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Information and Communication Technology as an Emerging Tool of Learning: Evidence From Different Countries

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Abstract:

Information and Communication technology (ICT) has an enormous impact on the lives of individuals, societies, industries, business, education and overall development of any nation. In this knowledge driven society, ICT is emerging as an important tool of information and learning and due to this the recent global development agenda recognizes the need of developing technical and vocational skills among youth and adults for employment, decent jobs and entrepreneurship. ICT is being used in the field of education much longer than it is usually recognized and the innovative educational programmes started with the help of ICT have proved quite successful for the expansion of education in remote areas and also for enhancing the learning of children, youth and adults in almost all the countries of the world. This article is an attempt to review the ICT based innovative programs and projects of different countries which have proved quite successful for enhancing the access of education and for promoting learning of all. In this globalized world, where the educational inequality like the other forms of inequality is rising day by day, such ICT based programs can reduce the prevalent inequalities in the access of education.

Keywords: *: ICT, Television, Developing Countries, Learning, Internet, Technology*

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I. INTRODUCTION

Information and Communication Technology (ICT) is expanding at an enormous speed and has a great potential to come up to the centre stage to ensure academic excellence, quality instruction and leadership in this knowledge driven society. It has a bidirectional relationship with education and it is being widely used as a cross-cutting tool of learning. In education field, the two broad uses of ICT include: ICT used in distance education and ICT used as a pedagogical tool. Use of ICT in distance education has transformed the open learning system of many developing countries. Besides this, ICT as a pedagogical innovation has also been widely used by teachers and students and it has proved to enhance learning (UNESCO, 2007). It has been observed that ICT has contributed a lot in economic and social progress of many nations. Due to these benefits of ICT, the recent global development agenda namely 'Sustainable Development Goals' put emphasis on developing the technical and vocational skills among youth. The Target 4.4 of SDG 4 states that by 2030, substantially increase the number of youth and adults who have relevant skills, including technical and vocational skills, for employment, decent jobs and entrepreneurship (UN, 2015).

Various programmes in education based on ICT have been started from time to time and the success of these programmes acts a strong motivation for the expansion of such programmes. This paper is an attempt to review ICT based programmes of various countries which were started with the aim of expanding the access of education and to enhance learning of children, youth and adults. Some of these programs have proved to be quite successful and have been adopted in other countries also, but as such very few articles were available on these programs and most of the available articles were limited to only one program. So, through this study, an overview of most successful ICT based programs of different countries have been presented with the purpose to create more awareness about such programs. The study is conducted by reviewing the previous related literature available and also by studying the global education monitoring reports. Various studies have reported that these programs have been considered quite successful for expanding the access to education and for promoting learning in remote and marginalized areas (Craig et. al., 2016; Miyazawa, 2009; UNESCO, 2007).

II. ICT BASED PROGRAMS OF DIFFERENT COUNTRIES

ICT is playing an important role in transforming the education systems across the world and more and more impact of ICT is observed on the schools. And it has been reported that the use of ICT will enhance the quality of teaching (Ratheeswari, 2018). The following review of different successful innovative programs attest the role of ICT as an emerging tool of learning in different parts of the world:

1. Cuba's 'Yo, si puedo' (Yes, I can)

Cuban Education System has known for its outstanding performance and universal literacy rates in the country. The Cuba's 'Yo, si puedo' (Yes, I can) program is an early example of the use of ICT in eradicating illiteracy. Radio, television, video and audio cassettes along with other

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teaching methods are utilized for educating the adults. The program consists of sixty-five sessions in two months period in which an adult can learn basic literacy skills. In each session, thirty-minute pre-recorded video on television has been played to train student as well as educator and this is the most defining feature of this program. This program was initially started in Spanish and it became so successful in helping the adults to learn basic literacy skills that many countries such as Argentina, Ecuador, New Zealand, Bolivia etc. have adopted this program. Till date, the program has been successfully implemented in more than 30 countries and this global reach of this program attest ICT as an important learning tool for adults (UNESCO, 2006; Boughton & Durnan, 2014).

