

General Article

Professional Development of Teachers with ICT

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Abstract

The increasing availability of Information and Communication Technologies (ICT) presents teachers with exciting opportunities to transform pedagogical practices. The demand on teachers to integrate ICT into their teaching and learning programs is high and places additional pressures on teachers in an already challenging profession. The pervasive nature of ICT in daily life has made society reliant on systems and tools that provide challenges for the way people think and work. Students entering the workforce need not only to be equipped with the skills to use those new technologies, but also to be flexible, adaptable, and multi-skilled. They need to operate in an information age that requires them to be: information literate, inventive thinkers, and skilled communicators. This has placed great pressure on educators to provide students with opportunities to develop the skills required to engage effectively in a progressive society and become life-long learners. First and foremost, teachers have to enhance their own ICT competencies and then have to bring changes in their classroom with the utilization of ICTs. The professional development of Teachers can be made possible through various online ICT and subject specific courses which are available on SWAYAM, ITPD and ICT curriculum portals.

Key Words: MOOCs, SWAYAM, ITPD, TPD, ICT, Professional Development, Professional Development of Teacher

Introduction

The well being of a nation is dependent upon the quality of its citizens and the quality of citizens is significantly determined by the kind of education they receive. The quality of their education depends on their teachers. The quality of the teachers mostly depends upon the environment, training and their education. It is acknowledged that what teachers know, do,

expect and value has a significant influence on the nature, extent and rate of students learning. The National Knowledge Commission of India (NKC, 2007) also observed that the teacher is the single most important element of the education system. Continuous professional development of teachers is the need of the hour to develop, implement, and share best practices, knowledge, and values that address the needs of all learners. OECD (2009) highlighted the importance of professional development of teachers by stating “No matter how good pre-service training for teachers is, it cannot be expected to prepare teachers for all the challenges they will face throughout their careers. Education systems therefore seek to provide teachers with opportunities for in-service professional development in order to maintain a high standard of teaching and to retain a high-quality teacher workforce” (p. 49)

The pace of technological revolution and emergence of a knowledge society are changing the traditional role of teachers and students. Traditionally, a teacher used to be the source of knowledge for the students. The development of ICT changes the epicentre of knowledge, i.e. teachers find themselves in a situation where they are no longer the principle source for delivery of information. In the new phase of the knowledge revolution, the source of knowledge has shifted from a one source (i.e. teacher) to different sources (i.e. teachers, printed materials and technology based materials etc.). In other words, we can say that there is a decentralization of the knowledge source.

With information having increasingly short shelf life, education must empower learners to learn for themselves, and to continue to do so incessantly. It is important to understand the key learning skills of the future -interpersonal skills, information skills, technology skills, basic skills, thinking skills and learnability. The pervasive nature of ICT in daily life has made society reliant on systems and tools that provide challenges for the way people think and work. Students entering the workforce need not only to be equipped with the skills to use those new technologies, but also to be flexible, adaptable, and multi-skilled. They need to operate in an information age that requires them to be: information literate, inventive thinkers, and skilled communicators (CEO Forum, 2001). This has placed great pressure on

educators to provide students with opportunities to develop the skills required to engage effectively in a progressive society and become life-long learners (Hancock, 1993).

Need of ICTs for Professional Development of Teachers

NCF 2005 states: “Integration of Information and Communication Technologies (ICT) into schooling needs serious consideration. Teachers, educators, curriculum developers, evaluators and others will have to redefine their roles to tackle ICT rich environment and harness its full potential for the benefit of learners”. National Curriculum framework for Teacher Education 2009 stated that it needs to also equip teachers with competence to use ICT for their own professional development. The demand on teachers to integrate ICT into their pedagogy is high and places additional pressures on teachers in an already challenging profession. Initially, teachers have to increase their own ICT skills and then they have to change elements of their practice to utilise ICT with their students. There is a premise that ICT competent teachers will produce ICT competent students.

Information and communication technology has woven an indefinite network in the current era with revolutionary changes taking place in education system. ICTs are widely believed to be important potential levers to introduce and sustain education reform efforts towards making a world class citizen. Teacher education institutions are faced with the challenges of preparing new generation of teachers to effectively use the new learning tool in their teaching practices. Preparing teachers for the challenges of a changing world means equipping them with subject-specific expertise, effective and innovative teaching practices, an understanding of technology etc. Further ICTs can be utilised for sustainable teacher training and ongoing teacher professional development to meet the challenges.

Teaching as a Profession

Teaching is a profession and teacher education is a process of professional preparation of teachers. Preparing one for a profession is an arduous task and it involves action from multiple fronts and perspectives. A profession is characterized by a sufficiently long period of academic training, an organized body of knowledge on which the undertaking is based, an

appropriate duration of formal and rigorous professional training in tandem with practical experience in the field and a code of professional ethics that binds its members into a fraternity. (National Curriculum Framework for Teacher Education, 2009).

Use of ICTs in Professional Development of Teachers

Introducing ICTs expands the needs for on-going professional development of teachers. ICTs can be important tools to help meet such increased needs, by helping to provide access to more and better educational content, facilitate routine administrative tasks, provide models and simulations of effective teaching practices, and enable learner support networks, both in face to face and distance learning environments, and in real time or asynchronously. A person having internet facility can register himself/herself and can have access to online courses offered by the universities across the world. The esteemed universities/institutions in the world like Stanford, Harvard, Duke, Caltech, Princeton, Massachusetts Institute of Technology (MIT) etc. have developed online courses and tied up with major MOOC providers like Coursera, Udacity and Edx etc. to provide these online courses to interested participants from world over, free of cost. The details of some of the major MOOCs provider are as below:

Coursera: Coursera was founded in 2012 by two Stanford Computer Science professors. Coursera is a platform (<https://www.coursera.org/>) where anyone, anywhere can learn and earn credentials from the world's top universities and education providers. It made the courses available online and free. Courses include recorded video lectures, auto-graded and peer-reviewed assignments, and community discussion forums.

