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AN EMPIRICAL STUDY ON ROLE OF INTERNET IN AUGMENTING LEARNING PERFORMANCE OF UNDERGRADUATE STUDENTS

Dr. B. K. Gupta
Associate Professor, Department of Education
Jawaharlal Nehru Memorial Post-Graduate College, Barabanki (U.P.)

Abstract

This study examined the role and use of internet in improving learning performance of undergraduate level students; and explored their problems. The subjects of the study comprised of undergraduate students and their teachers. Three hundred undergraduate students and forty teachers participated in the survey through two questionnaires. Simple percentage was used for data analysis. The findings of the study demonstrated that students use internet for social interactions and communication purpose round the clock according to their need(s) and availability. It limits travel and travel cost. They access to learning material(s) by using multiple sources on the net. It enhances their academic performance. However, they face problems of electricity failure and spywares.

Keywords: Internet Technology, Learning Performance, Instructional Process, Collaboration, Interaction and Communication

INTRODUCTION

Generally, internet technology is used for enhancing communication and interactions (Jethro, Grace and Thomas 2012; Mahmood, Safdar and Qutab 2010) among users. Apparently, it facilitates human being in all walks of life besides education. In education, it extends access to new information, facilitates instructional process (Rashid 2003) and enhances [learning] performance of students (Hussain 2005). Traditionally, a teacher has been all in teaching learning process meagerly considering potential and individual differences of students (Hussain and Mahmmod 2010). However, in modern age, the focus seemingly has shifted from teacher oriented teaching to learner centered instruction (Agarwal 2000) and/ or learning. Whereas, the quality of education mainly depends on the quality of instruction (Hussain and Mahmood 2010) which is associated with teacher and his/her instructional competencies or skills (Iqbal 1996). Hence, instructional use of internet can enhance quality of instruction by helping teachers and students in achieving learning objectives (George 2006) of the courses and/ or programmes.

Rationale of the Study

Internet seems to have been infused in human life. The young students appear to be very keen in using internet technology. The intensity of using it certainly depicts some results irrespective of their nature and usefulness. Keeping in view this backdrop, the study was designed to evaluating the role and use of internet in enhancing learning performance of undergraduate students. This study would be useful particularly for undergraduate students, their parents and teachers to use internet technology purposefully i.e. learning.

Objectives

This study evaluated the role of internet technologies in enhancing learning performance of undergraduate students with its main objectives to

1) Examine the use of internet technologies by undergraduate level students in improving their learning performance
2) Evaluate the role of internet in augmenting learning performance of undergraduate level students, and
3) Identify the problems faced by undergraduate level students and their teachers in using internet

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LITERATURE REVIEW

In education, mostly the teachers and students use internet for initiating and maintaining communication and interactions –sharing information, knowledge and views (Hussain and Safdar 2008) to enhance learning and learning achievement of the latter. Internet is used in number of ways (Grabe and Grabe 1999) and promotes networking and collaboration among the learners (Verma 2006) thus forming their virtual learning communities and/ or social circles. Usually, such networked students can work together on educational projects (Nazar 2003) including research. They share their ideas, leaning experiences and aspirations in their [social] circles (Hussain and Durrani 2012). Even so in Malyasia, Hong, Ridzuan and Kuek (2003) found affirmative opinion of university students about internet.

Similarly, internet as an instructional technology facilitates teachers in instructional delivery almost at all levels. Teachers can use internet in augmenting instructional process by presenting [learning] materials in innovative and novel ways –motivating and involving more senses of the learners (Johns 2011). Keeping in view this innovative nature Pandey (2006) regarded internet technology as an effective instructional tool which makes instructional process more effective and interesting in different ways because of its easiness of use, availability and universal access. The instructional use of internet technology is more than just am information tool or material artifact (Selwyn 2011) as it enhances learning of students by facilitating instruction and instructional process. The instructional effectiveness of internet technology has become conducive for instituting e-learning [and virtual education] even in developing countries (Sife, Lwoga and Sanga 2007). Similarly, in a study Fabunmi (2012) found [internet based] technologies to be the modern sources of instruction at university level. Majority of the students regarded such technologies to be easier in getting reliable, deeper and latest information on all areas of study (Fabunmi 2012).

