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Computer usage in teaching and learning among Indian Academics: Exploring the Gender disparity

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Abstract

This study aims to explore the gender disparity in Computer usage for teaching and learning among Indian academics. A total of 2463 samples were selected from 11 state universities in Karnataka, India. A well designed questionnaire was used to collect the data from the respondents. The result shows that, half of the male (50.2%) and female (49.8%) respondents used computer. Further, most of the male respondents used computer every day (58.0%) compared to female (42.0%) respondents. The present study found that majority of the respondents used computer for the research purpose (Male=55.6%, female=44.4%), followed by to read the e-books/e-journals, (Male=54.7%, female=45.3%) to prepare notes, to access Internet (Male=50.6%, female=49.4%), to prepare presentation slides (Male=50.1%, female=49.9%), to prepare class assignments (Male=49.1%, female=50.9%) and to improve typing skills (Male=51.8%, female=48.2%) and also to prepare project reports (Male=48.4%, female=51.6%).

Keywords: *Computer, ICT, Gender, Internet, Universities, Research, Academic.*

Introduction

During the last two decades higher education institutions have invested heavily in Information and Communication Technologies (ICTs). ICT has had a major impact in the

university context, in organization and in teaching and learning methods (Ben Youssef and Dahmani, 2008). In today's global and competitive environment, interactive Computer technology is becoming a widely accepted tool for multi-facet development in view of the flexible, quality services it offers and the potential to revolutionize the traditional education system (Sampath Kumar and Manjunath, 2013). Computers began to be used in schools in the early 1980s, and several scholars suggest that ICT will be an important part of education for the next generation (Bransford *et al.*, 2000; Grimus, 2000; Yelland, 2001; Ghavifekr *et al.*, 2016).

We have witnessed a tremendous growth in the Information and Communication Technologies (ICT) during the last two decades especially in the field of education institutions (John, 2015). This has posed many challenges to both faculties and Institutions. Institutions have spent and even spending considerable amounts of money to create Information Technology infrastructure and online learning opportunities. In return, faculties are expected to achieve technological competence and implement better forms of teaching practices which improve the student learning experiences. In universities, faculties can prepare the students for a digital world by allowing them to do their projects and other works involving the use of Information Technology resources (Roblyer and Doering, 2006; John, 2015).

Information technologies in education include computer technologies used to generate course materials such as word processing, presentation programs, database programs, electronic mails, websites, blogs, social networking sites etc. Further, the Information Technologies can be used by faculties for lesson planning, electronic research purposes, for recording and presenting classes online etc (Roblyer and Doering, 2006; John, 2015).

The potential of computer technologies to revolutionize university teaching and learning has long been celebrated by education technologists. Despite huge efforts to position computer technology as a central tenet of university education, the fact that many students and faculty

make only limited formal academic use of ICT during their teaching and learning is less discussed by educational technologists (Selwyn, 2007).

Computer technology in India has become an almost integral part of school, college, and university education as an additional specialised professional qualification. Students use the internet for communication, entertainment, socializing and education. The web search engine, Google, has become an important source of information. The web searching of these students is strengthened all the more when they enter the university system (Kumar, 2012).

Worldwide opportunities to access the computer and Internet vary dramatically among the different countries and individuals. Among the developing countries, India reached a significant position in development of ICTs. Particularly in the field of education, its development is tremendous. There is no doubt that in the near future, development will be based on ICTs. However, benefits of ICTs have not reached the expected level in the rural areas, and the Indian rural population still lives with minimum level of ICTs. As per the 2011 census, 72.2 per cent of the population lives in rural areas and the remaining 27.8 per cent lives in towns and urban agglomerations (Roy, 2012; Sampath Kumar and M.T. Basavaraja, 2016).

Keeping the importance of ICT in teaching and learning process, the present study has been undertaken to explore the use of computer among the students and faculty members working in universities of Karnataka State, India.

Review of Literature

McMahon *et al.*, (1999) examined the factors affecting the use of computers by university over a three year period. Unsurprisingly, the results indicated that situational factors (e.g. access, training and time) influence the extent to which students use computers, but a disparity was found in the importance attributed to these factors by the academic staff, who focused on the needs of their department, and by the students, who focused on their individual

needs. Results suggest that increased attention to a student perspective may lead to improved strategic planning in students' use of computers.

According to Jackson *et al.*, (2001) examined survey on gender differences in Internet use and factors responsible for these differences. A sample of 630 Anglo American undergraduates completed the Student Computer and Internet Survey that contained questions about e-mail and Web use, and about potential affective and cognitive mediators of use. Also as predicted, females reported more computer anxiety than did males, and males reported more computer self-efficacy than did females. Gender differences in computer attitudes indicated that females were less likely than males to believe in the importance of computer skills, to believe that using a computer may cause health problems, and to endorse gender and racial/ethnic stereotypes about computer skills. Females were somewhat more likely than males to believe that computers are taking over. There were no gender differences in e-mail or Web trust, e-mail or Web privacy, or success at Web searches.

