

ICT in Teacher Education : A Step towards Continuous Professional Development

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ABSTRACT

The mass media is a diversified collection of media technologies that reach a large audience via mass communication. The technologies through which this communication takes place include a variety of outlets. Among various forms of mass media, digital media which comprises both Internet and mobile mass communication is one of the dominant areas in the present era. From early forms of print technology to electronic communication, the media is playing a central role in shaping the personality of the teachers. Information and communication technology (ICT) interventions are the pillars for improvement of quality teaching learning in 21st Century. Consequently teaching is becoming one of the most challenging professions in our society where knowledge is expanding rapidly and modern technologies are demanding teachers to learn how to use these technologies in their teaching. Digital mass media can provide more flexible and effective ways for professional development for teachers, improve pre- and in-service teacher training, and connect teachers to the global teacher community. To use these tools effectively and efficiently, teachers need visions of the technologies' potential, opportunities to apply them, training and just-in-time support, and time to experiment. Only then can teachers be informed and confident in their use of new technologies. Thus the present paper attempts to explore the significance of digital mass media in continuous professional development of teachers. Further investigators have tried to adopt various strategies to integrate digital mass media in Teacher Education.

Key words: *Mass Media, Professional Development, ICT, Teacher Education.*

Introduction

Today we are living in a contemporary society. The nature and characteristics of contemporary society is different from the traditional society. Globalization, inclusiveness, mass media, science and technology are the buzz words of today's society. It is difficult to go back from the science and technological age where we live now. New media and technology surrounds us in each and

every activity and has significantly affected the way the world operates. This increasingly use of technology are not reflected in the teaching-learning process of our educational system. This creates a conflict for students who are familiarized to instant access to information outside of school walls yet often told to put away their devices when entering the classroom. The teaching-learning experience student practice jeopardizes our collective ability to

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prepare students with the skills necessary for life in the 21st century. Twenty-first century skills for students include information, communications and technology literacy skills that reflect the ability to access and evaluate information critically and competently, as well as manage the flow of information from a wide variety of sources. Further, they include the ability to use technology as a tool to research, organize, evaluate and communicate information.

As India strives to achieve universal education and implements the Right to Free and Compulsory Education Act (2009), well-qualified and effective teachers remain at the heart of school reform. Students today live digitally every day. They use the Internet, text messaging, social networking, and multimedia fluidly in their lives outside of school and they expect a parallel level of technology opportunity in their academic lives. There is a disconnect between the way students live and the way they learn, and student engagement ultimately suffers. To keep pace with the change, teachers don't want to do the same old tasks. They want new experiences, so that they can continue to grow as a professional.

As the Education Commission (1964-66) professed, "the destiny of India is now being shaped in her classrooms". So did the National Policy on Education 1986 emphasize: "The status of the teacher reflects the socio-cultural ethos of the society; it is said that no people can rise above the level of its teachers". Such opinions are indeed an expression of the important role played by the teachers as transmitters, inspirers and promoters of man's eternal quest for knowledge. So there is urgency to address ourselves seriously to examining the issues related to the preparation of teachers as well as to prune the theory and practice of teacher education. Issues related to inclusive education, perspectives for equitable and

sustainable development, gender perspectives, role of community knowledge in education and ICT in schooling as well as e-learning become the centre-stage of teacher education program. The National Curriculum Framework (NCF) 2005 places different demands and expectations on the teacher, which need to be, addressed both by initial and continuing teacher education. The importance of competent teachers to the nation's school system can in no way be overemphasized. It is well known that the quality and extent of learner achievement are determined primarily by teacher competence, sensitivity and teacher motivation.

Keeping in view the central role of teachers in the educational system there is an urgency of reforming Teacher Education as a whole. There is need to bring greater convergence between professional preparation and continuing professional development of teachers at all stages of schooling in terms of level, duration and structure. There must be digital professional development as we are living in a digital world.

