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COVID-19: Challenges and Opportunities for Teachers in Building the ICT Competencies

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Abstract: In this study, the author analyses the ICT competency gap of teachers in Uzbekistan in order to deliver effectively the distance education during the COVID-19 pandemic situation. With the shift to the online education provision, it became in utmost importance to adopt the ICT Competency Requirements for teachers and provide learning opportunities for teachers in mastering the ICTs for teaching in classrooms as well as in distance.

INTRODUCTION

Following the widespread of COVID globally in 2020, the Government of Uzbekistan initiated the nationwide school closures in the middle of March 2020 with the public health considerations. National education system faced an unprecedented challenge of delivering the school curricula in online mode in order to ensure continuity of learning for all. In order to ensure the effectiveness of the education system on shifting the teaching and learning in a distance mode, urgent preparedness actions were necessary to take. Those preparedness actions included creating enabling infrastructural environment for distance education, online course materials and curricula, teacher's preparedness to conduct the teaching in online mode as well as enabling environment for monitoring and assessment of learning achievements of students.

It is worth to acknowledge that the Government of Uzbekistan has placed an utmost effort to connect all schools with Internet, reduce the cost of the Internet for teachers and learners as well as launch the TV-based lessons as the most equitable and cost-effective solution for maintaining the learning. However, teachers' role continue to be essential for the designing and facilitating the learning activities, monitoring and evaluating the students' home-based learning, design and deliver video and audio lessons and assess students' achievement of learning outcomes by widely applying the ICTs. Hence, the preparedness of the education system for the unexpected interruptions is heavily rely on the preparedness of teachers with the relevant ICT skills and competencies.

Due to the school lock-down during the COVID-19 pandemic, many teachers in Uzbekistan had difficulties with helping their students navigate in the world of distance learning, lacking sufficient guidance, training on ICT, support with locating and developing the digital resources. This in turn, revealed that the existing teacher training system of Uzbekistan needs radical reform. Major feedback from the distance learning was that teachers do not feel comfortable or perform well with the use of

technology in teaching. Even highly professional teachers with the decent ICT infrastructure could not perform well because of the simple reason-limited ICT skills. Majority of those teachers when facing the challenge on coping with the ICT use in teaching, then started to find their own ways for the self-learning. Therefore, building the ICT competencies of teachers became highly essential in embedding the technologies into teaching and learning, and helping learners to develop the necessary knowledge and skills through blended approach.

MATERIALS AND METHODS

Competency refers to the proven or demonstrated individual capacity to use know-how, skills, qualifications or knowledge in order to meet the usual and changing, occupational situations and requirements (https://unevoc.unesco.org/home/TVETipedia+Glossary/filt=all/id=100). While the CEDEFOP describes the competencies as the ability to apply learning outcomes adequately in a defined context such as education, work, personal or professional development[1]. Both definitions emphasize the ability to apply the knowledge into practice adequately in the dynamic context. Competencies on teaching subsequently required knowledge of content of teaching, pedagogical capacities and interpersonal skill. Therefore, already in 1970's, the teaching profession was acknowledged as one of the professions that could benefit from competency-based training and certification[2]. Following with the conceptual movement on training and retraining of teachers for building competencies, Australia, the UK, the USA had already adopted the teacher competency standards[3] in order to guide teachers through the precise professional development objectives. Professional standards for teaching, for instance in Australia, describes the skills, knowledge and values for effective teaching. Such standards capture key elements of teachers' work, reflecting their growing expertise and professional aspirations and achievements. Standards make explicit the intuitive understandings and knowledge that characterise good teaching practice and enable this to be widely shared within the profession (http://www.curriculum.edu.au/).

