Effectiveness of Traditional and ICT Enabled Teaching Methods at B.Ed. Level

Manoj K Saxena* and Dhara Hans**


ABSTRACT

Inclusion of technology has given new dimensions to education by making education digital oriented, the teaching has moved away from traditional method to ICT enabled teaching. The purpose of the study was to investigate that either traditional method of teaching is better or ICT enabled teaching. For this researchers conducted an experimental study on sixty six (available) prospective teachers in which experimental group was taught through ICT enabled teaching and traditional group was taught by lecture method. The main objective of the study was to compare the effectiveness of traditional method of teaching and ICT enabled teaching with the help of achievement of Prospective Teachers with reference to their Locality and Streams. Two groups pre-test post-test research design was used to conduct the study. The finding of the study shows that prospective teachers of experimental group have been effected by the use of ICT due to which they have shown improvement in their post test scores with respect of their Streams and Locality. Based on the finding it was concluded that ICT as good resource when used in the classroom effects the teaching-learning process.

KeyTerms: Traditional method of teaching, ICT enabled teaching and Prospective Teachers

INTRODUCTION

Present era is in continuous flux due to the addition of improved technology and subtraction of older technology. With the change in time one can see a tremendous shift in human behaviour; the way of human thinking. In Ancient time human life revolved around religion, farming and trade but emergence and growth of Information Technology completely changed the outlook of human life into a world with thoughts of creativeness in information storage and management. The evolution of technology has developed our society leading it to digital era. The technological changes have created a new world with increased information literacy and technological literacy. US Department of Labor was also of the opinion that ICT has powered our teaching with technology which is fueled by information and driven to make knowledgeable society⁴.

The Technological change can be identified in teaching-learning process. ICT gadgets are like arrows in the quiver which when struck in right direction with right pace and momentum hits the aims of education. It is always a question of discussion among the academicians that which method of teaching should be opted for the effective teaching as better learning of the students. We have had always observed the gaps in context of teaching. Traditional method of teaching is teacher centered, a single or one way process where the students are supposed to be passive listeners. This teaching-learning process is confined to chalk and talk only; where the teacher delivers his lecture and student has to listen the teacher by maintaining the decorum of the class. Thus, the learning mode tends to be passive and the learners play little part in their learning process².

With paradigm shift, there is arrival of ICT enabled teaching which includes all the components of traditional teaching and are further it is being embellished with the use of ICT. Now the main focus is on the student’s interaction and their problem-solving.
The pre-dominant role of Acharya has now been changed with the addition of new technological innovations. Castro et al. says that ICT assists in transforming a teaching environment into a learner-centered one. Tinoi stressed the potential of ICT in increasing access and the quality of education in the developing countries.

In ICT classroom the learner are actively involved, they are authorized by the teachers to involve themselves in interaction and problem-solving. This study is important as the main focus is on the prospective teachers who have to build the nation and society by their effective teaching. Teaching in traditional method is a one way process in which a student plays a role of passive listener. A good teaching can be measured by the student learning. There are consistently high correlations between students' ratings of the “amount learned” in the course and their overall ratings of the teacher and the course. Those who learned more gave their teachers higher ratings. Use of ICT helps the student to focus on higher-level concepts rather than less meaningful tasks.

**LITERATURE REVIEW**

Researchers had searched for the works related to Traditional and ICT enabled teaching. It was found that ICT enabled teaching is galvanized with the application of ICT which has a greater impact on the effectiveness of the student learning. ICT enabled teaching is also more effective than Traditional method teaching. The introduction of innovative methods of teaching can improve the quality of education. The effectiveness of any teaching method depends on student perception and their Learning.

ICT assistance helps the students to access the information more effectively and efficiently. ICT helps them in getting the information and making them towards self-direction. It includes the student in making a creating environment and making their own material.

**OBJECTIVES**

- To compare the effectiveness of traditional and ICT enabled teaching on the achievement of prospective teachers.
- To compare the effectiveness of traditional and ICT enabled teaching on the achievement of rural prospective teachers.
- To compare the effectiveness of traditional and ICT enabled teaching on the achievement of urban prospective teachers.
- To compare the effectiveness of traditional and ICT enabled teaching on the achievement of prospective teachers of humanities background.
- To compare the effectiveness of traditional and ICT enabled teaching on the achievement of prospective teachers of science background.

**HYPOTHESES**

To conduct the present study, the following hypotheses were framed:

- There is no significant difference between the achievement of various groups of prospective teachers while taught through traditional and ICT enabled teaching.
- There is no significant difference between the achievements of rural prospective teachers while taught through traditional and ICT enabled teaching.
- There is no significant difference between the achievement of urban prospective teachers while taught through traditional and ICT enabled teaching.
- There is no significant difference between the achievements of prospective teachers of Humanities background while taught through traditional and ICT enabled teaching.
- There is no significant difference between the achievement of prospective teachers of science background while taught through traditional and ICT enabled teaching.