Hassan *et al.*, (2007), explore the study on computer usage among secondary school students in a selected school in Malaysia. It is to identify the routine of the students in using computer and internet access. From this study, the results revealed that more than half of the students had computers at their homes but unfortunately only about half from the figures had internet access. This study also disclosed that the venue of the most students spent using computers to get their internet access was at the cyber café. In addition, the difference between genders were also make known that male students spent more hours significantly compared to female students in playing computer game, downloading files and also surfing negative web page from the Internet.

Khan and Ghadially (2010) collected the data from 155 young Muslim women and men studying in three computer training centers in Mumbai, and a gender-based comparison was conducted. Data for computer ownership and home Internet connections were low for the entire

sample, and the training centers and cybercafés were important points of access for females and males, respectively. In terms of perceived empowerment, young women reported higher gains than men did from computer learning when combined with ICT use. Thus, despite the existence of a gender-based digital divide, when bridged, ICTs showed potential as an equalizing force between the genders. In light of the above, policy measures to widen access and provide subsidized training are suggested.

A study by Rahman (2011) revealed that 78.7 % of the students used computers since more than two years. Approximately 66 % students utilized their computers every day for their studies both at home and college. Majority of the students, about 63.7% gained their knowledge about computers from personal study and experience and the remaining 36.3 % acquired their knowledge from a special computer course.

Kumar and Mahajan (2013) investigated the levels of computer literacy among students in relation to their demographic characteristics in selected Indian universities. The study only revealed significant differences for computer use among various academic majors. There were no statistically significant differences for computer usage on the parameters pertaining to student categories, gender and age. This study clearly indicated that gender and age of students did not have any influence on computer utilization. The higher use of the internet was observed among research scholars, although there were statistically no significant variations between both categories, i.e. research scholars and postgraduate students. Similarly, male students made more academic use of internet in comparison to their female counterparts.

Abdelaziz *et al.*, (2013) investigated and measured postgraduate students' attitudes toward the Internet and computer use. A total of 289 postgraduate students participated in this study. Results reveal that, participants have a high level perception of the usefulness and their control of the computer and Internet, no significant differences were found between participants'

attitudes toward the Internet and computer related with gender, field of study, and ethnicity, and postgraduate student's attitudes toward computer and Internet usage is age related.

A survey conducted by the Sampath Kumar and Manjunath (2013) focused on the use of computer, experience in the use computer and use of various computer applications by students and faculty members of dental sciences. The Study found that all the respondents used computer. Majority of respondents had their own computers and they had 3-5 years of experience in using computer. Majority of them felt that they were most competent in computer skills and therefore training is not necessary.

Soh *et.al.*, (2013) explored the study gender differences in urban adolescent Internet access, usage and motives. Data were collected from 914 urban school students in Malaysia. Factor analysis revealed that eroticism, entertainment, social–interaction, shopping and information/surveillance are the key drivers for adolescence Internet usage. No differences between boys and girls were detected in Internet accessibility and home computer ownership. Boys and girls differed in their intensity of usage, place of access and their motivations to use the Internet. Girls were more motivated by social–interaction, shopping and surveillance/information, while boys were more motivated by eroticism and had a higher tendency to be addicted to the Internet. However, boys and girls did not exhibit any significant differences in online entertainment motivation.

Further, Sampath Kumar *et al.*, (2014) conducted the study to determine the computer access, use and its impact on academic performance among faculty members and research scholars of Kuvempu University. Findings of the study showed that a large majority of the faculty members had access to computers at departments (97.14%) and home (85.71%) while majority of research scholars had access to computer at central library of the university (95.71%). Another interesting finding of the study was that majority of faculty members (90%)

and research scholars (85.71%) used computer daily. This clearly indicates that the respondents are heavily depending on computer for academic work.

According to Sampath Kumar and Basavaraja (2016) explored the study clearly showed that 72 per cent of female and 63.33 per cent of male students have not used a computer. Most of the students opined that lack of support from teachers (91.57 per cent Male, 94.25 per cent Female) and non-availability of computers at home and schools (82.10 per cent Male, 80.55 per cent Female) were the main reasons for not using the computer. A notable finding of the study was that 93.68 per cent of male and 95.37 per cent of female students were interested in using a computer. Most of the students opined that the state/local government should establish computer laboratories and provide Internet facilities in rural schools.

According to Basavaraja and Sampath Kumar (2017) aimed to investigate the study on gender differences in the use of ICT by the students of urban schools. The study found that there is a significant association between the place ($p=.005$) and frequency ($p=.002$) of use of computers and gender. It is also found that there are significant differences in the problems faced by students while using computers ($p=.002$), use of Internet ($p=.004$), and the gender. This clearly indicates that there exists a gender disparity in the use of ICT by the male and female students in the urban schools. In order to overcome this disparity, the school authority should provide the basic and necessary ICT infrastructure in schools which can be equally used by male and female students.

