OF TEACHERS IN THE DIGITAL ERA -THE TRANSITION FROM BEING DIGITALLY LITERATE TO DIGITALLY COMPETENT

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ABSTRACT

Various structures, models, and literacies have been developed over time to guide teacher educators in their efforts to develop advanced digital skills in their students, motivating them to use new technology in their future classrooms. In general, these focus on students' progress in using 'educational' apps and digitally-sourced data or understanding successful blends of pedagogical, material, and technical information seen as promoting the incorporation of digital tools into teaching to improve subject learning outcomes. Courses designed to improve these abilities are often delivered as standalone units within teacher education organizations, or there is an assumption that they will be created through incorporating technology into other disciplines or by approved assessment. However, various studies suggest that the existing emphasis on subject-related technical and knowledge skills does not adequately prepare students for the scope of information and capabilities needed in today's classrooms and beyond. The article aims to discuss the preparedness needed that moves beyond technical and literacies conceptualizations, arguing for a more systematic and broader understanding of the required knowledge and skills that young people need to function morally, safely, and productively in a variety of digitally-mediated learning environments. It includes a critical analysis of existing competence frameworks and their pertinence to present the scenario. The framework's implications are explored, with emphasis on its interdisciplinary nature and the necessity that all faculty participate purposefully and intentionally in achieving its goals.

Keywords: *Digital competence; competence framework; digital literacy; digitally-mediated classroom.*

1. INTRODUCTION

The COVID-19 pandemic has created unexpected demanding situations in India's academic landscape. The pattern of education has transformed overnight. Educational establishments have switched to online learning, training, and exams. This unexpected transfer and overdependence on digitization have their fair proportion of limitations. Given the multifarious use of rapid-changing virtual technology within the workplace, new desirable skills have emerged. The use of those technologies has contributed to remodeling knowledge and developing skills into lifelong techniques. Indeed, people now should hold to expand and refresh their abilities and expertise to keep abreast with

the regular improvements and new traits within the virtual world. Amidst this transition in thirty- four years, for the first time the erstwhile Ministry of Human Resources and Development, now called the Ministry of Education released the New Education Policy (India) on 29 July 2020. Expectedly, the coverage proposes numerous measures for encouraging digital learning and improving infrastructure requirements. However, given the reformed education system in India, there exist a couple of roadblocks to accessibility and the capacity for considerable adoption of online teaching and learning.

2. EDUCATION SYSTEM IN INDIA

The history of education in India has a rich heritage since times immemorial. Sages in India ran personal boarding schools popularly known as "Gurukul" where children received education and also helped in the daily domestic chores of their teachers. In the year 1833, the visit of Lord Thomas Babington Macaulay paved the way for modern education in India where he established English as the national language. There were 19 universities and hundreds of affiliated colleges when the country gained independence in 1947, (CABE, 2005a). After independence, India's higher education system expanded rapidly. By 1980, the country had 132 universities and 4738 colleges, with roughly 5% of the eligible age group enrolled in higher education. India now has the world's third-biggest higher education system (after China and the United States), with 17973 institutions (348 universities and 17625 colleges), and is the world's largest higher education system in terms of the number of institutions. The number of institutions is more than four times that of the United States and all of Europe together. Higher education in China, which has the world's largest enrolment (almost 23 million students), is structured in only approximately 2,500 institutions. In India, however, the typical enrolment in a higher education institution is around 500-600 students. As a result, India's higher education system is highly fragmented and considerably more difficult to manage than any other higher education system in the world. After China and the United States, India has the world's third-largest higher education system in terms of students. However, unlike China, India benefits from English being the primary language of higher education and research. The University Grants Commission (India) is the principal regulating organization at the tertiary level, and it enforces its standards, advises the government, and helps coordinate between the center and the states. The main institutes of higher education in India are universities and their constituent colleges. According to the Indian government's Department of Higher Education, there are 16,885 colleges, including 1800 exclusively for women, operating under these universities and institutions, with 4.57 lakh teachers and 99.54 lakh students enrolled in India's higher education institutions. Apart from these higher education institutions, India has several private institutes that provide a variety of professional courses. The Indian higher education system also includes distance learning. Some Indian universities, such as the Indian Institutes of Technology (IITs), have received international recognition for their educational standards.

