teachers answered correctly in pre test while 95.5% of the teachers answered correctly in post test which shows that more number of teachers were able to know about the reflective process of progressive problem solving, during the training. Most of the teachers were very well informed about reflective process of progressive problem solving even before the training.

Table-9Item-5(Pre-Test)

S.No	Options	% of responses
1	Action research	90.5
2	Proposal writing	4.4
3	Report Submission	4.6
4	Budget calculation	0.5

Table-10 Item-5(Post-Test)

S.No	Options	% of responses
1	Action research	95.7
2	Proposal writing	1.8
3	Report Submission	2.2
4	Budget calculation	0.2

Item-6 NAS (National Achievement Survey) assesses learning levelsof students of classes_____.

64.3% of the teachers answered correctly in pre test. This indicates that more than 60% of the teachers were aware that which level of students are assessed in NAS while84% of the teachers answered correctly in post test which shows that more number of teachers were able to know about it during the training.

Table-11 Item-6(Pre-Test)

S.No	Options	% of responses
1	I,II,III and IV	18.6
2	IV, V, VI,andVI	9.8
3	III, V, VIII and X	64.3
4	IX, X, XI, andXII	7.3

Table12 Item-6(Post-Test)

S.No	Options	% of responses
1	I,II,III and IV	6.6
2	IV, V, VI, andVI	7.2
3	III, V, VIII and X	84
4	IX, X, XI, andXII	2.3

Item-7 NEP (2020) promotes a strong base of overall learning andwell-being through

64.1% of the teachers answered correctly in pre test. This indicates that more than 60% of the teachers were aware that NEP (2020) promotes a strong base of overall learning and well-being through Early childhood care and education while 84.5% of the teachers answered correctly in post test which shows that more number of teachers were able to know about it during the training.

Table-13 Item-7(Pre-Test)

S.No	Options	% of responses
1	ECCE (Early childhood care and education)	64.1
2	Vocational Education	22.1
3	multilingualism	13.3
4	Adult Education	0.4

Table-14 Item-7(Post-Test)

S.No	Options	% of responses
1	ECCE (Early childhood care and education)	84.5
2	Vocational Education	8
3	multilingualism	7.3
4	Adult Education	0.2

Item-8 Art Integration promotes holistic development because art acts as a _____

67% of the teachers answered correctly in pre test. This indicates that more than 60% of the teachers were aware that Art Integration promotes holistic development because art acts as a powerful medium to facilitate learning while 79.8% of the teachers answered correctly in post test which shows that more number of teachers were able to know about it during the training.

Table-15 Item-8(Pre-Test)

S.No	Options	% of responses
1	Medium to reduce curriculum burden	3.1
2	Powerful medium to facilitate learning	67
3	Medium of recreation and enjoyment	22.5
4	Way of promoting self confidence	7.3

Table-16 Item-8(Post-Test)

S.No	Options	% of responses
1	Medium to reduce curriculum burden	2.4
2	Powerful medium to facilitate learning	79.8
3	Medium of recreation and enjoyment	13.3
4	Way of promoting self confidence	4.5

Item-9 360 Degree assessment focuses on assessment on the basis of _____.

87.6% of the teachers answered correctly in pre test. This indicates that more than 80% of the teachers were aware that 360 Degree assessment focuses on assessment on the basis of multiple levels and multiple sources while 91.3% of the teachers answered correctly in post test which shows that more number of teachers were able to know it during the training.

Table-17 Item-9(Pre-Test)

S.No	Options	% of responses
1	Multiple levels and multiple sources	87.6
2	Child's performance in annual exams throughout the schooling	7.5
3	Student's behavior with fellow mates	3.9
4	Timely submission of assigned tasks	0.9

Table-18 Item-9 (Post-Test)

S.No	Options	% of responses
1	Multiple levels and multiple sources	91.3
2	Child's performance in annual exams throughout the schooling	5.4
3	Student's behavior with fellow mates	2.8
4	Timely submission of assigned tasks	0.5

Item-10 Division of co-scholastic classroom assignments should be based on :-

57% of the teachers answered correctly in pre test. This indicates that more than 50% of the teachers were aware that Division of co-scholastic classroom assignments should be based on principle of involvement of all children while 70.4% of the teachers answered correctly in post test which shows that more number of teachers were able to know about it during the training.

Table-19 Item-10(Pre-Test)

S.No	Options	% of responses
1	Gender of the child	1
2	Child's interest in specific subject	38.6
3	Principal of involvement of all children	57.4
4	Societal expectations from particular gender	2.9

Table-20 Item-10(Post-Test)

S.No	Options	% of responses
1	Gender of the child	1
2	Child's interest in specific subject	26.8
3	Principal of involvement of all children	70.4
4	Societal expectations from particular gender	1.8

Feedback of the sessions given by participants was as follows:

- **Views on Course content of the training**

The participants viewed that all the sessions were very interactive. Since the teachers were newly recruited, so all the topics were appreciated by them. The participants were of the opinion that the content was most appropriate for them. Topics of the sessions were very versatile specially Teachers' professional ethics, POCSO act, Gender Sensitization, Action Research, Inclusion and pedagogies of different subjects. The Idea of live streaming on YouTube was appreciated by all as this will help them to see the content whenever they want.

- **Views on Teaching learning strategies during the training**

The participants expressed that multiple techniques were used in the training which made the sessions interesting and helped to sustain interest of for longer duration. Facilitators used different techniques and strategies like storytelling, poem recitation and reflective questions etcetera

- **Views on Resource persons**

The participants appreciated the resource persons and viewed that all tried to create a lively environment by putting questions and asking the participants to do some activities. Resource persons shared their own best practices as well

- **Other Views**

Participants enjoyed the sessions and remained engaged in almost all the sessions. The training programme was very participatory and activity based. All the sessions were appreciated by the participants. The training programme provided an opportunity to the participants to clarify their doubts and to get hands on practice of online training. Since the timings of training were long, so limited data packs, mobile charging and internet connectivity were the major issues of all the participants. Most of the participants expressed their interest in attending offline training instead of online.

6. CONCLUSION

The present study proved the effectiveness of online teacher education programme for newly recruited primary teachers. Some of the reasons that added to the effectiveness of the online training were relevance of the course design, prior training and exposure of master trainers, active participation and respecting autonomy of participants, use of ICT and innovative approaches, activity based pedagogical practices, reflections at the end of every session etc. The improvement in scores of post test proved the effectiveness in quantitative terms. In the item wise analysis it was seen that the number of correct responses increased in the post test in all the items. There was a remarkable increase in number of correct responses in the items related to principle of involvement in co-scholastic assignments, skimming as a skill of reading, Happiness TRIAD and reflective process of progressive problem solving. The item analysis also revealed extension in conceptual clarity on the topics related to National Achievement Survey (NAS), 360 degree evaluation, Art integrated Education and National Education policy 2020. However, certain areas like language across the curriculum proved the Though nothing can substitute offline or face to face interaction but we need to prepare ourselves for the changing demands of this contemporary pandemic situation. Learning is a lifelong process and teachers need to update and refresh their professional skills in order to help their students develop holistically. Before organizing such programmes for teachers it must be ensured by the concerned authorities that the programme caters to the needs of participants, is based on the principle of respecting autonomy and individuality, active participation must be ensured, try to link theoretical concepts with practical or real life situation, proper monitoring and evaluation should be there. We are living in an age where the whole world has turned to be a global village so linking local concepts and contexts with global scenario has become need of the hour. Technical competencies of teachers must be developed looking into the future perspectives of technological based education.

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