An Evaluative Study of In-service Program On ICT for Primary Teachers Run by MCD Science Centers

Dr. ZAFAR IQBAL
Research Scholar
Department of TT & NFE (IASE),
Faculty of Education, Jamia Millia Islamia (A Central University),
New Delhi (India) 110025
Email: zafariqbalteacher@gmail.com

ABSTRACT

To empower primary teachers of MCD Schools with ICT skills, MCD initiated 'Shiksha' project collaboration with the Microsoft Corporation (India) Ltd. Investigator evaluated the extent of training in ICT to the teachers in MCD Schools. The study was biphasic; a purposive sample of 400 trained teachers was chosen for the comprehensive survey study in the first phase. The tools developed were questionnaire, checklist, interview schedule, competency test and an attitude scale (Likert-type). In second phase, a randomly selected sample of the total twenty male / female teachers from the total sample of the first phase was interviewed and ten schools were observed. Even if the results were not exciting and, still it is a challenge to stakeholders to train them on ICT appropriately.

Key Words: Information Communication Technologies, In-service Training, Availability of ICTs, ICT Competencies, In-service teachers' Attitude towards ICTs

INTRODUCTION

Integrating technologies in teaching learning, is the need of the hour when modern technologies are being adopted in teaching learning to bring excellence in the classroom processes. Thus it is important for teachers to undergo continuous professional development. One such professional development in ICT had been done of the in-service teachers of MCD.

For the purpose of quality education in primary schools Municipal Corporation of Delhi initiated 'Sharda' Project for Computer Aided Learning Program (CALP) in 2004. Besides, in order to empower primary teachers of MCD Schools with ICTs skills, MCD initiated 'Shiksha' project in collaboration with the Microsoft Corporation (India) in 2004. Project Shiksha is a twelve days In-Service Training Program on ICT named 'Partners in

Learning' at its six Science Centers in Delhi. The training was given through the ICT trainers of Microsoft Corporation (India) Ltd (CALP-MCD, 2006). The present study was undertaken to evaluate this training from the perspective of the teachers partaking of it.

NEED FOR THE STUDY

Technical innovation is a continuous process and inventions always remain never ending. In first decade of the 21st century, rapid changes in ICTs and by ICTs have taken place also in the teaching methods and learning styles with the integration of ICTs in teaching learning. By the tremendous use of ICTs, ICT have become, within a very short time, one of the basic building blocks of modern society.

Endeavors regarding ICT, were initiated by Government of India in 1998 Computer Literacy and Studies in Schools (CLASS) 2000. It had three components, viz. Computer Literacy in 10,000 Schools, Computer Aided Learning and Computer based learning in SMART schools, similarly in another scheme named 'ICT in Schools' in the year 2004, it was assumed to cover one lakh schools by 2010.

Under the IntelTeach Program, 7 million teachers were trained in 50 countries. In India, since February 2000 to 2011, the program impacted over more than one million teachers across 17 state governments and Union Territories of India.

In the first phase of Project Shiksha in India, under the Microsoft's 'Partners in Learning' 512,000 government school teachers had been trained by 2008 with the partnership of the 12 state governments (including Maharashtra, Uttaranchal, Andhra Pradesh, Karnataka, Gujarat, Bihar, Mizoram, Madhya Pradesh, Punjab, Rajasthan, Tamil Nadu and Uttar Pradesh) and Municipal Corporation of Delhi.

Under the Project 'Sharada', Department Primary Education, MCD established Computer Aided Learning Centers (CAL-Cs) in July 2004 in 1785 schools except those 34 schools which had a total enrolment below 50 students. These centers had the facility of computer lab with related basic infrastructure and educational packages, and CDs etc.

Under the Project 12600 MCD Primary Teachers had been trained in twelve days INSET program on ICT including 1575 teachers of the central zone, who were trained in 116 batches from 7th of November 2004 to 22nd October 2010. It was the first instance of MCD, where in-service training of computer was given at six science centres situated at different locations in the GNCT-Delhi.

Since the program had been running for almost four years, a need was felt to evaluate the quality of the INSET, availability of the ICTs, competencies attained of the in-service teachers and also how well equipped the teachers felt themselves to integrate ICTs in their regular classroom transactions.

Hence investigator attempted to evaluate in-service training program on ICT run by MCD Science Centers through the perception of the in-service teachers, what they have perceived about the INSET and post performance of the teachers on ICT.