Observably, internet technology facilitates teaching learning process by promoting interaction and communication among students and faculty. Terbuc (2001) studied the use of internet in process of teaching in University of Maribor and found students to be satisfactory with their experience of its use to enhance their learning. However, they regarded the cost of internet to be higher than their paying capacity, and they needed training for its effective use. In Asam majority of the [university] students used internet technology daily and less than an hour in morning for getting knowledge (Devi and Roy, 2012) to enhance their learning. Likewise, Ogedebe (2012) found a positive relationship of using internet technology with learning performance of university students. They affirmed that it enhanced their performance by helping them in better preparation for the examinations, facilitating in getting information relevant to their course(s), and assisting them in searching academic materials for improvement of their academic work (Ogedebe 2012).

Ability of students to use internet technology and their awareness about its different tools apparently enhances its educational usefulness. In a study Usun (2003) determined a good deal of the students to be cognizant with importance of internet technology having ability to use it for accessing materials relevant to their course(s). Majority of the students had access to and used it more at schools and colleges than at their homes. Nevertheless, Jethro, Grace and Thomas (2012) affirmed that using internet adds to knowledge and learning of the learners by enhancing their interactions, sharing of information, ideas and good practices to improve the quality of learning. They further found that the students using internet technology for retrieving learning or e-learning sources performed better than those who didn't use such sources. In a study Buzzetto-More (2013) found that social networking sites (SNSs) make instruction more interesting and supplement teaching learning process for undergraduate students [in a blended learning environment]. Facebook appeared at top of the SNSs with sixty three percent overall users. The researcher further asserted that the use of face book as a learning tool engaged [more senses of] students to enhance their learning process. It promoted opportunities of [virtual interactions] building virtual communities of the learners and/ or the users. Gafni and Deri (2012) studied benefits of Facebook for undergraduate students and its [social & economic] cost. It found Facebook to be a platform for exchanging educational information and developing collegial relationships among students and teachers. Majority of the students used Facebook one to three hours daily.

The study of Rajab and Baqain (2005) concluded that teachers used internet technology for enhancing communication and interactions among their communities. Teachers used World Wide Web (WWW) for retrieving instructional materials including lesson plans, exercise tests, research articles and other related creative work. In overall, teachers used internet technology for their professional development: they

shared their ideas, instructional expertise, communication skills, instructional experiences and knowledge with their community members for innovation and self-motivation. Tella (2007) and Tella et al. (2007) found internet technology significantly contributing towards academic performance of university students in Botswana. The literature review by Kamba (2007) supported internet based instruction in education as an innovative trend. Fatima, Ayesha and Zafar (2010) hold an optimistic approach towards using internet for educational activities. A prominent majority (95.6%) of respondents affirmed that using internet enhanced educational capabilities of the students. Kuh and Hu (2001) found computer and other related information technologies to be beneficial for students who used them regularly, properly and purposefully. Use of internet was studied by Ali and Aslam (2008). The study demonstrated interesting results as respondents revealed different reasons for using internet technology. According to the results, the college students used it for amusement whereas the university students used it for getting information and for research purpose. A prominent majority (87%) of the respondents affirmed that it improved educational capabilities of students. Similarly, college students appeared to be early users of internet (Jones 2002) with their positive attitude (Hong, Ridzuan and Kuek 2003).