However, this program received very little attention from scholars working in the field of education and literacy campaigns. The awareness of the program through the literature can help the other countries such as India, Pakistan etc. which are still fighting with the problem of high illiteracy rates. In 2006 the program was awarded for its work to advance individual and social potential through innovative teaching methods with successful outcome (LatinAmerica Post, 2017).

2.The Telesecundaria Programme of Mexico

The Telesecundaria programme of Mexico was started in 1966 to expand the access to secondary education specially to address the educational needs of marginalized, isolated, rural and low-income communities. The program is considered as an interesting application of communication technologies available at that time as the program used closed-circuit broadcasting in schools. The Telesecundaria classes or schools are being set up in already existing buildings or schools and in these schools the same curriculum of secondary education offered in formal schools is offered in these schools. The curriculum is being covered through the television programmes and in 2010 approximately 20 percent students of secondary education was enrolled in these schools (UNESCO, 2012).

In the traditional Telesecundaria programme, only televisions were utilized in broadcasting but with continuous expansion of ICT and with sustained government commitment, at present a number of Telesecundaria lessons are made available on Internet. Besides this, the facilitator in these Telesecundaria schools utilize DVD, TV Broadcast and online technological and pedagogical support to assist students. Telesecundaria schools has proved an effective and innovative programme for expanding the access to secondary education through the use of information technology (Craig et. al., 2016).

3.EDUSAT Project of India

Due to high population growth rate in India, the country needed approximately 10, 000 new schools to meet the goal of education for all. Despite the fast-economic development in India, this requirement of physical infrastructure was quite challenging to fulfil and so the country turned to large scale distance education program based on the ICT. The Ministry of Human Resource Development in collaboration with the Indian Space Research Organization, state departments of education and the Indira Gandhi National Open University launched the EDUSAT Project in 2004 to meet the educational needs of children, youth and adults through virtual learning methods. With the emergence of EDUSAT, the virtual learning became a reality in India. This project is also critical for promoting the use of ICT in education in India (UNESCO, 2007).

EDUSAT has transformed the classroom teaching with the use of cutting-edge technology and considers as an interactive satellite-based distance education system of the country. The classes are conducted in both ways-interactive and non-interactive method. Traditionally, the video lectures are prepared and run through the EDUSAT and students can ask questions from the experts via phone or email. After that these live videos have been recorded and played with the help of computers in those institution which lack direct connection to EDUSAT. The program is being used in all levels of education starting from primary education to higher education and for the learning of children, youth and adults in the country by using different kind of ICT enabled delivery modes such as one way television broadcast, interactive television broadcast via phone, interactive television through computer support and email, video conferencing, web based interactions etc. (Pallai, 2013).

4. Mobile Learning Program of Pakistan and India

Mobile learning is an affordable and easily accessible way to access learning content by using mobiles. The program based on mobile learning are widely used in Pakistan and India for eradicating illiteracy and also for enriching the learning experience of school students. In Pakistan, a pilot project was started with the collaboration and support of UNESCO with non-government organization 'Bunyad' to use mobile phones as a tool of learning of basic literacy skills. During this four-month program, 250 females who received mobile phones were taught by sending through text messages on wide range of topics. The program aims to improve literacy among these females by using mobile technology and the results of this pilot project reported that the literacy skills of the selected sample has been remarkably improved (Miyazawa, 2009; UNESCO, 2011).

The use of mobile phones in eradicating illiteracy is gaining popularity in developing countries especially due to their tremendous reach into the remote and marginalized areas of these countries. This form of information and communication technology have special benefits for learning both in and out schools (Wagner et. al., 2014). An after-school programme using mobile phones in rural India to support English language learning among the students from low income families has been conducted for 38 days. The result of the program has shown significant learning gains in language learning among these students (UNESCO, 2014). The Mobile Assisted Language Learning, a sub-category of mobile learning, is gaining popularity in learning of English in India as this method is learner-centred and offers freedom of choice to learner to learn at his/ her own pace (Chinchole, 2019). Besides mobiles, English teachers in India use various ICT tools such as Television, Radio, Language Laboratory etc. to make teaching more dynamic, practical, interesting and comprehensible (Patil, 2020).

