

Understanding the usage of ICTs in the education sector of Uzbekistan

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ABSTRACT

Thirty years ago, here, Central Asia got independence from the Soviet Union in the year 1991 A.D. It was a momentous year for all new five countries. These countries which have ethnic and cultural diversity pursued different strategies for the socio-economic transformation. A new republic of Uzbekistan broadly moving towards “Digital 2030”. For “Digital 2030” the country attempts to go parallel with ICTs in the education sector which will be going to be the basic foundation for the socio-economic development of the nation. The present paper will examine the questions of the usage of ICTs in the socio-economic development of Uzbekistan during a pandemic and its role in defining and evaluating nation-building. Also, how do various scholars define the role of ICTs in Uzbekistan? The paper attempts to understand how the idea of ICTs in Uzbekistan being introduced in the country through the years.

KEYWORDS

ICTs, Uzbekistan, digital 2030, HEI.

INTRODUCTION

The New Republic of Uzbekistan and other Central Asian countries came out as independent countries after the breakup of the Soviet Union in the year 1991. In recent years, Uzbekistan has devoted significant resources to the thorough advancement in information and communication technologies, as well as their widespread application in all aspects of state and society, since the country's independence. It has been seen that overgrowing concern about the usage of ICTs in the socio-economic development of Uzbekistan is surrounded by the debate in Uzbekistan as well as the international community and organizations. The authorities built a regulatory framework that allowed the market for IT technologies to continue to form and grow in a short period. Now the point is, what are the common grounds through which information and communication technologies and the people of Uzbekistan come closer to each other and how does the Government of Uzbekistan and the society is dealing with both for the nation's progress? Apart from that, Information and communication technologies in Uzbekistan cannot be separated from the socio-economic development of the nation as it is playing a major role in building a strong impression within the nation and also in the international lobby. Therefore, it becomes significant to trace their ideas to demonstrate how the country is dealing with information and communication technologies, perpetuating its identity as an advanced developing independent nation to achieve its SDG 2030.

After the dissolution of the Soviet Union, one of the dilemmas reflected against Uzbekistan was to construct a balanced socio-economic structure for building national identity. In the early 1990s, Uzbekistan was struggling with a rapidly increasing population and fragile resource base, where approximately 60 % of the population was under the age of 18. The population of the newly birthed nation has multi-ethnicity, different languages, and different cultures, after the breakup of the Soviet Union, it becomes essential for the government of Uzbekistan to move towards Information and communication technologies, though it took time to establish its arena which leads to the rise of unhindered questions of usage of ICTs in the socio-economic development of the country. Now, most of the ICTs debate in Uzbekistan academia moves around the usage of ICTs in the health sector, women's employment, enterprises, and education. In the present discourse, the Uzbekistan government laid much emphasis on building a technology-friendly nation, not in terms of building a strong economic infrastructure for the country but also a socially healthy technology environment with rising opportunities which also defines the interest of the individual particularly.

The present paper will examine the questions of the usage of ICTs in the socio-economic development of Uzbekistan during a pandemic and its role in defining and evaluating nation- building. Also, how do various scholars define the role of ICTs in Uzbekistan? Before going into details, let's understand how the idea of ICTs in Uzbekistan being introduced in the country through the years.

The idea of ICTs in Uzbekistan

For instance, the "On Telecommunications" Law was passed in 1992, establishing broad rules for the industry's progressive development. The Law "On Information," which was enacted on December 11, 2003, expanded on problems of ICT legal regulation. The President's Resolutions "On initiatives for more development and execution of advanced information and communication technologies," effective March 21, 2012, as well as "Further on the innovation of computerized system and the arrival of information and communications technology," dated May 30, 2002, became significant documents in this regard. The Republic of Uzbekistan's Complex Program for the construction of the National Information and Communication System from 2013 to 2020 is now being executed. The President's Resolution of June 27, 2013, approved this program.

President Islam Karimov stated at an augmented meeting with the Ministers of Cabinet, focused on the socio-economic growth in 2015 and the most significant preferences of the economic program for 2016, that in today's conditions, the recent emergence of information and communications technology in the field of social and economic, as well as the radical acceleration of the creation of the system "Electronic government," is of paramount importance. As the president stated, ICT development has a significant effect on the country's competitiveness, enables the collection and analysis of large volumes of data, and provides excellent prospects for strategic management. The Ministry for the Development of Information Technologies and Communications, established by a Resolution of the Head of the State dated February 4, 2015, was tasked with the duty of improving governance and building the capability of the IT industry regularly. In addition, since 2002, the UZINFOCOM Centre for Development and Introduction of Computer and Information Technologies has been operating, assisting in the development and execution of national computerization and ICT initiatives in all areas of government, the economy, and society.

