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Awareness and Use of ICT among Undergraduate Students of Rural Areas in Dindigul District: A Study

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Abstract

This study aims to analyze student's awareness and use of ICT the rural area at Dindigul. A survey of the questionnaire was distributed randomly to the total of 150 students a rural area in Dindigul district. The survey research design was a study adopted. The data for quantitative research were analyzed for both descriptive and inferential statistic using SPSS (version 23) software. A comparison of undergraduate students between awareness and use of ICT sources and services. Independent samples t-test and ANOVA test difference were performed across two groups, which are gender and age. The results of the tests conducted indicate that ICT integration is a great effectiveness for the students. The study found that majority of the respondents had ICT information needs on their academic engagements like class assignment and preparing exam updating subject Knowledge. The study recommended that the teaching needed to ICT oriented training program for rural students it improvetheir career development and education level.

Keywords: ICT, Awareness, Students, Rural Area, the Statistical technique of ANOVA test and T-test.

1. Introduction

Information Communication Technology (ICT) is one of the important slogans of today's education world. It has changed the society into an information society and our way of life. It has been integrated into every walk of our life. ICTs play a vital role for knowledge dissemination to the advancement of our educational society. The Library is the main source of information and able to provide the users with the necessary facilities in ICT infrastructure from which they access the required information. The Internet is that the gateway for libraries and knowledge centers to enter the Electronic modern Era and is providing the knowledge, generated by totally different organizations, establishments, institutions, research centers and peoples everywhere the world.

Information and Communication Technology is the fusion of computers and telecommunications. It describes exciting and innovative ways to provide lifelong learners with global access to information, leaving and support. Computers enable people to work creatively. It can be used discussing, questioning, supporting a partner, debating, sharing data, analyzing, seeking, collecting, organizing, and online information and exploring the real world (Master Arul Sekar, 2016).

2. Literature Review

Thanuskodi (2009), India has significant advantages in the 21st century knowledge race. It has a large higher education sector – the third largest in the world in student numbers, after China and the United States. The library is the chief instrument for accumulating and using our intellectual heritage. Formal education can be conducted effectively and efficiently only with well-equipped libraries. Today, libraries are connected to a vast ocean of Internet-based services. Electronic resources are developing rapidly. Academic libraries are the nerve centres of their institutions, and must support teaching, research, and other academic programmes. The situation in academic libraries in India is the same as that of academic libraries the world over; however, Indian libraries must provide maximum information with limited resources. This article explores the Indian higher education environment in relation to academic libraries.

According to Biradar (2006) conducted a study on Internet usage by the students and faculties in Kuvempu University. The results indicated that 42.1 % of students use the Internet twice a week and 31.25% faculties use it every day. The majority of students, further as faculties, use internet for teaching purpose. The favorite place for using the Internet is library followed by commercial places. A thumping majority of respondents are satisfied with web sources and services.

Jude and Dankaro (2012) conducted a study on the usage of ICT by a teacher in College of Education Katsina-Ala, Benue, Nigeria and found that 87.5% of the teachers had no facility of Laptops/computers in College while 95.0% had personal laptops/computers. 82.5% of lecturers had no internet services in offices. The majority of the teachers did not use television (82.5%), radio (90%) and power point presentation (82.5%) in lectures.

According to Thanuskodi (2013), E-resources are mushrooming online and in other formats. This phenomenon is due to the rapid advancement of information technologies, including the Internet and digitizing techniques. The extent of e-resources (including e-journals, e-books, etc.) is spiraling, although no exact number is available. These changes significantly enlarge the size of the

electronic resources pool. Electronic resources have become one of the most important aspects of a digital library. The study reveals that slightly over one-third of the respondents (40%) spent less than 2 hours on the Internet per session, followed by those having 2-3 hours per session (29.17%). The study also shows that of the total of 120 respondents, 30.83% search documents with the help of the library Website.

Further, the preliminary results of the survey Thanuskodi (2012) analyzed ICT use among faculty members of Annamalai University, Tamil Nadu, and India. The study found that the majority of the faculty members preferred Internet (82.85 %) and computers (75 %). 75.71 % faculty members used ICT for creating new information, 83.92 % used for research and 80 % used for developing skills and knowledge.