For the development of the ICT competencies of teachers many countries developed stand-alone ICT competency standards for teachers while some countries embedded the ICT skills requirements into the existing teacher professional standards. Table 1 demonstrates few examples of how teacher ICT competency development policies are carried out in some countries. More precisely, The review of these different cases demonstrates that the ICT competency development for teachers can be either embedded into the existing standards and programmes on teacher training, or can be maintained as separate or as stand-alone standards that could be promoted as a partnership of the Government and the private sector. For example, the Australian ICT competency standards are

Table 1: Summary of the country cases on integrating the ICT competency development of teachers

Countries	Title	Nature of approach	Background/Policy environment
Australia	Australian Professional Standards for Teachers (APST)	ICT competency as an integral part of the overall APST Positioning ICT in teachers' four-staged career path, namely, Graduate, Proficient, Highly Accomplished and Lead Teachers	The Melbourne Declaration of Educational Goals for Young Australians as the foundation for the development of the Australian Curriculum (p.27)[4] 'Teaching Teachers for the Future' project (2011-2012) (p.30)
Korea	Teacher Competencies for SMART Education	Profiling competencies through a Delphi methodology with exemplary teachers, together with experts and policy makers	As part of the new SMART Education Policy launched in 2012 To train teachers to effectively use digital textbooks, a national initiative by the government
China	ICT Competency Standards for National Primary and Secondary School Teachers	Through a two-year research by the National Teachers Expert Committee for ICT in Education Drawn on extensive reviews of internationally Renowned frameworks for ICT competency standards for teachers	As part of the10th 5-Year National Plan (2001-2005) The Competency Standards for Teachers currently undergoing significant upgrades based on the ICT 10-year Development Plan (2011-2020)
Global E-School Communities Initiatives	ICT Competency Framework for Teachers for SIPSE Curriculum Pathways	Partnership for a demand- driven assistance (two-year pilot) between development agency, private sector and government Adapted the UNESCO ICT-CFT As a framework	As part of SIPSE (Strengthening Innovation and Practice in Secondary Education) project, a partnership programme of GeSCI, MasterCard and Ministries of Education To enhance ICT competencies and skills to teach STEM (Science, Technology, English and Mathematics) in Kenya and Tanzania

UNESCO[5]

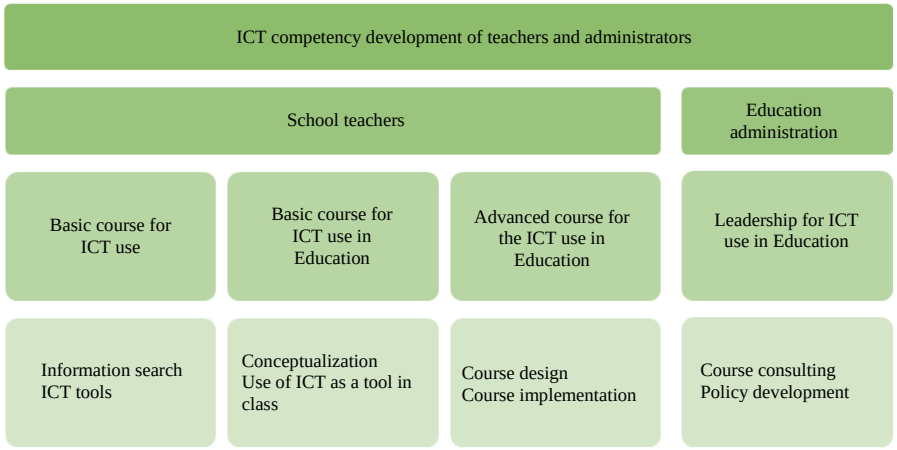

Fig. 1: Conceptual framework for ICT training in a teacher's professional life cycle[6]

embedded in their common teacher professional standard framework. Yet, other examples in this table specify the stand-alone ICT competency standards offered for teachers. Both approaches proven to work well, especially in the context of the rapid development of the ICTs, the stand-alone option would better fit for the case of Uzbekistan[7].

In the case of Korea, since, 1988, ICTs have been used as important media at schools and the training of teachers in the use of ICT was implemented on a full scale. Prior to 2000, ICT training had two courses: a regular course for teachers and a special course for professors and school inspectors. The regular reflecting teachers' voices course initially focused on the understanding of structures and principles of computers and later advanced to promote the improvement of information capability such as word processors, spreadsheets, presentations, internet use, etc. The special course was designed for the training instructors in regional education offices, designers of educational content, school inspectors for computer training, etc., throughout the 2001-2020, the Ministry of Education carried our substantial reforms and enhancements of the ICT skills development for its teachers, courses consisting of mandatory and voluntary options. The latest versions of the teacher professional development courses aimed to strengthen the teachers' capability to work effectively in a new educational environment brought about by advances in ICT and a paradigm shift in education.

