

The role of information and communication technologies (ICT) in rural development

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Abstract: Review of literature shows that intervention of information and communication technologies (ICT) in rural development initiatives are capable of development, but are not successful. Lack of community participation, absence of an integrated approach and non-inclusion of traditional knowledge systems (TKS) in the project designs are the major impediments. We therefore suggest a systems-based approach in the design of e-Governance projects, and brief some future directions. Sustained development using rural informatics is possible, only if ICT interventions are able to respond to the local needs and re-adjust as per the prevailing knowledge (Traditional Knowledge Systems- TKS) of the rural areas. To capture the needs and local knowledge prevalent at the grassroots, these interventions should preferably have an effective bi-directional link.

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Introduction:

Information and Communication technologies (ICT) have a potential for economic growth and social empowerment (Nandi, 2002). Direct or indirect application of ICT, in rural development sector has also been referred to as "Rural Informatics". Rural economies can be benefited from ICT by focusing on social production, social consumption and social services in the rural areas (Malhotra, 2001). The inculcation of a Citizen-to-Government (C2G) and Citizen-to-Citizen (C2C) interface would provide this link that would also lead to community participation in design and implementation of ICT interventions. This in return could promise better economic opportunities as well as social inclusion of rural people in the processes of governance. Such attributes in the social set up are essential prerequisites for good governance and rural development.

Globalization and technological changes, the processes in the past fifteen years have been quickly lead to a new global economy have been driven with the reinforced technology and fuel (energy) that by providing information and knowledge.

The global economy requires the kind of necessity and purpose of educational institutions. Since the current trend towards reducing incomplete information and access to accurate information is growing, other schools can not control time to transfer a set of prescribed information from teacher to student during a fixed time point are, but schools must to promote Culture of "Teaching for Learning For example, acquisition of knowledge and

continuous learning skills which make possible during the individual's life. According to Alvin Toffler, illiterate in 21st century, who was not read and write but those who do not know which fail to learn or remember are illiterate (Jauhari, 2004).

Concerns about educational quality and educational opportunities with the necessity of developing those most vulnerable are the accumulation of globalization is symbiotic. Generally, "the changes of globalization in developing countries, on low-income groups, especially women and girls and" low skill workers, as well as all groups applying for and obtaining new skills to press (Bellamy and Taylor, 1998).

In the rural context, development involves use of physical, financial and human resources for economic growth and social development of the rural economies (Burkey, 2000). The term rural development also represents improvement in quality of life of rural people in villages. As per Chambers (1983) "Rural Development is a strategy to enable a specific group of people, poor rural women and men, to gain for themselves and their children more of what they want and need." Singh (1999) defines Rural Development as "A process leading to sustainable improvement in the quality of life of rural people, especially the poor". The fact of the matter is that three quarters of the world's poor, about 900 million people are in rural areas, and the Millennium poverty target set by Millennium Development Goals (MDG), cannot be met unless the world addresses rural poverty. "Sustainable Rural Development can make a powerful contribution to four critical goals of:

Poverty Reduction, Wider shared growth, Household, national, and global food security and Sustainable natural resource management” (World Bank, 1997). Hence worldwide there is a growing emphasis on development of rural economy of the countries. Any improvement, in the social or economic status of rural areas would not just directly benefit rural poor but would also bring down the migration-pressures on cities and contribute by positive ripple effect in global stride towards development.

The process of development in a country is to be aided by its governance. The goal of governance “should be to develop capacities that are needed to realize development that gives priority to the poor, and creates needed opportunities for employment and other livelihoods” (The World Bank, 1992, UNDP, 1994). Increased number of poor, hungry or marginalized people in a country represents decrease in its quality of governance. To promote development, various studies have proposed governance in the contextual realities of each country, including veritable participation of citizens in the governmental decision-making process (Grindle, 2004; Evans and David, 2006). Several

Institutions and experts accept Governance as a reflexive process, wherein policies, institutions, outcomes and analysis interact, to maximize the process of participatory development (UNDP, 1997; Ludden, 2005; Mehta, 2006).

Information and communication technologies (ICT), including radio and television and the newer digital technologies like computers and the Internet as potentially are introduced powerful tools and activators of educational reform and changes. Different ICT, when properly applied can be developed to help access to education and the relationship between training and workshops to strengthen the increasingly digital, the quality of education also helped to create teaching and learning in an active process connected to real life high take. However, the experience of being raised by ICT in the classroom and other educational sites around the world during the last few decades proves that is not automatic fully realize the potential benefits of ICT training. (Guptaand et al, 2004)

Effective integration of ICT in the educational system is a complex process that involves not only technology but also involves educational and technical training, institutional readiness, teacher competencies and long-term investment. In fact the subject of such vital importance is that the technology to get the easiest part of it. Introduced ICT information and communication technologies are for this purpose, as a different set of tools and technology resources, used to information communicate, create, release, storage and

management have been defined. These technologies are including computers, internet, broadcasting technologies (radio and television) and telephone. In recent years started a wave of intense public interest about how computers and the Internet can become a better control to the efficiency and effect of education at all levels and in both formal and informal development (Rogers and Shukla, 2001).