Jebamalar (2013) surveyed the use of ICT based Resources and Services among the Users of Arts and Science Colleges Affiliated to Manonmaniam Sundaranar University and 179 research scholars, 31.84% of them faced slow access speed while accessing ICT based resources and services.

3. Statement of the Problem

The main problem in ICT learning opportunity for educational institutions the need of the rural area students. In Dindigul, the ICT literacy rate of the rural undergraduate students is much less than the urban students. There is a need for computer literacy as well as literacy in Dindigul district; there is a connection between education level and use of electronic means or the Internet. This is a major drawback in which the users are not technically literate to use the technology. In Dindigul district, the poor rural student who does great effort for their daily living. To whose accessing the Internet is a costly issue for necessary communications in the form of installing the required telephone lines needed for internet or email access is similarly too exclusive in developing rural peoples.

4. Objectives of the study

The main objectives of the study are as follows:

- To compare the level of awareness about ICT among male and female the undergraduate students.
- To study the level of satisfaction ICT among the undergraduate students.
- To study the user's views about ICT

- To analyze the purpose of library use.
- To examine the frequency of using ICT based resources and services
- To examine the frequency of Visiting Library
- To suggest improvement measures based on the findings of the study
-

5. Scope and Limitations of the Study

- The findings of the study are valid to the ICT skills of undergraduate students from rural areas in Dindigul and it may or may not be valid for another district.
- The questionnaire has been designed only for the undergraduate students in rural areas in Dindigul district.
- The present work is a detailed study only on the ICT skills of undergraduate students in rural areas in Dindigul district.

6. Null Hypothesis

- There is no significant difference between male and female Undergraduate Students and awareness of Information and communication technology.
- There is no significant difference between the Genders groups Location of usage of ICT based resources.
- There is a no significant difference between Age and level of satisfaction of information and communication technology.
-

7. Methodology

The study was conducted on the use of ICT among Undergraduate Students in Rural areas is a descriptive research that adopts the survey method. For collecting the essential data from Out of 160 Undergraduate Students from Rural areas in Dindigul only 150 (94 percent) responded with the filled in the questionnaire. The data collected through the questionnaires were analyzed, classified, and tabulated for better by administering a questionnaire on “Awareness and use of ICT among Undergraduate Students of Rural areas in Dindigul district: A Study”. The study is observed nature based on the survey method. Both primary and secondary Undergraduate Students of Rural areas in Dindigul district, secondary data have been used in this study. Primary data have been collected from students and, with the help of a structured questionnaire. Secondary data have been collected from books, journals, and Websites.

