DIGITAL FACILITIES UTILIZATION AND COMPUTER SKILLS AMONG SCIENCE AND ARTS STUDENTS

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ABSTRACT

The computer world expanded into each and every sector in the current digital era including the education field and rapidly targeting students to acquaint computer and digital knowledge not only for entertaining but also to enhance academic skills. The basics of digital technology are in reach of the people through different sources such as smart phones, desktop computers, laptops and tablets. Recently, the curricular and competency levels are gradually incorporating to the students to acquire digital skills by motivating to various modes of pedagogy such as seminars, assignments and project works. The present research was mainly focused on understanding the digital devices owning by the students, studying knowledge levels of computer skills and frequency of utilizing digital services. The study was carried out from the randomly selected college students of both science and arts streams from the university and colleges students located at Tirupati urban. The sample size of the present investigation comprised of 60 students from each stream of science and arts with total sample of 120 members. The findings well demonstrated that absolutely all the students owned the smart phone and surprisingly one third of them were even planned to purchase the new mobile within one year. The data indicated that around one fourth of science students had desktop and tablets and about one tenth in arts students. The computer skills and levels of confidence also noticed at higher levels in science students against their arts students' counterparts probably the science students regular academic activities might be intricately enabled the basic computer skills. The information gathered from the students strongly highlighted the high frequency utilization of smart phone by students of both streams. Educating students, creating awareness and organizing digital training programmes by colleges will surely

helpful to enhance the digital skills among the students and to excel their academic and future career opportunities.

Keywords: Digital Devices, Digital Skills, Computer Knowledge, College Students, Urban.

INTRODUCTION

Recent days, the concept of digital literacy has been gaining much importance to connect the people even at far distances. The concept encourages the professionals to train the students effectively and perform better academic performance. The libraries in the university and colleges focus on disseminating digital literacy among students to acquire, preserve and to disseminate knowledge using digital technology [1]. Digital technologies became an integral part of Higher Education in support of teaching and learning process [2].

Digital literacy defined as the ability to locate, organize, understand, evaluate, and analyse information using digital technology. Research on digital literacy is mainly related to the wider aspects associated with how learning to effectively find, use, summarize, evaluate, create, and communicate information while using digital technologies, not just being literate at using a computer[3]. The wider perspective enlighten, the critical need for digital literacy development in higher education and is evident through the strategic priorities expressed by the highest levels of governance, both nationally and internationally[4]. Students of high education are being motivated for the welfare of people by receiving suitable supporting information. Based on this background, the present study focused on knowing the confidential levels and the frequency distribution of the utilization of digital devices.

The United Nations' sustainable development 2030 agenda is focused on bringing quality education globally. The digital technologies emerged as the better useful and easy tools to achieve this sustainable development goal. The students find much easier in creating presentations and projects using online sources instead depend on bulky books and hectic paper and pen work [5]. These days, learner-centered approaches are recommended by nearly all education regulations, with teachers carrying out particular pedagogical roles and placing students at the centre of all learning activities. The university sector's embrace of ICTs has made it feasible to adapt instructional strategies, enhance the calibre of instruction, and connect with a new student audience interested in online learning. Additionally, they have enabled the development of innovations that influence the abilities and modes of learning of pupils. For example, improved adjustments to teaching procedures are made possible by the flexibility of the Internet and university intranets, which facilitate more productive group projects, discussion boards, wikis, and tailored lectures [6].

METHODOLOGY

The knowledge levels of college students on the computer skills from the two different streams of science and arts were obtained using structured questionnaire. The confidence levels on digital knowledge were evaluated on five point hedonic scale and frequency of utilization of digital devices on six point scale. The data was interpreted as mean and standard deviation and calculated for the significant differences using 2-paired t-test between science and arts groups. The utilization of digital devices was calculated using frequency and per cent distribution. The

sample comprised of 60 members from science students and 60 members from arts with total sample size of 120 members from the colleges of Tirupati town.

RESULTS AND DISCUSSION

i. OWNING OF DIGITAL DEVICES

The data collected on owning of various digital facilities and if not the status of planning to purchase the respective devices such as smart phone, desktop computer, laptop and tablet was tabulated and presented in table 1.