Over the last few years, the country has worked diligently to expand the service of the Internet, mobile networks, and other areas to build a high-tech foundation for the modernization of the country's economy. Telecommunications infrastructure is the foundation for ICT development in Uzbekistan. Expansion of fixed and mobile broadband access, increased switching centers for data transfer and voice traffic, modernization of trunk lines and the creation of infrastructure for the development of multimedia services characterize the country's present condition of telecommunications technologies, networks, and communication infrastructure. Over 2,000 kilometers of fiber-optic cables have been deployed in numerous parts of the country over the last 20 years. They're made for providing broadband access to modern technologies and converged services like video telephony, high-speed Internet, and watching HDTV channels, among other things.

The entire rate of use of international information networks climbed by 42.3 percent in 2015, reaching 15.5 Gb/s, thanks to the actions adopted. Today, all mobile operators in the country are introducing the fourth-generation network, 4G LTE, which allows us to quickly and efficiently handle large amounts of data on the Internet, download and view high-quality video streaming, and use online applications for educational and business purposes. All of these technologies allow Internet users in Uzbekistan to broaden their abilities to operate with information and communication technologies. The Republic of Uzbekistan successfully implemented a program to develop broadband access networks using Wi-Fi technology in 2014-2015.

Wi-Fi sites have been established in the capital and each administrative center of the republic as a result of comprehensive initiatives at airports, railway stations, frequent-stay passengers' locations, parks, retail malls, and other public areas. The national Internet segment's rapid growth should be highlighted individually. 10.2 million people utilize the internet in Uzbekistan. According to the UZINFOCOM center, the number of websites in the UZ zone surpassed 25 thousand in January 2016, an increase of more than 30% over the previous year's same time. In the development of sectors of the economy and domestic industry, the use of ICT and software products in management and production processes plays a vital role.

For example, 86 projects worth over 330 billion soums were completed in 2014-2015 as part of a special government program to establish information systems in significant joint-stock firms, groups, and organizations. The establishment of the national market for software products is given special focus. The National Register of Software Developers, which already includes 69 companies, was established to encourage domestic programmers. Software.uz, a directory of software producers, has been created to give people and businesses the necessary information.

New benefits and privileges for members of the software sector have been implemented, according to the President of the Republic of Uzbekistan's Resolution "On steps to further improve the incentives of domestic software developers," dated September 20, 2013. As a result, until January 1, 2017, they are exempt from paying customs charges on imported equipment, components, parts, technical reports, and software. It is well recognized that interacting public services play a critical role in the safeguarding of human rights and freedoms, as they save time and money by facilitating the acquisition of needed information

and services. In the country, ongoing efforts are being made to establish an "Electronic government."

SPISS's capability is growing all the time, and it now offers 235 different interactive services. This system has received over 200 thousand electronic applications from both residents and businesspeople during the last five years. Making online consultations with government agency leaders, receiving information on their actions, making various queries, and sending requests have all become popular. The portal established a new method in January 2015 for discussing draught legal acts relating to commercial activity and evaluating current papers.

To date, this approach has been used to discuss 80 draught legislation, with nine of them being modified as a result of citizen feedback. At this time, over 20 legal acts are still being debated.

Since 2004, the electronic proceedings information system E-Sud has been operational. Procedures such as preserving registration books, document handling within the courtroom, the direction of judiciary notifications and procedure acts, and the familiarization of parties with the case are now totally automated as a result of its deployment. The Ziyonet network, which has been operational since 2005, connects all educational institutions in the nation.

Almost 75 thousand components of informative-educational sources, containing textbooks, dissertations, research papers, and other materials, are available in the portal's library, which was updated in 2014.

The "Foreign Languages" section on Ziyonet was created as part of the implementation of the Head of State's resolution "On measures to further improve the foreign language learning system" dated December 10, 2012, which encompasses more than four thousand materials such as textbooks, interactive lessons, games, relevant video, and audio. The country hosts special events dedicated to the promotion of the high-tech industry regularly. ICT Week Uzbekistan, in particular, has been conducted since 2004. It is traditionally started with the ICT Expo national exhibition of information technologies, which is held twice a year in Tashkent and Samarkand. The exhibition showcases current and future ICT-based services aimed at businesses, government agencies, and the general public.