However, in Asia mostly the internet is used for academic purpose; and undergraduate students appeared to be good users (Muniandy 2010) of internet technology. Whereas, the impact of internet depends on its use and varies from individual to individual and country to country (Wolcol and Goodman 2000). In distance education information and communication technologies (ICTs) enhance learning process of learners as they get support for preparing their assignments and searching materials for research (Nisar, Munir and Shad 2011) purpose. Nazar (2002) studied the effectiveness of internet technology at Allama Iqbal Open University and found it to be useful for all levels of education and for all categories of students having positive effects on their learning and learning performance. Internet technology increases access of the learners to information sources and decreases their dependence on printed word and/ or print material(s) (Loan 2011). Mahmood, Safdar and Qutab (2010) regarded internet technology as an effective instructional tool and found positive attitude of students towards it. Students used it for educational purposes including communication & interactions, updating their knowledge & information, preparing for examinations, writing and submitting assignments and entertainment.

In spite of all instructional uses and benefits of internet technology, some problems were also reported by the users. Ghayyur (2011) concluded that majority of the students needed expertise in using e-mail and other internet based tools and technologies. Majority of the students were facing problems in using ICTs for learning purpose. The study of Devi and Singh (2009) conducted in Manipur University; India found that students used academic websites for research, communication and interaction purpose. It was affirmed as a substitute of the library. However, it recorded some problems which students faced in using internet technology. These problems included blacking of important informative websites, slow speed and slow browsing, lack of students' expertise in using internet properly. Similarly, Rajab and Baqain (2005) reported some barriers in using internet technology. These were lack of facilities, time, cost of access to the technology itself, low bandwidth and lack of knowledge involved in using it.

RESEARCH DESIGN

This descriptive study elicited opinions of undergraduate learners and faculty on the role of internet in enhancing learning performance of students. It described the situation of using internet at undergraduate level; and researchers considered survey to be suitable for portraying the phenomenon.

Population and Sampling

Final semester's students of Bachelor Studies (BS) and their teachers in the departments of Social Sciences were population(s) of this study. It was a non-sponsored study and therefore, it employed convenience-cum-purposive sampling technique(s). It selected those students and university teachers who were using internet technologies [tools] for three years or more for study.

The principal investigator communicated with undergraduate university students and their teachers to seek their permission for data collection. Four hundred (400) undergraduate learners and fifty (50) teachers who were using internet technologies for three years or more voluntarily agreed to give their opinions through a survey.

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Tools

After reviewing the available related works; the researchers prepared two questionnaires on five-points' rating (likert) scale for gathering opinions of respondents i.e. for undergraduate university students and their teachers respectively. All the statements of the questionnaires were closed ended with following scale values
SA= Strongly Agree, A= Agree, UD= Undecided,
D= Disagree, SD= strongly Disagree.

The tools were validated through their pilot testing on 30 undergraduate students and 10 teachers. Expert's opinions were also sought and researchers finalized tools.

Implementation of Tools

The principal investigator trained three data collectors, "how to collect data" before piloting. After getting an informed consent of respondents the data was collected by the data collectors. The tools were distributed among 400 students and 50 teachers; and response rate was 75% as 72% as 300 and 36 completely filled-in questionnaires were received back from the undergraduate university students and their teachers respectively.

Ethical Considerations

This study strictly followed the ethical considerations for conducting research in social sciences.

DATA ANALYSIS AND RESULTS OF STUDY

The data was analyzed in terms of percentage by using MS-Excel programme. The results both of the categories are described here;

a. Results of the Data of Undergraduate Students

This section describes results drawn from the data of undergraduate students;

Table 1
Opinion of under graduate student's about use of internet technology

Statement	Level of Agreement *(Parentheses values are percentage)* SA	A	UNC	DA	SDA
Comfortable	148 *(49.3)*	*96 (32)*	6 *(2)*	22 *(7.3)*	28 *(9.3)*
Affordable	136 (45.3)	86 (28.7)	12 (4)	24 (8)	42 (14)
Easy Use	142 (47.3)	94 (31.3)	8 (2.7)	18 (6)	38 (12.7)
Easy for Communication	164 (54.7)	102 (34)	4 (1.3)	14 (4.7)	16 (5.3)
Motivating	156 (52)	108 (36)	6 (2)	18 (6)	12 (4)
Relevant for Material	154 (51.3)	118 (39.3)	8 (2.7)	14 (4.7)	6 (2)
Multiple Sources	154 (51.3)	118 (39.3)	6 (2)	12 (4)	10 (3.3)

