Learners' Perception towards Information and Communication Technologies: A Case Study of Indira Gandhi National Open University

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Abstract: In a rapidly growing information society, Information and Communication Technology (ICT) plays a pivotal role in all aspects of our life, and thereby covers the learning phenomena — both academic and non-academic fields. In the academic arena, ICTs are not only used as tools for support services but also embedded in instructional design of self-learning materials for assisting learners in their learning activities. In the context of Distance Education (DE), ICTs' implementations are appreciated in all spheres. This is so, because it is an alternative method to establish didactic relation between 'learner-tutor' and 'learner-learner'. Hence, its uses in DE are seen vicariously. Indira Gandhi National Open University (IGNOU) as a premier institute of India offers many of its programmes through technology enabled platforms and adopts various technologies in different learning contexts for its learners. This paper is a case study to discern the attitude of distance learners towards ICTs. The outcomes are derived from the filled up questionnaires received from students of BA, B. Sc, BCA, BTS, MCA, MBA programmes registered in IGNOU in the calendar year 2008.

Keywords: Information and Communication Technology (ICT), World Wide Web (WWW), Online learning, Cognitive skills

Introduction

The use of Information and Communication Technology (ICT) in Open and Distance Learning (ODL) system has overwhelmed many learners in the world during the last few decades. At present, there have been outpouring of interests in how computers and Internet can be harnessed to improve the efficiency and effectiveness of education at all levels. Hence, ICTs can be seen in terms of its capacity to store and deliver teaching materials. The potential role of ICT can be seen as to search and locate to find and retrieve dispersed resources. In the context of communication, it facilitates and connects dialogue both synchronously and asynchronously (Krickwood & Price, 2006).

If we have to implement ICT and its functionaries in various educational systems then we have to find out that teaching and learning in higher education is to be improved by the application of new technologies. This envisages that learning can be enhanced when innovations take place in pedagogic design, the context within which learning takes place, learner attitudes, their behavioural patterns, their prior experience, and lastly the most crucial issue is learners' familiarity with the technologies.

The recent use of ICT in the Open & Distance Learning (ODL) system resulted good response from the learners in a wide range. It satisfies continuing educational needs of learners that belong to all age groups, expands trained workforce, and trains teachers to improve the quality of teaching. If we look at the recent trend of broadcasting facilities which are a part and parcel of ICT, we find, they play a very significant role to promote and improve ODL practices. The impact of the use of ICT in ODL system are not confined within the paradigm of teaching and learning environment, but it stretches over towards the development of new culture, new concepts and understanding, and aspirations for both individual and organizational achievements.

The other important findings of ICTs are that it considerably develops and transforms learners' views towards education, hence brings changes in application of societal spectrum. These transformations include the changing characteristics and circumstances of learners and also create new demands in terms of knowledge, skills, and competencies which have been gained by the learners after completion of their respective courses. It creates opportunity for the learners for varied sources of learning opportunities and expanding their participation in the 'network society' which strengthen their interpersonal communication skills and access to digital resources (Kirkwood & Price, 2006). In these ways learners benefited a lot by using the ICT application. The implementation of ICT in learning and teaching enhances learners' motivation, skills, concentration, cognitive processing, independent learning, and critical thinking abilities. It assures a positive learning attitude. Hence, ICT can benefit academically strong and weak learners as well as learners with special needs. It assists them to do their teamwork purposefully and get maximum benefits out of it. It hypothesizes that the use of networked technologies will lead to specific educational outcomes and possibly change practices in higher education simply by making resources available to learners (Zenios et al, 2004).

Learners' Perception of ICT and Distance Education

The term 'perception' is a subjective phenomenon which varies from individual to individual. It varies in due course of time depending on the advancement of technologies. To explain, ICTs can be used to access, process, manage and present information, modulate and control events, construct new understanding and communicate with others. ICTs as an interdisciplinary domain focus on supporting learners with tools to transfer their knowledge and to enrich their learning environment in the ODL system.

In the globalization era, each and every learner has more or less stretched his/her views towards ICTs. The reason may be: it plays a vital role in their day-to-day learning activities. The learning objectives of ICTs enable learners to:

- develop new thinking and learning skills that produce creative and innovative insights;
- develop more productive ways of working and solving problems individually and collectively;
- express themselves in contemporary and socially relevant ways;
- communicate locally and globally to solve problems and to share knowledge; and
- understand the implications of the use of ICT and their social and ethical responsibilities as users of ICTs.

Review of Literature

Previous research studies found that by using ICTs learners' self-perception-cum-reflection on education has changed a lot. It gathers learners' confidence with the technology and sometimes beyond the ICTs environments (Seymour et al, 2005). ICTs offer just tools through which various educational outcomes can be achieved. Hence, due consideration of ICTs are a crucial factor for enabling learners to engage in educational procedurals that were previously not possible in a distance learning system. ICTs as a means or mechanism help the learners to find out their peer groups and it encourages to a great extent by availing their respective research findings. Thus, it is assumed that if the ICT strategy is integrated into the overall strategy of ODL, it has the greatest potential to act as a catalyst for change.

