

Between Policy Options and Technology Applications: Measuring the Sustainable Impacts on Distance Learning

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Abstract—This paper examines the interplay of policy options and cost-effective technology in providing sustainable distance education. A case study has been conducted among the learners and teachers. The emergence of learning technologies through CD, internet, and mobile is increasingly adopted by distance institutes for quick delivery and cost-effective factors. Their sustainability is conditioned by the structure of learners and well as the teaching community. The structure of learners in terms of rural and urban background revealed similarity in adoption and utilization of mobile learning. In other words, the technology transcended the rural-urban dichotomy. The teaching community was divided into two groups on policy issues. This study revealed both cost-effective as well as sustainability impacts on different learners groups divided by rural and urban location.

Keywords—Distance Education, Mobile Learning, Policy, Technology

I. INTRODUCTION

DISTANCE education is increasingly benefited from the use of mobile learning. Mobile learning focuses on learning across contexts. It is concerned with portable technologies and mobility of the learner. M-learning is accessible from virtually anywhere, which provides access to all the different learning materials available. It is also collaborative and sharing. It is almost instantaneous among everyone using the same content, which leads to the reception of instant feedbacks [1]. Several studies have been conducted mostly in developed countries in this case [2]. Studies are also conducted in developing countries [3]. Right from the second generation of mobiles, SMS text messaging became possible initially on GSM networks and eventually on all digital networks. Mobiles are evolving into platforms for collaboration, knowledge access and performance support. Mobile phones deliver learning materials whenever and wherever the learners needs arise. Currently, mobiles have advanced features like e-mail, Internet and e-book reader capabilities, and a built-in full keyboard or external USB keyboard and VGA connector. In other words, it is a computer, communication device and learning device on the hand. However, the main challenges regarding mobile deployment include screen size, battery life and security. Since the internet becomes both personal and portable, learning will move more and more outside of the classroom and into the learner's environments, both real and virtual.

The emergence of web based instruction for mobile learning assists and expands the learning syndrome of distance learners of developing countries as well [4].

II. MOBILES AND SUSTAINABLE DISTANCE LEARNING

Sustainable distance learning can be gradually achieved by expanding mobile learning. Mobile technology greatly influences human interaction in general. It facilitates and carries communication of human voice with ideas, emotion, feeling and knowledge. It binds human beings transcending place. It gives freedom from inter-subjective inhibitions which normally occur during face-to-face in-person communication. It provides an expansion of two different worlds at a time. An individual may plunge into subjective world through the entertainments provided by the mobile device. Or an individual can use it for effective inter-subjective communication. But the latter occupies more space in contemporary civil society. People want to talk or communicate more with fellow beings. The geographical limits do not adversely affect their aspirations. The rural and urban division can be transcended by mobile learning. The technology for human interaction also facilitates learning process. The students of open learning and distance education are in this context greatly benefited.

III. TECHNOLOGY AND HIGHER EDUCATION IN INDIA

Higher education in India is one of the largest in the World. In terms of population, the demand for education at primary, secondary and higher levels is increasing. However, the government alone could not meet the demand. Private institutions do share the responsibility. Number of institutions is increased every year. But the enrollment of students in higher education stands at 6 percent only. This figure is far behind in comparison with the developed countries [5]. Distance education in India had its genesis in the early 1960s. It tries to meet the growing demand for higher education. Since then it has expanded rapidly and provides higher education to over 2.8 million students. Each year, nearly 1.5 million students register for various courses in distance education. The Consortium for Educational Communication (CEC) and the National Programme on Technology Enhanced Learning (NPTEL) assist in applying ICT in higher education. Radio, Television, and web-technology are adopted for instruction. The introduction of 3G services further assists the application of mobile learning in Indian universities [6].

IV. RURAL-URBAN SECENARIO IN INDIA

The vast majority of the population of India lives in rural areas. The 2001 Census found that 72% of population lives in villages, while 28% lives in cities and towns. The urban population has been increasing its share steadily, from about 11% at the beginning of the twentieth century to about 28% at the beginning of the twenty-first century, an increase of about two-and-a-half times [7]. It is widely believed that urban students are more advantageous than the rural students in appropriating the technology for learning. This study attempts to test the hypothesis.

V. STUDY SETTING

This experimental study was conducted among the distant learners of the Vinayaka Missions University. Distance education in the university was started in 2005 with the objective of widening access to higher education for diversified learners. The aim of the study was to explore the differences between the rural and urban students in appropriating mobile technology for learning.