Significance of Digital Mass Media in Continuous Professional Development of Teachers

Chalkboards and textbooks are evolving into smartboards and eBooks. Front of the classroom style instruction is evolving into online web conferencing and video instruction. And whole group instruction is transforming into personalized, differentiated learning. All of this growth allows students to connect to their studies using the devices and tools they refer while simultaneously giving them the flexibility to learn class content at their own pace.

What do these classroom changes have to do with professional development? Teachers have to know how to facilitate pedagogical change and digital professional development

allows them to build the skills to do just that. Experiencing digital tools themselves in a learning environment will give them the knowledge they need to integrate those techniques into their own classrooms.

The American Association of Colleges for Teacher Education (AACTE) and the Partnership for 21st Century Skills believe new teacher must be equipped with 21st century knowledge and skills and learn how to integrate them into their classroom practice for our nation to realize its goal of successfully meeting the challenges of this century.

Characteristics proposed for the 21st century teachers would include the ability to:

- ✓ Facilitate and inspire student learning and creativity so that all students achieve in the global society.
- ✓ Enable students to maximize the potential of their formal and informal learning experiences. Facilitate learning in multiple modalities.
- ✓ Work as effective members of learning teams.
- ✓ Use the full range of digital-age learning tools to improve student engagement and achievement.
- ✓ Work with their students to co-create new learning opportunities.
- ✓ Use student data to support student learning and program improvement.
- ✓ Be lifelong learners.
- ✓ Be global educators.

Various Strategies to Integrate Digital Mass Media in Continuous Professional Development of Teacher Education

It is very essential to ensure that all teachers in educational institutions have the skills and attributes necessary to successfully use new media and incorporate them into course delivery. The wide ranging selection of tools, programmes, technologies and information sources can make it difficult for teachers to know where to start. New technologies and

associated pedagogies require a very different skill-set from more conventional teaching, and this can place additional pressures on teaching staff. Academic staffs are not all technology experts and in many cases, they have not received any form of pedagogical training at all. They need specific training, guidance and support if they are to deliver quality teaching. This is especially true as the integration of these new modes of teaching is resulting in a changing role for teachers, from knowledge transmitters and experts in a particular subject to mentors and facilitators of critical thinking.

Teacher preparation Institutions must also provide digital skills training to their trainees. Experience around the world in developing, industrialized and information-based countries has shown that teacher training in the use and application of technology is the key determining factor for improved student performance (in terms of both knowledge acquisition and skills development enabled by technology). Moreover, providing technical skills training to teachers in the use of technology is not enough. Teachers also need professional development in the pedagogical application of those skills to improve teaching and learning. Traditional one-time teacher training workshops have not been effective in helping teachers to feel comfortable using technology or to integrate it successfully into their teaching. Instead, a new paradigm is emerging that replaces training with lifelong professional preparedness and development of teachers.

Integration of Digital Media Technologies in Teacher Education Program

The whole teacher education programme encompasses two phases. These are

1. Initial preparation/training (preservice) that provides teachers with a solid foundation of knowledge; competency in teaching, classroom management and

organization skills; mastery of the subject matter they will teach; and proficiency in using a variety of educational resources, including technology.

2. Workshops, seminars, and short courses (in-service) that offer structured opportunities for acquisition of new teaching skills and subject matter knowledge, as well as skills development in the use of technology in the classroom, that are government-certified and linked to teachers' professional career development.

Integration of digital mass media in teacher education programme is helpful in the following ways :

- ✓ It can improve preservice teacher training by providing access to more and better educational resources, offering multimedia stimulations of good teaching practice, catalyzing teacher-to trainee collaboration, and increasing productivity of non-instructional tasks.
- ✓ It also can enable in-service teacher professional development at a distance, asynchronous learning, and individualized training opportunities. Finally, ICTs can overcome teachers' isolation, breaking down their classroom walls and connecting them to colleagues, mentors, curriculum experts and the global teacher community.
- ✓ Teacher professional development in the use of media, technology should represent and model the forms of pedagogy that teachers can use in their classrooms. For example, these training programs should accomplish the following. Empower teachers to develop their knowledge and skills actively and experientially, in a variety of learning environments, both individual and collaboratively.