Research studies have been conducted by technology savy scholars on 'various aspects of ICT' in general and 'learners' perception towards ICTs in particular. Findings of these studies indicate mixed views about the advantage and disadvantage of the use of ICTs in teaching learning processes particularly in ODL system. However, a few researches acclaim that the use of ICTs empower distance learners in their learning activities. Keegan (1996) claimed that there were two main models of ICTs based on typology: western and eastern model. It was presumed that the western model is based on the development of individual learners and the eastern model is based on the socio-cultural development of the community.

Stacey and Rice (2002) highlighted that ICTs can provide a socially constructed learning environment which is essential for effective learning. Learners' perceptions generally have a positive attitude and strong inclination towards ODL system. This brings out the radical changes in the educational needs of an individual as well as society at large. Research also reveals that ICTs are important for the effectiveness of instructional process in Distance Education like (a) the tutorials used in ODL through ICTs was as effective as the lecture methods used in the conventional systems; (b) it was easy to work and study in the ODL institution unlike in the conventional university; (c) one of the reason learner motivated towards ODL system was the use of technology in instructional design. In addition to this, research studies also find that learners benefited from the faculty's expertise and lectures delivered through the radio counselling, teleconferencing and YouTube presentation/clips while studying through multi-media. 'Social presence' was also felt in ICTs embedded courses. Learners in videoconference and radio counselling felt that their communication is real and they have been talking to the right person in the right time (Ojo & Olakulchin, 2006).

According to Garrison et al. (2001) ICTs make learners competent and arouse confidence among them for pursuing their respective courses and even go for higher studies. This is so because it caters to the emerging learning needs. Learning through online mode is convenient and more effective therefore, when learners log into the course they view their goal as learning (Garrison & Cleveland-Innes, 2005).

Gulati (2008) in his research study mentions that new communication technologies, particularly the Internet, appear to offer exciting possibilities for overcoming geographical access and cost barriers to learning. Supporting to this view, Hashim et al (2010) express that in distance education, ICT is the enabler for most means in imparting education.

According to Kwapong (2009) technology-mediated learning has the potential to meet the educational needs of masses of poor learners in developing countries. E-learning could offer the opportunity to shift the distance learning paradigm from delivery of content towards learner-centered and discussion-led learning. Further, Kwapong adds ICTs empowers learners to harness, access, apply information, and disseminate knowledge in all sorts of their routine activities. These have created the opportunity to improve the quality of daily life and education of learners.

ICTs make available just-in-time information and knowledge for learning. Those who own or have access to computers and the Internet can open up a wealth of information and learning resources either by online searching or by using CD-ROMs or DVDs for self-paced learning. Well developed and organized websites and various online publications, as well as powerful search engines can offer a tremendous amount of information and knowledge twenty-four hours a day (Maguire & Zhang, 2010).

Research says that the role of e-moderators is to stimulate discussion, keep the discussion on topic, encourage everyone to participate, and summarise the weekly discussion (Stodel et.al. 2006). Berge and Collins (1995) pointed out that educators often do not take advantage of the latest technologies available to enhance learning. They argue, "there is no shortage of technology, only the shortage of the educational vision necessary to use the technology to create new educational environment". However, ICT friendly scholars argue on the positive side of the utilisation of ICTs in teaching learning process. It helps them to (a) develop cognitive skills; (b) inter personal skills; (c) enhance opportunities in the competitive global market; (d) ensure their quality education for social strength and (e) promote new understanding and access the update information. Burbulls and Collister (2000) suggested that rich online activities are "unique, irreplaceable learning opportunities themselves; and often they can exist only online". Nevertheless, ICTs help learners in their learning activities. The major challenge lies when some learners say that they need more experience on using search engines. They suggest: each course must corroborate with some basic studies to ICTs, so that their motivation towards ICTs can be enhanced. Some are claiming that it is necessary to train them first how to use computer so that they can search, manage, browse and collect information. Once they are equipped with ICT facilities, they can proceed further without needing help from others. Giving importance to ICTs, Stodel et al (2006) further stated that ICT develop students' cognitive skills. It inspires and encourages students to sit online and use their mail server and write on web pages. By doing this practice they can also develop their study skills.

A few students who were already on the job claim that learning through ICTs helped them in their job sectors (Burbulls & Collister, 2000). Gaba (2005) found that IGNOU's students of Bachelor of Information Technology (BIT) programme (online) got promotion (who were on the job), got job, continued their education in joining master degree programmes and open their own business after completion of the programmes through online mode.

ICTs help students to plan their own learning. Moore (1994) argues that ICTs are especially emphasized on the importance of autonomy and independent learning. ICT develops the cognitive processes of learning which understood as self-regulated learning (Boekaerts, 1997). Meta cognition is an important component of self-regulated learning.

It can be defined as knowledge and regulation of human cognition (Schraw, 1998). Distance Education seems to be a good experience for an individual who is an independent learner and who learns by himself/herself. A lot of students have no chance to learn how to become independent learners. In this sense, technology helps a lot to provide meaningful education. It helps them to acquire the qualities which will assist them at present and in their future educational life. Collaboration with faculty and other students can be a strong motivating force for the ICT learner (Johnson & Johnson, 1999). Interaction alone, however, is not sufficient to create a positive social dynamic in the online classroom. Although increased interaction among participants may lead to more opportunities for positive social movement, it may also lead to competition and other forms of negative communication (Woods & Baker, 2004). According to Moore (1989) 'interaction' is one of the important components of distance education. There are three distinct types of interactions: (a) Learner-content, (b) Learner-instructor, and (c) Learner-learner. Hillman et al (1994) added a new type of interaction to the above three, i.e. learner-interface interaction; this is to reflect the growing role of technology in the distance education processes.