3. NEED FOR TEACHER TRAINING IN HIGHER EDUCATION

The American Commission on Teacher Education rightly observes, "The quality of a nation depends upon the quality of its citizens. The quality of its citizens depends

not exclusively, but in a critical measure upon the quality of their education, the quality of their education depends more than upon any single factor, upon the quality of their teacher."

In his 1996 Call for Action for American Education in the Twenty-First Century Clinton stated that "every community should have a talented and dedicated teacher in every classroom. We have an enormous opportunity for ensuring teacher quality well into the 21st century if we recruit promising people into teaching and give them the highest quality preparation and training". It is obvious that the academic and professional standards of teachers constitute a critical component of the essential learning conditions for achieving the educational goals of a nation. Teachers' academic and professional standards are widely acknowledged as an important component of achieving a country's educational objectives. If teacher preparation was to have a positive impact on the quality of curriculum transactions in classrooms, as well as child learning and greater social transformation, the focus of teacher preparation has to move from training to education. But ironically, the preparedness of teachers to fulfill the needs of varied learning circumstances, as well as their degree of dedication to the profession, sensitivity to modern themes and challenges, and level of motivation, have all been overlooked. This would not be achievable if teacher training was solely focused on content knowledge training. It is consequently vital to develop holistic teachers. Thus, teacher education is required more than just training.

4. COMPETENCY NEEDS OF TEACHERS

Quality teaching has become an issue of importance as the landscape of higher education has been facing continuous changes. The student body has considerably expanded and diversified, both socially and geographically. New students call for new teaching methods.

Modern technologies have entered the classroom, thus modifying the nature of the interactions between students and professors. As the environment of higher education continues to evolve, quality teaching has become increasingly important. Both socially and geographically, the student body has grown and varied significantly. Students now necessitate new teaching techniques. Modern technology has made its way into the classroom, altering the character of student-teacher relations.

Governments, students and their families, companies, and fund sources are all demanding more value for their money and more efficiency from education. Hanushek, Kain, and Rivkin (1998) and many other researchers have come to the same conclusion that the institution's influence on achievement is caused primarily due to differences in teacher quality.

5. PROBLEM STATEMENT

The attention of schooling and education in the preceding era was for stability, while the present-day and future are for instability (Kress, 2000). Along with the competence profiles, instructors have to undertake and adapt to the modern pedagogies and empower accountable learners (CAENA Francesca, REDECKER Christine, 2019).

The function of instructors has ended up being more and more traumatic because, in addition to enhancing current knowledge and skills, at present, it's far more vital to broaden their digital literacy so that they can efficiently use new techniques within the classroom. Lund et al. (2014) address the particular difficulties looked by instructor teachers in growing an all-encompassing perspective on the computerized fitness of their students. They have pointed out that instructor teachers are required both to prepare their students roughly the use of present and impending virtual assets in their expert practice, anyway additionally about how to make their students, ready for the utilization of rising innovations in effective manners. Achieving that is particularly difficult because it necessitates catering to students' needs beyond their immediate functional needs to develop transformative competence, which will enable them to translate into specific instructional, learning design, classroom organization, and evaluation practices to use virtual assets to help their students gain knowledge (Lund et al. 2014). According to Weinberger, Fischer, and Mandl (2016), teachers are expected to become more digitally oriented to be more cooperative, collaborative, open-minded, and facilitators who will support students in studying in a digital environment. Teachers' competencies are highly important in both implementing the current curricula effectively and training people for the future by developing these curricula. Teachers who are responsible for the training of the individuals of the future need to be well equipped to fulfill this responsibility (Nayak, Pani 2019). It's no surprise that in this digital age, teachers' capacity to increase training and collaborative work, establish new learning settings, and combine new pedagogy with technology is critical to effective technology integration in the classroom. For all of these reasons, it is critical to assist teachers in understanding what skills they have acquired and what additional training is required by matching competency frameworks to twenty-first-century demanding scenarios and articulating the requirements of teaching professionals.

6. DEFINING DIGITAL LITERACY AND DIGITAL COMPETENCE

Digital Literacy was first used by Paul Gilster in his book in 1997 as:

"…a bunch of capacities to utilize the internet, discover, control, and alter computerized records; include in interchanges, and associate with a web data and organization. Advanced proficiency is the ability to successfully utilize and analyze virtual assets, hardware, and contributions, and use them on deep-rooted cycles of learning."