The Forum for Information and Communication Technologies ICT Forum, wherein delegates from prominent enterprises, industry professionals, and international experts analyze the state and possibilities for advancement in this sector, is the most prominent event of the scheduled week. e-Government Uzbekistan is dedicated to the strategic objectives in the field of "e- government," results of implemented projects, exchange of experience, and ideas in this direction. Best Soft Uzbekistan is also holding conferences as part of the week, during which they illustrate the recent accomplishments of software application developers, and e- Government Uzbekistan is deeply committed to the strategic objectives in the field of "e- government," results of implemented projects, exchange of experience, and ideas in this direction. Personnel development in the ICT industry is a popular issue.

Tashkent State Technical University (TSTU) and Tashkent University of Information Technologies (TUIT) are currently training specialists in technical direction and for the IT sector as significant domestic centers of integration of education, science, and industry. TUIT launched two new master's programs in 2013: system management and library science.

Simultaneously, these colleges conduct scientific research in close collaboration with the country's largest industrial firms. On the 1st of October 2014, the Tashkent branch of South

Korea's prominent Inha University opened its doors. Computer and software engineers, as well as computer network engineers, receive training here. "Presently we are establishing should a new national concept of the digital economy, that gives for the renewal of all sectors of the economy associated with digital technologies and enforce the program titled "Digital Uzbekistan-2030" concerning this," Uzbekistan's President Sh. Mirziyoyev wrote in his message to the Oliy Majlis.

As a result, the domestic IT industry is flourishing, with new joint ventures being formed, new software projects being developed and deployed, and the Internet expands. Continuous and consistent actions in this direction help Uzbekistan's information society expand and integrate into the global information sphere.

ICTs in Education Sector

Information and communication technology have already established themselves as an indisputable aspect of modern education. It can be used to effectively distribute, construct, and reconstruct knowledge. Higher education institutions (HEIs) have been transformed by the broad availability of information and communication technology (ICT) into a multi-choice learning atmosphere that boosts learning depending on individual choices, regardless of time or location. The proper integration of ICT technologies in every context of teaching and learning, especially face-to-face to online or blended learning, leads to the formation of a productive learning environment. As a result, the public's attention is always drawn to this issue. Uzbekistan is ramping up reforms in the higher education sector, recognizing that education is at the heart of a country's modernization and development.

Literature review: Very few studies on the use of ICT in various phases of education in Uzbekistan have been carried out. The ability to adapt to modern society is a must for the youthful generation in today's society (Kiani, M., at. all 2020). The growth of students' motivation for learning is intrinsically tied to the success of learning. This can be accomplished by transitioning to public persona technologies in training, which aids in the development of the abilities required for young people's adaption to the modern environment. New tasks come just before the system of higher professional education as a result of the modernization of higher education, and professors involved in scientific, pedagogic, and methodological activities are always looking for new ways to be innovative (Azhgibkova T.N 2004). Ibrahim and Nat investigated HEIs' mixed online learning models. McLachlan, Buabeng Andoh Charlez, and Yidana looked into kids' opinions of ICT in schools, whereas Tezci looked into the elements that influence instructors' ICT use. It's no coincidence that three-dimensional computer modeling tools are gaining in popularity (T. A. Stelman). Their use enables you to efficiently carry out design work, offers the designer the capacity to execute drawings fast and efficiently with such a factor loading of accuracy, and show drawings on paper. In most cases, descriptive geometry lectures are supported by presentations on all aspects of the science (R. U. Sindarov 2013).

Other studies on the use of digital technologies such as video conferencing, teleworking, remote learning, mobile learning, E-learning, Massive Open Online Courses (MOOCs), Blended Learning, and cloud technologies have made significant contributions to the current educational process. Tugeeva Guzal believes it is critical for Uzbekistan's development that