A. Target group

This experimental study was conducted on the third year students studying HEP (History, Economics and Political Science). The age of group of students ranged from 21 to 26. Among the 568 students who had enrolled in this program, 120 students were selected for the study. They have multi-ethnic and multi-linguistic background. The rural and urban ratio of the students was 50 and 50 respectively. The 120 students included the two experimental groups of 24 students and 96 students of control group. The two experimental groups were organized with 12 students from rural area and 12 from urban area. The duration of experimental study continued for four months.

B. Profile of the Study Group

Since the distance mode of instruction has no territorial limitations, students were enrolled in this academic program all over India. The following table shows the profile of the learners.

TABLE I
PROFILE OF THE STUDY GROUP

S.No	Particulars	No of Students
1	Study group	120
2	Control group	96
3	Experimental group	24
4	Males in Experimental group	18
5	Females in Experimental group	6
6	Rural background	12
7	Urban background	12
8	Age Group (Below 21)	4
9	Age Group (21 – 26)	18
10	Age Group (Above 26)	2

VI. METHODOLOGY

Successive steps were followed in the experimental study. These included content preparation, delivery mode, reception and answering questions.

A. Content Preparation

The graduate program of HEP is descriptive and theoretical free from practical courses. The 'HEP' is the abbreviated form of History, Economics and Political Science. The third and final year program consists of five courses, namely, History of Europe, History of China and Japan, Economic Thought, Public Policy, and Local Governments in India.

The self-learning material of each course has twelve lessons. For the experimental study, the course 'Local Governments in India' was selected. The task of each learner was to prepare question-answer format of content for one lesson only. In other words, the two experimental groups, namely, the rural group and the urban group prepared the contents separately. Each group of students had to send their preparation to their respective group. In this way, each student prepared one lesson and received 11 lessons from their respective group of students. A teacher facilitated the students in preparing the question-answer format from the point of view of term-end examinations.

Example:

Program: B.A. HEP – Third Year
Course: Local Governments in India

Lesson no-1: Evolution of Local Governments in India

Question no-1: Who is the father of local-self government?

Answer: Lord Ripon

Question no-2: When was the Madras Municipal Corporation established?

Answer: 1687

B. Delivery Mechanism

Smartphones with PDA were used for delivering the content preparation. The prepared contents were sent as SMS and attached files in document. Discussion forum was envisaged after sending the content preparation. The student who prepared the content also responsible to test the other learners by asking questions and to evaluate the answers received from others. It had a double function. The student not only learned but also taught and examined. Official instructions and formal messages were not used in the discussion forum. The discussion and chats were voluntarily envisaged by students themselves with an informal mode of approach. Play impulse rather than study anxiety was encouraged in the discussion forum.

VII. RESULTS AND FINDINGS

The average score of the rural and urban experimental groups in their previous examination was 62 percent. After the

exercise of m-Learning, the score of both groups was increased to 68 percent. By the time, the average score of control group was stable. The following table shows the study impact.

TABLE II
IMPACT ON MOBILE LEARNERS

S.No	Group	Before Experiment	After Experiment
1	Control group	62	62
2	Experimental group (Rural)	62	68
3	Experimental group (Urban)	62	68

There were also failures in the process of preparation of content, delivering the content, discussion forum and answering the questions. The failures have both human technological dimensions. In the case of content preparation, the learners fully prepared and delivered to the respective learners. Out of 120 contents 10 could not be delivered due to network failures. The same happened in the case of SMS notification as well. The questions prepared by the learners sent promptly and received in time. In the case of sending answers for questions 4 learners did not participate due to personal reasons. Discussions were envisaged in 3 times regarding the evaluation of questions and answers. Each time 6 did not participate due to personal reasons.

VIII. CONCLUSION

This study reveals that mobile learners scored higher than the conventional learners. It also reveals that the application of mobile technology transcended the differences in the performances of rural and urban learners. Mobile device seems to be an instrument for sustainable distance learning. It is also a symbol of technology for human interaction. Initiatives and enthusiasm are higher in mobile learners irrespective of their geographical location. The options of policy are now clear that efficiency and cost-effectiveness can be appropriated by the system of mobile learning technology. The rural-urban dichotomy in learning process can also be transcended.

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Subramaniam Chandran (1964) was born at Salem in Tamil Nadu, India. He gained M.A. degree in Political Philosophy and Ph.D. degree in Politics and Public Administration at the University of Madras. He worked as Project Fellow and Lecturer at the Department of Politics and Public Administration, University of Madras. Currently, he teaches at Vinayaka Missions University. He has authored books in the field of political science and public administration. He has also prepared self-learning materials for the distance learners. Currently, he is preparing instructional design for distance learners. He is also a recipient of best book award given by the Government of Tamil Nadu.