According to Ahmad *et al.*, (2018) conducted the study results also show that male students have less “computer anxiety” than female students, and the reasons might be that less percentage of female students have their own PCs and do not get maximum opportunities to work on computer. Therefore, they feel greater computer anxiety than male students. Thus, to minimize the computer anxiety among female students in particular, the possession of PCs is very important, and it is recommended that authorities should facilitate all students, particularly

female students, in possessing PCs either through the continuity of the Prime-Minister Free Laptops Scheme in higher education institutions (universities) or by providing easy loans to students for getting PCs. Moreover, trainings on the computers and internet usage for female students by the concerned departments of the university can improve the situation.

Gasaymeh (2018) to examined the study extent of undergraduate students' use of Information and Communication Technologies (ICT) for personal and educational purposes. The result shows that, most of the participants (87.3%, n=220) reported having “easy” or “very easy” access to a computer. The great majority of participants had access to their own computers. A low percentage of participants used computers belonging to their relatives or friends. A very low percentage of the participants (6.3%, n=16) used the university computer lab. This might reflect the students' limited use of computers for educational purposes.

Research questions

The present study has been conducted with the following research questions:

RQ1. For what purpose the male and female respondents use computer and its applications?

RQ2. Which are the preferred places for using computer by male and female respondents.

RQ3. Who spends more time in using computer?

RQ4. Is there any significant difference in the purpose of use of computer by male and female?

Hypotheses

The following hypotheses were formulated and tested with the data using Statistical Package for Social Sciences (SPSS-26.0 version).

H1. There is an association between the use of computer and the gender.

H2. The preferred places for using computer will vary among the male and female respondents.

H3. Male respondents spend more time in the use of computer than female.

H4. The frequency of use of computer will vary among the male and female respondents.

Methodology

Study Area

Karnataka is one of the pioneering states in India to introduce reforms in higher education. There are 59 universities (including state, deemed and private universities) and about 3500 colleges in Karnataka state, catering to approximately 1.6 million students (Karnataka Jnana Aayoga, 2016). Hence, the scope of the study will be confined to 11 Universities in Karnataka state, India. It includes Bangalore University, Davanagere University, Gulbarga University, Karnatak University, Akkamahadevi Women's University, Kuvempu University, Mangalore University, Mysore University, Rani Chennamma University (RCU), Tumkur University and Vijayanagara Sri Krishnadevaraya University (VSKU). The study is confined to collect the data from the students and faculty members of above said universities of Karnataka state.

