PROFESSIONAL COMPETENCY OF TEACHER EDUCATORS IN THE CONTEXT OF EDUCATION 4.0

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Abstract

Technological evolution is in rapid pace in the present scenario and in this context the entire sector of education undergoes drastic changes. There is a shift from pedagogical practices to techno-pedagogical practices. The need for techno-pedagogical approach is reflected in classroom practices and it is the primary task of the teacher educator to update themselves in techno-pedagogical skills. A professionally competent teacher educator has to be well versed in ICT skills. Then only, he could be able to produce an effective teacher to suit the needs of the present generation learners. This article discusses on the conceptual framework of the varied ICT skills required for teacher educators in the present context of techno-pedagogy and education 4.0. The pre-requisite techno savvy skills that are required for the present teacher educators are discussed.

Keywords: *Professional Competency, ICT skills, Techno-Pedagogy, Teacher Educator*

Introduction

National Education policy, 2020 emphasizes on the integration of information and communication technology with education and it was practically implemented during the Covid-19 lock down period. Traditional system of education was shifted to online education during the pandemic period. This leads to the increased use of ICT technologies and tools in imparting education. Digitization and virtualization of education has commenced in present times and it is need of the hour to shift traditional pedagogical practices to techno-pedagogical practices.

The preparation and continuous professional development of educators is a major element that is required for school transformation and appropriate use of ICTs. (UNESCO, 2011). Professional development of the teacher educators relies on the training on the professional skills and in which ICT skills is of prime importance in the present scenario of the education 4.0 transformation.

Teacher Education

The prime task of creating prospective teachers lies in the hands of the teacher educators who create teachers for the future society. Teacher education plays a vital role in shaping and developing the future society by developing quality teachers who in turn transform the entire school system. In the present progress of education from 3.0 to 4.0, teacher education programmes have to be revitalized and the curriculum must be transformed accordingly. Teacher educators are the pivots of the entire teacher education program. They are the creators and shaper of the new age teachers.

Professional skills of Teacher Educators

In the present world new age skills are more attributed towards the integration of technology in teaching and learning process. Following are the important ICT skills that a teacher educator needs to adopt to be in upfront in the process of techno-pedagogical revolution.

1. Technological knowledge

Proper knowledge on the use of internet tools and software tools are the technological knowledge that a teacher educator needs. It aids in content creation and dissemination of knowledge.

2. Netiquette

Using appropriate language in social media and in student groups is a required skills for teacher educators to communicate properly with students.

3. Online pedagogy

Understanding and using online pedagogy platforms and tools to handle classes via online environment is required skill in the present educational system.

4. Data management

Handling students' data and information across various online and hardware devices is required to handle store, retrieve data when needed.

5. Software

A basic knowledge on operating systems, android platform and the applications that run in that platform is needed for teacher educators.

6. Using blended learning

Teacher educator are in the need of use of both online and offline media according to time and situation.

7. Presentation skills

Using online platform while making presentation is an essential quality for a teacher educator.

8. Techno-pedagogical approach

When it comes to techno-pedagogy using online and offline tools and software appropriately is essential.

Evolution of Education 4.0

Education 4.0 is well pronounced term in recent times. Earlier Education 2.0 was there and evolved into 3.0. Presently it has become 4.0.

Education 2.0 is the traditional way of teaching and learning and in which the learners are exposed to traditional way of learning in which learners are communicating, connecting and collaborating in a physical way. Computers are being used in a naive way in education with some uses. There is no clarity and purpose on the use of computers in education.

Education 3.0 was in recent past and student-centred individualized approach is employed. The role of the teacher has been transformed to coordinator, facilitator, advisor, learner and guide. Flipped classroom methods are employed. Technology is extensively employed in pedagogical practices. Traditional classroom no longer exists.

Education 4.0 in which classroom have been viewed as innovation and incubation centres. Practical oriented education is extensively employed. Teaching is personalized. More emphasise is given for creativity and creative outcomes rather than traditional exam-oriented education. ICT is used extensively and virtualization of education is in progress.

Education 4.0 is a tremendous change in educational system according to industry 4.0. Improvement in industry originates from industrial revolution which is industry 1.0 to creation of assembly line and mass production of products which is industry 2.0 and adding computers and automation in industry 3.0 and finally it is in era of industry 4.0 wherein cyber physical systems fully controlled by computers is in the present phase of development.

Education 4.0 is developed in par with the requirements for industry 4.0. In this mode of education, students can learn in virtual environment and in blended mode. It is mainly by consuming technology based tools in online platform and also in blended approach.

Education 4.0 model

This recent model of education given by N Joshi, 2022 involves:

a) Constructive criticism

b) Personalized education

c) Industry 4.0

e) Accessibility

a) Constructive criticism

Feedback in education is completely changed to constructive criticism which aid the learners to improve further in the process of learning.

b) Personalized education

It employs the use of the individualized learning approaches in a blended learning environment.

c) Industry 4.0

Industry 4.0 is automated systems of Computer monitored machinery and education for such industry environment is scientific, problem solving oriented and practical oriented.

d) Accessibility

With the ICT integration, internet of things (IoT), artificial learning, virtual reality, augmented reality, accessibility are very basic things needed in this form of education.

Advantages of Education 4.0

As education 4.0 is evolved in the recent times it has several advantages over traditional methods in the following ways.

1. It is learner outcome oriented in which learner learning outcome is more considered.

2. It employs more practical and realistic way of learning.

3. It uses ICT tools and techno savvy skills.

4. Advanced automation software are employed in the teaching learning situation.

5. It helps to achieve better learning outcome based on scientific and professional interests.

6. Cyber physical system has more advantage in promoting blended learning approach.

Conceptualization of ICT skills of Teacher Educator for Education 4.0

A conceptual model is derived in integrating the required ICT skills for the education 4.0. In this model it is evident that there is a link between ICT skills and education 4.0. Only if the ICT skills are present among the teacher educator, they can prepare the student teachers for the education 4.0.

Ict Skills Of Teacher Educator	Learning Of Student Teachers In Education 4.0	Outcomes Of Education 4.0
Techno-pedagogy knowledge and skills	Outcome based learning Industry 4.0 oriented learning with necessary scientific skills and problem solving skills	Automated task oriented and learning for cyber physical environment

In this model, it is evident that the Education 4.0 can be implemented only if the teacher educators have sound ICT skills. With the application of ICT skills in teacher education, student teachers can be oriented and prepared towards the education 4.0 which demands towards learning and performing tasks in cyber physical environment. In teacher preparation education 4.0 is using creativity, problem solving, and scientific knowledge.

Education 4.0 in Teacher Education

In teacher education, education 4.0 can be applied to develop more quality teacher education. By applying techno-pedagogy, blended learning, creativity, practical oriented education in teacher education, its standards can be improved.

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