Gibson (1998) argues that because of ICTs distance learners simultaneously engage and interact with multiple contexts which extend beyond the classroom. There has been a clear emphasis on the dynamics of interpersonal communication in the online environment. Online learning encourages and improvises the cognitive learning and pace collaborative learning. De Verneil and Berge (2000) noted that, "it is important in mass web-based instruction that a designer explicitly includes learning in social context. Since the learning process takes place within a social framework". Hall and Le Cavaleir (2000) pointed out that economic savings are the hallmarks for converting traditional training delivery methods to e-learning.

According to Maguire and Zhang (2010), ICTs are suited to quickly reach larger numbers of learners across the globe at a low marginal cost. The savings on travel and the economies of scale reduced learning costs. The Internet is fast becoming the communication tool that is unrivalled for its power, speed and ability to reach a vast number of users world-wide. The mobile phone is becoming commonplace and contributes greatly to information transmission among small businesses and entrepreneurs.

American Society of Training and Development (ASTD, 2001) reported a research work on learners' perception on ICTs, where they have taken randomly 700 e-learners. The study found (a) 87 percent preferred to take digital courses during work hours; (b) 52 percent preferred e-learning in a workplace office area; and (c) 38 percent said they generally preferred e-learning than classroom training. Nettles et al (2000) report that e-learning programmes had positive outcomes based on students' preference, improved grades, higher cost effectiveness, and a higher percentage of homework completion. Bates (1996) noted that "the potential for developing higher order skills relevant to a knowledge-based society is a key driver in developing computer-based distance education courses". Serrano and Alford (2000) concluded that e-learning empowers learners to engage them in language-content learning activity and to develop their higher-order critical thinking.

Research finds that learners' perception and attitude towards study through ICTs in the ODL system varies from individual to individual. Because, it depends on various factors

like geographical, cultural, educational, and contextual. Learning through ICTs has enabled potentially a new type of community which provides a space for group discussion and communication. It also provides a socially constructed learning environment which is essential for effective learning.

However, a few scholars found opposite learners' views of using ICTs in their learning process. Learners informed that they need more experience on using search engines; want more web creation skills e.g. tables, frames, forms and scripts and need to do more hands-on tasks. Some learners were not able to judge what materials are relevant and what are irrelevant for their course. It may be possible that a few learners are completely new to the use of ICTs and much familiar/comfortable with prints and texts modes only.

There are arguments in favour of using ICTs in teaching learning process. Nevertheless, majority of the studies reviewed above indicates that there is an advantage of using ICT in distance education. ICTs provide the higher level of motivation among the learners. IGNOU is using audio, videocassettes, CD, television (Gyandarshan); radio broadcasts (Gyanvani) and multimedia components such as computers and satellites transmissions. The present study targeted specifically to learners registered in various programmes in IGNOU.

Objectives of the Study

IGNOU has been playing a prominent role by providing the multi-media facilities to the learners. It is delivering various programmes through ICTs to both national and international learners scattered across the globe. IGNOU uses innovative teaching methodologies for the delivery of its programmes with emphasis to using emerging technologies to empower learners. The teaching methods includes: (a) live satellite based teleconferencing lectures; (b) recorded video lectures; (c) computer lab; (d) computer based training/tutorials (CBT's); (e) Internet learning resources by internet browsing; (f) online interactive chat- peer group, faculty and external experts. A learner is expected to be a very active learner who can independently access learning resources and participate in learner interactions, which take place through the Internet and the World Wide Web (WWW). Regarding the use of ICTs some questions are regularly asked:

- Which of the ICTs are liked by the learners?
- How learners perceived that they will be benefited and in what sense?
- How far they are acquainted with all these ICTs before registering/admitted to their respective programmes through ODL mode?
- Does it benefit them in true sense?

The present study was an attempt to find out answers to some of these questions from learners' feedback. The findings of the study may help IGNOU to eradicate problems and barriers if any, and may implement the suggestions as recommended in this study. The objectives of the study were to:

- ascertain the awareness of online/distance learning programmes;
- find out which teaching delivery model is preferred by the learners most;
- examine learners' accessibility to on-line programmes;
- study learners' level of skills for study through online; and
- know the learners' preference for the support services through ICTs.

Research Methodology

Looking into the nature of the research topic and the objectives formulated, the method for research was decided. For the present research, a descriptive sample survey method was adopted, as the respondents were scattered over the entire country. This necessitated collecting the responses of the respondents through structured questionnaire developed by the researchers and sent by post.

Development of the Tool

In order to collect information with regard to the objectives formulated for the research work, a questionnaire was developed by the researchers. The questionnaire consists of five major sections or components. These are: 1) Personal Information, 2) Awareness of IGNOU's students support services; (3) Accessibility of ICTs; (4) Skills to use ICTs; and (5) Attitudes towards study through ICTs. Under each section, desired information was collected from the students.

