

Full Length Research Paper

User awareness towards using information and communication technology (ICT) in government arts and Science Colleges in Southern Tamil Nadu: An analytical study

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Accepted 1 June, 2011

In India, the need for reforms in education by harnessing Information and communication technology (ICT) is increasingly being accepted as essential by universities and cultural organizations across India. The National Policy for ICT in education, under formulation, highlights the need to integrate ICT as a subject in the curriculum as well as to strengthen the overall teaching and learning process. Open and distance education systems in India use EDUSAT and other TV and radio channels for delivering content; but ICT is yet to be used significantly for the delivery of content. Personal computers have played a vital role in our everyday lives today. Everywhere, right from the retail shops to the atomic research centers, computers are being used. The growth in popularity and networking of computers led to the phenomenon called internet. Internet is believed to be a very powerful tool for information searching. Today from teens to old persons, everyone is using internet. The results of this study showed that faculty respondents rank the first position with respect to their overall frequency of using internet; research scholar respondents the second; post graduate students the third; undergraduate students the last. Study revealed that under graduate respondents take the first position with respect to their overall purpose of using e-resources, post graduate respondents the second, research scholars the third and faculty respondents the last.

Key words: Information and communication technology (ICT), internet, search engines, e-journal, cyber café, EDUSAT, digital library.

INTRODUCTION

Society has been transformed by the rapid development and diffusion of information and communication technology (ICT) into fields such as education, business, health, agriculture, and so on. Information users may be bewildered by a variety of digitized information. Information touches all human activity and is communicated in a multitude of ways, which includes speech, pictures, video and text, etc. Access to information is generally recognized as contributing significantly to the efficiency of any organization. Recent developments in computer, communication and networking technology have given new meaning to information retrieval systems. Today, information sharing is achieved through networks. The geographical boundaries and distances, which used to act as barriers in the way of free exchange of data and information, have

been rendered irrelevant.

As a natural corollary, the internet has also affected the way one earns and www (World Wide Web) dot com has opened up new avenues and opportunities, by which a person, with the right skill set and drive, can earn from the comforts of ones home. Logon to the Internet, go to any site and here we are in a world of our own, in which we will be lost for the time we work on it, a world full of fun, excitement, styles and a world beyond imagination. The progressive increase in the use of information and communication technologies (ICT) in education has drastically changed the teaching/learning process. A great deal of research has proven its benefits in educational quality. Among the ICTs, the internet has been a single major force of change in higher education. Since 1991, and especially with the use of the www

browser in 1993, the internet has gradually become the main vehicle of scholarly communication. However, the intensity of internet use varies from individual to individual, institution to institution, and from country to country. Internet is the largest worldwide network linking more than 140 countries with 3 million host computers. It is a network of networks. The primary mission of the Internet is communication of ideas, work and play we name it. Everything else is a means towards that end. The research scholars and faculty members of any research organization make use of internet. The present study is aimed to find out the usage of internet facility available in the library of government arts and science colleges in Tamil Nadu by the research scholars and faculty members in the field of arts and sciences.

A study by Alshankity and Alshawi (2008) examined the gender differences in internet usage among faculty members in Saudi Arabia. The study collected information from 504 faculty members in four Saudi Arabian higher education institutions regarding internet usage for academic purposes. In the context of the gender-segregated higher education systems and the relatively new advent of internet in the region, the researchers did not see a significant gender difference in the overall internet usage. Kumar and Kaur (2006) reported on the results of a survey of internet use, which also provides information about the benefits of internet versus print documents. Panda and Sahu (2003) conducted a study on the engineering colleges of Orissa. The study revealed that majority of the colleges use the internet to provide online demonstrations. Jagboro (2003) conducted a case study of internet usage in Nigeria with a particular reference to Obafemi Awolowo University, Ile-Ife, Osun state, Nigeria. The study revealed that the respondents use the internet to access research materials and for email. The study concluded that the use of internet for academic activities would improve significantly with more access in the departments. Igun (2005) examined the levels of internet skill, and the influence of the internet on research.