While UNESCO (2011) defines digital literacy as a broad concept that encompasses ICT (Information and Communication Technology) literacy, technological literacy, and information literacy, ICT literacy refers to a person's ability to participate in a society where "offerings and cultural offerings are computer-supported and distributed over the internet." Information literacy makes specific use of the ability to apply virtual resources adequately, to understand a way to identify, find, and examine each resource. Technological literacy is associated with a deeper understanding of technology and includes user and technical computing abilities, while information literacy makes specific use of the ability to apply virtual resources adequately, to understand a way to identify, find, and examine each resource. All of those terms were associated with the effective

use of virtual assets in coaching and learning and were marketed as complements to an all-encompassing perspective. Because of the always altering technological, cultural, and sociological landscapes determining what, when, and how virtual technology is used in private and professional activities, as Helsper (2008) points out, developing a new definition of digital literacy is difficult. In the context of teacher education, developing digitally literate students has typically meant prioritizing technical skills in the use of virtual equipment and structures judged appropriate for academic contexts, as well as finding out how they may be employed within specific units of learning (Admiraal et al. 2016). This method is based on the idea that doing so "equips aspiring teachers with a set of core skills that allow them to move to their classroom practice" (Admiraal et al. 2016, p. 106). Those methodologies, however, have been criticized for their narrow focus on expertise, loss of authenticity, failure to consider varied socio-cultural settings for technology usage, and poor, reductive design (Gruszczynska et al. 2013; Lim et al. 2011; Lund et al. 2014; Ottestad et al. 2014). Many recent studies have called for a rethinking of teacher training program outcomes, recommending that the existing competencies-targeted digital literacy emphasis be replaced with broader digital competency models that recognize the different abilities and dispositions required of future teachers. Taking into account the nature of digital competence, Janssen et al. conclude:

"Digital competency incorporates more prominent than understanding an approach to utilize devices and applications… that is unpredictably connected with abilities to communicate with ICT. Reasonable utilization of ICT calls for remarkable comprehension and mentalities concerning moral elements, protection, and security, just as comprehending the part of ICT in the public arena and an uplifting disposition for the rising advances." (Janssen et al. 2013, p. 480).

While this conceptualization acknowledges the need for technical knowledge and skills, it also takes a much broader socio-cultural perspective by emphasizing the need to notice and remember the broader implications and results of digital technology on individuals and society. This poses a significant challenge for teacher educators, who must now not only better assist their students in effectively utilizing virtual resources in their future classrooms, but also assist them in recognizing and broadening a challenge for broader concerns about technology use and its consequences. Furthermore, "keeping in mind the dynamic nature of technology", the perception of competence indicates a desire for continual revision, reflecting adaptations to technical structures and uses (Janssen et al. 2013, p. 474). This necessitates that teacher educators continue to reflect on cutting-edge abilities and goals, and if necessary, gain entrance to expert expertise, in response to rapidly changing academic surroundings and opportunities given by technological advancements.

7. FRAMEWORKS SUPPORTING TEACHER DIGITAL SKILLS DEVELOPMENT

Digital literacy is so important in training that it is essential and advised that all teachers continue their education. Digital Competence Framework For Teachers (DigCompEdu, 2017) explains how virtual technology can improve coaching, education, and training in six ways. A professional engagement place, according to DigCompEdu (2017), is a location

where teachers learn new methods to communicate with their students, colleagues, and parents through virtual technology while also improving their digital pedagogical practice. Many competency frameworks have emphasized the requirement for competencies in the areas of communication, cooperation, ICT-related competencies, and social and/or cultural awareness to support the development of the teacher's digital competency. UNESCO ICT-CFT, TVET Teacher Competency Framework, P21 twenty-first century system, and NCBTS focused on specialized/operational elements of ICT and innovative skills—especially an approach to utilize PC gadgets and programming projects to get access, work with and analyze assets for utilizing it in educational plan and preparing. ICT is at the focal point of each system. The advancement of ICT does not always appear to be a justification for the need for new competencies across all frameworks, but it is also linked to a whole new set of competencies about how to effectively use, manage, compare, and disseminate resources across. While some frameworks emphasize ICT-related competencies as separate domains (e.g., P21 and TVET), others emphasize more integrative approaches in which ICT competency improvement is embedded within various twenty-first-century competencies such as critical thinking, problem-solving, communication, and collaboration. While the current framework emphasizes digital literacy conceptions of technical, pedagogical, and topic knowledge to explain the abilities expected of graduating teachers, it has been suggested that they are insufficient in current and future academics. The existing frameworks (UNESCO ICT-CFT, version 3) need to think about empowering cooperation between various sectors (private/public/instruction) expanding on previously existing work, and focusing on what is 'feasible'.