Sample

Although the population of the study can broadly be referred to all the students of BA, B.Sc, BCA, BTS, MCA, MBA programmes enrolled. The research methodology aims at for providing comprehensive attempt to understand learners' perception about ICTs. A bilingual questionnaire in English and Hindi was developed for IGNOU's fresh learners. Questionnaire was administered among 10% (9310 students) of the total number of students registered (93100) in the academic programmes of IGNOU like BA, B.Sc, BCA, BTS, MCA, MBA for the academic year 2008 (Table 1). The random sampling technique was adopted for posting the questionnaires. The student's addresses were collected from the Student Evaluation Division (SED) of IGNOU. A total of 1159 (12.44% of the total 9310) filled in questionnaires were received during the month of July, 2008.

Table 1: Response Rate

Programmes	Total number of students registered for 2008 academic session in IGNOU	Questionnaire administered to 10% of the total number of students registered with IGNOU	Frequency	% to Total Response
BA	46743	4674	667	57.55
BCA	18604	1860	254	21.92
BSc	5089	509	6	0.52
BTS	4848	485	75	6.47
MCA	9884	988	157	13.55
MBA	7932	794	6	0.52
Total	**93100**	**9310**	**1159**	**100.00**

The profile of the respondents was as follows:

- About 58 % respondents belonged to BA programme followed by 22% BCA, 14 % MCA, 6% BTS and less than 1% MBA and B.Sc programmes.
- Rural 52% and Urban 48%.
- 68% were male and 32 % were female respondents.

- Single 68%, married 28 %.

- 49% respondents belonged to the age group 21-25 years ,16% to below 20 years, , followed by 15% to 26-30 years, 8% in 31-35 years, 6% in 36-40 years, 2% in 41-45 years, 1% in 45-50% and less than 1 % in 51-55 years.

- Respondents' fathers' educational background was generally high school/10th pass (32%) and graduates (23%); and mothers' background was lower than that of father's qualification: 27% were not educated, 17% were primary school pass, and 12% were middle school pass.

Respondent's status at the time of registration of IGNOU's programmes

Most of the respondents (52%) were fresh students i.e. just passed out from different institutions; 30% were on the job, 10% were unemployed, 4% were housewives and 4% were self employed at the time of registration with IGNOU in their respective programmes (Table 2).

Table 2: Respondents' status

	Frequency	Percent
Fresh students (passed out from previous institutions)	624	52
Housewives	51	4
Employed	356	30
Self-employed	50	4
Un-employed	118	10
Total	**1159**	**100.0**

Respondents' present occupations

About 28% respondents of all the programmes were Government employees, 17% were school teachers, 10% were self employed, 3% were working in a marketing and finance area, 2% were working as a high rank public officers and same percentage (2%) were working in police department and private security firms. Rest of the respondents were working as legal experts/lawyers (1%), medical experts (1%), agricultural/forestry/fisheries (1%), Military officers (2%), administrative officers (0.5%) and journalists (0.3%).

Findings of the Study

The present study has shown very interesting findings on the nature of learners' perception of ICTs while studying through open and distance education. The findings obtained through analysis of survey data revealed that learners could be successful in online courses in terms of their learning outcomes, besides they have rich experience in online platform. With positive response to ICTs, some learners claim that they use various technologies for understanding on certain facts or issues. The findings of the survey are summarised here.

Learner's basic knowledge and skill to use computer before registration

- Majority of the respondents of all the programmes were having basic knowledge of ICT in general and computer skill in particular before registration with IGNOU. They were also having experience in using Internet for about 1 to 2 years.

Learners' preference to get support services

- Learners had given their preference to receive support services through Audio/ Video and CDs/DVDs followed by Online/e-Learning/Web based programmes.

Accessibility of ICT equipments to IGNOU's learners

- More than 90% of lGNOU's learners of respondents were having mobile phones followed by access to FM Radio (80%), TV with Cable, DTH and Gyan Darshan on it (77%), MP3 player (70%), Desktop Computer (67%),TV without cable connection (66%), telephone landline (63%), audio, video, CD/DVD player (55%), and Desktop with Internet facility (53%). About one fourth learners of all the programmes were having the accessibility of laptop and laptop with internet facility (Table 3).

Table 3: Accessibility of ICT equipments to IGNOU's Learners

Accessibility of ICT	%
Mobile phone	94
FM Radio	80
TV with cable TV with DTH & Gyan Darshan on it	77
Accessibility of MP3 Player	70
Accessibility of Desktop Computer	67
TV without cable connection (Only Doordarshan Channel)	66
Telephone (Landline)	63
Audio/Video and CD/DVD Player	55
Desktop Computer with Internet facility	53
Accessibility of Laptop	28
Laptop with internet facility	25

Awareness and Visiting of IGNOU and Regional Centre's web pages

IGNOU has recently revamped it web page and this facility has been extended to the Regional Centres (RCs) for having their own web page. These web pages have been continuously providing support services and latest information related to the students' programmes and new programmes on offer in addition to students' examination results. We asked questions pertaining to the awareness and its utilisation of IGNOU as well as Regional Centre's web page. The responses given by the respondents have been presented in the following discussions.

