Awareness about Information and Communication Technology among Secondary School Teachers of Ajmer District, and its Role in their Professional Development

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ABSTRACT

Information and communication technology (ICT) is one of the important tools in promoting education at all level. ICT has changed society into information society & facilitating every sphere of social and economic life. Impact of ICT has been evident in all socio & economic sectors such as banking and insurance, administrative setup, postal services, biomedical, health & trade etc. It has spreader all walks of life & made life easy and comfortable. Education is one of the important areas which have been greatly influenced by the application of ICT in a very impressive & successful manner. ICT has entirely changed the working style of teachers & of the school. Teachers are expected to teach in an inclusive manner. Keeping in view the educational needs of special children with the appropriate use of ICT. This paper is an attempt to explore the perceived role of ICT in the effective professional development of secondary school teachers and their awareness towards the use of ICT in imparting quality education. Further the paper highlights the important surveys, finding in respect of ICT. The paper has critically analyzed the challenges being faced by the secondary school teachers in their professional development.

Keywords: Awareness, Secondary School, Teachers, Information & communication technology, Professional Development

"If a country is to be free of corruption and become a nation of beautiful minds, I strongly feel there are three key societal members who can make a difference. They are the Father, the Mother and the Teacher".

— **Dr. A.P.J. Abdul Kalam**

Education is a process of all round development of personality of an individual and empowerment for the achievement of a better and higher quality of life and adjustment in the social and economic life. The field of education is progressing day by day as advancement is being made in the field of technology and research. With the fast changing world, Educational technology is helping teachers in keeping them up-to-date about knowledge and skills of teaching. As technology is influencing and supporting what is being learned in schools and teacher training institution, it is also supporting changes to the way students are learning. In spite of providing good pre-service training for teachers, it cannot be ensured completely that teachers are prepared for all the challenges they are going to face throughout their careers. So there has been a need of time bound and excellent professional development for in-service schools teachers. Progressive and dynamic education system therefore seeks to equip its teachers with opportunities for in-service professional development in order to maintain a high standard of teaching learning and to maintain high-quality teacher community. The enhancing use of ICT as an instructional and professional medium is changing and likely to continue to affect many of the strategies being used by the teachers in the teaching learning process.

In the words of Anderson and Glen (2003) ICT is the term generally applied collectively ....

to those technologies that are being used for accessing, gathering, manipulating and presenting or communicating information. The technologies may include hardware e.g. computers and other devise; software applications; and connectivity.

Role of ICT in Professional Development

"Professional development is defined as the group of activities and efforts being made by a professional that develop an individual's skills knowledge expertise and other characteristics as a teacher."

— OECD, 2009

In this age of rapid change and uncertainty, teachers essentially need to adapt to change if they have to be relevant, survive and keep abreast with new methods and techniques and technologies in the field of education. ICT is generally believed to be crucial in introducing and sustaining educational reforms on regular basis. Teaching as a profession has become one of the most challenging professions in our society where knowledge is increasing rapidly and much of it is available to teachers and students equally at the same time. As new concepts of learning are being evolved on a continuous basis, as professional teachers are expected to facilitate teaching learning and make it meaningful to individual learners rather than just to provide well processed chunk of knowledge and skills. Recent innovations and trends in the field of educational technology have provided new possibilities and challenges to teaching profession but at the same time have placed more demands on behalf of teachers to learn using these technologies in their profession.

ICT and Professional Development

Technology has the potential to transform the professional environment for teachers. Through the application of ICT to research and collaborative planning, teachers can avoid isolating environment that the teaching profession had imposed on them. Technology impacts not only on the teaching and learning process but also on the ways and opportunities to educate and develop them professionally. Innovations and advancement in the field of education and technology affects teaching learning scenario in many ways. One is the way schools train prospective teachers (pre-service)

and the other is how schools design continuing education for their teachers to learn during the job either at eh physical workplace or at virtual learning (in-service) centers. Other teacher training institutions also have an active role in professional development beyond just providing undergraduate or graduate level teaching. Teachers are members of learning communities; they learn from each other. Exchanging ideas with one another and solving common problems are powerful ways of learning among teachers. Fortunately, technology can provide some solutions to structural problems that serve as obstacles to sustain collaboration among teachers. Inadequate and unplanned training is the most important obstacle to the effective use of technology in instruction and in professional development. If teacher did not get enough of it in pre-service, then the learning gaps must be filled through in-service training by making efforts in a systematic way. ICT enabled distance education is poised to rule the world. This would not only strengthen the elementary education needs of the country but would also increase the dependence of education on ICT. Technological development always warrants transition to newer technologies by jeopardizing the cost effectiveness of the distance education programme.