But nowadays, ICT is more than a technology. Although the old technologies such as telephone, radio and television, will be less attention in the past but were used as educational tools. For example, "radio and television are used for over forty years to open and distance education. In this regard, although print remains the most expensive method and therefore available, but in developed and developing countries is provided the most prominent mechanism. Internet and computer use in developing countries still in early stages are spent and if they used are limited due to is expensive infrastructure and access to them.

Promises of ICT in education:

ICT for developing countries, are associated a potential for increased availability and quality of training and development. ICT basis and attract a lot of knowledge and its acquisition, providing unprecedented opportunities for developing countries, adding and expanding educational systems, improve policy formulation and implementation of opportunities to expand scope of work and gives poor facilitation. One of the biggest hardships that the poor are bearing the other people, who live in the poorest countries, is the sense of isolation. Communication technologies such sensory loss, are guaranteed and also has been unthinkable facilitate access to knowledge through the ways that already. However, the reality of the digital divide (the gap between those who control access technology and those who do not have access) means that the introduction and integration of ICT are challenging at different levels and in various types of training, most commitments. Failure in this struggle to become more significant gap of knowledge and the deepening economic and social inequalities (UNDP, 1997; Ludden, 2005; Mehta, 2006).

How ICT can help developing access to education?

ICT is a potentially powerful tool for developing educational opportunities, whether formal or informal is for areas already "stated (rural and dispersed populations) ethnic minorities, women, girls, disabled and old people traditionally excluded from education groups because of cultural or social reasons are also all those financial reasons or time constraints can not register in educational centers.

Any time, anywhere (defining feature ICT) capability in ICT is a passing of time and place. ICT, education or training with asynchronous features provide a time delay between education and its acceptance by students makes it possible.

1- ICT application in preparing people for the workplace:

One of the most common reasons cited for employing ICT class, better preparing students for the current generation of working environment is one in which particular ICT, Computer, Internet and related technologies, from day to day remit more prevalent. Therefore, technological literacy, or can be an effective and optimized using ICT, as a competitive edge in a labor market under globalization seems. Technological literacy skills course offered only wanted good things according to the new economy that is global. Northern Region Educational Laboratory United States, is called what the 21st century skills such identification (Nandi, 2002). Century Digital Literacy (includes functional literacy, visual literacy, scientific literacy, technological literacy, information literacy, literacy and awareness of cultural and global awareness) is thinking invention, thinking to achieve a higher rank, full argument, effective communication and high productivity.

2- Application of ICT in educational quality improvement:

Promoting education quality is a critical point. ICT can make education quality to strengthen several ways: by increasing students' motivation and entering the employment scene, by facilitating and promoting training basic skills of instructor. ICT is also a tool that transfers go when properly used, can the initiative in an environment to promote student-centered.

2-1- Motivation for learning - ICT have been merged such as video, television and multimedia software, which text, sound and moving pictures, they can create authentic content and militant students in the educational process.

Interaction and communication as well as radio waves, sound effects, songs, drama, comedy and other presentations run customs and traditions, to force students to listen and get involved in their courses are used.

Similarly, better than any ICT, network computers with Internet connection can be motivated learners with rich media integration and interaction with other ICT provide opportunities to connect the real world and participate in world events, to increase.

2-2- Facilitate learning basic skills - basic skills and concepts transfer of skills, infrastructure and higher degree of intellectual creativity as they can by ICT to facilitate oral and practical. Educational TV programs are used repeating and reinforcing tool for teaching the alphabet, numbers, colored, and other forms of basic concepts.

Most early applications of computers for education training, was reinforced and repeated skills-based mastery, curriculum content. Upgrade teacher training. ICT has been used to promote the availability and quality of teacher training (Singh, 1999).

For example, "institutions such as the Center for Teacher Education Network (CTTC) in South Korea had exploited the Internet to provide better opportunities for professional development of teachers. The center, which has financing from the government, was established in year 1997. And training courses based on the World Wide Web for primary school teachers and provides guidance.

These courses are include "computers in the information society," "educational reform" and "Future Society and Education". Specific periods of online courses with some face to face conference will be held. In China, comprehensive training of teachers based on radio and television is guided for several years by the Central Radio and Television University.

Radio and Television University, Shanghai, and many other radio and television schools in the country contributed to this work. Indra Gandhi National University in India unilateral visual conference system and audio-based two-way satellite, which was created in 1996 by print and is presented video recordings.

And will train 910 elementary school teacher and assistant coach of the 200 local Teacher Training Institute in Karnataka state, Teachers are interacting together by mutual discussions by telephone and fax (Malhotra, 2001).