- Majority of the respondents (about 70%) of B.Sc and BCA programmes were aware about the web pages of IGNOU and its Regional Centres' in comparison to rest of the respondents of other programmes (60%) (Figure 1). 53.73% respondents of all the programmes were visiting web pages once in a month; 23.86% twice in a week; 10.60% daily; 7.23% four times in a week and 4.58% were weekly.

- On an average one sixth of the respondents of all the programmes, i.e. 16% were able to get required information on IGNOU and RC's web page.

Learners' perceptions on advantages and disadvantages of ICTs

- The major focus of the study was to know about the learners' perception to study through ICTs. The respondents expressed mixed views on study with ICT and

online/e-learning mode. About 60% respondents of all the programmes (expect BCA and MCA programmes) informed that they are not aware about the availability of ICTs services (web pages) of IGNOU. However, they expressed their views on advantage and disadvantages of the ICTs while studying through open & distance mode. The major advantage they assumed was that while studying at IGNOU with ICTs, they might experience in-depth understanding by interacting with their peer group.
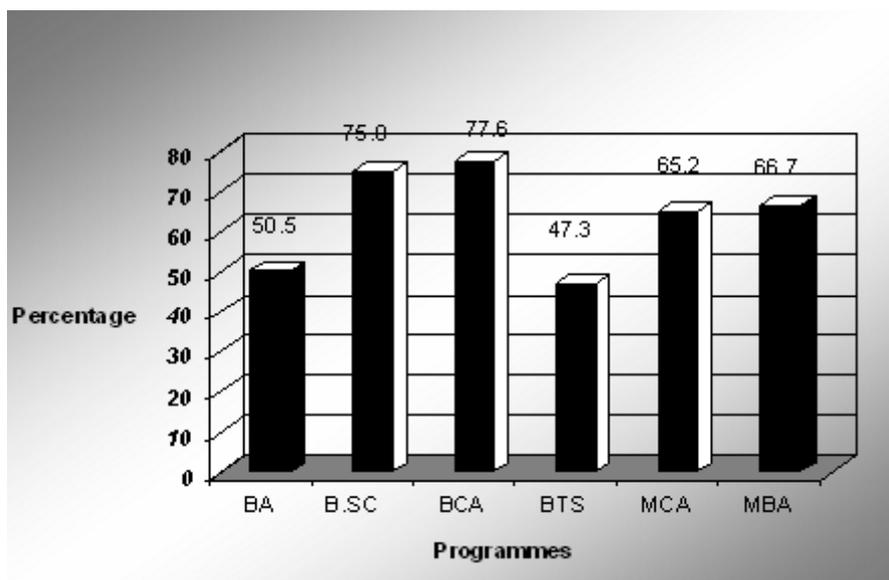

Figure 1: Awareness about Web page

• There are also contradictions in respondents' views regarding their attitude towards study through ICTs (Table 4). Some respondents expressed that study through ICT will not enhance their performance in examination. They evoked that online learning creates more confusion and results frustration. The method of communication in computer medium will be very slow and less effective because of operational mechanism of computer. Listening and taking notes in face to face interaction is easier than reading and typing the notes on computer screen.

Table 4: Respondents' perception towards study through ICTs

Statements	A	SA	CS	D	SD	Total	Mean	StD
Preference to learning through ICTs (Online/elerning than Class room learning)	395 (35.55)	126 (11.34)	212 (19.08)	291 (26.19)	87 (7.83)	1111 (100.00)	2.39	1.620
Receiving courses through online is easier than postage	376 (33.66)	170 (15.22)	201 (17.99)	262 (23.46)	108 (9.67)	1117 (100.00)	2.42	1.754
It is easy to communicate between teacher/counsellor	350 (31.99)	138 (12.61)	179 (16.36)	300 (27.42)	127 (11.61)	1094 (100.00)	2.48	1.636
It is easy to get the contents of the course through ICTs	393 (37.15)	104 (9.83)	343 (32.42)	172 (16.26)	46 (4.35)	1058 (100.00	2.09)	1.423
Asking questions on topic through online is easier than through F2F	345 (31.42)	127 (11.57)	166 (15.12)	358 (32.60)	102 (9.29)	1098 (100.00)	2.50	1.580
Appearing in examination through online is easier than F2F	314 (28.47)	158 (14.32)	194 (17.59)	319 (28.92)	118 (10.70)	1103 (100.00)	2.53	1.561
Submission of assignments through ICTs is more comfortable than F2F	464 (41.58)	196 (17.56)	201 (18.01)	205 (18.37)	50 (4.48)	1116 (100.00)	2.08	1.384