Review of Related Literature

Ifeoma, O.E. (2013) has conducted a study titled as "Information and Communications Technology Awareness and Use for Home Economics Curriculum Delivery in Anambra State: Teachers' Improvement Strategies". The purpose of the present study was to appraise the awareness and use of information and Communications Technology by Home Economics teachers in Anambra State junior secondary schools. Four research questions were formulated to guide the researcher in carrying out the study. A sample of 234 Home Economics teachers participated in the study. The data collection instrument was a 35-item questionnaire Data collected was analyzed using mean scores and standard deviation to answer the research questions.

Babu, R.N. (2203) has conducted a study entitled "ICT and CCE Awareness among Secondary school Students". The aim of the present study to know the awareness among ICT and CCE among secondary school students in Y.S.R. Kadapa District.

60 secondary school students were selected for the study. Mean, S.D. and t-test were used for the analysis of the data.

Beena, M. (2012) has conducted a study on "ICT Awareness of M.Ed. Trainees" This Paper highlights the various impacts of ICT on contemporary teacher training institutions of education and explores potential future development. The paper argues the role of ICT in transforming teaching and learning and seeks to explore the awareness of teacher educators about use of information and communication technology for effective teaching learning process and how this will impact on the way programs will be offered and delivered in the teacher training institutions.

Rational of the Study

ICT in Education **is** the foundation upon which a country develops. It is a dynamic force in the life of every individual influencing his physical, mental, emotional, social and ethical developments. It is a complete development of the individuality of a child enabling him to make original contribution to human life. Worldwide research has shown that ICT can lead to improved student learning and better teaching methods. Unwin (2004) considers that our understandings of use of ICT for the purpose of professional development practices should be broadened to include the value of blended learning solutions which he defines as the combination of printed text materials, radio, video and face-to-face practical experiences alongside the use of computers and the internet to enable people to learn effectively in ways that are appropriate to their needs'. The present study has been designed to know the ICT and Internet awareness amongst the school teachers. So the study has been conducted in order to explore the impact of ICT awareness on the professional development practices of school teachers. The data has been analyzed quantitatively and qualitatively and interpreted to give interesting findings.

Objectives of the Study

The study has been conducted for the fulfillment of following objective:

- ❒ To study the level of ICT awareness among secondary school teachers of Ajmer district in relation to their sex, experience status and stream of teaching.

- ❒ To study the perceived impact of ICT on their professional development practices.

- ❒ To suggest measures for improving the professional development efforts of secondary school teachers of Ajmer district using ICT

Research Questions

The study has been designed for seeking the answers of the following questions related to the ICT awareness and its impact on the professional development of school teachers:

- ❒ What is the level of ICT awareness among secondary school teachers of Ajmer district in relation to certain background variables?

- ❒ What is the perceived impact of ICT awareness on the professional development activities of school teachers?

Hypotheses of the Study

The following null hypothesis has been tested by the investigator by using t-test and other suitable statistical techniques:

- ❒ There is no significant difference in the level of ICT awareness among secondary school teachers of Ajmer district in relation to their sex.

- ❒ There is no significant difference in the level of ICT awareness among secondary school teachers of Ajmer district in relation to their experience

- ❒ There is no significant difference in the level of ICT awareness among secondary school teachers of Ajmer district in relation to their status.

- ❒ There is no significant difference in the level of ICT awareness among secondary school teachers of Ajmer district in relation to their stream.

Methodology

In the present study Descriptive Survey Method of investigation has been employed.

Population and Sample

All the school teachers working in the secondary schools of Ajmer comprised population for the present study. About 60 school teachers have been selected randomly as a sample for the present study.

Tools Used

The ICT awareness questionnaire development by the investigator himself has been used for the assessment of ICT awareness among school teachers. The questionnaire contains three sections viz. section A, B and C. Section A deals with background information of respondents, B deals with ICT awareness among teachers and the section C contains questions related to use of ICT for Professional development activities and professional practices.

Analysis of Data

The data has been analyzed using t-test and other suitable statistical techniques. A brief overview of the analysis of data is being discussed below:

Hypothesis-1

There is no significant difference between Male and Female teachers with regard to awareness towards ICT.

Table 1: Means and standard deviations of ICT Awareness Scores in Relation to Gender and their t-value

Gender	N	Mean	S.D.	S.E. of Mean	T-Value
Male	30	64.57	11.38	2.05	1.86
Female	30	55.75	10.70	1.98	

#not Significant at 0.01 level.

Hypothesis-2

There is no significant difference in the level of ICT awareness among secondary school teachers of Ajmer district in relation to their experience.