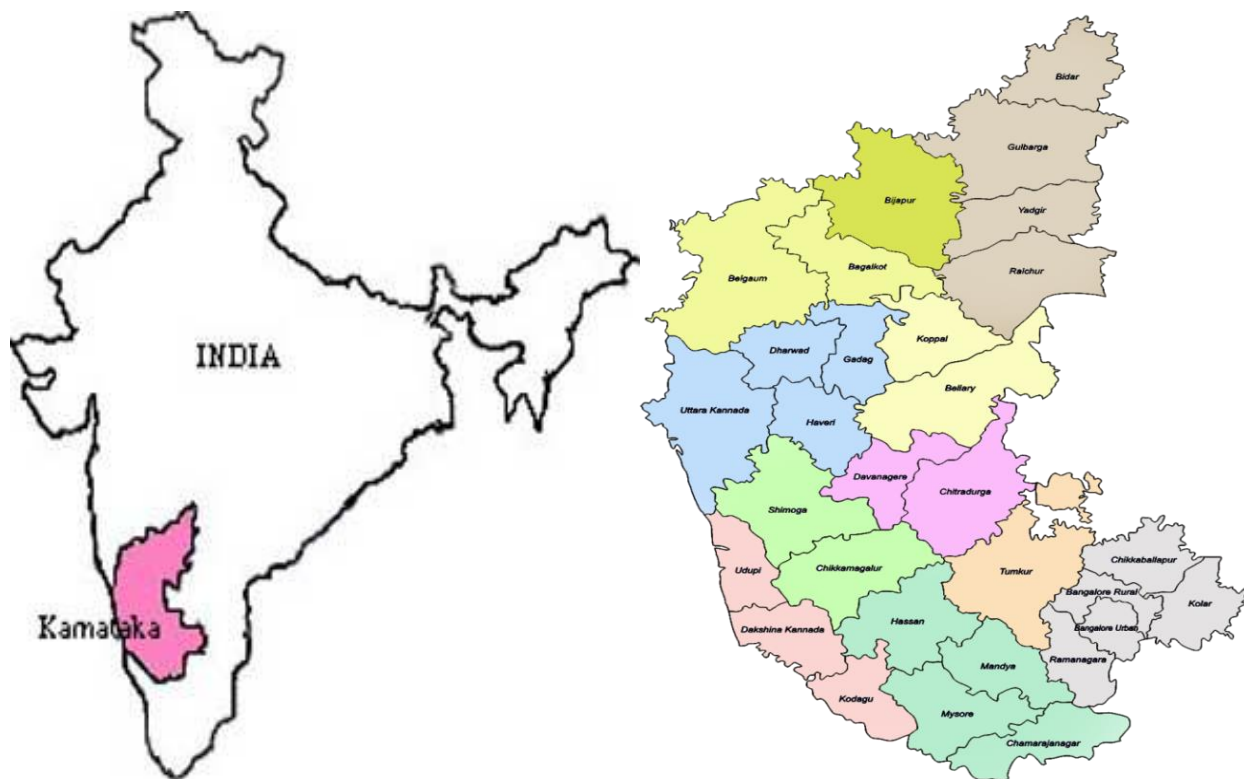

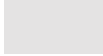



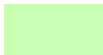



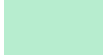



Figure-1: Map of India and Karnataka State(study area)

(Sources: <https://images.app.goo.gl/9ukJ1MCH8WSAq42JA>;
<https://images.app.goo.gl/SFm61qN2WYCF9rz1A>)

	Akkamahadevi Women's University		Bangalore University
	Davanagere University		Gulbarga University
	Karnatak University		Kuvempu University
	Mangalore University		Rani Chennamma University
	Tumkur University		University of Mysore
	Vijayanagara Sri Krishnadevaraya University		

Study population

The total strength of the faculty members and postgraduate students in the eleven universities was 34,283 for the academic year 2015-16. There are several formula for calculating the required sample size. This study has followed the formula given by Krejcie and Morgan (1970).

$$s = \frac{x^2 NP(1 - P)}{d^2(N - 1) + x^2 P(1 - P)}$$

s = required sample size.

x^2 = the table value of Chi-square for 1 degree of freedom at the desired confidence level (6.635).

N = the population size (34,283).

P = the population proportion (assumed to be 0.50 since this would provide the maximum sample size).

d = the degree of accuracy expressed as 'p' (i.e. Margin of error=0.025)

$$s = \frac{6.635 \times 34283 \times 0.50 (1 - 0.50)}{(0.025)^2(34283 - 1) + (6.635) (0.50) (1 - 0.50)}$$

$$s=2463.371$$

The sample size has been calculated using the above mentioned formula. The required sample size was 2463.371 but the sample population was rounded off to 2463 (Degree of accuracy/margin of error=0.025 and confidence=99%).

Survey Instruments

The present study is based on the survey method. After reviewing the literature published in various national and international journals by the previous researchers. The final version of the questionnaire consisted of various pre-coded questions were personally distributed by the researcher to postgraduate students, research scholars and faculty members in the eleven universities in Karnataka state. Finally, a total of 2463 duly filled questionnaires were collected and analyzed using Statistical Package for Social Sciences (SPSS-26.0 version).

Analysis and Interpretation of Data

Table-1: Designation of respondents cross tabulated by gender

Designation	Male (N=1236)		Female (N=1227)	
	Frequency	Percentage	Frequency	Percentage
Professor	52	77.6	15	22.4
Associate Professor	28	71.8	11	28.2
Assistant Professor	88	75.9	28	24.1
Guest Faculty	83	50.9	80	49.1
Research Scholar	125	67.2	61	32.8
Students	860	45.5	1032	54.5
Total	1236	50.2	1227	49.8

The designation of respondents is presented in table-1. The table clearly indicates that, most of the male respondents are professor (77.6%), followed by assistant professor (75.9%), associate professors (71.8%), research scholar (67.2%), guest faculty (50.9%) and students (45.5%). Furthermore, the study clearly shows that, 54.5% of the female respondents are

students, followed by guest faculty (49.1%), research scholar (32.8%), associate professors (28.2%), assistant professor (24.1%) and only 22.4% are professor.

Table-2: Distribution of university-wise respondents cross tabulated by gender

University	Male (N=1236)		Female (N=1227)	
	Frequency	Percentage	Frequency	Percentage
Akkamahadevi Women's University	8	3.7	209	96.3
Bangalore University	103	51.5	97	48.5
Davanagere University	115	53.7	99	46.3
Gulbarga University	125	55.3	101	44.7
Karnatak University	128	55.7	102	44.3
Kuvempu University	130	55.1	106	44.9
Mangalore University	133	53.8	114	46.2
Rani Chennamma University	123	55.9	97	44.1
Tumkur University	117	55.2	95	44.8
University of Mysore	120	52.9	107	47.1
Vijayanagara Sri Krishnadevaraya University	134	57.3	100	42.7
Total	1236	50.2	1227	49.8

The number of respondents from various universities cross tabulated by gender is shown in the table 2. The result shows that equal number of male and female respondents were chosen from all university except Akkamahadevi Women's University where the percentage of male is only about 3.7 %. Since most of the faculty working in the Akkamahadevi Women's University are female, very less percentage of male respondents were chosen from it.