5. One Laptop per Child in Peru

The use of ICT in education is gaining more popularity for learning in developing countries especially for students at risk of leaving schools before its completion. The international program of One Laptop per Child in Peru is an example of the increasing use of ICT as a learning tool which can improve the verbal fluency, abstract reasoning and processing speed of primary school children through the use of laptop. This program was started in 2008 and 40, 000 laptops were distributed in 500 schools located in poor regions. These laptops were pre-loaded with age appropriate e-books. The increased use of laptop by students increased their computer skills and have a positive impact on the improvement of cognitive skills among these students (UNESCO, 2012). However, the program received lot of criticism due to the lack of electricity in some areas, lack of internet access and no concrete evidence on the improvement of school subject learning.

6. Enlaces Programme in Chile

In 1992, the government of Chile started a major education reform based on the use of information and communication technology in public schools of the country. The government has provided computers, local networks, educational and productivity software, free and unlimited internet and proper training to school teachers to harness the educational potential of ICT in learning of secondary as well as primary school students. The program has improved the ICT skills of school students. The international organizations such as UNESCO and the World Bank appreciated the Enlaces program of Chile for its contribution in the field of education (UNESCO, 2012).

The project is praised for its sustainability of ICT infrastructure and the schools which received this infrastructure has registered an increase in the number of enrolments. The teachers reported that the program has improved the quality of teaching-learning process and besides this it opens doors of professional development in teachers. The positive impact of program has been observed on the students in terms of increased creativity, improved capacity for gaining global knowledge and increased reading comprehension levels (Hinostroza & Hepp, 2009).

7.MOOCs in Different Countries

MOOCs are recent development in the distance education, which were introduced in 2006. It is an online course and a form of distance education which is web-based, openly available for the students, and anyone can access the content from anywhere in the world. These courses aimed at increasing the accessibility of higher education for the students by unlimited participation. MOOCs are usually viewed as an instrument to transform the higher education system of any country and also a substitute for the traditional face to face interaction. MOOCs provides free online interactive courses and anyone can enrol, some of the platforms such as edX offers courses which are totally free and other platforms such as Coursera offer course on the payment basis. MOOCs emerged as a popular form of learning in this knowledge driven era and changed the perception of students towards online learning methods. In developing countries having high population, MOOCs can play a critical role in the expansion of access to higher education. It has been believed that MOOCs is a fascinating development and it can widen access to life-long learning and have a long-term effect on reducing the cost of higher education in developed as well as developing countries (Daniel, 2012).

In India, SWAYAM, an online course provide, is considered one of the world's largest MOOC providers. It has a catalog of 2000 courses and all these courses are free to take and public higher education institutions in India may allow the students to complete upto 20 percent of their degree program by taking these courses. Such kind of courses are quite relevant for a high populated country like India as these may help the country to increase enrolment in higher education, tackle the issue of faculty shortage and geographical barriers (Mendez, 2019).

III. CONCLUSION

In the late 1960s, Televisions revolutionized the field of by education by their use in literacy and learning activities. With the advancement of ICT, new forms of technology are being used in the learning activities and most important benefit of the use of ICT is its ubiquitous reach in rural and remote areas of developing countries. Utilization of ICT is playing a critical role in the increasing the access of higher education and also in improving the training of new teachers. Technology is helping the disadvantaged children to have better learning opportunities within and outside the school and use of Radio and Television in the above-mentioned programs have proved it. The Cuban literacy program, television use in Mexico, educational satellite of India and recently introduced MOOCs in higher education are some of the outstanding examples of the use of ICT in teaching learning process. ICT has enormous benefits in expanding the access to education and promoting learning of all and thereby considers an important tool for reducing the prevalent educational inequality in the access and quality of education especially in the developing countries. However, the use of ICT for promotion of learning need expert teachers and trainers and in most of the times, the success of the program depends upon its implementation.