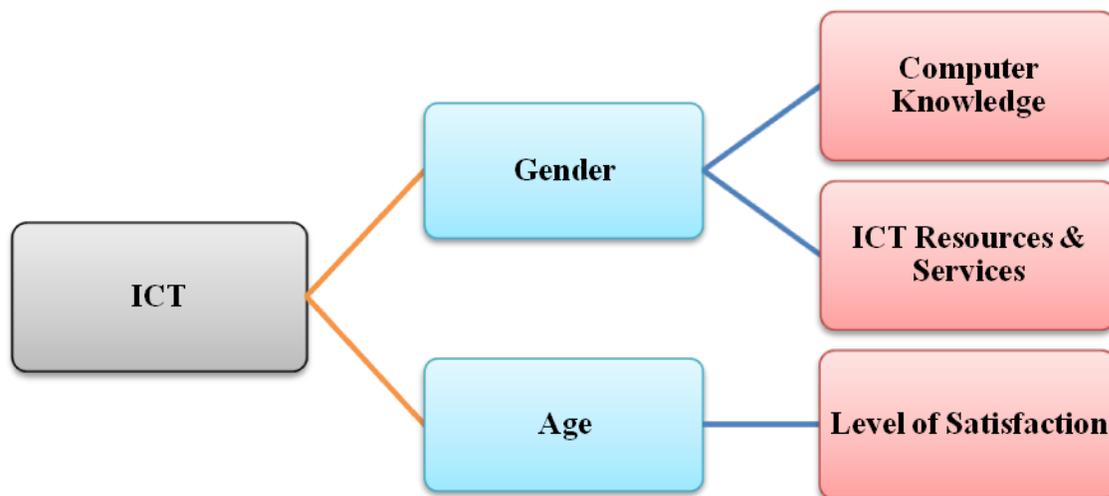
7.1 Design of the Questionnaire

The scaling used for the primary data collection has been graphical, Likert pattern and yes or no. The indicator was measured using the five-point Likert scale has been used for measuring the level of Highly Satisfied (HS-5), Satisfied (S-4), Neutral (N- 3), Dissatisfied (D-2), and Highly Dissatisfied (HD-1) of respondents about the Undergraduate Students. The yes or no question has been used to check the opinion of the respondent and multiple choices question used multi opinion of the respondents.

8. Data Analysis and Results

The level of awareness and usage level of satisfaction of ICT as the dependent variables. The independent variables selected for the study were age, gender. The data were analyzed through the application of required statistical techniques tools like i.e. Frequencies, Percentage, Descriptive statistics Mean, and Standard deviation, t-test of Independent t-test and One-way ANOVA and Post Hoc Test (Duncan Test).

Figure: 1 Research Model



The above the fig.1 shows the research model for the study. Undergraduate students have different types of ICT skills like Computer Knowledge, ICT Resources and services, Level of satisfaction. It has a statistical technique specially designed to test whether the means of more than

two quantitative populations are equal. Example age is a variable and can take the age of different students, Gender is a variable and can also be male or female, Age is another variable.

8.1 Population Study

Table 1-Gender wise distribution

| Gender | Respondents | Percentage |
|---------------|--------------------|-------------------|
| Male | 66 | 44.00 |
| Female | 84 | 56.00 |
| Total | 150 | 100.00 |

Table-1 shows that overall population (n=150) based on gender, there are 84 female respondents with a percentage of 56% as compared to 66 Male respondents with 44%.

Table 2-Distribution of Respondents by Age

| Age | Respondents | Percentage |
|--------------|--------------------|-------------------|
| Below | 21 | 14.0 |
| 20-22 | 63 | 42.0 |
| 23-25 | 45 | 30.0 |
| Above 25 | 21 | 14.0 |
| Total | 150 | 100.0 |

Table-2 shows that out of 150 respondents, 63 (42%) of respondents were the age group of below 20-22, followed by 45 (30%) of respondents were 23-25 and 21(14%) of respondents were the age group of Above 25.

8.2 Use of computer and e-resources

Table 3-Use of Computer

| Using computer | Respondents | Percent |
|-----------------------|--------------------|----------------|
| Yes | 150 | 100.0 |
| No | 0 | 0 |
| Total | 150 | 100.0 |

Table- 3 shows that 150 (100%) respondents were the use of the computer using available from the library and Zero percent respondents do not use it.

Table 4-The frequency of Using ICT based Resources and Services

| Frequency of using ICT | Respondents | Percentage |
|-------------------------------|--------------------|-------------------|
|-------------------------------|--------------------|-------------------|

| | | |
|----------------------|------------|--------------|
| Daily | 70 | 46.7 |
| 2-3 times in a week | 24 | 16.0 |
| Monthly | 12 | 8.0 |
| Once a week | 15 | 10.0 |
| Above 4 times a week | 18 | 12.0 |
| Occasionally | 11 | 7.3 |
| Total | 150 | 100.0 |

Table-4 shows that the Frequency of Using ICT by the respondents. Maximum 70 (46.7%) respondents used ICT based resources daily, followed by 24 (16%) 2-3 times in a week, and 18 (12%) Above 4 times in a week, and 15 (10%) once a week and 12 (8%) Monthly, 11 (7.3%) of the respondents rarely used ICT resource.