Table-3: Use of computer

Response	Male (N=1236)	Female (N=1227)	Chi-Square (X²)	Contingency Coefficient	<i>p-value</i>
Yes	1209 (97.8%)	1198 (97.6%)	.089	.006	.766*
No	27 (2.2%)	29 (2.4%)			
Total	1236 (50.2%)	1227 (49.8%)			

The main objective of the study was to explore the gender disparity in the use of computer in the universities of Karnataka state. For this purpose, a question was asked in the questionnaire to mention the use of computer. It can be seen from the table-3 that most of the male (97.8%) and female (97.6%) respondents used computer. Only very few male and female respondents have not used computer. In order to know the association between the use of computer and the gender of the respondents, Chi-square test has been performed. The result is given in the table clearly indicates that there is no significant association between the use of computer and the gender of the respondents since $p > 0.05$ ($X^2 = .089$, $c = .006$, $p = .766$).

Table-4: Place of use of computer cross tabulated by Gender (N=2407)

Preffered places	Gender		<i>p-value</i>
	Male	Female	
Home	718 (48.4%)	764 (51.6%)	.027*
University Library	514 (57.4%)	382 (42.6%)	.000
Departments	143 (43.2%)	188 (56.8%)	.006*
Hostel	297 (59.0%)	206 (41.0%)	.000
Friends/Neighbors' home	220 (53.0%)	195 (47.0%)	.213*
Park/Field/Temples	151 (55.3%)	122 (44.7%)	.074*

The place where respondents used computers cross tabulated by gender is presented in the table-4. It can be seen from the table most of the male respondents used computers at hostel (59.0%), followed by university library (57.4%), park/field/temples (55.3%) and also in the friends/neighbors' home (53.0%). Further, other notable findings showed that few of the them used computers at their home (48.4%) and also in the respective departments (43.2%).

Furthermore, the study shows that that 56.8% most of the female respondents have used computers at thier respective departments and also in the home (51.6%). Further, other notable findings showed that 47.0% of the respondents used computers in the friends/neighbors' home followed by park/field/temples (44.7%), university library (42.6%) and also in the hostel (41.0%).

To know the difference between the place of use of computer and gender of the respondents, Chi-square test has been applied. The result shows that there is a significant association between the place of use of computer and gender for the fields viz., hostel ($p=.000$), university library ($p=.000$), departments ($p=.006$) and home ($p=.027$) and Park/Field/Temples ($p=.074$). Thus, it can be concluded that, there is a significant association between the place of use of computer and the gender.

Table-5. Frequency of use of computer cross tabulated by Gender (N=2407)

Frequency	Male (N=1209)	Female (N=1198)	Chi-square (X²)	Contingency Coefficient	<i>p-value</i>
Every day	742 (58.0%)	537 (42.0%)	70.039	.168	.000*
2-3 days in a week	244 (44.4%)	306 (55.6%)			
Once in a week	108 (39.1%)	168 (60.9%)			
Once in a month	30 (39.0%)	47 (61.0%)			
Occasionally	85 (37.8%)	140 (62.2%)			
Total	1209 (50.2%)	1198 (49.8%)			