IV. REFERENCES

- Boughton, B. & Durnan, D. (2014). Cuba's "Yes, I Can" mass adult literacy campaign model in Timor-Leste and Aboriginal Australia: A Comparative Study. *International Review of Education*, 60, 559-580, Retrieved on January 5,2020 from https://doi.org/10.1007/s11159-014-9421-5
- Chinchole, S. N. (2019). Mobile Assisted Language Learning: Scope and Limitations in Rural and Semi-urban Indian Context. Language in India, 19 (8), 190-193, Retrieved on February 25, 2020 from http://www.languageinindia.com/aug2019/subodhmobileassitedlanguagelearning.pdf
- Craig, D., Etcheverry, J., & Ferris, S. (2016). Mexico's Telesecundaria Program and Equitable Access to Resources. McGill Journal of Education, 51 (1), 657-666, Retrieved on December 5, 2019 from http://doi.org/10.7202/1037364ar

- Daniel, J. (2012). Making sense of MOOCs: Musings in a maze of myth, paradox and possibility. *Journal of interactive Media in education*, 3, Retrieved on March 5, 2019 from https://jime.open.ac.uk/articles/10.5334/2012-18/
- Hinostroza, E., & Hepp, P. (2009). *Enlaces: The Chilean ICT Experience in Education.* Retrieved on March 1, 2020 from http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.109.102&rep=rep1&type=pdf
- LatinAmerica Post (2017, April 3). 'Yes, I Can:' A Cuban Innovation gone global. LatinAmerica Post Retrieved on February 1, 2020 from https://latinamericanpost.com/14997-yes-i-can-a-cuban-innovation-gone-global
- Mendez, M. C. (2019, April 2). In India, MOOCs are now part of the Education System. *Class Central*, Retrieved on February, 15, 2020 from https://www.classcentral.com/report/swayam-for-credit/
- Miyazawa, I. (2009). Literacy Promotion through Mobile Phones. Paper presented at the 13th UNESCO International Conference and World Bank-KERIS High Level Seminar on ICT in Education, pp. 1-13. Retrieved on December 5, 2019 from http://www.unesco.org.pk/education/documents/Project%20Brief%20Paper_ICT.pdf
- Pallai, P. (2013). Use of Educational Satellite in Teacher Education. *Techno LEARN- An International Journal of Education Technology,* 3 (1), 11-18, Retrieved on October 2, 2019 from https://ndpublisher.in/admin/issues/tlv3n1b.pdf
- Patil, B. M. (2020). ICT in English Literature and Language Classroom. *Studies in Indian Place Names*, 40(57), 28-32, Retrieved on March 24, 2020 from https://archives.tpnsindia.org/index.php/sipn/article/view/3891/3766
- Ratheeswari, K. (2018). Information Communication Technology in Education. *Journal of Applied and Advanced Research*, Retrieved on February, 5, 2020 from https://phoenixpub.org/journals/index.php/jaar/article/view/169
- UNESCO. (2006). *EFA Global Monitoring Report 2006:* Literacy for Life. Paris: United Nations Educational, Scientific and Cultural Organization.
- UNESCO. (2007). *EFA Global Monitoring Report 2008- Education for All 2015: Will we make it*. Paris: United Nations Educational, Scientific and Cultural Organization.
- UNESCO. (2012). *EFA Global Monitoring Report 2012- Youth and Skills: Putting education to work.* Paris: United Nations Educational, Scientific and Cultural Organization.
- UNESCO. (2014). *EFA Global Monitoring Report 2013/4: Teaching and Learning-Achieving quality for all.* Paris: United Nations Educational, Scientific and Cultural Organization.
- United Nations. (2015). *Transforming our world: the 2030 Agenda for Sustainable Development.* New York: United Nations.
- Wagner, D.A., Castillo, N.M., Murphy, K.M., Crofton, M., & Zahra, F. T. (2014). Mobile for Literacy in developing countries: An effectiveness framework. *Prospects, 44* (1), 119-132.