The data given in the table-1 reveals that internet technology facilitates undergraduate students in promoting their access to educational resources. The data analysis demonstrates that 81% of the undergraduate students were of the opinion that they feel comfortable in using internet technology; whereas, 74% viewed it to be affordable for them. Similarly, 78% and 88% of the respondents affirmed that they use it because of its easy use and easy communication through it respectively. Likewise, 88% reported it to be motivating; according to 90.6% it provides relevant materials and 90.6% used internet technology because of the reason that they can have access to latest relevant information and learning materials through multiple sources/ sites.

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Table 2
Opinion of undergraduate students about benefits of internet

Statement	Agreement Level (Parentheses values are percentage) SA	A	UNC	DA	SDA
Time Convenience					
All Time (7/24)	96 (32)	156 (52)	9 (3)	18 (6)	21 (7)
Means	109 (36.3)	149 (49.6)	2 (0.6)	15 (5)	25 (8.3)
Cut Travel	117 (39)	149 (49.6)	3 (1)	9 (3)	22 (7.3)
Useful Search Engines	119 (39.6)	141 (47)	5 (1.67	10 (3.3)	25 (8.3)

The data given in the table-2 indicates that 84% of the undergraduate students affirmed that they can use internet technology any time (7/24) round the clock according to their availability; whereas 86% of the respondents used it as it provides access to maximum learning resources on their demand and according to their need. Similarly, 88.7% acknowledged that the use of internet technology limits their travel and travel cost. Even so, 86.7% had advantages of different search engines to support their learning.

Table 3
Opinion of undergraduate students about instructional role of internet

Statement	Agreement Level (Parentheses values are percentage) SA	A	UNC	DA	SDA
Internet Technology is					
Self-Instructional	104 (34.7)	138 (46)	12 (4)	22 (7.3)	24 (8)
Supporting Independent Study Place	124 (41.3)	98 (32.7)	14 (4.7)	28 (9.3)	36 (12)
Enhancing Learning	136 (45.3)	118 (39.3)	4 (1.3)	18 (6)	24 (8)

Table-3 shows that (80.7%, 74% and 84.6%) of the respondents acclaimed that they used internet technology because of its elf-instructional nature, supporting independent study, and enhancing their learning process respectively.

Table 4
Opinion of undergraduate students about the role of internet in facilitating them

Statement	Agreement Level (Parentheses values are percentage) SA	A	UNC	DA	SDA
Exchange of Learning Experiences	118(39.3)	132 (44)	6 (2)	18 (6)	26 (8.7)
Educational Aspirations	128 (42)	124(41.3)	8 (2.7)	12 (4)	30 (10)
Academic Performance	154 (51.3)	98 (32.7)	6 (2)	22 (6.7)	22 (7.3)
Social Interactions	128 (42.7)	122 (40.7)	8 (2.7)	18 (6)	24 (8)

The data given in the table-4 reveals that 83% of the undergraduate students affirmed that internet technology supports them in exchanging their learning experiences among their [social] circles [of virtual community]; 83% were of the view that it helps them in fulfilling their educational aspirations. Similarly,
84% acknowledged that internet technology plays a positive role in enhancing their academic performance; and 83% appreciated its role in supporting their social interactions [among members of their virtual community].

