

ICT and Youth Development in Tajikistan

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Abstract

The mountainous regions of the world may well be the last places on the planet connected to the internet, and compared to the lowland regions the digital divide will be more pronounced in mountainous areas. This mountain/lowland digital divide has many origins; from the technical challenges for connectivity in the mountains, to the lack of infrastructure such as irregular electrical supplies and impassable roads, to the lack of trained personnel for training and repairs. Yet at the same time access to the internet is critical for mountainous regions as a way to overcome issues of geographic and social isolation, access to information, and the flight of youth to nearby population centers.

The paper details the US State Department's Global Connections Program for Tajikistan, which beginning in 2003 connected high schools to the internet in several mountainous regions in Tajikistan. The program opened a network of internet learning centers and developed programs specifically targeted to providing opportunities for youth through access to the internet centers. This paper will outline the successes of the Global Connections program, as well as detail the challenges faced for internet development that are specific to mountainous regions.

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Introduction

It is often stated that the world is changing faster now than at any time in human history. As we look forward to new advances in medicine, agriculture, information technologies, and relationships on a global scale, the question is no longer if the rate of change is increasing at an exponential rate, but how best to prepare for the future. The importance of ICT development in mountainous regions was highlighted at the Bishkek Mountain Summit in 2002 and included in the final Mountain Platform where section 6.3 states: “We recognize that the physical nature of mountain regions hinders access in many ways. In particular, we call upon governments to use information and communications technologies to bring benefits to mountain people.”

This issue is especially important for those that stay behind in remote mountain villages while others must leave to work. “Often, too, isolated mountain communities have a disproportionately high population of women, children, and the elderly, on account of the common and ever-increasing out-migration by men of the household for seasonal employment.” (Aitkin 2002) For youth in mountainous regions, the challenge is especially pronounced as many of the profound changes in technology reach the mountainous areas last – the final mile. Education that focuses on youth potentials to integrate technology more rapidly than stagnant systems can be used to help “leapfrog” the current generation of youth into the global economy.

This leapfrog into era of global communication brings both promise and peril; the promise is the chance for students currently without access to knowledge resources to actively participate in global dialogue, while the peril is the potential for global culture to dominate and suppress local knowledge that binds generations across time contributing to the homogenization of global cultural diversity. ICT also has the potential to further exacerbate global and regional disparities in wealth if the digital divide is not bridged, “However, while ICT clearly has the potential to empower young people and improve their lives in many respects, questions remain regarding its role in deepening existing inequalities and divisions in the world.” (United Nations 2004 p.76)

Overview of Tajikistan

Tajikistan, 93 percent of which is considered mountains, is defined by mountains. The north and the south of the country separated by the Alay mountains, a vast range that is impassable in winter. The varying terrain and landforms create extremes in temperatures, unbearable heat in the summer slows the pace of life to a crawl, freezing temperatures in winter make travel difficult and create dangerous conditions for students to attend school in unheated buildings. As well as being fragmented by its mountainous geography, Tajikistan is also divided by language and ethnic groups. During the Soviet era borders were drawn that ran through ethnic lines, when the Soviet Union collapsed in 1991 Tajiks found themselves living in Uzbekistan and many Uzbeks in Tajikistan. 15 percent of the population is Uzbek, with pockets of Uzbek communities dominant along the border areas. (UNDP, 2004) . The Uzbek minority in places such as Gulukodoz in the north study in the Uzbek language and have limited ability to function in the wider Tajikistan. With restricted communication to the rest of the country they are isolated both socially and physically as they have no common language and are separated by mountains. In Gorneo Badakhshan (Mountain Badakhshan) their first language is Pamirian and they distinguish themselves ethnically from the rest of the country. With limited physical connection to the main cities in Tajikistan, the Pamirians are also isolated both socially and geographically. Russian language as the unifying language is disappearing as there are fewer and fewer teachers of Russian language in mountainous areas throughout the country.