8.3 Frequency of Using ICT

Table 5- The Frequency Visiting of Library

| Library Visit | Respondents | Percentage |
|----------------------|--------------------|-------------------|
| Daily | 57 | 38.00 |
| Twice in a Week | 27 | 18.00 |
| Weekly | 27 | 18.00 |
| Monthly Twice | 39 | 26.00 |
| Total | 150 | 100.00 |

Table-5 shows that the frequency of visiting the Library for various purpose. It indicates that majority of respondents 57 (38%) were visiting the library Daily, and followed by 39 (26%) were visiting in the library Monthly Twice, 27 (18%) were visiting library Twice in a week, and same respondents visiting library weekly, the respondents used ICT resource.

Table 6-The frequency of using ICT based resources and service

| ICT Based Resources | Respondents | Percent |
|----------------------------|--------------------|----------------|
| Daily | 70 | 46.7 |
| 2-3 times in a week | 24 | 16.0 |
| Monthly | 12 | 8.0 |
| Once a week | 15 | 10.0 |
| Above 4 times a week | 18 | 12.0 |
| Occasionally | 11 | 7.3 |
| Total | 150 | 100.0 |

Table-6 shows that the majority of the respondents 70 (46.7%) were using ICT based resources daily, followed by 24 (16%) were using ICT 2-3 times in a week, and 18 (12%) were using ICT Above 4 times in a week, and 15 (10%) were using ICT once a week and 12 (8%) were using Monthly, 11 (7.3%) of the respondents rarely were using ICT resource.

Table 7-The frequency of Using ICT product

| ICT Devices | Respondents | Percent |
|------------------------|--------------------|----------------|
| Desktop | 45 | 30.0 |
| Laptop | 33 | 22.0 |
| Mobile | 21 | 14.0 |
| Tablet | 27 | 18.0 |
| Projector | 3 | 2.0 |
| CD-DVD/Pen Drive/Modem | 6 | 4.0 |
| Digital television | 6 | 4.0 |
| Others | 9 | 6.0 |
| Total | 150 | 100.0 |

Table -7 shows that the majority 45 (30%) of the respondents used ICT resources in through Desktop, followed by 33(22%) of the respondents from via Laptop, and 21(14%) of the respondents through got ICT information in Mobile, 27 (18%) of the respondents from got information in tablet, and least number respondents got ICT information in projector, CD-DVD/Pen Drive/Modem, Digital television.

8.4 Purpose of using Library

Table 8-Purpose of using the Library

| Purpose of using the college library | Responses | |
|---|------------------|-------------------|
| | N | Percentage |
| Updating subject knowledge | 84 | 23.7% |
| Prepare for examination | 57 | 16.1% |
| For browsing internet | 57 | 16.1% |
| Reading newspaper | 30 | 8.5% |
| For circulation | 36 | 10.2% |
| For taking notes | 27 | 7.6% |
| To complete the assignment | 48 | 13.6% |
| Consult periodicals /journals | 15 | 4.2% |

| | | |
|--------------|------------|---------------|
| Total | 354 | 100.0% |
|--------------|------------|---------------|

Table -8 shows that majority of the respondents 84 (23.7%) were purpose of using library in Updating subject knowledge, 57 (16.1%) were using library in Prepare for examination, 57 (16.1%) of the respondents used for browsing internet, 30 (8.5%) were used for Reading newspaper, 36 (10.2%) were used for circulation, 27 (7.6%) were used for taking notes, 48 (13.6%) were used To complete assignment, 15 (4.2%) were used for Consult periodicals /journals.

Table 9-Descriptive test influencing ICT Knowledge Mean value

| Source | N | Mean | Std. Deviation |
|------------------------|-----|------|----------------|
| CD-ROM Searching | 150 | 4.60 | 0.777 |
| Online Searching | 150 | 3.86 | 0.602 |
| File format | 150 | 4.08 | 0.938 |
| Online Information | 150 | 3.24 | 1.034 |
| News clipping scanning | 150 | 3.34 | 1.510 |
| Online reservation | 150 | 3.60 | 1.187 |
| Database searching | 150 | 3.94 | 0.950 |