graduates are trained for the difficulties of the twenty-first century, wherein the workforce is expected to have sophisticated ICT skills. With the purpose of accounting and monitoring student performance in various topics, the computer's function is expanding. Subject discipline computer support helps you to personalize work with pupils, increase interest in the subject, and make learning at a higher school interesting and successful (Voronina M.V. et.al 2017). "ICT literacy has risen considerably," says Sayora Melikova, director of Samarkand City's Number 21 School. She tells out that nowadays, tertiary education is computer-based, therefore ICT studies are essential for students' continued education. "Previously, computers were only available to students in classrooms eight and nine, but today they are available to students in grades five through nine," she explains. The growing number of computers in schools, as well as the promising applications of technology for teaching and learning, necessitates expanding the PCK construct to account for the phenomena of instructors looking to learn how to teach using technologies (Angeli and Valanides 2005). Bakiev G.Kh and Muradkasimova K.Sh conducted a study on the integration of ICTs towards learning, teaching, and assessment which reflected that every teacher employs the most effective and cost-efficient strategy in which Mobile-assisted method (30 percent of respondents) and Interactive whiteboards are the most popular applications (26 percent of respondents) where E-readers are the cheapest option (5 percent of respondents). Solikha Allayarova conducted a study on the implementation of modern ICTs in higher education opinionated that E-content is created by national state education and rearing criteria, as well as national initiatives or projects that emphasize the state language. Ulugov B.D. et.al found that Learning tools, on the other hand, are a collection of subjects that include training material or execute training tasks to improve students' knowledge, skills, and abilities while also regulating their intellectual and practical activities to enhance professional quality fully.

Methodology: This research attempts to trace the understanding of the usage of ICTs in the education of Uzbekistan by re-analyzing the previously conducted studies using inductive methods and secondary resources which provide the following results.

Results: The results are reflected in the following themes given below:

Lack of sociological scripts

The first common thread that emerged from the study is the lack of techno-cultural roadmaps. The study finds consistent evidence that sociological scripts for the individuals of the society are less defined than other scripts, and that was particularly pronounced when an individual ICTs experiences were new in the education sector. In many instances, an individual described not necessarily knowing what to expect in ICTs experience encounters not only because they had little experience with the technology and also expectations were not clearly defined. For an individual who experienced it for the first time in recent years, ICTs in the education sector appeared during a period when Uzbekistan has been going through several socio-economic activities which involves a conscious mind for economic development along with sociological factors which can either be micro or macro and the individual did not know yet how to incorporate it properly. From some study explanations, we analyzed that people of Uzbekistan never experienced ICTs learning and teaching so broadly before going trans- informative phase. As a result, when they did seek out encounters with ICTs in the education sector and for other job activities in college, home, office, etc., these individuals were less sure of what was normal or expected for their overall social progress. Whereas ICTs in the

field of the education sector and other sectors now receive ample representation in Uzbekistan, there is a dearth of sociological scripts for the individuals to understand the use ICTs.

Lack of pedagogical practices

The pedagogical technique provides a way for developing, implementing, and defining a comprehensive pedagogical process and acquiring knowledge that takes into account students' particular talents as well as lesson-specific technical equipment. This is a strictly constructed system of collaborative student and teacher actions in the design (planning), organization, direction, and regulation of the education system to accomplish the desired goal while maintaining participant comfort. We can define pedagogic technology as a clear network of interactions between both the student and the teacher in the planning, organizing, and adjusting of the educational process, to achieve the desired goals for successful material assimilation.

The study found that some university professors in Uzbekistan continue to employ exclusively lecture tactics in class, abusing passive approaches (lecturing- questioning, monologue, presentation). In most HEIs, the use of interactive methods is quite low, yet some of them do so well. This demonstrates that the majority of teachers do not use modern pedagogical methods. Those who have a high likelihood of not using modern information communication technology. The use of ICT should not be limited to the teaching and learning process. Its immense efficiency is also seen in the way it is managed and monitored. As a result, this aids in transparency and time management, as well as provides a platform and networking environment for organizational, educational, and research conversations.

Lack of proper technological capacity

Uzbekistan as a developing ICT country wants to contribute as much as to its society. Due to its newlines towards the introduction of a digital environment the country faces a lack of proper technological capacity. The biggest impediment for both teachers and pupils is a lack of technological capacity. This issue is more prevalent in regional HEIs. To address this issue, the government needs to invest in the formation and development of universities' material and technical bases, which is now being done through a series of reforms. The inability to use current technologies, for example, leads to the second impediment, which is teachers' barriers. This could be addressed by providing specialized training and seminars on how to successfully use and integrate ICT into the classroom.

The role of ICTs in Uzbekistan during the Pandemic

On March 15, 2020, the first case of COVID-19 was recorded in Uzbekistan, when an Uzbek person returning from France came back positive. Uzbekistan had reported 6,500 illnesses in a country of 33 million people as of June 23, with 4,450 individuals fully recovered and only 19 persons dying. This arises as a consequence of stringent limitations on people's travel in and out of the nation, as well as President Shavkat Mirziyov's order to quarantine all returning inhabitants.