Tajikistan has had a slow and difficult road in fostering development of its education sector since the collapse of the Soviet Union. Many factors can be cited for this, notably the five year civil war that discouraged investments in infrastructure, the exodus of managers and professionals, and Tajikistan's position as the poorest county of the former Soviet Republics. "In general, the problems of the education system are immense. Most school infrastructure, basic equipment and materials are in appalling condition. Buildings are of old-fashioned design, communal services (heating, water, sanitation and electricity) are dilapidated often making buildings unusable in winter. Textbooks are often not available and teachers are poorly paid. Although it has been decreed that all schools should have computers in the classrooms, the

reality is that many schools do not have electricity for more than a few hours of the day for most of the academic year.” (World Bank 2005 p.25)

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ICT, specifically Internet technology, can bring substantially greater gains than access to computers alone. ICT can create internal bonds in a fragmented nation, encourage learning of secondary languages, foster good governance, promote public health, fight corruption, and change how students view knowledge and their role in society. Internet brings the power of global communication to the remotest corners of the globe, “ICT has facilitated the development of new forms of creative, open and non-hierarchical channels of cyber-participation. Youth are gradually becoming more aware of resources outside their communities and of opportunities to share in and reinforce each other's work. (United Nations 2004 p.74)

The digital divide at the global level is much more than a simple measure of who has access to the internet and other communication technologies versus who does not. Knowledge is just as important as access; this knowledge component of the digital divide is the difference between knowledge dissemination, and knowledge production. The internet is often viewed as an excellent mechanism for knowledge dissemination; but it is when the potential of knowledge production is incorporated that the true global ramifications of the Internet are realized. Youth can then participate in the global information revolution on an equal playing field. When the youth in the mountainous regions join this body of knowledge, gain from it, contribute to it, and be on an equal level with youth from an urban area, and this phenomenon happens globally, then the full potentials of Internet are realized.

This phenomenon has ramifications, both positive and negative, within societies as the role of youth towards their elders and traditional forms of knowledge are changed as well, “The direction of socialization can even be reversed as the younger generation teaches the older generation about the uses and applications of emerging technologies. It is important to recognize, however, that ICT and the media do not preclude the continuing influence of such traditional actors as parents and schools in the socialization of children and youth.” (United Nations 2004

p.79) ICT and development priorities for youth are no longer separable, but are inherently integrated with improvements in employment opportunities, health, leisure and understanding of gender roles resulting in ICT access and understanding. ICT should not be viewed as a replacement for other needs in society such as basic health and nutrition, but as part of a larger development strategy.

In the face of the challenges confronting education in Tajikistan there has been much attention by the international donor community on how to support the education sector. In a negative, but possible scenario schools will be full of unhealthy and hungry children, with girls more likely to drop out regardless of academic achievement. There will be a chronic shortage of teachers due to teachers searching for work in Russia, and others leaving the profession for other work. To prevent this scenario, measures will have to be taken from a multitude of sectors. Unfortunately in Tajikistan, regardless of the potential offered by ICT to use education to advance society, geographic factors notably the mountainous terrain, and social factors such as widespread poverty, poor health of students, corruption, resistance to change, and crumbling infrastructure make it more likely than less that ICT will play only a limited role in development for the near future without significant support from international donors. If ICT is to see progress as a tool for social policy, development organizations will have to see the value added potential of ICT and incorporate an ICT component into all of their projects. Small but creative approaches can be used to overcome barriers to development of ICT. Integration of ICT provides a platform for Leapfrog education, where students can bypass a rigid educational system to directly interact with the world's body of knowledge.

The Global Connections Program in Tajikistan

Beginning in 2003, the US State Department funded Global Connections Program brought Internet access to schools in Tajikistan on a broad basis for the first time. The Global Connections program opened 26 Internet Learning Centers (ILCs) in regions throughout the country, with a focus on ILCs in rural and mountainous regions. Each ILC is comprised of 8 - 10 computers, an Internet connection, and 2 local staff members to monitor the equipment and develop education plans. As stated on the State Department website, the goals of the Global

Connections program are to; “Empower youth to use technology to tackle universal issues such as gender equity, health, environment, diversity and human rights. These programs educate schools (as opposed to only individuals) to benefit from Internet access and resources by engaging participants in dialogue with the international community. Through this exchange of information, students are able to expand their world vision and gain perspectives that will help them succeed in the international arena.” (US State 2006)

The Global Connections Program is one example of how ICT can be used creatively to address some of these barriers for social, economic and educational development. The introduction of a network in Internet centers throughout the country provided a new way for the youth of Tajikistan to find connections, to make friends with peers from their own country that they have never met, to share stories, and to gain a better understanding of their place within their country, as well as the world. The Global Connections program has given this opportunity to thousands of pupils, and while it is not a large enough program to reach all areas and schools of the country, it has shown the potential that Internet gives as a unifying force among the youth in this country.