Table-9 shows that the mean score value of ICT Knowledge of respondents. It clearly shows that the maximum number of respondents agree with the sources above. The highest mean score of ‘CD-ROM Searching’ mean value 4.60 and the standard deviation of 0.777 followed by the ICT Knowledge ‘Online Searching of respondents in mean value 3.86 and the standard deviation of 0.602 and ‘file format’ of the respondents 4.08 of a mean value and 0.938 of a standard deviation. Mean value 3.24 and a standard deviation of 1.034 of the respondents in ‘Online Information’. ‘News clipping scanning’ with the mean score of 3.34 and standard deviation of 1.510, ‘Online reservation’ of the respondents with the mean score of 3.60 and standard deviation of 1.187, ‘Database searching’ with mean value 3.94 and standard deviation of 0.950.

Null Hypothesis

There is no significant difference between male and female Undergraduate Students and awareness of Information and communication technology.

Table 10- Independent Sample T-Test

Test whether a significant difference between Genders groups with using services and their awareness of ICT

T-Test for difference of two means Independent Sample T-Test

| Variables | Gender Group | | | | T-value | P-value |
|-----------------------|--------------|------|--------|-------|---------|---------|
| | Male | | Female | | | |
| | Mean | S.D | Mean | S.D | | |
| Browsing | 2.95 | .210 | 2.89 | 0.311 | 1.382 | 0.005 |
| Downloading articles | 2.14 | .552 | 2.21 | 0.493 | -.912 | 0.996 |
| Reading surfing | 2.14 | .975 | 2.18 | 0.809 | -.290 | 0.001 |
| Scanning journals | 2.27 | .621 | 1.96 | 0.685 | 2.852 | 0.498 |
| Internet surfing | 2.32 | .826 | 2.21 | 0.822 | 0.767 | 0.811 |
| Reading emails | 2.27 | .692 | 2.32 | 0.541 | -.484 | 0.021 |
| Chatting with friends | 2.18 | .893 | 2.18 | 0.809 | 0.023 | 0.063 |

Table -10 shows that comparing the t-test values and significance values, it is made clear that the t-test comparisons favor the acceptance of the alternative hypothesis. Hence, the null hypothesis is rejected and the alternative hypothesis is accepted.

There was a significant difference at the 5% level between male and female undergraduate student's responses. As the p-value of Levene's for the ICT awareness, Browsing (0.005), Reading surfing (0.001), Reading e-mails (0.021) is less than 0.05, it rejected the null hypothesis and it is concluded that the variance using ICT services among male is significantly different from female. The p-value Downloading articles (0.996) Scanning journals (0.498), Internet surfing (0.811), Chatting with friends (0.063) is greater than 0.05, it accepted the null hypothesis and concludes that the variance in awareness of ICT information of male is not significantly different from female.

They were using ICT service these Browsing, Downloading articles, Reading surfing, Scanning journals, Internet surfing, Reading emails and Chatting with friends, calculated 't'- value 1.382, -.912, -.290, 2.852, 0.767, -.484 and 0.023. Since the p-value is less than 0.01, the null hypothesis is rejected at 1% level of significance with using ICT service and their awareness and more than 0.05 values; the null hypothesis is accepted at 5% level of significance.

Null Hypothesis

There is no significant difference between the Genders groups Location of using ICT based resources.

Table 11-Independent Sample T-Test

Test whether a significant difference between Genders groups Location of using ICT based resources

| Variables | Gender Group | | | | T-value | P-value |
|--------------------|--------------|-------|--------|-------|---------|---------|
| | Male | | Female | | | |
| | Mean | S.D | Mean | S.D | | |
| Library | 3.955 | .2099 | 3.750 | .6920 | 2.317 | 0.001 |
| Cyber Cafe | 3.05 | .210 | 2.96 | .424 | 1.425 | 0.318 |
| Computer Lab/Dept. | 2.95 | .935 | 2.96 | 1.023 | -.060 | 0.065 |
| Home/Hostel | 2.41 | 1.037 | 2.64 | 1.014 | -1.388 | 0.380 |
| Other places | 2.95 | 1.115 | 2.64 | 1.295 | 1.554 | 0.008 |

To find out the significant difference, the Independent t-test is applied and the details are presented in the Table-11 shows that there is a significant difference between Genders groups where do you use ICT based resources. As the t-value for Location of using ICT based sources are Library, Cyber Café, Computer Lab/ Department, Home/ hostel, and Other places with the calculated t- value were (2.317,1.425,-.060,-1.388,1.554).