Statement of the problem

Present study has attempted to study the perceptions of teachers regarding in-service program on ICT quantitatively and qualitatively. It has attempted to find out the accessibility and functioning of ICTs, ICT competencies of the In-service teachers and their attitude towards the integration of ICTs in the teaching-learning process. It is hoped that results would enable the educational planners, policy makers to update and modify the present curriculum and methodology of ICT In-service teacher training program. Therefore the topic of the present study was:

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Objectives of the Study

The objectives of the present study were:

(i) To study the extent of training in ICT given to MCD Primary teachers in terms of:
   a. Content of the training as perceived by the teachers
   b. Duration and timings of the training as perceived by the teachers

c. Methods used to train the teachers as perceived by the teachers

(ii) To study the availability of ICTs to the teachers in MCD School.

(iii) To evaluate the training in ICT in terms of attainment of following competencies:

a. Fundamental operations of computer

b. Social and ethical issues related to use of ICT

c. Use of the IT tools

d. Use of the communication tools

e. Tools for problem-solving

f. Individualized Learning

g. Accessing to quality Information

h. Response Time

i. Learner engagement

(iv) To study the attitude of ICT trained teachers towards ICT.

Methodology

The study was biphasic, formulated containing both quantitative and qualitative methods for the analysis of the raw data and that had to be obtained separately in the two stages i.e. First Phase and Second Phase.

SAMPLE

Out of the six Science Centers, a purposive sample of 400 teachers from 12,600 trained teachers was chosen for the comprehensive survey study in the first phase.

For in-depth study the investigator selected the randomly sample of the total twenty male / female teachers from the total sample of the first phase and ten MCD Schools from Central Zone schools were chosen for in-depth study.

Survey Study: Tools and Procedure of Data Collection

The tools developed for first phase of the present study were questionnaire, checklist, interview schedule, competency test and an attitude scale. These four tools of the survey study were administered on every one of the selected sample in one to one situation individually.

Subsequently, data was obtained in the form of parametric data which were to be measured and non parametric data from the administered tools.

Investigator prepared a quick tally sheet as a data summary sheet on Ms-Excel sheet to display each and every response of trainee. On the basis of the response codes, the total frequencies were counted for each and every code with the help of Ms-Excel software and these frequencies were put according to aspect relatively their questions /informations and choices.

In-depth Study

Investigator observed on the spot the condition, function, capacity of the all available ICTs, and involvement of teachers with available ICTs. Investigator desired to see content coverage of the different subjects taught in different classes from I to V by the use of these ICTs in teaching learning. Moreover, investigator observed the use of these ICTs in other works of the school by the teachers through an Observation Schedule.

In observation, investigator find out not sufficient use of ICTs by the teachers after undergoing in-service training so more exploration was necessary find out teachers' perception about the different ICTs aspects. Indeed, investigator had to hear the in-service teachers' talk about each particular aspect of their experiences in interview.

Statistical Treatment

In accordance with the different objectives of the study, the obtained data of the first phase were analysed through the statistical techniques including standard deviation, average mean and percentage. However, data of the second phase of the study were analysed qualitatively.

Delimitations of the Study

The present study was delimited as per following-

(i) The study is delimited to those MCD Schools, which were under cover of the Science Centre for Central Zone in the National Capital Territory of Delhi.

(ii) The study is further delimited to the only perceptions of those teachers who participated in the in-service training on ICT given at the MCD Science Centre for Central Zone in the National Capital Territory of Delhi.

FINDINGS

Findings came out after analyzing aspect wise the obtained data. The investigator presented findings as per following-

- There were 15.0-18.0 per cent of the in-service teachers of the sample who influenced and carried over the effect positively on other aspects of the study because they had already learnt operating computers before this INSET program while the rest of the in-service teachers were given first time training on computer.
- Five topics were covered for the fundamental operations of the computer during in-service computer training; trainees were given knowledge of the main components and peripheral devices of computer, Ms-Word, Ms-Excel, Ms-PowerPoint, and browsing / surfing Internet. Contents covered of the fundamental operation was perceived as very little and not satisfactory by a substantial number of in-service teachers and they had also no satisfaction from this INSET program.
- Duration of 12 days of the training was perceived as too short and the training for 8 hours in every day was seen as too long and unsuitable.
- Resource persons gave hints, cues and demonstrations to them during INSET whenever they faced difficulties in working on computers. Level of involvement of the resource persons in computer training transaction was average. The amount of demonstration and practical experience in computer training program were given to some extent. In this program, every batch comprised twenty in-service teachers of MCD schools. The transactional methodology lecture cum demonstration was used in the computer training program by resource person. There were only 5.0 per cent of trainees who could complete their chosen project by themselves while the rest of the in-service teachers could not do

the project work independently. This can be a point of concern, since project work helps in boosting their confidence.