Table 1: Distribution of science and arts students based on owning of digital devices and planning of purchasing

Digital Device	Science Students(N=60)				Arts Students(N=60)			
	Owning of the device		Planning to purchase by 1 year		Owning of the device		Planning to purchase by 1 year	
	Frequency (n)	Percentage (%)	Frequency (n)	Percentage (%)	Frequency (n)	Percentage (%)	Frequency (n)	Percentage (%)
Smart Phone	60	100	19	32	60	100	20	33
Desktop computer	13	22	7	12	8	13	6	10
Lap top	10	17	26	43	7	12	9	15
Tablet	14	23	12	12	11	18	8	13

The important point to be highlighted from the table 1 that absolutely all the students of both streams had smart phone which was a very good evidence for the common and maximum utilization of mobile facilities in the student community. In spite of owning the smart phones about one third of both science (32 %) and arts students (33%) planned to purchase another mobile within a year. The probable factors made them to purchase another piece of device might be for their interest in the upcoming new advanced features, status symbol and to replace the improperly working old mobile.

Nearly one fourth of science students (22%) and slightly above one tenth (13%) of arts students had their own desktop computers. Around one tenth of science (12%) and arts students (10%) had planned to purchase the new desktop computer. Similar trend of results were observed with the possession of laptop as evidenced by more per cent distribution among science students (17%) compared to the arts students (12%). About half of the science students intended to purchase laptop which might be due to the need and ease to carry out the project work as part of their academic curriculum. Even the arts students to the extent of 15 per cent had an idea to purchase the laptop within one year. Regarding tablet, about one fourth of science group (23%) had their own device which found to be relatively higher than their arts (18%) counterparts. Considerably good number of science students (20%) decided to purchase the newer one within one year and it was noted as 13 per cent only among arts students.

ii. KNOWLEDGE ON COMPUTER SKILLS

The results were tabulated in terms of frequency and percent values against each level of confidence expressed by the candidates of the two groups viz., science and arts students and presented in table 2.

Table 2: Confidence levels of knowledge on utilization of computer skills in science and arts students

Computer Skill	Science Students(N=60)					Arts Students(N=60)				
	Confidence Hedonic Scale					Confidence Hedonic Scale				
	4 n(%)	3 n(%)	2 n(%)	1 n(%)	0 n(%)	4 n(%)	3 n(%)	2 n(%)	1 n(%)	0 n(%)
Microsoft Word Processing	10 (17)	38 (63)	9 (15)	3 (5)	0 (0)	3 (5)	14 (23)	12 (20)	21 (35)	10 (17)
Microsoft Excel	8 (13)	31 (51)	7 (12)	10 (17)	4 (7)	2 (3)	10 (17)	9 (15)	19 (32)	20 (33)
Microsoft Power Point	8 (13)	32 (54)	9 (15)	8 (13)	3 (5)	3 (5)	12 (20)	10 (17)	20 (33)	15 (25)
Customizing Desktop Environment	4 (7)	10 (17)	18 (30)	20 (33)	8 (13)	8 (13)	7 (12)	13 (22)	18 (30)	14 (23)
Graphic Editing	0 (0)	5 (8)	13 (22)	22 (37)	20 (33)	0 (0)	2 (3)	9 (15)	16 (27)	33 (55)
Multimedia Authoring	2 (3)	4 (7)	7 (12)	39 (65)	8 (13)	1 (2)	2 (3)	4 (7)	41 (68)	12 (20)
E-mail	19 (32)	29 (48)	10 (17)	2 (3)	0 (0)	11 (18)	20 (33)	7 (12)	16 (27)	6 (10)
Search Engines	11 (18)	15 (25)	18 (30)	9 (15)	7 (12)	5 (8)	7 (12)	10 (17)	15 (25)	23 (38)

Scale: 4- Highly confident;   3- Moderately confident;   2- Slightly confident;
          1-Not confident;   0- No idea

Note: Values within parentheses indicated percent values

The high confidence levels of knowledge in MS Office applications among science students were noticed for MS Word (17%) followed by 13 percent each of Excel and PowerPoint. The findings from the table revealed that maximum of respondents from science group expressed their confidence levels moderately in the utilization of the basic knowledge on MS Office like word processing (63%), excel (51%) and PowerPoint (54%). More than half of the science students had MS PowerPoint skills moderately which would be sufficient for the effective presentation of data and information. In case of arts students, the confidence levels found to be at much lower levels and maximum of them were not confident in executing their computer skills.

Exceptionally for Customizing Desktop Environment arts students comparatively expressed high confidence levels (13%) than science students (7%). But, regarding the concept of 'no idea' comparatively high percent of arts students (23%) than science students (13%) were reported. However, the overall average confidence levels were seemed to be better in science students than arts students. Regarding graphic editing, none of the students had strong confidence and moderate level of confidence was at minimal percentage in science (8%) and arts (3%) students. About one third of science (33%) and more than half of arts (55%) students had no idea on

editing the graphics. Similarly, the confidence levels multimedia authoring also implicated low proficiency in both streams.