The study found that the internet skills were low and that the internet had no significant influence because the university does not have a functional and comprehensive internet and university-wide information system. Aldojan (2006) investigated the internet use among Education faculty members in Jordanian Public Universities. The population of this study includes the entire education faculty members (309) in seven Jordanian public universities, ranking instructor/lecturer, assistant, associate, and full professors. The study explored how often, what types of internet tool is used on a daily basis, and the degree of satisfaction of education, faculty members in Jordanian public universities using the internet in their academic work. The purpose of this study was to collect and to analyze the data to determine the patterns of internet use and to identify the faculty's concerns and their overall satisfaction degree of its

services. In 2006, Al-Ansari conducted a study on internet use by the faculty members of Kuwait University. This study was designed to investigate the patterns of internet use by the faculty including purposes for use, its impact on teaching and research, internet resources used, and the problems faced while using the internet.

A structured questionnaire was used to collect data from the faculty coming from four colleges of Kuwait University, that is, Arts, Social Sciences, Sciences, and Engineering. The study revealed that the internet is mostly used for communication, research, and publication by saving time, find up to date information, and cooperate with their colleagues. Slow speed, lack of time, and lack of access from home are the major problems. Gifty Adika (2003) analyzed internet use among faculty members of universities in Ghana. Research results showed that in spite of the benefits of the internet, its use among faculty is still very low. The main reasons for this are lack of access to the internet and the need for training. It suggested that university authorities must take immediate steps to provide general access points for faculty through computer laboratories.

Thus, librarians, information professionals and computer scientists have vital role to play for organizing training and refresher sessions for faculty to get up to date information via internet for teaching and research. A doctoral study by Fortin (2000) explored faculty members' use of and their information seeking behaviors and activities on the internet at Angelo State University. Using both a quantitative and qualitative methodology, differences were found between tenured and tenure track faculty members on the perceived value of the internet to meet their research and classroom information needs. Similar differences were also found among faculty members in the broad discipline areas of the humanities, social sciences, and sciences. Tenure-track faculty members reported a higher average internet use per week than tenured faculty members.

A review of the literature reveals that lecturers and students are the most frequent users of the internet, which they use mostly for research and educational purposes. A study of internet use by 2,500 teachers from public and private schools in the US was conducted by Becker (1998). The study revealed that 90% of teachers had internet access at school, while 59% had access at home. Sixty eight percent (68%) used the internet to find information for preparing their lessons, and 62% used search engines to find information. Findings by Bavakutty and Salih Muhamad (1999) revealed that students, research scholars, and teachers use the internet for study, research, and teaching at Calicut University. Manmart (2001) found that the internet is used by academic staff as a tool for teaching preparation, research, and academic work. Manmart (2001) further revealed that the use of internet and knowledge of its advantage are significantly correlated with the age of the academic staff as well as their knowledge, skills, and

Table 1. Category-wise distribution of respondents.

Category	Number of respondent	Percentage (%)
Faculty	112	23.33
Research scholars	44	9.17
Post graduate students	98	20.42
Under graduate students	226	47.08
Total	480	100.00

Table 2. Gender-wise distribution of respondents.

Gender	Number of respondent	Percentage (%)
Male	292	60.83
Female	188	39.17
Total	480	100.00

experience in using computers and the internet.

Objectives

The main objectives of the study were:

- i. To know the purpose for which teachers and students are using internet.
- ii. To determine the purpose and utilization of the electronic resources by teachers and students.
- iii. To ascertain the users preference search engine.
- iv. To determine the frequency of internet usage.
- v. To examine the usefulness of internet based information resources.
- vi. To know how much time is spent in using internet.
- vii. To find out the problem faced by the users while browsing the internet based information resources.

MATERIALS AND METHODS

The researcher has employed a well structured questionnaire for collecting the data from the faculty members and students of government arts and science colleges in Tirunelveli region, Tamil Nadu. The questionnaire has been prepared in such a way that the respondents could easily understand the items. A total number of 600 questionnaires were distributed among the faculty members and students. The investigator could collect questionnaires from only 480 out of 600 faculty members and students among whom the questionnaires were distributed. This constitutes 80% (480 /600) of the total response.

Analysis of data and interpretation

A study of the data in Table 1 indicates the category wise distribution of respondents. It could be noted that, out of the total 480 respondents, 23.33% of them are faculty members and 9.17% of them are research scholars. In this study, 20.42% of the respondents are post graduate

students and 47.08% of them are under graduate students. It is concluded that more under graduate students followed by faculty members are the respondents in the study. A study of the data in Table 2 indicates the gender distribution of respondents. It could be noted that, out of the total 480 respondents, majority of the respondents (60.83%) belong to the male group and the rest of them (39.17%) are females. It is concluded that male respondents constitute more in number than female respondents.