- A bilingually published book as reading and reference material and also a CD of Microsoft's program 'Partners in Learning' about the computer training was distributed to in-service teachers mostly on the first day of the training itself. It was reported to be of good quality.
- Logistical supports provided to in-service teachers during the INSET were satisfactory.
- Mostly in-service teachers were not interested in in-service training program and in the use of ICTs and that exceptionally radio was used to some extent. But it was a very interesting finding that 87.25 per cent in-service teachers were ready to go for further in-service computer training for their own reasons including improving and clearing their doubts, and keenness to overcome the difficulties, if provided an opportunity. It was realized that they were dissatisfied with the current training; however they were keen on a future training which they hoped would be better.
- Most of the merits of the resource person (RP) such as ability to create interest and motivate trainees for learning, communication skills, and level of competence were positive for a good in-service training but it was the level of interaction between the trainees and resource person that was found poor, which would effect the training negatively. Thus all merits are always required in the part of the resource person of the in-service training for a good training.
- Sixty six per cent of the teachers felt result of upgrading their teaching skills as very little and 9.75 per cent felt no upgrading.
- In-service computer training was either very little useful or not useful at all for 31.25, and 41.25 per cent of the teachers, respectively. It is important to note that the in-service training was not found so useful by the trainees. While trainees were not satisfied from this training; it was either not at all for 47.75 per cent or very little for 36.75 per cent of the trainees, and both these category had the significance value of the not satisfied group.
- In-service training on ICT whatever was given during the INSET that computer training application by the teachers in the MCD schools was poor.
- In-service training was perceived as ineffective by quite a significant number of the in-service teachers.

- Problems were faced during applying the computer training in schools such as the facilities available in the school were not sufficient to support teaching learning using ICT.
- Teachers faced different kinds of the problems such as computer hardware and software problem, problems related to CDs provided and inadequate number of computers in the schools. Problems like computers not functional and inadequate numbers of the computers were significantly high.
- In-service teachers were not able to manage the problems properly.
- In-service teachers could not perform on ICTs in teaching learning properly, therefore in-service teachers' ICT performance was found unsatisfactory.
- Availability of the ICTs to the teachers at school was somewhat better them availability at home because availability of educational softwares were found good only at school but the availability of electronic gadgets, computer peripheral devices and other softwares were found good at teachers' homes rather than schools. Teachers might have more involvement with ICTs at home rather than in school.
- Maintenance of the ICTs was better at the home rather than school.
- Most CAL Labs and TVs were found dysfunctional. Moreover, there were enough ICTs available in the schools but only radio was being used every day as per schedule. While there was no financial crunch in any MCD schools to maintain these ICTs.
- There was enough availability of ICTs in the schools observed, but ICTs were not being used in teaching-learning by teachers and students did not have access to these ICTs. Over all use of ICTs in their capacity was very poor in the schools observed.
- In-service teachers attained very little competencies of the fundamental operations and most in-service teachers were very poor in the fundamental operations of the computer.
- In-service teachers were unable to keep privacy of the data on single computer in sharing mode. It was more practical skill of the computer literacy and computer proficiency.
- Teachers were acquainted very little with the use of the IT tools in teaching with computer.
- In-service teachers had only knowledge of the use of communication tools but they had no proficiency in these.
- There were 12.0 per cent of the teachers who were competent in using computers for problem solving.
- All teachers could not do the individualized learning.

- Since in-service teachers were not using computers therefore how could they access quality information in the school.
- Most teachers could not perform at the acceptable proficiency level.
- There were almost 18.25 per cent of the teachers, who could have the learner engagement with computer in the classroom processes.
- All ten competencies were attained averagely by 57.37 per cent of the teachers. However it might be that 18.25 per cent out of the 57.37 per cent teachers who attained almost all components of competencies in the in-service training because these were the teachers who spent more than two hours every day on computer regularly and they were involved in every component of the competencies in this study.
- In-service teachers had favourable positive attitude towards ICTs however it was not perfectly positive.
- Overall use of ICTs in their capacity was found very poor in schools. While teachers had undergone the training on ICT only 57.37 per cent of the all competencies taught were attained during the INSET.
- In-service teachers' ICT performance was unsatisfactory. There were computer related problems in the school regarding improper training of the teachers, inappropriate number of computers, dysfunctional computers, softwares, educational packages and so on.
- In-service training was perceived not effective to quite a significant number of the in-service teachers. Covered content of the fundamental operation was perceived as not satisfactory.
- In-service teachers had need for further training on ICT at that time and it should be conducted like a professional course and a refresher in-service should be given every year as per the perceived needs by in-service teachers' that were diversified based on content of the further training, batches of the further training, duration of the further training, venue of the further training, resource person of the further training, establishment a resource centre, and monitoring and evaluation.

CONCLUSIONS

On the basis of analysis and findings the investigator reached the following conclusions:

- It was a first initiative of in-service training on ICT in MCD run schools but it was quite unsuccessful because even after training in ICT, the teachers were not using ICTs in their

schools. There were 15.0-18.0 per cent of the in-service teachers of the sample who already had learnt operating computers before this INSET program while the rest of the in-service teachers were given first time training on computer.