Statement	A	SA	CS	D	SD	Total	Mean	StD
Easy to get updated information through ICTs than visiting library	447 (40.71)	203 (18.49)	261 (23.77)	140 (12.75)	47 (4.28)	1098 (100.00)	2.00	1.335
Learning through ICTs creates more confidence than printed books	344 (31.33)	127 (11.57)	260 (23.68)	267 (24.32)	100 (9.11)	1098 (100.00)	2.42	1.526
Study through ICTs will help in learners job performance	460 (41.78)	167 (15.17)	348 (31.61)	107 (9.72)	19 (1.73)	1101 (100.00)	1.94	1.239
Enhanced study skills	556 (49.96)	188 (16.89)	258 (23.18)	91 (8.18)	20 (1.80)	1113 (100.00)	1.78	1.188
Study through ICTs doesn't require any fixed time for study	433 (39.80)	146 (13.42)	274 (25.18)	191 (17.56)	44 (4.04)	1088 (100.00)	2.10	1.498
ICTs help me to share my ideas among my fellow students	561 (51.05)	181 (16.47)	252 (22.93)	91 (8.28)	14 (1.27)	1099 (100.00)	1.74	1.178
I will be able to get best teacher as well quality content through ICTs	477 (44.29)	156 (14.48)	335 (31.10)	84 (7.80)	25 (2.32)	1077 (100.00)	1.85	1.252
Study through ICTs will help in saving my travel time and cost as well	525 (48.25)	221 (20.31)	227 (20.86)	85 (7.81)	30 (2.76)	1088 (100.00)	1.76	1.219
I prefer to receive my study material in digital form	448 (42.03)	159 (14.92)	269 (25.23)	148 (13.88)	42 (3.94)	1066 (100.00)	1.96	1.395
Study through ICTs enhance my motivation	472 (44.07)	169 (15.78)	319 (29.79)	88 (8.22)	23 (2.15)	1071 (100.00)	1.84	1.250
ICTs help me to find out the right materials for my study	579 (53.56)	203 (18.78)	226 (20.91)	57 (5.27)	16 (1.48)	1081 (100.00)	1.63	1.158
Study through ICTs helps us to interact with other students	474 (43.69)	177 (16.31)	305 (28.11)	100 (9.22)	29 (2.67)	1085 (100.00)	1.91	1.516
ICTs help me for getting a job in the competitive world	487 (45.26)	206 (19.14)	302 (28.07)	59 (5.48)	22 (2.04)	1076 (100.00)	1.77	1.190
Use of ICTs improves my communication skills	507 (51.84)	206 (21.06)	203 (20.76)	53 (5.42)	9 (0.92)	978 (100.00)	1.47	1.152
ICTs provide current information	578 (53.52)	231 (21.39)	200 (18.52)	61 (5.65)	10 (0.93)	1080 (100.00)	1.59	1.094
ICTs reduce isolation	516 (48.45)	209 (19.62)	254 (23.85)	61 (5.73)	25 (2.35)	1065 (100.00)	1.70	1.195
Study through ICTs will not enhance my performance in examination	342 (32.23)	117 (11.03)	397 (37.42)	167 (15.74)	38 (3.58)	1061 (100.00)	2.16	1.388
Ambiguous response through online create more confusion and results frustration	291 (27.27)	90 (8.43)	420 (39.36)	213 (19.96)	53 (4.97)	1067 (100.00)	2.34	1.434
The method of communication in computer medium will be very slow and less effective	356 (32.90)	110 (10.17)	306 (28.28)	242 (22.37)	68 (6.28)	1082 (100.00)	2.30	1.482
Listening and taking notes in F2F teaching is more easier than ICTs	415 (37.66)	198 (17.97)	169 (15.34)	256 (23.23)	64 (5.81)	1102 (100.00)	2.19	1.462
It is easy to get more information in F2F method rather than ICTs	510 (45.90)	272 (24.48)	154 (13.86)	148 (13.32)	27 (2.43)	1111 (100.00)	1.84	1.248
I prefer print materials due to the complex nature of ICTs	487 (44.07)	218 (19.73)	193 (17.47)	187 (16.92)	20 (1.81)	1105 (100.00)	1.93	1.298
In ICTs chances are more for diversion while searching one particular information	457 (41.89)	180 (16.50)	278 (25.48)	148 (13.57)	28 (2.57)	1091 (100.00)	1.96	1.308
I like print text because text misguide me	410 (37.58)	125 (11.46)	307 (28.14)	208 (19.07)	41 (3.76)	1091 (100.00)	2.15	1.402
I feel more comfortable in reading print texts because	415 (37.69)	174 (15.80)	268 (24.34)	208 (18.89)	36 (3.27)	1101 (100.00)	2.12	1.371
To update with ICTs, I need more skills	523 (47.50)	235 (21.34)	172 (15.62)	144 (13.08)	27 (2.45)	1101 (100.00)	1.82	1.263
Quality of information available through ICTs is questionable	411 (37.85)	189 (17.40)	284 (26.15)	159 (14.64)	43 (3.96)	1086 (100.00)	2.05	1.357

Note: A= Agree, SA= Strongly Agree, CS= Can't say, D=Disagree, SD= Strongly Disagree, StD= Standard Deviation

Discussion and Suggestions

The study found that ICTs help IGNOU learners in various ways:

- It helps to use their present ideas and understandings to audiences.
- It helps them to communicate with known and unknown peer groups.
- It supports the knowledge building among peer groups.
- It helps to locate information from a wide range of on-line and multi-media resources to support their learning.
- It supports knowledge building among teams and enables team members to collaborate, enquire, interact and integrate prior knowledge with new understanding.

However, a few learners expressed that study through ICT leads to develop their concepts on a subject/topic. Further, it gives the inner confidence to understand the distance teaching materials without any ambiguities and any one's assistance.