- ✓ Include a variety of learning strategies, encompassing direct instruction, deduction, discussion, drill and practice, deduction, induction and sharing.
- ✓ Aim at higher-order thinking skills.
- ✓ Provide an authentic learning environment so that teachers engage in concrete tasks within realistic scenarios.
- ✓ Emphasize ways that technology can facilitate and enhance teachers' professional lives.
- ✓ Encourage teachers to be mentors, tutors, and guides of the students' learning process (rather than simple presenters of knowledge and information).
- ✓ Develop teachers' skills in learning how to learn (define learning objectives, plan and evaluate learning strategies, monitor progress, and adjust as needed). Promote cooperative and collaborative learning.
- ✓ Be sensitive to the culture and diversity of teachers as learners, using a multifaceted approach to respond to different learning styles, opportunities, environments, and starting points.
- ✓ Enable learning independent of time and place (anytime, anywhere learning).

Teacher Professional Development through Use of Digital Media

Emergence of new technology, especially web 2 technologies have given many platforms for teachers to learn. In this section, we explore various opportunities available for professional development of a teacher through digital technology.

✓ Online Learning Platforms

Internet is a host for a large number of learning opportunities. Some of them give learning opportunities by offering complete online courses. There are free as well as paid courses that one can choose from. The online

learning platform may supply the reading materials as well as opportunity to post your learning. Examples are EdTech Leaders Online - <http://www.edtechleaders.org/> and iEARN - <http://www.earn.org>

✓ **Massive Open and Online Courses (MOOCs)**

Today a host of platforms is available which offers open and online courses, again many of them are free. The essential feature of MOOC is that it is offered through online learning platforms, to anyone interested in learning, to any number of participants, at a fixed given time-frame in a modular form. Usually, a course in a MOOC would long anywhere between 6 to 16 weeks. The course contents are structured on a weekly basis. The course participants are expected to go through the readings, videos, workshops, activities, assessment exercises to complete a course. The MOOCs are different from the online learning platforms in a sense that in MOOCs, one would be able to enroll into a full-fledged course, consisting of course structure, instructional video, guided interaction, monitored evaluation, grading of the tasks completed etc. In other words, the MOOCs provide a complete learning experience online. An online learning platform might only provide e-content, assessment tasks which are not graded and an interaction platform.

✓ **Social Media Networks**

Social media networks provide teachers with opportunities to get connected with people who are working in areas connected with educational practice. Most highly valued use of such a network is sharing ideas. Spaces such as Twitter(<https://twitter.com/>), LinkedIn (<https://in.linkedin.com/>), Facebook (<http://www.facebook.com/>) and Google+ (<https://plus.google.com/>) offer instant opportunities to

follow and learn from authors, educators, educational leaders and professional heroes who not only share information and resources but frequently initiate and invite direct engagement. Social media-based platforms provide access to professional organizations and resources of value to adult learners. Online communities created in these social media spaces provide opportunities to share resources, spark questions that expand collective learning and make connections that sometimes lead to employment offers, consulting requests and collaboration opportunities

✓ **Web 2.0 Technologies (Blog, Wiki, and Podcasts)**

Web 2.0 technologies such as blogs, wikis, and podcasts have been considered as ‘social software’ because they are perceived as being well connected, allowing users to develop web content collaboratively and open to the public. Web 2.0 tools are easy to use and quickly developed and organized. Thus, they allow powerful information sharing and straightforward collaboration. Further, these tools have advantage of requiring minimum technical skills to use their features. Hence users can focus on the information exchange and collaborative tasks without bothering about technical knowledge.

✓ **Social bookmarking**

Social bookmarking, an online service through which adding, annotating, editing and sharing bookmarks of online resource is possible. Let us illustrate its use for teachers. Indian Freedom Movement is one of the topics of History in Social Sciences. A teacher could identify various online sources and shortlist the most useful ones. Now, the teacher could give an annotation (brief description) for each of the sources. This collection of sources is useful to

every teacher teaching the topic. Sharing such a collection of sources is easy when social bookmarking service is used. Since there is no one good collection, collaboration among teachers would help in reviewing the collections, adding new sources to the list of annotations. Some of the most popular social bookmarking service providers are Diigo, stumble upon, delicious.