- Although five topics e.g. components and peripheral devices of computer, Ms-Word, Ms-Excel, Ms-PowerPoint, and browsing/surfing Internet were covered for the fundamental operations of the computer during in-service computer training but it was inadequate and trainees were not satisfied due to lack of practice at science centre and at school also because they were using computer at science centre in sharing mode (two teachers per computer and they were not regular partner in entire training) while they did not have same softwares in schools.
- In-service teachers said that duration of the training was too short (12 Days); and the trainings hours every day eight hours were too long and unsuitable.
- Logistical supports provided to in-service teachers during the INSET were satisfactory and every batch comprised twenty in-service teachers of MCD schools. The transactional methodology lecture cum demonstration was used in the computer training program by the resource persons. While it might be project based also that would help in boosting their confidence. So transfer of the training to the school did not take place.
- In-service teachers were not satisfied with the resource person in terms of level of interaction between them that was poor and this could not upgrade their teaching skills in use of ICTs. This factor of the computer training, made it very little useful for trainees and was one of the causes of their dissatisfaction. Therefore in-service training was perceived as ineffective.
- Most in-service teachers were not interested in in-service training program and in the use of ICTs. It was realized that they were dissatisfied with the current training; however they were keen on a future training which they hoped would be better.
- Facilities available in the schools were not sufficient to support teaching learning using ICT. Thus even if they had learnt something during the training, there was hardly any scope to practice or improve it in the schools. In-service teachers were not able to manage the problems properly and could not perform on ICTs in teaching learning properly.
- The ratio of the students per computer in the schools (approximately 4 to 5 computers for the whole school) was extremely high. Also that computers provided at the CAL centre in every school were not as advanced as those used by teachers in their training.

This technical problem could not be understood by the stake holders like decision makers of the Department and they were completely dependent on the agency, which provided computers to the schools and out sourced ITs. At this point, they could also not understand that use of computers of the CAL centers was not limited to the students only but these were also for the teachers to use during their teaching learning. However the use of ICTs in schools depended only on out sourced IT rather than in-service teachers. It indicated that monitoring and evaluation of the both MCD projects -Sharda and Shiksha was not done effectively.

- Availability of the ICTs to the teachers at school was somewhat better than availability at home because availability of educational softwares were good only at school. However, the availability of electronic gadgets, computer peripheral devices and other softwares were better at teachers' homes than schools. Teachers might have more involvement with ICTs at home than in school. Maintenance of the ICTs was better at the home than school. Most CAL Labs and TVs were dysfunctional. Moreover, there were enough ICTs available in the schools but only radio was being used every day as per schedule. If these ICTs were provided to the teachers at home, all would be functional, while there was no financial crunch in any MCD schools to maintain these ICTs.
- There was enough availability of ICTs in the schools observed, but ICTs were not being used in teaching-learning by teachers and students did not have access to these ICTs. Overall, use of ICTs in their capacity was very poor in the schools observed.
- In-service teachers attained very little competencies of the fundamental operations and in fact most in-service teachers who underwent the said ICT training were found to be very poor in the fundamental operations of the computer. Teachers were acquainted very little with the use of the IT tools in teaching with computer. In-service teachers had only knowledge of the use of communication tools but they had no proficiency in these. The in-service teachers were not using computer therefore how could they access quality information in the school. Mostly teachers could not perform at the acceptable proficiency level.
- In-service teachers had favourable positive attitude towards ICTs however it was not perfectly positive.

In the 21st century, students of MCD run schools are craving for learning which should be given by talented teachers who would give them rich and varied learning

experiences, would be able to understand the fast changing requirement and updating themselves in the use of ICT in their teaching-learning. Usually in MCD, teachers are given annual in-service training for updating the subjects rather than the use of ICTs. This training is provided by the specialized in-service training institute like SCERT, Delhi which never organised any training program on computer for MCD teachers. MCD attempted it first time and trained the teachers above the goal i.e. 12000 teachers. Even if the results were not exciting and in-service teachers would not be able to use ICT successfully in their teaching due to lack of competencies of ICT, still it is a challenge to stakeholders to train them on ICT appropriately. If it makes them better use ICTs in their teaching learning, effects will reflect on the learning experiences of the students. But the real challenge before the MCD is still how to train these teachers. For the successful use of ICTs in their teaching learning a rigorous planning about the INSET program on ICT is the need of the hour. Collaborative efforts of both, trainees and trainers are essential for designing of curriculum of the in-service training program on ICT and its utilization for achieving goals of education. All required ICTs and its related infrastructures are also the basic requirements of every school.

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