The coronavirus epidemic has brought many alterations in the lives of the citizens of Uzbekistan. They have been compelled to develop new methods of living, connecting, and working in certain respects. Information and communication technologies (ICT) have a

significant impact on their daily life, which should not be overlooked. This had been felt even more strongly in Uzbekistan during the epidemic, with the Uzbek community ill-prepared to deal with the problems of COVID-19, particularly distant work and distance learning. The necessity to build a freelancing culture and increase IT skills amongst the public became even more vital during the pandemic.

Developed countries have already begun to invest substantial resources in innovation, realizing that rapid adoption and deployment of new technology is the only way to achieve good returns and market benefits. It should be emphasized that the growth of the ICT industry is a priority for the Uzbek government. Uzbekistan has made significant investments in its technology ecosystem in recent years, propelling the development and supply of IT goods and services such as Internet access, communications technology, as well as other related fields. In addition to minimizing governmental regulation and ensuring property rights, ongoing development aims include boosting the investment climate. In Uzbekistan, the year 2020 has been designated as the Year of Science, Enlightenment, and Development of the Digital Economy. Today, information and communication technologies (ICTs) are important drivers of the country's economic development.

In Uzbekistan, the digital economy accounts for only 2.2 percent of GDP, compared to 10.9% in the United States, 10% throughout China, and even 5.5 % in India. The Ministry for Development of Information Technologies and Communications established the Technology Park of Software and IT (IT-Park Uzbekistan) on January 10, 2018, in collaboration also with the Society of Software Technology Parks (STPI) and under the Ministry of Electronics and Information Technology of India, to further develop Uzbekistan's technological potential, increase IT exports, and sustain the country's technology-led development. The "techno-park" aspires to be a national influencer in the development of innovative and competitive IT goods and services, as well as their marketing in local and international markets.

IT Park's current activities include tax benefits for local businesses, incubation and acceleration programs for local IT startups, investment in startups through public and private venture funds, IT education, startup hackathons, and other events, IT centers focusing on improving digital literacy in all of Uzbekistan's regions, IT infrastructure development, and Business Process Outsourcing with stress on the export of IT-enabled services. At the moment, IT Park is home to 355 businesses and employs over 4,000 people. Currently, the residents of IT Park contribute over 491.5 billion Uzbek soums (about 49 million USD) in services, with 65.5 billion Uzbek soums (around 7 million USD) in export numbers.

Beyond new infrastructure and ecosystem, the Uzbek government is focusing on social capital and IT education, with the IT Academy organizing short- and long-term comprehensive programs for the development of ICT workers. The IT Academy also offers open courses to the general public. Simultaneously, the IT Academy is the lead organization behind the 'One Million Uzbek Coders' project, which is online for free programming education. The One Million Uzbek Coders homepage and the Udacity platform have both been localized into the Uzbek language, and the project hopes to train every day 2,000 students by the conclusion of 2020.

ICT literacy is now becoming a practical prerequisite for people's job, societal, and personal lives in Uzbekistan, which is a rapidly developing country. The third of the President of the Republic of Uzbekistan's "Five Initiatives," which aims to enhance digital literacy among the

populace, reflects the government's political desire to push ICT development. Thus, local Digital Competency Training Centers (IT Centers) are now being established in all of Uzbekistan's regions to popularize the field of information technology and strengthen IT competencies among the Uzbek population. These IT Centers will instruct youngsters skills and knowledge around computing and communications devices, as well as disseminate IT culture and increase digital literacy.

The government wants to incubate 14 IT parks across Uzbekistan between 2020 and 2024, as well as build local Digital Competency Training Centers (IT-centers), thrice technology park residents, and hire 40,000 people. The proportion of computer services as well as programming, and also their export, is predicted to expand as a result of this. This will hasten the spread of ICT skills throughout Uzbekistan's society and economy. To summarise, Information Technology is a basic requirement of today's world, as technological advancement pervades many sectors, and despite great outcomes, there is still much to be done in the field of information technologies.

CONCLUSION

To summarise, this research paper tried to trace the understanding of the usage of Information and communication technologies in the education sector of Uzbekistan which draws the attention of the policymakers and academicians as Uzbekistan going sharply towards “digital 2030”, firstly, it is essentially required to prepare the country not consciously at socio- economic development level but also sub-consciously with proper sociological scripts to reduce individual-techno barriers which were reflected in many studies. Although, the government of Uzbekistan has come up with different methods to illustrate the idea of ICTs in the nation, more attention to more simple but advanced pedagogical practices and increased techno capacity can fill the gaps by excluding barriers will help the new Republic to achieve it's SDG Digital 2030.

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