Successful introduction of a new innovation has several stages of implementation. At minimum the technical equipment must work, there needs to be a plan for routine repair and maintenance, and there must be trained staff to use the equipment. If these conditions cannot be met then the whole ICT component to a project should be re-examined. In a review of 17 ICT for development project worldwide a World Bank study identified technological challenges, including lack of infrastructure and high cost of maintenance as a major impediment to success of a project. The report also identified other core needs for a successful project including involving the target group in planning, adequate training, and community involvement. (Gamos 2003) In the case of the Global Connections Program in Tajikistan, this meant a heavy investment in human resource development, online follow-up, technical support, the establishment of community committees, and routine site visits.

From a non-technological perspective there are also social conditions that must be met before ICT will be incorporated into a new environment. The rate of adoption of innovations can

vary due to many factors as some members of a group incorporate innovations at a different rate than others. Rogers, in his work “Diffusions of Innovations”, gives 5 categories of adoption including: Innovators, early adopters, early majority, late majority and laggards. (Rogers 2003 p270) . Innovation laggards resist innovation; these groups can initially include parents, teachers and school administrators. Some resistance can be expected as the benefits of ICT are not immediately seen by digital immigrants. Other resistance comes for good reason, as youth users would often find sites of violence and pornography and teachers were not prepared to provide a context. Internet norms and accepted behaviors can be very permissive related to local norms and schools feel responsible to control access. This is the promise and peril of internet, access to the world’s information - the good, the bad, and the ugly.

It was the students that were the innovators and first saw and exploited the potential of the Internet. Youth do not have as many outside pressures as do adults and new technologies and ideas come to them with ease. “Youth are often the leading innovators in the development, use and spread of ICT. They adapt quickly and are generally very eager to access the great quantities of local and global information made available through technological innovation.” (United Nations 2004) Within weeks of the introduction of the Internet Learning Centers students were online searching for information, writing emails, and finding friends. There were no limitations on their curiosity; all that was needed was an open education program to channel their energy toward the positive uses of the Internet.

It is this ability of ICT, to excite students, to have them be engaged in their own learning, and to give them access to basic information not otherwise available that is the value added component of ICT. Youth were able to expand their social circles beyond their village and beyond their country. This internet communication is a new form of relationships, a virtual social capital in a world where virtual networks that enable people to act collectively are continuously created. Through use of ICT, a new collective culture is created that lies outside of traditional clan defined and family orientated domains. “Because new technologies provide immediate and direct access to global information, young people have become more aware of issues, problems and crises in other parts of the world. These technologies are used by youth movements for communication and coordination, allowing instantaneous contact between young activists, and

also serve to strengthen the sense of e-solidarity among individuals and groups with different agendas.” (United Nations 2004) A nation that does not develop an ICT infrastructure and knowledge of how to use ICT will not be able to participate in this global dialogue.

ICT can provide a critical component of this dialogue, along with more resources devoted to building maintenance, teacher preparation and support, and curriculum development. ICT is not silver bullet, instead an integral component in an overall education reform strategy. With over 40% of the population of Tajikistan under the age of 14 social and economic progress will be difficult without tapping into the potential of youth in the country. ICT can be an engine of both economic and youth development. Without ICT, youth from the disparate regions of the country will never have a chance to meet or to communicate with each other, mountains will continue to divide instead of unite them. Prejudices held by adults in the community will be passed to the next generation without a competing voice. Social networking such as chat rooms, shared dialogues, and exchange of pictures and letters, have the potential to leapfrog concrete barriers of preconceived stereotypes. Youth quickly realize that they have more in common by being Tajik, than differences from being from a certain region of Tajikistan. Youth in mountain villages, if given access and proper education, could contribute to a dialogue as much as can youth from the capital cities. These outcomes are not guaranteed simply by connecting a school, but if the internet connection is combined with other school level reforms there are new potentials not now imaginable for youth initiatives.

Globalization and technology, as Thomas Friedman (2005) points out, “levels the playing field and makes the world flat”; this adage applies to a country fragmented by mountains and culture as well. Internet connections for the youth have potential to help the next generation have pride in their nation as well as their community by forming bonds impossible to imagine just a few years ago. The Internet centers have also proven an excellent method for communication not only between youth, but between institutions and governmental entities. In many of the Internet Learning Centers time was given for government workers to transmit documents to their central offices, this is especially important for mountainous regions when land transportation is cut off due to poor roads and bad weather. ICT is a needed skill in the workforce, including in the private sector, government and among international NGOs. To promote this ICT base, what is

needed is leapfrog development directly into a Knowledge Based Economy. (NBE) This leap requires developing an ICT infrastructure, of changing the way students learn, of starting to educate for knowledge production now, of supporting schools that change pedagogy, and letting old forms of knowledge continue while simultaneously creating new knowledge. A UN report for Tajikistan defines the Knowledge-Based Economy as an economy that “incorporates new forms of knowledge, supported by cultural and spiritual values, integrates intellectual resources, and is by itself an engine of development.” (UN 2003 p.V) The report directly links a NBE and the development of the country; the greater percentage of the economy that is knowledge based the greater development of the country.