The system additionally needs to call for the improvement of new assessment methods and instruments that encourage and allows the use of the acquired competencies in authentic settings to make learning visible. While the TVET teacher competency system centers on teacher's significant subject knowledge, practical information, academic abilities, and sensible activity on the premise of instructive values and information as the key to moving forward the quality and status of TVET, at the same time it should stress on the need to fortify and upgrade the technical and vocational instruction and training program. P-21 framework incorporate information, media, and technology skills as required competencies for effective citizenship. But In any case, they need categories significant to professional aptitudes and information on engineering, science, and technology. Self-management/self-development or life and career skills are regarded as vital in the context of P 21st-21st century competencies. However, time management, information management, and asset management for oneself and others are not included. Those who lack sufficient information, instruction, and training struggle to stay up. To better prepare students for effective professions, the framework of 21st-century talents and building requirements may need to include time, information, and resource management aptitudes. Students nowadays require more than procedural and technical abilities, and they must benefit from the usage of virtual technology in curriculum and topic mastery. It is reasonable to assume that teacher education students will want to expand their knowledge beyond the didactic use of virtual technology to a more holistic view that includes personal and societal problems. While this is a difficult

undertaking, it is critical if the students they educate are to be well-organized to function efficiently and thoroughly in digitally-mediated private and professional situations.

8. ALIGNING THE FRAMEWORKS TO 21ST - CENTURY EDUCATIONAL CONTEXT

To build broadly based virtual competency within teacher education programs, all faculty should be included, and interdisciplinary methodologies should be used. There is wide agreement on the need for communication, teamwork, ICT-related skills, and social and/or cultural knowledge. Most systems consider creativity, critical thinking, problem-solving, curriculum, and professional growth to be important competencies in the twenty-first century (Nayak, Pani, 2021). Opportunities to widen the abilities inherent in the framework's pillars must no longer be viewed as only the duty of one or a teacher educator's skill set. To be successful, all training programs must be involved, and all participants must have a consistent understanding of the skill's breadth and definition. Instead of the compartmentalized, field models that are prevalent today, a faculty could use an interdisciplinary approach to continue teacher education programs. Interdisciplinary approaches to teacher education, according to Habowski and Mouza (2014), can significantly improve student mastery and provide a coherent and coordinated foundation for achieving the framework's aims and goals. However, interdisciplinary approaches are uncommon, and universities' inflexible, subject-based knowledge, where the majority of teacher training takes place, is difficult to modify. Despite this, the current frameworks can be used to map or audit the content and pedagogy of current or new teacher education manuals across field regions, to see how many opportunities they allow for students to develop more holistic understandings and abilities associated with the frameworks. Taking into account the current state of India's education system, the NEP 2020 aims to encourage "carefully conceived and scaled experimental study to determine how the benefits of online/virtual education might be realized while addressing or reducing the drawbacks." The NEP aims to create a new self-reliant body - the National Educational Technology Forum (NETF) - as part of its recommendations for leveraging virtual technology for learning. The NETF will standardize content and pedagogy, as well as encourage the adoption of constantly evolving technology for online learning across the country. It can be argued that, while the NEP proposes a few ground-breaking tasks for the advancement of e-learning technologies and aims to encourage universal access to education, it falls short of tackling the major structural challenges that characterize digital learning in India. Going forward, it is critical to achieve convergence between the NEP's goals and major projects like Digital India, which aims to improve communication, infrastructure, and internet connectivity across the country.

9. CONCLUSION

It has been a long-standing problem to prepare teacher education students to use technology effectively and efficiently in institutions. There is a pressing need to improve teacher education students' understanding of the kind of skills needed to function efficiently, thoroughly, and ethically in a variety of digitally-mediated situations. The current frameworks and rules, while highlighting the importance of this in terms of their

future classroom roles, teaching young students to encourage them to build potential to leverage gain from virtual resources in safe, steady, and sustainable ways must also facilitate and inspire ICT integration in all subjects, with the instructor educators playing an important role in implementing via modeling and planning. It also demonstrates that all instructors who desire to have a consistent and well-evolved grasp of the framework's aim, scope, and content material are responsible for applying it. It is envisaged that the current teacher competency framework would serve as a focal point for policy and curriculum revisions, planning, and implementation, resulting in growth in the education of aspiring teachers for our future classrooms.

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