Table 5
Opinion of undergraduate students about problems of internet

Statement	Agreement Level (Parentheses values are percentage) SA	A	UNC	DA	SDA
Undergraduate Students Face Problems in Using Internet Technology					
Electricity Failure	154 (51)	118 (39)	6 (2)	12 (4)	12 (4)

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Bandwidth	126 (42)	136 (45.3)	10 (3.3)	10 (3.3)	18 (6)
Viruses	102 (34)	92 (30.7)	6 (2)	52 (17.3)	48 (16)

The data (of the table-5) indicates that 90 % of the undergraduate students reported intermittent electricity failure and its related problems which caused stress and aggression among them. They (87.3%) also faced the problem of low bandwidth and 64% reported problems of spywares while using internet.

b. Results of the Questionnaire for Teachers

This section describes the results of the data analysis of the questionnaire for teachers and their interpretation.

Table 6
Opinion of university teachers about the educational role of internet

Statement	Agreement Level *(Parentheses values are percentage)*				
	SA	A	UNC	DA	SDA
Undergraduate Students use Internet Technology because it is					
Comfortable	16 (44.4)	18 (50)	4*(5.6)*	00	00
Affordable	14 (38.9)	16 (44.4)	2 (5.6)	2 (5.6)	2 (5.6)
Easy Use	20 (55.6)	16 (44.4)	00	00	00
Easy for Communication	16 (44.4)	18 (50)	2 (5.6)	00	00
Motivating	12 (33.3)	22 (61.1)	2 (5.6)	00	00
Relevant for Material	22 (61.1)	10 (27.8)	2 (5.6)	2 (5.6)	00
Multiple Sources	26 (72.2)	8 (22.2)	2 (5.6)	00	00
Anytime Time (7/24)	22 (61.1)	14 (38.9)	00	00	00
Maximum Resources	20 (55.6)	12 (33.3)	2 (5.6)	2 (5.6)	00

The data given in table-6 explains that 94.4% and 83.3% of the university teachers affirmed that undergraduate students use internet technology because it is comfortable and affordable respectively for them. All (100%) of the university teachers apprized its easy use in learning and 94.5% regarded it easy for communication. Similarly, 94.4% of the university teachers were of the opinion that it creates and sustains motivation among undergraduate students; 88.9% affirmed that it provides relevant learning materials to them; whereas, 94.4% were of the view that undergraduate students get such materials from multiple sources and/ or websites. However, all (100%) of the university teachers acknowledged that undergraduate students use internet technology because of its 7/24 availability and according to 88.9% it facilitates undergraduate students in having access to maximum learning resources.

Table 7
Views of university teachers about internet in sharing experiences

Statement	Agreement Level *(Parentheses values are percentage)*				
	SA	A	UNC	DA	SDA
Exchange of Learning Experiences	16 (44.4)	12 (33.3)	2 (5.6)	2 (5.6)	4 (11.1)
Educational Aspirations	32 (88.9)	4 (11.1)	00	00	00
Academic Achievements	28 (77.8)	8 (22.2)	00	00	00
Social Interactions	24 (66.7)	8 (22.2)	2 (5.6)	2 (5.6)	00

The table-7 explains that 77.7% and 100% of the university teachers were of the opinion that internet technology provides a platform to the undergraduate students for exchanging their learning experiences and educational aspirations respectively. All (100%) and 88.9% of the university teachers affirmed that it enhances academic performance and supports social interactions [among members of virtual community] of undergraduate students.

CONCLUSION

This study demonstrated useful and interesting results which can help undergraduate students, their parents and teacher in using internet technology for enhancing learning. The results depicted that internet technology facilitates undergraduate students in having access to educational resources. They feel comfortable and affordable to use internet technology for their learning. They also use it because of its easy use and easy communication through it. Furthermore, it is motivating and provides relevant materials and information through its multiple sites/ sources.

Similarly, the present study reported that undergraduate students can use internet technology any time (7/24) round the clock according to their need(s) and availability. It promotes their access to maximum learning resources on their demand and its use limits their travel and travel cost. Even so, they have advantages of different search engines to augment their learning and learning process. It is elf- instructional, supports independent study, and facilitates their learning process.

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