As the p-value of Levene’s test for hypothesis, greater than 0.05 significant values are Cyber Café (0.318), Computer Lab/Department (0.065) Home/Hostel (0.380)is null hypothesis accepted and it is concluded that the variance location of using ICT based resourcesamong male isnot significantly different from female.

The p-value of Levene’s test for hypothesis less than 0.05 of Library (0.001) and Other places (0.008) is rejected the null hypothesis and it is concluded that the variance location of using ICT based resourcesamong male issignificantly different from female.

Null Hypothesis

There is a no significant difference between Age and level of satisfaction of information and communication technology.

**Table12 -Test whether significant difference among age group with
Regard to the level of satisfaction of ICT
One way ANOVA and Post Hoc Test (Duncan Test)**

| | Age Group | | |
|--|-----------|--|--|
|--|-----------|--|--|

| Variables | Below 20 | 20-22 | 23-25 | Above 25 | F-value | P-value |
|-------------------------|----------|-------|-------|----------|---------|---------|
| Text Books | 4.29 | 4.67 | 4.93 | 4.57 | 2.831 | 0.041 |
| Current Periodicals | 4.14 | 3.86 | 4.13 | 3.86 | 2.124 | 0.100 |
| Journal back volumes | 3.86 | 4.29 | 3.20 | 4.00 | 10.292 | 0.001 |
| Magazines and newspaper | 4.14 | 3.62 | 3.53 | 3.43 | 1.545 | 0.205 |
| Education CD'S | 3.43 | 4.19 | 2.07 | 3.43 | 21.050 | 0.001 |
| UG/PG Project reports | 3.43 | 3.71 | 3.33 | 4.71 | 5.001 | 0.002 |
| Electronics resources | 4.00 | 4.52 | 3.07 | 4.29 | 18.278 | 0.001 |

Table -12 shows that the Based on the Duncan multiple range test (DMRT) the age group of below 20, 20-22 and 23-25 is significantly differ with above 35. Comparing the F -test values and significance values, it is made clear that the ANOVA comparisons favor the acceptance of the alternative hypothesis. Since the P-value is less than 0.01 the null hypothesis is rejected at the 1 % level.If the P- value between 0.01 to 0.05 (ie. $0.01 < P \text{-value} \leq 0.05$) then reject H_0 at 5% level of significance Hence there is a significant difference between age group and level of satisfaction of ICT.

The One way ANOVA and Post Hoc Test (Duncan Test) test of p-value were Journal back volumes <0.001 , Text Books .04, Education CD'S <0.001 , UG/PG Project reports <0.002 , Electronics resources <0.001 is null hypothesis rejected and it is concluded that there is a significant difference between the level of satisfaction of ICT of the respondents among age groups.

The P - value is Current Periodicals (0.100), Magazines and newspaper (0.205) is null hypothesis accepted and it is concluded that there is not a significant difference between the levels of satisfaction of ICT of the respondents among age groups.

9. Conclusion

This research provided awareness into the ICT Skills of Undergraduate degree students of rural areas in Dindigul (Dt): A study the data was obtained through a well-structured questionnaire, informal interview and observation method. Various tools were used for analyzing the data to find out the solution like Analysis of variance for ANOVA test and t-test, and Descriptive statistics. The study recommended that there is need to improve the access of the student to ICT in an oriented training program for rural students improvetheir level of using ICT resources and also developed their education level. Strategies employed in meeting their ICT needs to be exposed to their limited ICT knowledge even as they only have little exposure to an available training program. Many considered difficult identifying their needs class assignment and preparing the exam, online searching, database searching,and internet browsing subscription requirements and challenges;

hence their low-level ICT establishing difficulty against the full exploration of information resources that may be available for their access.

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