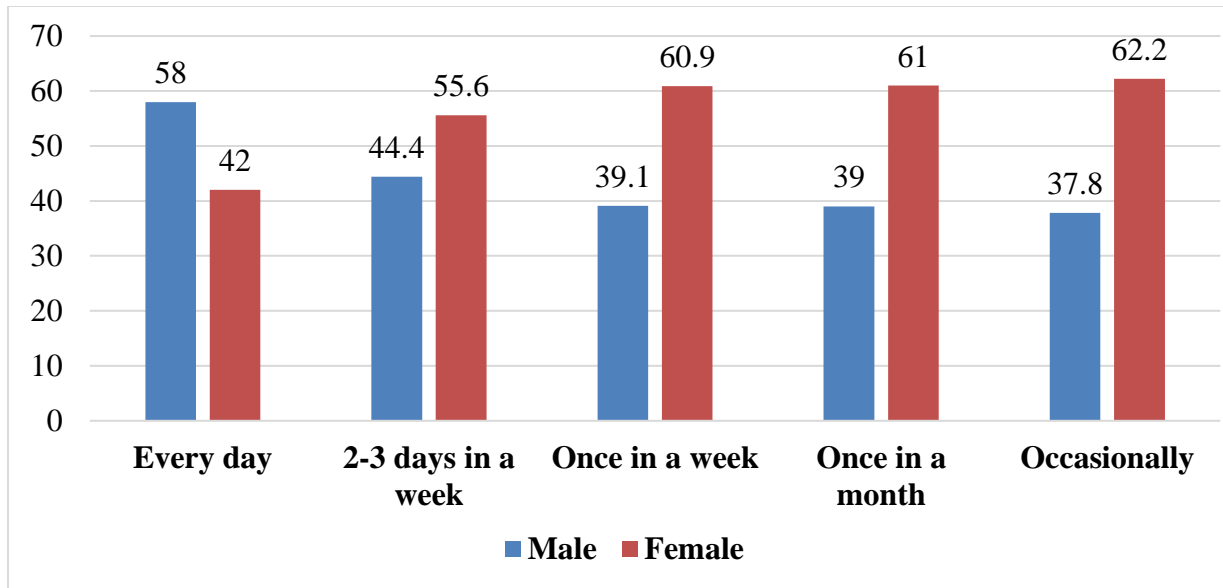


Figure-2: Frequency of use of computer cross tabulated by Gender

Frequency of use of computer cross tabulated by gender is presented in the table-5. It can be seen from the table that most of the male respondents used computer every day (58.0%) followed by 2-3 days in a week (44.4%), once in a week (39.1%), once in a month (39.0%) and only 37.8% of the male used computer occasionally. Furthermore, it can be seen from the table that majority of the female respondents used computer occasionally (62.2%) followed by once in a month (61.0), once in a week (60.9%), 2-3 days in a week (55.6%) and only 42.0% of the female used computer every day. The result shows that majority of the male respondents used computer every day compared to female respondents. The Chi-square test also shows that there is a significant association between the use of computer and the gender of the respondents since $p < 0.05$ ($X^2 = 70.039$, $c = .168$, $p = .000$).

Table-6: Time spent in the use of computer cross tabulated by Gender (N=2407)

Time	Male (N=1209)	Female (N=1198)	Chi-square (X^2)	Contingency Coefficient	<i>p-value</i>
<2 hours	713(49.7%)	723(50.3%)	27.167	.106	.001*
3-5 hours	408 (49.5%)	417(50.5%)			
>6 hours	88 (60.3%)	58(39.7%)			

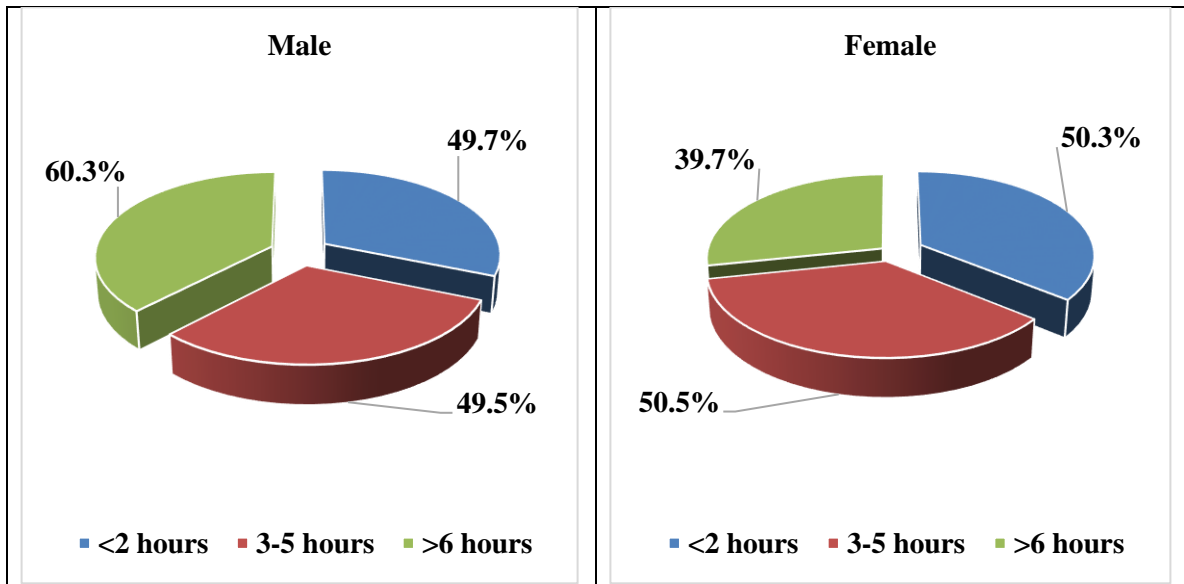


Figure-3: Time spent in the use of computer cross tabulated by Gender

Time spent in use of computer cross tabulated by gender is presented in the table 6. It is found that most of the male respondents spent more than 6 hours per day (60.3%) followed by less than 2 hours(49.7%) and 3-5 hours (49.5%) per day to use computers similarly. Furthermore, it can be seen from the table that majority of the female respondents spent 3-5 hours per day (50.5%) and less than 2 hours (50.3%). Only few of them spent more than 6 hours (39.7 %) per day to use computers. The Chi-square test also shows that there is a significant association between the use of computer and the gender of the respondents since $p < 0.05$ ($X^2 = 27.167$, $c = .106$, $p = .001$).