✓ **Online groups**

As we mentioned in the beginning of this Unit, WhatsApp groups are popular among teachers. WhatsApp group is an example of online groups. There are other ways to connect people through formation of groups. One of them is a mail group.

✓ **Podcast**

Podcasts are another web 2.0 technologies that are useful for teachers. Since the archives of the resources are always available for use, podcasts become very handy when they are in need. Since the audio format can be played on mobile phones, they are available for teachers for convenient professional development, i.e., teachers can select what, when and where they learn.

✓ **Web-conferencing**

Web conferencing allows us to connect and communicate in real-time with people in different locations through internet. It allows people to reach in a conversation crossing state, national and international boundaries, crossing various time zones. Web conferencing combines graphics, such as Power Point Presentations, with voice and/or video. It also includes a range of interactive tools such as polling/voting, chat and a 'hand raising' feature to indicate that you have a question or comment. It may also include document sharing, a whiteboard and web surfing features. As a participant, we see information

on our computer screen and hear the presenter and other participants through telephone or internet.

Web conferencing has become popular for delivering professional development to teachers. Whenever an expert, be it a subject expert, pedagogic expert or a teacher expert needs to be invited from a far off place, webinars are found to be a good tool for hosting such interactions.

✓ **Online Videos/ Teaching Channels**

There are many platforms like YouTube (<https://www.youtube.com/>) which provide thousands of videos which can be embedded in the lesson. They are popularly known as teaching channels. These not only enrich the content for teachers but also provide a rich learning experience by exposing students to professionally made educational videos.

Another video lesson platform is MIT Blossoms (<https://blossoms.mit.edu/>). This source provides rich learning experiences to students of high school. This video Library contains over 100 math and science lessons, all freely available to teachers as streaming videos and Internet downloads and as DVDs and videotapes

✓ **Teacher Portfolio**

In earlier unit on ICT and assessment we have discussed the concept of portfolio and portfolio assessment. Portfolios are also good tools for teacher professional development, as they can be used to record, display, analyze and reflect on individual teachers' professional journey.

In a portfolio, as teachers we can assemble records, documents and details of our teaching and their result in a very creative and systematic way. These documented details give us an opportunity to look at them at a different point of time. Thus teaching can be seen as

an ongoing process of inquiry, experimentation and reflection. Teacher portfolios maintained in digital form are called electronic portfolio, e-portfolio in short.

✓ **E-Publications**

Professional writing is one of the professional development activities which has been explored to the least extent. Writing, even of a paragraph, requires organizing ideas and presenting them in a coherent way. Hence the writer need to understand the idea even before writing, writing leads to higher level of understanding. Since writing also allows others to comment on it, collaboration on developing an understanding is a possibility. Since there is no alternative to start writing to become a good writer, there is a need for space for writing and interact with others on the product of writing. With the advent of internet, there are many such spaces where one can write and communicate with other members of the community.

Conclusion

A variety of training options should be available for teachers; online classes, face-to-face training and collaboration time, and one-on-one and small group coaching. Accessible training is essential so that teachers can provide appropriate instruction and take advantage of what technology has to offer. Teachers need to be supported in their efforts to use technology. The primary reason teachers do not use technology in their classrooms is a lack of experience with the technology (Wenglinsky, 1998; Rosen & Weil, 1995). In successful projects, teachers are provided with ongoing professional development on practical applications of technology.

Teachers cannot be expected to learn how to use educational technology in their teaching after a one-time workshop. Teachers need in-

depth, sustained assistance not only in the use of the technology but in their efforts to integrate technology into the curriculum. Teachers also need embedded opportunities for professional learning and collaborating with colleagues in order to overcome the barrier of time and teachers' daily schedules. Besides pedagogical support to help students use technology to reach learning goals, teachers also need time to become familiar with available products, software and online resources. They also need time to discuss technology use with other teachers and become members of a professional collaboration.

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