EdX: It is an online learning platform and MOOC provider and founded by Harvard University and MIT in 2012. edX is offering high-quality courses from the world's best universities and institutions to learners everywhere. edX differs from other MOOC providers, such as Coursera in that it is a nonprofit organization and runs on open source software. Following link would take you to edX home site. <https://www.edx.org/>

Other popular MOOC platforms are:

- a) Open learning - <https://www.openlearning.com>
- b) NPTEL - Managed by IITs and IISc - <https://onlinecourses.nptel.ac.in/explorer>
- c) Future Learn - <https://www.futurelearn.com/>
- d) Stanford Online - <http://online.stanford.edu/>
- e) European School Net - <http://www.europeanschoolnetacademy.eu/>
- f) NovoEd - <https://novoed.com/>
- g) MOOC-Ed - <https://place.fi.ncsu.edu/>

Similarly, several ICT initiatives have been taken up in India to facilitate the process of professional development of the teachers. Some of the major initiatives are as follows:

ICT in Education Curriculum and Courses

NCERT has developed a model curriculum on ICT in Education which broadly attempts to equip teachers with ICT competencies to strengthen their own professional capacities and to effectively use ICTs in their teaching- learning. The curriculum revolves around the six strands i.e. Connecting with World, Connecting with each other, Creating with ICT, Interacting with ICT, Reaching out the unreached and Possibilities in education and ensuring together the basic, intermediate and advanced levels of competence in the field of ICT. The curriculum is rolled out as a series of short term courses which includes three induction and twenty refresher courses for teachers including subject specific optional courses. These courses are being offered online on the web portal (ictcurriculum.gov.in) as in Figure 1. Any teacher completing all three induction and twenty refresher courses becomes eligible to take an examination leading to Diploma in ICT in Education which would be awarded by NCERT.

Each session of the induction and refresher courses involves an instructor led demonstration followed by hands on session, during which teachers undertake a number of activities. Each activity has an associated deliverable to be recorded in a portfolio (an e-portfolio). Teachers also have to submit various assignments as part of the courses. The cumulative record in the portfolio, representing their achievements during the courses serves to provide a comprehensive and continuous assessment. Provision for improving one's performance is also built in.

Online In-service Teacher Professional Development NCERT has developed another web portal to run online courses related to In-service Professional Development of Teachers. Several courses for in-service teachers are being offered through the same course portal. (<http://itpd.ncert.gov.in/>).

The portal is offering subject specific pedagogy courses like teaching of science at secondary stage and courses on generic issues as well as skill based courses like action research, diploma in guidance and counselling etc. The portal will host more courses for teachers teaching different subjects at all stages of school education in future.

MOOCs on SWAYAM

MHRD, GoI has launched a Massive Open Online Courses (MOOCs) platform popularly known as SWAYAM (Study Webs of Active learning for Young Aspiring Minds) on 9th July, 2017. SWAYAM is a programme aimed to take the best teaching learning resources to all, including the most disadvantaged. SWAYAM seeks to bridge the digital divide for students who have hitherto remained untouched by the digital revolution and have not been able to join the mainstream of the knowledge economy.

The SWAYAM portal (<https://swayam.gov.in/>) is offering online courses for students, teachers and teacher educator from school education and higher education to promote quality education and lifelong learning. These courses adopted four quadrant approach as below:

- Quadrant1:e-Tutorial (Video) with transcription of the video content

- Quadrant 2: e-Content (PDF, Text, e-Books, Illustrations, documents etc.) including web resources (related links, Wikipedia, open content etc.). *Figure 3:*
- Quadrant 3: Assessment (Problem solutions, MCQs, Short answers etc.).
- Quadrant 4: Discussion Forum

The eTutorial quadrant is similar to a classroom lecture delivered in the face to face mode teaching-learning process in the school/institution. Similarly, the second quadrant i.e. e-Content is for providing text materials along with the references to the learners for better understanding of the content and assessment quadrant is taking care of the assessment activities/ items for assessing the learner's progress online. The last quadrant is supporting the online teaching-learning process by providing the services to communicate with the teachers or among the learners to share the ideas, clarify the doubts, asking questions etc.

CIET-NCERT has developed course materials (e-content, e-tutorial and assignment) for Master of Education (M.Ed.) course jointly with Allahabad University. A course on Educational Administration, Management and Leadership in School Education is launched on the SWAYAM portal. This course has completed its first cycle and is relaunched from 2nd July, 2018 and 734 learners are enrolled in the course as on 5th September, 2018. NCERT is also running twenty courses on various school subjects at senior secondary school level and 22,000 approx. learners enrolled in these twenty one (21) courses (<https://swayam.gov.in/courses/public?keyword=ncert%202018>).

Conclusion

The advocacy to use ICTs for professional development of teachers is based on many promises. ICT provides various opportunities for a teacher for professional development. ICT like MOOCs offer a powerful platform for education and development with almost no cost and greater efficiency. ICTs promise to support teacher professional development by providing accessible, flexible and short term online courses. ICT can promote international collaboration and networking in education and professional development. There is a range of ICT options- from videoconferencing through multimedia delivery to web sites-which can be used to meet the challenges teachers face today. In fact, there has been increasing evidence

that ICT may be able to provide more flexible and effective ways for lifelong professional development for today's teachers. Recognizing the need and importance of ICT in teaching and learning, a majority of the countries in the world have provided ICT teacher training in variety of forms and degrees. Teachers can be trained to learn how to use ICT as well as teachers can be trained via ICT.

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