Unlike in Uzbekistan, Korea has introduced the Consolidated Information System for Teacher's Training to collect and analyze data on teachers' professional development, administering the trainings and enabling the self-diagnosis of professional competencies of teachers. Figure 1 demonstrates a conceptual framework for ICT training in a teacher's professional life cycle.

RESULTS

In Uzbekistan, with the support of UNESCO initial steps were taken to design the ICT Competency Requirements for Teachers. After series of consultations with the Ministries of Higher and Secondary Specialized Education and the Ministry of Public Education national ICT Competency Requirements was developed as follow. For the development of the ICT Competency Standards for school teachers of Uzbekistan, team of national and international experts led by UNESCO have carefully scrutinized the promising cases of Australia, Korea, China, Kenya and Russia. In addition, for setting up the basic ICT competency requirements for teachers, national research team guided by UNESCO conducted the baseline analysis of the teachers' ICT skills, existing ICT infrastructure in schools, national policies and strategies for the development of ICTs in the country and etc. so that school teachers would be able to meet those requirements posed under this framework.

Based on the guidance provided by UNESCO[8], six domains of ICT competency standards were elaborated as the basic requirement for all subject teachers in Uzbekistan. One of the advantages in basing the development of the ICT Competency Requirements for Uzbekistan based on the UNESCO's guidelines is being able to devise a comprehensive view on what teachers should know and do without having to spend too much time and resources on building a framework. It is especially true when the framework is internationally recognized and proven effective.

These ICT competency domains can be embedded into the existing compulsory teacher professional development courses (Fig. 2). Also, standalone short courses can be developed so that teachers will be provided an opportunity to build those ICT competencies either

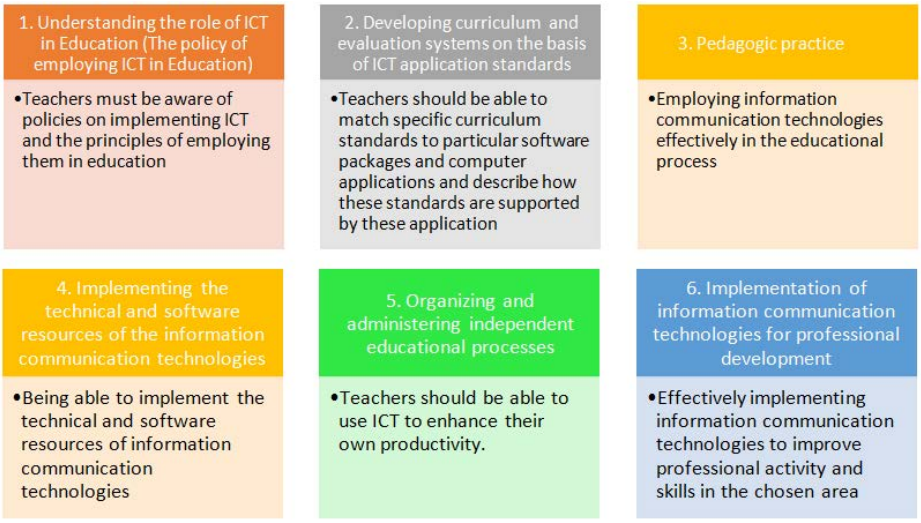

Fig. 2: Teacher ICT Competency Domains in Uzbekistan

through the formal teacher professional development courses or independently on their own pace. The ICT Competency Requirements include mastering the online learning, E-learning, remote studies, flexible learning and Massive Open Online Courses (MOOCs), Learning Management Systems (LMS) which are essential components of the distance education.

DISCUSSION

While schools are back to face-to-face learning in Uzbekistan, the best pedagogical practices, innovative ways, in which pedagogical practices were infused with the ICTs, shall be maintained. Definitely, for the blended learning models through ICTs, the teachers' competencies are very important in facilitating the integration of technology into pedagogy. The technological solutions in teaching and learning can actually support increasing the efficiency and effectiveness of learning, feedback, monitoring, visualizing, collaborating and creating. All these successful technology-oriented pedagogical practices can be facilitated through adopting the ICT Competency Framework for teachers in Uzbekistan in the post-COVID-19 new normal.

CONCLUSION

The Article briefly analyses various country experiences and proposes the six principal competency domains on ICTs.

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