Table-7: Use of computer for general purpose cross tabulated by gender (N=2407)

General purposes	Male (N=1209)		Female (N=1198)	
	Frequency	Percentage	Frequency	Percentage
For teaching/learning	703	50.8	680	49.2
To browse the Internet	631	52.4	573	47.6
To learn basic computer applications	411	50.0	411	50.0
To type text	438	54.5	365	45.5
To use spread sheets	261	58.8	183	41.2
For drawing/painting	241	55.5	193	44.5
To write computer programs	289	51.6	271	48.4
For entertainment purpose	330	51.4	312	48.6

Table-7 shows that the general purpose of use of computer cross tabulated by gender. The study found that all most all the male and female respondents used computers for general purpose. The result shows that, most of the male respondents always opined that, they computer to use spread sheets (58.8%), followed by to drawing/painting (55.5%), to type text (54.5%), to browse the Internet (52.4%), to write computer programs (51.6%), to entertainment (51.4%), to teaching/learning (50.8%) and also to learn basic computer applications (50.0%) for the general purpose.

Furthermore, the present study found that female respondents always opined that they used computers to learn basic computer applications (50.0%) followed by for teaching/learning (49.2%), to entertainment (48.6%), to write computer programs (48.4%), to browse the Internet (47.6%), to type text (45.5%), drawing/painting (44.5%) and also in the use spread sheets (41.2%).

Table-8: Use of computer for academic purpose cross tabulated by gender (N=2407)

Academic purposes	Male (N=1209)		Female (N=1198)	
	Frequency	Percentage	Frequency	Percentage
To read e-books/e-journals	602	54.7	498	45.3
To prepare notes	508	50.7	493	49.3
For research purpose	525	55.6	420	44.4
To prepare class assignments	417	49.1	432	50.9
To prepare project reports	428	48.4	457	51.6
To improve typing skills	487	51.8	453	48.2
To use Internet	678	50.6	661	49.4
To prepare presentation slides	471	50.1	470	49.9

The use of computer for academic purpose by respondents is presented in the table-8. The present study found that majority of the male respondents always used computer for the research purpose (55.6%), followed by to read the e-books/e-journals (54.7%), to improve typing skills(51.8%), to prepare notes (50.7%) and for research (39.3%), to access Internet(50.6%) and also to prepare presentation slides(50.1%). Table also shows that 49.1% of the respondents used computers to prepare class assignments and also to prepare project reports (48.4%).

Furthermore, the result shows that, most of the female respondents always used computer to prepare project reports (51.6%) followed by to prepare class assignments (50.9%), to prepare presentation slides (49.9%), to access Internet(49.4%), to prepare notes (49.3%) and also to improve typing skills (48.2%). Further, few of the the female respondents used computers to read e-books/e-journals (45.3%) and also in the research purpose (44.4%).

Table-9: Testing of Hypotheses

No	Hypotheses	Test applied	P-value	Result
H1	There is an association between the use of computer and the gender.	Chi-square	.766	Rejected
H2	There is an association between the place of use of computer and the gender.	Chi-square	.000	Accepted
H3	There is an association between the frequency of use of computer and the gender.	Chi-square	.000	Accepted
H4	There is an association between the time spent in the use of computer and the gender	Chi-square	.001	Accepted

Table-9 shows the formulated hypotheses, test applied and the result. A total of four hypotheses were formulated and all hypotheses are tested using Chi-square analysis. The result is shown in table-9 and it can be seen from the table that the Hypothesis-2, Hypothesis-3 and Hypothesis-4 are accepted since the $p < 0.05$. The remaining Hypothesis-1 is rejected since the $p > 0.05$.

Discussion and Conclusion

The present study found that various interesting results with respect to exploring the gender disparity in the Computer usage in teaching and learning among Indian Academics.

- Firstly, the findings of the study enlighten the use of computers by the students and faculty members of Indian academics. Apart from the universities, it is observed that most of the respondents are male. The majority of male respondents used computers at hostel and as well as at university library, as compared to their female respondents. The data show that female respondents are not exposed to use of computers either at hostel or at their university library. This indicates that there is a gender difference in the place of use of computers. Therefore, the concerned departments and university authorities need to

support their female respondents to make use of computers their academic work in the hostels and university library.

- Secondly, the result shows that majority of the male respondents used computer every day compared to female respondents. The study recommends that university authority needs to provide a congenial environment for female respondents to providing free hostel facilities on the campus to optimum use of computers and other ICT facilities.
- Further, the study found that all most all the respondents have high positive attitude toward use of computers. In this context, it is suggested that the concerned universities authorities need to provide more computer facilities with Internet connections and also conduct more ICT based learning programmes to the students and faculty members to enhance their academic activities.
- Finally, with respect to the purpose of use of computers, both male and female respondents used computers for their general and academic purposes. It is observed that most of the male respondents showed their interest in the use of computer for their academic and general purposes compared female respondents. In this context, it is suggested that, the concerned departments and university authorities need to conduct more computer training and awareness programmes for the female respondents enhance their general as well as academic performance.