Barriers and solutions to ICT in education

Much of what is needed for ICT development in Tajikistan is not more technology, but instead political will from the Presidential apparatus and the Ministry of Education. The Ministry of Education, as the centralized authority for curriculum development and state standards, will need to introduce Internet learning as a core component of education where Internet is available, and encourage teachers through increased time off for training and financial incentives, to use the Internet to add to the existing curriculum with information found on the Internet. In the strategic plan for the education sector there is mention of ICT, but this mention is limited to a passing reference, not as a fundamental need for advancement of rural areas. (MoE Tajikistan 2005) Students that know how to surf the web for information, participate in online groups and can create and share PowerPoint presentations are not recognized in the standards. Teachers saw little point in using the Internet for new information if this information was not already integrated into the State curriculum. Much as state controlled production of goods in a controlled economy led to inefficiency, state control over the production of ideas will stifle a knowledge economy.

International Donors need to encourage changes in tax laws and educational policy as well as contribute financially to Internet development projects aimed at youth. As with the Global Connections project which used money from a diplomacy budget to advance ICT skills in youth, other projects in health campaigns, business incubators, support for women’s rights, fights

against corruption, conflict prevention, and encouragement for decentralized decision making all can be advanced through ICT skill development in youth. All of these initiatives, when taken together, form part of the backbone for progress toward the Millennium Development Goals which seek to end hunger, promote health and gender equity, good governance, as well as promote economic development.

A final and important note not addressed in this paper is that any initiative towards increasing ICT use in mountainous regions will need to focus on emerging technologies and their specific application for mountain communities. Internet centers in many ways are an unsustainable method for bringing widespread access to mountainous populations. As the target population is not geographically concentrated, nor are they economic centers that can support such investments, and may not have the means to pay for long term investments in infrastructure, only through support of international donors are these projects typically sustained. (Aitkin 2002) This is also the case with Global Connections program as there has yet to be a viable widespread sustainability plan for maintaining access after the outside support ends. Internet Centers are crippled by unreliable electricity and oftentimes there is no connection potential due to geographic barriers. If the approach to technology is to emulate the methods used in urban areas, mountainous regions will always stay one step behind, and youth will continue to migrate to the cities in search of better opportunities. Emerging technologies must be watched closely for new applications, such as a foot-pedal powered laptop, or Wi-Max technologies that can provide service to wide areas for less cost than a single point satellite-based Internet center. New generations of ICT technology should be applied in creative ways for connecting the world's mountains. The focus on connecting the final mountainous internet mile may well be best served by reading publications such as *Wired* magazine and the *Economist's Science and Technology* section for the latest news in emerging technological and social innovations, rather than being limited to what has worked for urban centers in the past

Conclusion

If the costs of providing Internet centers to schools seem unreasonably high, the cost to this generation of youth to not have ICT literacy is even higher. The direct comparison between

the costs of a computer versus the cost of a pencil is not a valid comparison as the extra value added from a computer greatly exceeds that of a pencil. It is not just about providing skills, pencils can do that, it is about providing an opportunity to use these skills in a new globalized economy. It is about joining a global culture of youth that are coming together using this new technology in creative and productive ways. The way forward is no longer an individual endeavor as the global network is part of the solution to ending poverty and bringing economic opportunity to all regions of the world, including mountainous regions. As Jeffery Sachs writes, “The end of poverty will require a global network of cooperation among people that have never met and who do not necessarily trust each other.” (Sachs 2005 p. 226) Building this global network is something that a pencil alone cannot create in the emerging Knowledge-Based economy. Without widespread use of ICT, and the incorporation of emerging technologies in remote regions such as mountainous areas, important voices will be left out of this global network.

(Garth Willis was the program director for the US State Department funded Global Connections program from 2003-2005 and is currently a PhD student at the University of Minnesota in the Comparative International Developmental Education concentration)

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