**METHODOLOGY**

The Present study was conducted on sixty six (available) prospective teachers of Dronacharya College of Education, Rait (Himachal Pradesh). The whole class of these 66 prospective teachers was divided into two sections on the basis of their roll numbers. All the students having even roll numbers were allotted to the control group whereas the students having odd roll numbers were allotted to the experimental group. Researchers conducted a pre-test on both by applying self-made achievement test on the topic of personality under their part of syllabus of educational psychology.

Both the groups were taught the topic 'personality' for seven days. The control group was taught by using traditional teaching whereas the experimental group was taught by giving special treatment in the form of ICT enabled teaching. This teaching included power point presentation supported by lecture and discussion. After completing the teaching for seven days a post test was conducted on both groups.

**INSTRUMENTS USED**

Researchers used a self-made achievement test for testing the knowledge of both group of prospective teachers on the topic 'personality'. A power point presentation was also used to teach the prospective teachers of experimental group. Achievement test has the list of twenty five items. Each correct item was scored with one mark.

**DATA ANALYSIS**

The collected data were analyzed with the help of mean and ‘t’ test.

- Mean and SD scores of Prospective Teachers

  Table 1: Mean and SD Scores of Prospective Teachers

<table>
<thead>
<tr>
<th>Groups</th>
<th>Sample Size</th>
<th>Mean</th>
<th>SD</th>
<th>t- value (df=64)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Traditional Teaching+</td>
<td>33</td>
<td>12.91</td>
<td>2.93</td>
<td></td>
</tr>
<tr>
<td>ICT Enabled Teaching++</td>
<td>33</td>
<td>20.27</td>
<td>2.02</td>
<td>11.88*</td>
</tr>
</tbody>
</table>

‘Control Group’ Experimental Group*Significant at .01 level of significance

An analysis of table 1, shows that the prospective teachers who were taught through ICT enabled teaching scored higher mean value than their counterpart Prospective teachers who were taught through traditional teaching (p = .01, t= 11.88). The probable cause for this result may be the use of ICT in classroom...
which affects the teaching-learning process by adding quality to their learning. This finding is also supported\(^{14,15}\).

- **Mean scores of Prospective Teachers of Rural Background**

  Table 2: Mean Scores of Prospective Teachers of Rural Background

<table>
<thead>
<tr>
<th>Groups</th>
<th>Sample Size</th>
<th>Mean</th>
<th>SE</th>
<th>t-value (df=40)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Traditional Teaching+</td>
<td>22</td>
<td>13.3</td>
<td>1.09</td>
<td>6.21*</td>
</tr>
<tr>
<td>ICT Enabled Teaching++</td>
<td>20</td>
<td>19.9</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Significant at .01 level of significance

The data presented in table 2, reveals that the Rural prospective teachers differ from each other when taught through traditional teaching and ICT enabled teaching (p=.01, t= 6.21). Saxena & Rathour found in their study that difference between the groups of rural background students of online learning were highly significant in post test as compared to traditional group\(^{16}\).

- **Mean scores of Urban Prospective Teachers**

  Table 3: Mean Scores of Urban Prospective Teachers

<table>
<thead>
<tr>
<th>Groups</th>
<th>Sample Size</th>
<th>Mean</th>
<th>SE</th>
<th>t-value (df=22)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Traditional Teaching+</td>
<td>11</td>
<td>12.45</td>
<td>2.32</td>
<td>3.62*</td>
</tr>
<tr>
<td>ICT Enabled Teaching++</td>
<td>13</td>
<td>20.84</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Significant at .01 level of significance

The analysis of table 3, shows that urban prospective teachers who were taught through ICT enabled teaching, scored higher mean value than their counterparts who were taught through traditional teaching (p=.01, t=3.62). ICT enabled teaching may have helped to support their exposure towards technology and learning due to this they may show improvement in their test scores. As Brush, Glazewski & Hew have stated, ICT is used as a tool for students to discover learning topics, solve problems, and provide solutions to the problems in the learning process\(^{17}\).

- **Mean scores of Prospective Teachers of Humanities Background**

  Table 4: Mean Scores of Prospective Teachers of Humanities Background

<table>
<thead>
<tr>
<th>Groups</th>
<th>Sample Size</th>
<th>Mean</th>
<th>SE</th>
<th>t-value (df=44)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Traditional Teaching+</td>
<td>23</td>
<td>13.17</td>
<td>1.24</td>
<td>5.65*</td>
</tr>
<tr>
<td>ICT Enabled Teaching++</td>
<td>23</td>
<td>20.17</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Significant at .01 level of significance

The analysis of table 4, leads us to the conclusion that the prospective teachers of Humanities background differ significantly while they were taught through traditional method and ICT enabled method of teaching (p=.01, t=5.65). This may be due to that the ICT enabled teaching may have break the monotonous routine of traditional teaching as a result, they had shown better learning. Sangra reported that the contribution of ICT to the improvement of teaching and learning processes is higher in the schools that have integrated ICT as an innovation factor\(^{17}\).