References

- Abedalaziz, N., Jamaluddin, S., & Leng, C. H. (2013). Measuring attitudes toward computer and internet usage among postgraduate students in Malaysia. *Turkish Online Journal of Educational Technology-TOJET*, 12(2), 200-216.
- Ahmad, S., Rafiq, M., & Ahmad, S. (2018). Gender disparities in the use of internet among graduate students of a developing society: A case of Pakistani universities. *Global Knowledge, Memory and Communication*, 67 (4/5), 226-243.
- Basavaraja, M. T., & Sampath Kumar, B. T. (2017). Gender disparities in the use of ICT: a survey of students in urban schools. *Journal of Information Science Theory and Practice*, 5(4), 39-48.
- Ben Youssef, A. & Dahmani, M. (2008). The impact of ICT on student performance in higher education: Direct effects, indirect effects and organisational change. *RUSC*, 5(1), 45-56.
- Bransford, J., Brown, A. L., & Cocking, R. R. (Eds.). (2000). *How people learn: brain, mind, experience, and school* (2nd ed.). Washington, D.C.: National Academy Press.
- Gasaymeh, A. (2018). A study of undergraduate students' use of Information and Communication Technology (ICT) and the factors affecting their use: A developing country perspective. *EURASIA Journal of Mathematics, Science and Technology Education*, 14(5), 1731-1746.
- Ghavifekr, S., Kunjappan, T., Ramasamy, L., & Anthony, A. (2016). Teaching and Learning with ICT Tools: Issues and Challenges from Teachers' Perceptions. *Malaysian Online Journal of Educational Technology*, 4(2), 38-57.
- Grimus, M. (2000). ICT and multimedia in the primary school. Paper presented at the 16th conference on educational uses of Information and Communication Technologies, Beijing, China.

- Hassan, S., Sulaiman, F., Gabda, D., & Sanusi, N. (2007, December). A study on computer usage among secondary school students: a comparative analysis on hours spent using computers without activities connecting to internet and hours spent doing internet activities respective to genders. In *Proceedings of the 12th WSEAS International Conference on Applied Mathematics* (pp. 412-416).
- Jackson, L. A., Ervin, K. S., Gardner, P. D., & Schmitt, N. (2001). Gender and the Internet: Women communicating and men searching. *Sex roles, 44*(5-6), 363-379.
- John, S. P. (2015). The integration of information technology in higher education: A study of faculty's attitude towards IT adoption in the teaching process. *Contaduría y Administración, 60*, 230-252.
- Khan, F., & Ghadially, R. (2010). Empowerment through ICT education, access and use: A gender analysis of Muslim youth in India. *Journal of International Development, 22*(5), 659-673.
- Kumar, S. (2012). Use of computer, internet, and library OPACs among rural and urban postgraduates in Indian universities. *OCLC Systems & Services: International digital library perspectives, 28*(3), 144-163.
- Kumar, S., & Mahajan, P. (2013). Computer literacy and student demographics: a study of select Indian universities. *Library Hi Tech News, 10*, 21-27.
- McMahon, J., Gardner, J., Gray, C., & Mulhern, G. (1999). Barriers to student computer usage: staff and student perceptions. *Journal of Computer Assisted Learning, 15*(4), 302-311.
- Rahman, G. (2011). Use of computers among students of dental college in Saudi Arabia. *Journal of Education and Ethics in Dentistry, 1*(1), 12-17.
- Roblyer, M. D. & Doering, A. H. (2006)., “*Integrating educational technology into teaching* (Vol. 2)”, Upper Saddle River, NJ: Pearson/Merrill Prentice Hall.

- Roy, N. K. (2012). ICT-enabled rural education in India. *International journal of information and education technology*, 2(5), 525. available at: www.ijiet.org/papers/196-T044.pdf (accessed 11 September, 2020).
- Sampath Kumar, B. T., & Basavaraja, M. T. (2016). Computer access and use: understanding the expectations of Indian rural students. *Quality assurance in education*. 24(1), 56-69.
- Sampath Kumar, B. T., & Manjunath, B. (2013). Computer Literacy Among the Students and Faculty Members of Dental Sciences. *Asian Journal of Information Science and Technology*, 3(1), 36-40.
- Sampath Kumar, B. T., Kumbar, M., & Sharath, B. (2014). Use of Computer and its impact on academic performance of faculty members and research scholars: A case study of Kuvempu University. *Library Herald*, 52(4), 349-367.
- Selwyn, N. (2007). The use of computer technology in university teaching and learning: a critical perspective. *Journal of Computer Assisted Learning*, 23, 83–94.
- Soh, P. C., Teh, B. H., Hong, Y. H., San Ong, T., & Charlton, J. P. (2013). Exploring gender differences in Malaysian urban adolescent Internet usage. *First Monday*. 18(9).
- Yelland, N. (2001). Teaching and learning with information and communication technologies (ICT) for numeracy in the early childhood and primary years of schooling. Australia: Department of Education, Training and Youth Affairs.