The study projected that though there are many technological instructions available with the IGNOU, yet these are not familiar to the learners. The facilities that IGNOU provides to learners are mostly unknown. Hence, it needs mechanisms to popularize ICTs among the learners. Majority of the learners are beginners in the context of online learning. Some are comfortable with e-mail, Internet browsing, and a few even love to chat in an online platform. But, these skills are new to many. Hence, they need special training before getting admitted to online courses. They expect IGNOU to bring out manuals on ICTs to guide them to use ICTs in a better and purposive way. Further, some sorts of guide books need to be prepared which will assist them to follow the online instruction. Regarding Interactive Radio Counselling (IRC), majority said that it is a helping tool for those who are still accustomed with radio but not helpful for those who have many responsibilities. They said that DVDs/VCDs received by them are of very ordinary quality, hence, visibility and audibility is hampering their attention.

A few learners who had experience with online platform suggested that they need YouTube facilities where lectures can be uploaded. The learners can visit the YouTube according to their suitable time and learn independently. This also gives facilities that learners can see the YouTube as many times as they wish for. Some claim that they wish to receive SMS in their mobile phone with their update information regarding their programmes and their queries. As a result, they need not to run from pillar to post. Since most has mobile in their hand, this will help them to keep update on their programmes.

Learners are happy that online services are a little better to solve some of their queries. They got some answers to some of their queries while reading their peer groups Blogs and chatting with them. The present finding endorses Moore (1989) views that 'learner-learner' interaction is a communication between two or more learners doing the same course. Such interaction often occurs via asynchronous computer-mediated communication, although it may include other forms of interpersonal and small group communication, such as, online and offline that occur during the duration of a course.

The respondents appreciate IGNOU for its e-Gyankosh and wiki facilities. The days are gone when learners were waiting a long time to receive their study materials. Now they can easily downloaded their study materials from e-Gyankosh and go though it without waiting for the print version. Majority of the learners share their opinion that IGNOU always update news, and run the upcoming events in its web page. It helps learners to

know the current news of IGNOU. But a few complained that they are not receiving their assignment responses grade on time. So they could not get the opportunity to learn from their mistakes. Their e-mails are not responded and hence, frustration becomes an obvious phenomenon. This study proclaims that most learners have mobile phones but not necessarily Internet enabled Personal Computer (PC). Therefore, it is suggested that IGNOU deliver content and other services through mobile devices. Since mobile devices are cheap in comparison to PCs, they are affordable to the learners.

Most of the learners prefer to opt mobile learning because it is personal to them and they carry always with them. By accessing mobile devices they can utilize their leisure time effectively while waiting in the bus stop, railway station and airport. It will help them to browse the loaded content and go through it in any place at less time. This can facilitate learners to learn through multimedia also and even increase fascination towards web based programmes. Using mobile device is certainly cost effective, time saving and real time communicator for the learners.

Some learners wish to participate in the live teleconferencing sessions but due to their different commitments in various organizations they could not attend that. In this context, a few learners suggested that the entire teleconferencing programme can be uploaded in the IGNOU YouTube platform, so that learners can access at their own convenience. This study supports the view of Serrano and Alford (2000) that 'incorporating technology across the curriculum acts as a catalyst for all learners'.

Needless to say, IGNOU as a mega open university in Asia – in fact, the largest in the world — encompasses the learners' need and provide all the possible technological support to learners in their learning activities and helps them to develop their skills in many levels and many ways which will help them not only to receive an educational certificate from the institution but also to earn their livelihood in the competitive world.

Outcome and Implications

The present study proves that recent steps taken by IGNOU to offer its various programmes through ICTs are in right direction. Some of them are: webcast programmes, online programmes, online learning, SMS Alert Services, etc. These will facilitate the availability of an integrated database to all the concerned. In addition to this, the university has already introduced online admission in most of the programmes of study. At present, the University is in the process of developing and testing the system of on-demand examination. The findings of the study indicate that the learners' awareness of online/ distance learning programmes and preference towards it. The policy-makers can reformulate the structure of ICTs by taking into account the positive and negative views on ICTs expressed by the learners in the present study.

References

American Society of Training and Development ASTD (2001): Retrieved on 23/05/2008 from http://www.astd.org/astd

Bates, A.W. (1996). The Impact of Technological Change on Open and Distance Learning, Keynote Address at *Open Learning: Your Future Depends on It,* Queensland Open Learning Network, Brisbane, Queensland, Australia

Berge, Z.L., & Collins, M.P. (Eds.) (1995). Computer Mediated Communication and the Online Classroom. Volumes 1-3. Cresskill, NJ: Hampton Press, pp. 81-90

Boekaerts, M. (1997). Self-regulated Learning: A new concept embraced by researchers, policy makers, educators, teachers, and students*, Learning and Instruction,* 28 (2), 161-186

Burbules, N.C., & Callister, T.A. (2000). Universities in transition: the promise and the challenge of new technologies, *Teachers College Road¸* 102 (2), 271-293

De Verneil, M., & Berge, Z.L. (2000). Going online: guidelines for faculty in higher education*, International Journal of Educational Telecommunication,* 6 (3), 227-242