A study of the data in Table 3 indicates the category wise respondents' frequency of using Internet. The category wise analysis examines the following facts. The faculty respondents occupy the first position with respect to their overall frequency of using internet as their secured mean score is 3.88 on a 5 point rating scale. The research scholars take the second position in their overall frequency of using internet as their secured mean score is 3.35 on a 5 point rating scale. The post graduate student's respondent's rank in the third position in their overall frequency of using internet as their secured mean score is 3.16 on a 5 point rating scale. The under graduate students take the fourth position in their overall frequency of using internet as their secured mean score is 2.99 on a 5 point rating scale. It could be seen clearly from the above discussion that the faculty respondents rank in the first position with respect to their overall frequency of using internet, research scholar respondents the second, post graduate students the third, undergraduate students the last.

A study of the data in Table 4 indicates the category wise respondents' time spent for using internet. The category wise analysis examines the following facts. The under graduate students respondents occupy the first position with respect to their overall time spent for using internet as their secured mean score is 4.25 on a 5 point rating scale. The post graduate student respondents take the second position in their overall time spent for using

Table 3. Category-wise respondents' frequency of using internet.

Frequency	Category				Total
	Faculty	Research scholar	PG student	UG student	
Daily	3.51	2.35	2.36	2.26	2.75
Thrice a week	4.32	3.82	3.85	3.89	3.90
Once in a week	3.42	3.51	2.36	2.44	2.80
Once in a fortnight	4.16	3.89	3.79	3.76	4.00
As and when required	2.79	2.12	2.89	2.59	2.45
Total	3.88	3.35	3.16	2.99	3.46

PG, Post graduate; UG, under graduate.

Table 4. Category-wise respondents' time spent for using internet.

Time spent	Category				Total
	Faculty	Research scholar	PG student	UG student	
Less than 2 h	2.36	2.86	3.39	3.56	2.75
2 - 3 h	3.89	4.11	4.26	4.36	3.90
3 - 4 h	2.56	2.76	3.36	3.52	2.80
4- 5 h	3.99	4.01	4.11	4.26	4.00
Above 5 h	2.02	2.56	2.96	2.88	2.45
Total	3.27	3.65	3.86	4.25	3.46

PG, Post graduate; UG, under graduate.

Table 5. Category-wise respondents' place of using internet.

Place of using internet	Category				Total
	Faculty	Research scholar	PG student	UG student	
Central library	3.88	2.90	3.11	2.52	3.04
Department	4.15	3.16	3.78	3.52	3.77
Cyber café	3.33	3.78	4.01	3.79	4.15
Home	3.69	2.56	2.52	2.56	2.40
Total	3.87	3.39	3.32	3.18	3.57

PG, Post graduate; UG, under graduate.

internet as their secured mean score is 3.86 on a 5 point rating scale. The research scholar respondent's rank in the third position in their overall time spent for using internet as their secured mean score is 3.65 on a 5 point rating scale. The faculty members take the fourth position in their overall time spent for using internet as their secured mean score is 3.27 on a 5 point rating scale. It could be seen clearly from the above discussion that undergraduate student respondents rank in the first position with respect to their overall time spent for using internet, post graduate student respondents the second, research scholars the third, faculty members the last.

A study of the data in Table 5 indicates the category wise respondents' place of using internet. The category

wise analysis examines the following facts. The faculty respondents top the position with respect to their overall preference of using internet as their secured mean score is 3.87 on a 5 point rating scale. The research scholar respondents take the second position in their overall preference of using internet as their secured mean score is 3.39 on a 5 point rating scale. The post graduate student respondent's rank in the third position in their overall preference of using internet as their secured mean score is 3.32 on a 5 point rating scale. The undergraduate student respondents take the fourth position in their overall preference of using internet as their secured mean score is 3.18 on a 5 point rating scale. It could be seen clearly from the above discussion

Table 6. Category-wise respondents' satisfaction on search engines.

Name of the search engine	Category				Total
	Faculty	Research scholar	PG student	UG student	
Google.com	3.69	4.19	3.90	2.52	4.20
Yahoo.com	4.12	3.77	4.10	3.96	4.10
msn.com	4.05	3.85	3.79	3.80	3.95
Sanook.com	3.98	2.33	2.65	3.36	3.11
hunsa.com	3.26	2.19	2.95	2.80	3.15
Altavista	2.26	2.22	2.44	2.15	2.65
Excite	2.49	2.16	2.19	2.02	2.45
Euroseek	3.13	2.52	3.11	2.96	2.90
Total	3.52	3.06	3.20	3.03	3.46

PG, Post graduate; UG, under graduate.