Table 2: Means and standard deviations of ICT Awareness Scores in Relation to Experience and their t-value

Gender	N	Mean	S.D.	S.E. of Mean	T-Value
Male	24	64.57	11.38	2.05	3.24(#)
Female	36	55.75	10.70	1.98	

 # Significant at 0.01 levels

Hypothesis-3

There is no significant difference in the level of ICT awareness amongsecondary school teachers of Ajmer district in relation to their status.

Table 3: Means and standard deviations of ICT Awareness Scores in Relation to status of teacher and their t-value

Gender	N	Mean	S.D.	S.E. of Mean	T-Value
Male	38	54.57	11.38	2.05	1.57(#)
Female	22	55.75	10.70	1.98	

#not Significant at 0.01 level.

Hypothesis-4

There is no significant difference in the level of ICT awareness among secondary school teachers of Ajmer district in relation to their stream.

Table 4: Means and standard deviations of ICT Awareness Scores in Relation to their stream and their t-value

Gender	N	Mean	S.D.	S.E. of Mean	T-Value
Male	27	64.56	11.36	2.05	3.04(#)
Female	33	55.76	10.69	1.98	

 # Significant at 0.01 levels.

Findings of the Study

There is no significant difference between Make and Female teachers with regard to awareness towards ICT.

❒ There is no significant difference in the level of ICT awareness among secondary school teachers of Ajmer district in relation to their experience.

❒ There is no significant difference in the level of ICT awareness among secondary school teachers of Ajmer district in relation to their status.

❒ There is no significant difference in the level of ICT awareness among secondary school teachers of Ajmer district in relation to their steam.

Other Findings

❒ 76% of the total teachers are using computers whereas 24% teachers are not using computers.

- ❒ About 58% of the teachers who are using computers have internet connection while others don't have any such connection.

- ❒ Similarly all respondents who are using computers revealed that they are comfortable in using computers for their day to day work whereas remaining is not comfortable in dealing with computers.

- ❒ 67% of the teachers who are using computers make the use of computers for the preparation of their day to day classroom preparation and rest of the teachers consult it for getting the information from the DOE and other official work.

- ❒ 10% teachers are using IT in their classroom activities whereas only 90% are not using IT for this purpose.

- ❒ 40% teachers are comfortable in using MS-Office for their class work and other official activities whereas 36.58% are not able to use this in any way.

- ❒ About 20% teachers are able to make power point presentation while rests don't possess this competency.

Suggestions

On the basis of the findings of the study following suggestions are being given for the facilitation of professional Development practices of the secondary school teachers through the use of ICT:

- ❒ All the school teachers should be empowered by giving them an opportunity to attend courses and training related to the ICT usage.

- ❒ Teachers must acquire their own computer (PCs or Laptop) and use it for teaching-learning and for improving their Professional Development Practices.

- ❒ Directorate of Education in collaboration with SIERT should arrange training for Information Communication Technology applications and Internet use and all the school teachers and staff should be encouraged to take part in these activity and programs.

Implications of the Study

This study will be helpful to:

- ❒ Establish the ICT based culture among the

in-service teachers for their professional development.

- ❒ Cultivate the teachers' enthusiasm for ICT to make their profession development practices progressive and dynamic

- ❒ Stimulate teachers to start a revolution in the whole educational system.

- ❒ Enhance the awareness among the teachers to increase their capability and independence to search for and acquire the knowledge they need in their teaching process and professional development efforts.

CONCLUSION

The finding revealed a minimal extent of teachers' awareness of the potentials of ICT for empowering themselves for teaching he subject and develop them professionally with the help of ICT. The teachers revealed that they were only aware that computers and Internet can be used for whole class teaching and for the planning of teaching and for their professional development through the use of ICT. As a result of the study it can be seen that most of the teachers are still unaware of the other potentials of ICT in this information age. If they did not know enough about the empowering applications of ICT or did not understand them, they might not see the unlimited scope to apply ICT to teaching and learning and further for their professional development and competence. Hence, if the teachers are to be exposed to ICT and digital information, they might become more aware of the limitless potentials of the ICT for curriculum delivery and learning.

The strategies perceived by the teachers for improving their use of ICT in empowering themselves includes: provision of well-equipped ICT libraries, use of ICT facilities in teacher education institution, purchase of ICT facilities by school and Government provision of adequate ICT facilities to schools. These strategies might yield expected results in creating awareness and improving the use of ICT among teachers in Ajmer. The teacher education system empowered by ICT driven infrastructure can have a great opportunity to come up to the center stage and ensure academic excellence, quality instruction and leadership in a knowledge-based society.

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