3- ICT applications in education:

Organizations and educational policy planners should first of all about the desired educational outcomes (mentioned above) is straightforward. The broad objectives must choose different technologies used to go and how to apply the guidance to go. Potential of each technology varies according to how to use. Haddad and Draxler have been identified IT application in education at least five levels of:

1. present,
2. experimental proof,
3. practice and practice,
4. interaction,
5. collaboration

Each of the different ICT tools (print, audio cassette and video, broadcast radio and television, computer or Internet) may provide the most basic means and surfaces used to go to prove. Except for visual technology, practice and practice the maximum use of both technologies may be offered. Each of the different ICT (print, audio cassette and video, broadcast radio and television, computer or Internet) used to may provide the most basic means and surfaces. Except for visual technology, may be offered practice and practice the maximum use of both technologies. The other network computers and Internet, ICT interactive learning that are provided and they if only used for providing proof or go, was not realized can better their full potential (Jauhari, 2004)

4- Application of radio and television broadcasts in education:

Radio and television are used widely from year 1920 and 1950 respectively as educational tools. There are three general approaches in the application of radio and television in education (Cecchini and Scott, 2003).

1. Direct classroom teaching, in which broadcast programming substitute teachers are in a temporary basis.
2. A school broadcasting, where broadcast programming sources being provided and will provide available in supplemental education.
3. Planning the overall educational level of the community and officials of national and international public and non-formal educational opportunities offers.

The best documented example of direct class teaching approach, is education of radio interactive (IRI). The training includes exercises to learn directly prepared 20-30 minutes. Radio lessons about topics specific levels of math, science, health and language that are intended to advance the quality of education and are offered as a helpful structure to the teachers, the educational level in poor schools and no educational resources. education of radio interactive projects in Latin America and Africa have been implemented, Asia, the first project in Thailand, was conducted in 1980, and Indonesia, Pakistan, Bangladesh and Nepal to the project implementation completed in 1990(Andersen and Henriksen , 2006). What interactive radio education projects from other education programs to non-attendance is that distinguishes the primary objective is to improve the quality of learning (nor merely "to extend educational

access) and in both formal and informal form has had many successes.

Extensive worldwide research has shown that many interactive radio educations project a positive effect on learning outcomes and have educational equality. And savings in scale, a strategy that proved effective on the costs associated.

Results:

This paper is a multidisciplinary study of ICT initiatives for rural development. It emphasizes adoption of a more systematic approach for integrating Traditional Knowledge Systems (TKS) and ICT inputs to ensure sustainability of rural e-governance projects. The study of literature related to rural development and e-governance has indicated various issues impeding success of such initiatives. The main issues are lack of localization of content for rural communities and inadequate participation of rural communities in design of rural ICT initiatives. The study therefore suggests the use the systems-approach to integrate the relevant TKS along with ICT initiatives in the design of e-governance systems for rural development. This participatory approach can lead to creation of more acceptable and sustainable e-governance projects.

Regardless of the wide differences in ICT access between rich and poor countries and between different groups in the country, there are concerns that challenge the application of ICT in education with the existing differences among the lines of economic, social, cultural, geographic and gender will be broader. Everyone equal opportunities in terms of suitability for participation are necessary, but access to various factors, either as users or as producers through their sources is difficult and heavy. Therefore, the primary differences enhance and even grow. Consequently, programmers' international education is faced with a difficult challenge and how to help solve the problem and its development.

Promoting ICT in education, when done without careful study, can lead to the marginalization of those with more favorable conditions are unknown. For example, "women compared with men, because of illiteracy, lack of higher education, lack of time and mobility and poverty, controlling access to ICT and fewer opportunities for training are relevant. Also, more boys than girls' access to computers at home and school are not strange to say that if more boys than girls are willing to work with computers. The report of the University Association of American Women is that "Although some girls have an important gender gap have been limited, but today's technology, technology club, and boys in public schools while its own problems and programs are

settled girls use computers for word processing the brand". In an assessment in four African countries, the activities organized by World links remote international cooperation on projects between teachers and students in developing countries will promote, despite creating programs without regard to sex contacts, sexual inequalities remain Uganda and Ghana. In addition, while more girls than boys in relation to academic performance and advanced communication skills program will enjoy more than boys, but they were unable to perform their technological skills were. A set of economic factors, organizational and cultural differences involved in the social.

"The high ratio of students to computers and politics, whoever came first, the first is used in accordance with the girls wanted it." Girls travel restrictions in the early hours of daily work and home responsibilities are that this will limit their access. Also because local patriarchal beliefs dominate the boys are in the computer lab environment. Including proposed measures to address this discrimination, strategies to encourage schools to create "fair use" in the computer labs and the holding of meetings and sexual sensibilities conductivity decreased defense duties after school girls. ICT provides access to only a small part of the action is created equal. Equal attention should also be applied to ensure the technology really "is used by learners and ways of how well their needs will cure.

An educational program that reinforced this approach shows the overall program is bilingual. The program seeks to establish technology learning centers for bilingual teachers, students, teachers, parents and community members. Technical teams from each center three students, two teachers and the director of the Center with at least one female student and a teacher are female.

Another example of a general approach to the application of ICT in education, radio education project Gobi Women of Mongolia, which seeks to provide professional and educational structure of women's favorite courses around the nomads and their opportunities for income generation.

It contains topics such as livestock rearing, family support (family planning, health, nutrition and health) to create income in the application of local raw materials and basic skills for the job is a new market.

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