Table 7. Category-wise respondents' learning to use electronic resources.

Learning to use electronic resource	Category				Total
	Faculty	Research scholar	PG student	UG student	
Self thought	2.89	3.76	3.96	3.65	3.16
Trial and error	3.56	2.65	3.11	3.92	2.96
Guidance from faculty	2.89	3.16	2.77	3.96	3.18
Guidance from library staff	3.81	3.77	2.89	4.42	3.85
Guidance from computer staff	2.26	2.89	2.52	3.39	2.52
Total	3.41	3.58	3.46	4.00	3.39

PG, Post graduate; UG, under graduate.

that the faculty respondents rank in the first position with respect to their overall preference of using internet, research scholar respondents the second, post graduate student the third, undergraduate student the last.

A study of the data in Table 6 indicates the category wise respondents' satisfaction on the search engines. The faculty respondents occupy the first position with respect to their overall satisfaction on all search engines as their secured mean score is 3.52 on a 5 point rating scale. The post graduate respondents take the second position in their overall satisfaction on all search engines as their secured mean score is 3.20 on a 5 point rating scale. The research scholar rank in the third position in their overall satisfaction on all search engines as their secured mean score is 3.06 on a 5 point rating scale. The under graduate respondents take the last position in their overall satisfaction on all search engines as their secured mean score is 3.03 on a 5 point rating scale. It could be seen clearly from the above discussion that the faculty respondents occupy the first position with respect to their overall satisfaction on all search engines, post graduate students the second, research scholars the third, and under graduate students the last.

A study of the data in Table 7 indicates the category wise respondents' learning to use e-resources. The

category wise analysis examines the following facts. The under graduate student respondents top the position with respect to their overall learning to use e-resources as their secured mean score is 4.00 on a 5 point rating scale. The research scholar respondents take the second position in their overall learning to use e-resources as their secured mean score is 3.58 on a 5 point rating scale. The post graduate student respondent's rank in the third position in their overall learning to use e-resources as their secured mean score is 3.46 on a 5 point rating scale. The faculty respondents take the fourth position in their learning to use e-resources as their secured mean score is 3.41 on a 5 point rating scale. It could be seen clearly from the above discussion that under graduate students respondents rank in the first position with respect to their overall learning to use e-resources, research scholar respondents the second, post graduate student the third, faculty members the last.

A study of the data in Table 8 indicates the category wise respondents' purpose of using e-resources. The category wise analysis examines the following facts. The under graduate student respondents top the position with respect to their overall purpose of using e-resources as their secured mean score is 3.98 on a 5 point rating scale. The post graduate student's respondents take the

Table 8. Category-wise respondents' purpose of using e-resources.

Purpose	Category				Total
	Faculty	Research scholar	PG student	UG student	
For research	4.21	3.76	4.26	4.49	4.20
E-books	3.78	4.21	4.36	4.43	4.10
Career information	3.89	4.10	4.11	4.19	3.95
Preparation for class teaching	2.39	4.01	3.76	3.58	3.11
E-journals	2.16	3.18	3.52	3.90	3.15
General Information	2.19	2.05	3.39	3.59	2.65
Sending and receiving e-mail	2.11	2.56	2.76	3.11	2.45
Entertainment	2.56	3.11	3.36	3.52	2.90
Total	3.08	3.55	3.83	3.98	3.46

PG, Post graduate; UG, under graduate.

Table 9. Category-wise respondents' problems in encountered while internet browsing.

Problem	Category				Total
	Faculty	Research scholar	PG student	UG student	
Over load information on internet	3.96	3.81	2.96	2.52	4.01
Slow access speed	3.76	3.77	2.56	2.26	3.51
Limited access to computers	3.52	2.77	3.15	3.11	3.16
Lack of time	2.44	3.52	2.85	3.15	2.96
Virus	2.52	2.81	3.81	3.52	3.18
Retrieval of unwanted information	3.36	3.85	4.11	3.79	3.85
System hang-up	2.12	2.36	3.36	2.96	2.52
Total	3.22	3.38	3.24	3.03	3.39

PG, Post graduate; UG, under graduate.

second position in their overall purpose of using e-resources as their secured mean score is 3.83 on a 5 point rating scale. The research scholar respondent's rank in the third position in their overall purpose of using e-resources as their secured mean score is 3.55 on a 5 point rating scale. The faculty respondents take the fourth position in their overall purpose of using e-resources as their secured mean score is 3.08 on a 5 point rating scale. It could be seen clearly from the above discussion that under graduate respondents take the first position with respect to their overall purpose of using e-resources, post graduate respondents the second, research scholars the third and faculty respondents the last.