- **Mean scores of Prospective Teachers of Science Background**

  Table 5: Mean Scores of Prospective Teachers of Science Background

<table>
<thead>
<tr>
<th>Groups</th>
<th>Sample Size</th>
<th>Mean</th>
<th>SE</th>
<th>t-value (df=18)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Traditional Teaching+</td>
<td>10</td>
<td>12.3</td>
<td>2.08</td>
<td>3.08*</td>
</tr>
<tr>
<td>ICT Enabled Teaching++</td>
<td>10</td>
<td>20.3</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Significant at .01 level of significance

The analysis of table 5, shows that prospective teacher of science background who were taught through ICT enabled teaching scored higher mean value than their counterpart who were taught through traditional method of teaching (p=.01, t=3.85). The probable reason may be that traditional method of teaching students tends to be passive listener with their minimal interaction. This may have affected their post test score. Reid viewed that, ICT offers students more time to explore beyond the mechanics of course content allowing them to better understand concepts\(^{18}\). The use of ICT also changes the teaching and learning relationship.

**FINDINGS**

- The first null hypothesis of no significant difference between the achievements of various groups of prospective teachers while taught through traditional method and ICT enabled teaching method is rejected. Prospective teachers may have been affected by the use of ICT enabled teaching due to which they have shown improvements in their post test scores.

- The second null hypothesis of no significant difference between the achievements of prospective teachers of rural background while taught through traditional and ICT enabled teaching is rejected. Prospective teachers of rural background of experimental group have shown improvement in their scores may be due to ICT enabled teaching. As ICT may have helped them to better understand the topic.

- The third null hypothesis of no significant difference between the achievement of prospective teachers of urban background while taught through traditional and ICT enabled teaching method is rejected. In experimental group of prospective teachers of urban background, ICT enabled teaching may have facilitated them to have more exposure to technology. Further, it has paved their way to find out solutions which may lead to more grasping and learning of the topic.

- The fourth null hypothesis of no significant difference between the achievement of prospective teachers of Humanities background while taught through traditional and ICT enabled teaching method is rejected. Prospective teachers of experimental group of Humanities background when exposed to ICT aided classroom got more time to learn about the topic due their active participation and involvement which was lacking in traditional teaching.

- The fifth null hypothesis of no significant difference between the achievement of prospective teachers of science background while taught through traditional and ICT enabled teaching method is rejected. Prospective teachers of
experimental group of Science background may have got more time in ICT enabled classroom which have allowed them to better understand the concept whereas the boring procedure followed in traditional teaching may have affected the post test scores of control group.

DISCUSSION

ICT has greatly embellished our teaching-learning process as it has increased the information aura of the individual by ending the objectivity and increasing subjectivity. It has connected us to the whole world by ending the area of isolation of the four walls of classroom. ICT as technological tool has the power to enhance our teaching effectiveness. Integration of ICT is a great support to the teaching-learning process. As a tool ICT ameliorates accessibility, delivery, learning, understanding and creating a knowledgeable society. The finding of present study reveals that the prospective teachers of experimental group with respect to their locality and stream have been affected by the use of ICT due to which they have shown improvement in their post test scores. Kozma & Anderson reported that ICT has brought a new curricula which lays down more importance to the problem-solving and interaction of students. It gives better chance to students to learn and reflect. Roger was also for the view that influx of technology greatly effect our teaching-learning process. Wagner & Kozma reported that ICTs can affect the learning and can accelerate the rate of knowledge. Adler reported that active learning and in-depth understanding in the student take place through active teaching which orient the student towards more and more problem solving. Bonwell & Eison have proposed several techniques to support and promote active learning: visual media, graphics, and collaborative learning.

CONCLUSION

ICT is a growing aspect of technology in the field of education. When well-equipped technology is used in the field of education it adds a new quality dimension, it enhances teaching-learning process by reshaping the traditional teaching method. The influence of ICT has noticeably knocked and touched every sphere of our education. Even our academic world could not remain untouched by the influence of technology. Education has power to shape the society. Quality of education is a critical issue whose solution can be found with ICT. ICT is tool that acts as catalyst in initiating the process of teaching-learning by adding a new quality to it. In the present study has also investigated that good use of ICT has a remarkable effect on the achievement of the students. UNESCO are of the same opinion that ICT adds value to the learning process. The respondents from the experimental group, irrespective of their locality i.e. rural and urban and stream i.e. science and humanities have shown improvement in their achievements. Lowthe, et al., Weert & Tatnall are all of the view that an appropriate use of ICT can raise educational quality and connect learning to real-life situations.

Therefore, it can be concluded that ICT enabled teaching adds a new outlook to traditional teaching. It tends to break the passive mode of learning to active learning among student.

REFERENCES