Gaba, A. (2005). Online education and job market: a case study from India, *Malaysian Journal of Distance Education*, 7(2), 19-27

Garrison, D.R., & Cleveland, I. M. (2005). Facilitating cognitive presence in online-learning: interaction is not enough, *The American Journal of Distance Education*, 19 (3), 133-148

Garrison, D.R., Anderson, T., & Archer, W. (2001). Critical thinking, cognitive presence, and computer conferencing in distance education*, American Journal of Distance Education*, 15 (1), 7-23

Gibson, C.C. (1998). 'The distance learner in context*', in Gibson, C.C. (ed), Distance Learners in Higher Education: Institutional Responses for Quality Outcomes,* Madison: Atwood Publishing

Gulati, S. (2008). Technology-enhanced learning in developing nations: A review, *The International Review of Research in Open and Distance Learning*, 9(1), 1-16

Hall, B., & LeCavalier J. (2000). *E-Learning Across the Enterprise: The benchmarking study of best practices.* Retrieved on February 17, 2002 from: http://www.brandon-hall.com/elacenbenstu.html

Hashim, R., Ahmad, H., & Abdullah, C.Z. (2010). Antecedents of ICT Attitudes of Distance Education Students, *The Turkish Online Journal of Educational Technology*, 9(1), 28-36

Hillman, D.C. Willis, D.J., & Gunawardena, C.N.(1994). Learner-interface interaction in distance education: an extension of contemporary models and strategies for practitione*rs, The American Journal of Distance Education,* 8 (2), 30-42

Johnson, D.W., & Johnson, R.T. (1999). *Learning Together and Alone: Cooperative, Competitive, and Individualistic Learning,* (Eds.) Needham Heights, MA, Allyn and Bacon Publication

Kirkwood, A., & Price, L. (2006). Adaptation for changing environment: developing learning & teaching with information & technologies, *International Review of Research in Open and Distance Learning*, 7 (1), Retrieved on 14/07/2008 from:

http://www.irrodl.org/index.php/irrodl/article/viewArticle/294/624

Keegan, D. (1996). *Foundation of Distance Education*, New York: Routledge Publication

Kwapong, O.F. (2009). Comparing Knowledge and Usage of ICT among Male and Female Distance Learners of an Endowed and Deprived Area in a Developing Country in Africa, *Journal of Information Technology Education*, 8, 1-17

Moore, M.G. (1994). Autonomy and Interdependence*, The American Journal of Distance Education*, 8 (2), 1-5

Moore, M.G. (1989). Three Types of Interaction*, The American Journal of Distance Education*, 3 (2), 1-7

Nettles, K., Dziuban C., Cioffe, D., Moskal, P., & Moskal, P. (2000). Technology and learning: the 'no significant difference' phenomenon: a structural analysis of research on technology enhanced instruction, *Distributed Learning Impact Evaluation*, (Eds.) Dziuban and Moskal, Orlando, University of Central Florida

Ojo, D.O., & Olakulehin, F.K. (2006). Attitudes and perceptions of students to open and distance learning in Nigeria*, International Review of Research in Open and Distance Learning,* 7 (1), 1-10. Retrieved on 16/07/2008 from

http://www.irrodl.org/index.php/irrodl/article/view/313/496

Schraw, G. (1998). 'On the development of adult Metacognition', in Smitch, M.C. and Pourchot, T., (Eds). *Adult Learning and Development, Perspectives from Educational Psychology,* New Jersey: Lawrence Erlbaum

Serrano, C., & Alford, R.L. (2000). Virtual languages: An innovative approach to teaching EFL/ESL English as a foreign language on the World Wide Web,*in* Lioyd, L. & Less Lioyd (Eds.). *Teaching with Technology: Rethinking Tradition*, Medford, NJ, Information Today, Inc.

Seymour, L., Brown, I., Beck, E., Khatree, F., & Morley, L. (2005). Factor affecting usage of web-based learning tool, *Alternation*, 12 (1), 1-14

Stacey, E., & Rice, M. (2002). Evaluating an Online Learning Environment, *Australian Journal of Educational Technology*, 18 (3), 323-340. Retrieved on 21/05/2008 from http://www.ascilite.org.au/ajet/ajet18/stacey.html

Stodel, E.J., Thomson, T. L., & MacDonald, C.J. (2006). Learners' Perspective on What is Missing from Online Learning: Interpretations through the Community of Inquiry Framework, *International Review of Research in Open and Distance Learning,* 7(3), 1-24. Retrieved on 23/06/2008 from http://www.irrodl.org/index.php/irrodl/article/view/325/744

Thompson, T.L., & MacDonald, C.J. (2005). Community building, emergent design, and expecting the unexpected: creating a quality e-learning Experience*, Internet and Higher Education*, 8 (3), 233-249

Woods, R.H., & Baker, J.D. (2004). *Interaction and immediacy in online-learning, International Review of Research in Open and Distance Learning*, 5(2), Retrieved on 21/06/2008 from: http://www.irrodl.org/index.php/irrodl/article/viewArticle/186/268.

Zenios, M., Goodyear, P., & Jones, C (2004). Researching the impact of the networked information and learning and teaching, *Computer and Education,* 43(1/2), 205-213

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