A study of the data in Table 9 indicates the category wise respondents' problems in browsing internet. The category wise analysis examines the following facts. The research scholar respondents top the position with respect to their overall problems in browsing internet as their secured mean score is 3.38 on a 5 point rating scale. The post graduate student respondents take the second position in their overall problems in browsing internet as their secured mean score is 3.24 on a 5 point rating scale. The faculty respondent's rank in the third

position in their overall problems in browsing internet as their secured mean score is 3.22 on a 5 point rating scale. The under graduate respondents take the fourth position in their overall problems in browsing internet as their secured mean score is 3.03 on a 5 point rating scale. It could be seen clearly from the above discussion that the research scholar respondents take the first position with respect to their overall problems in browsing internet, post graduate student respondents the second, faculty respondents the third and under graduate respondents the last.

A study of the data in Table 10 indicates the category wise respondents' satisfaction with the use of internet. The category wise analysis examines the following facts. The under graduate student respondents top the position with respect to their overall satisfaction with the use of internet as their secured mean score is 4.05 on a 5 point rating scale. The post graduate student respondents take the second position in their overall satisfaction with the use of internet as their secured mean score is 3.93 on a 5 point rating scale. The research scholar respondent's rank in the third position in their overall satisfaction with the use of internet as their secured mean score is 3.76 on

Table 10. Category-wise respondents' satisfaction with use of internet.

View on library service	Subject				Total
	Faculty	Research scholar	PG student	UG student	
Excellent	2.52	3.36	3.52	3.72	2.90
Good	3.77	4.01	3.58	4.27	3.81
Poor	2.96	3.39	3.96	2.79	3.04
Very poor	3.66	3.77	4.11	4.21	3.77
No opinion	3.99	4.26	4.33	4.56	4.15
Total	3.48	3.76	3.93	4.05	3.58

PG, Post graduate; **UG**, under graduate.

5 point rating scale. The faculty respondents take the fourth position in their overall satisfaction with the use of internet as their secured mean score is 3.48 on a 5 point rating scale. It could be seen clearly from the above discussion that the under graduate respondents take the first position with respect to their overall satisfaction with use of internet, post graduate student respondents the second, research scholars the third and faculty members the last.

Recommendations

Based on the findings of this study, the following suggestions are put forward to improve the use of the internet resources among faculty members, research scholars, post graduate students and under graduate students of the government arts and science colleges in Tamil Nadu:

- i. The college authority should endeavour to provide facilities necessary to procure and give access to electronic information resources.
- ii. The post-graduate departments of the college should teach faculty how to search/browse for e-information, evaluate its validity, and to make judicious use of it.
- iii. There is need to develop knowledge about use of electronic thesis and dissertations, technical reports, patents, etc., available online.
- iv. The central library of the college should start a digital information literacy programme to educate the faculty members.
- v. The Library should subscribe more e-journals and e-databases.
- vi. The college administration should develop the necessary infrastructure for the promotion of e-information.
- vii. Some orientation training programmes should be organized by the college at regular intervals so that the maximum users can improve their excellence or proficiency in the use of the internet for academic purposes.

Conclusion

The study showed that Internet has radical impact on the changing higher education environment. In conclusion, it can be said that in view of credibility, the internet and e-resources have exponentially changed the way people communicate, interact, acquire, share knowledge, search, investigate and participate in creation and re-use of content and prompted to bring revolutionary changes in almost all spheres of activities of present day education and learning system and evolved broadly a collaborative structure over the ground and pillars of a range of new technological tools and techniques. The results of the study indicate that the internet facilities in the central library are being well used by the research scholars and faculty in sciences. Although most of the users are well aware about the internet and its tools but still the library professionals can contribute a lot. As library professionals are well versed with indexing and searching techniques hence these techniques can be taught to the users of internet. The major problems of the respondents are the downtime of internet server, speed of internet and timings of the internet laboratory. The library should take some steps for enhancing the speed of internet and timings of the laboratory.

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