Interestingly both the students had better idea and confidence on e-mailing the conversations and all the science students were aware about e-mailing in different degrees. The highlighted point to be noticed that one third of the science students showed high confidence (32%) in e-mailing and nearly half of them had moderate confidence (48%) ,17 percent of them would abled to maintain and only 3 percent had no confidence. About 90 percent of the arts students had better understanding on e-mailing at various confidence levels of high (18%), moderate (33%), slight (12%) and no confidence (27%). Maximum of the science students also had good confidence in searching information using search engines and the knowledge levels found to be at relatively low levels in arts students, where 38 percent of them had no idea on search engines.

A significant amount of research has been done to examine the ICT-related factors that influence students' computer and information literacy since the International Computer and Information Literacy (CIL) was developed to evaluate schoolchildren's proficiency with computers and other information and communications technologies (ICT) for educational purposes. The study conducted eighth graders (N = 2821) in China's rural areas had viewed that support extended to rural students in low-resource environments is beneficial in developing their computer literacy and ICT proficiency, as well as aid in minimizing the digital inequities exist[7].

The mean scores on each computer skill and the levels of significance between science and arts students were denoted in table 3.

Table 3: Mean confidence scores on knowledge levels of computer skills and the levels of significance in science and arts students

Computer Skill	Mean Confidence Scores and Standard deviation (SD)							
	Science Students(n=60)		Arts Students(n=60)		t-Value	P-value	Total Mean	SD
	Mean	SD	Mean	SD				
Microsoft Word Processing	2.92	0.71	1.65	1.15	7.1781	<0.0001*	2.28	1.15
Microsoft Excel	2.48	1.12	1.25	1.18	5.8336	<0.0001*	1.87	1.30
Microsoft Power Point	2.57	1.04	1.47	1.20	5.3143	<0.0001*	2.02	1.25
Customizing Desktop Environment	1.70	1.10	1.62	1.32	0.3729	0.7099[NS]	1.66	1.21
Graphic Editing	1.05	0.94	0.67	0.85	2.3256	0.0217**	0.86	0.92
Multimedia Authoring	1.22	0.88	0.98	0.74	1.5603	0.1214 [NS]	1.11	0.82
E-mail	3.08	0.78	2.23	1.30	4.3158	<0.0001*	2.66	1.15
Search Engines	2.23	1.24	1.27	1.30	4.1244	<0.0001*	1.75	1.36

Note: [NS]= Not Significant; **= Significant at 5 % level; *= Significant at 1% level

The mean scores on confidence levels in science students indicated the highest mean confidence score for e-mailing the communication and then showed good confidence levels in documentation of the information using MS Word. The mean confidence scores on the knowledge pertaining to the Excel and PowerPoint were at slightly above score of slight confidence. The students expressed low confidence in customizing desktop environment, graphic editing and multimedia authoring. Similar trend of results were notice with the arts students. The statistical analysis results showed highly significant mean differences at one percent level between science and arts students as evidenced by the higher scores among science students than arts students on the knowledge of MS Word, excel, PowerPoint, e-mail and search engines. The differences found to be significant at five percent on graphic editing. The mean confidence scores on customizing desktop environment and multimedia represented non-significant differences.

iii) FREQUENCY OF UTILIZATION OF DIGITAL DEVICES

The data on the utilization of digital devices was denoted in table 4 in terms of frequency and percentage both in science and arts students.

Table 4: Frequency of utilization of Digital Devices by science and arts students

Digital Device	Science Students						Arts Students					
	5 n(%)	4 n(%)	3 n(%)	2 n(%)	1 n(%)	0 n(%)	5 n(%)	4 n(%)	3 n(%)	2 n(%)	1 n(%)	0 n(%)
Smart Phone	53 (88)	7 (12)	0 (0)	0 (0)	0 (0)	0 (0)	56 (93)	4 (7)	0 (0)	0 (0)	0 (0)	0 (0)
Desktop computer	4 (7)	8 (13)	11 (18)	14 (23)	19 (32)	4 (7)	0 (0)	5 (8)	9 (15)	18 (30)	21 (35)	7 (12)
Lap top	3 (5)	11 (18)	9 (15)	10 (17)	16 (27)	11 (18)	1 (2)	5 (8)	4 (7)	8 (13)	17 (28)	25 (42)
Tablet	10 (17)	4 (7)	5 (8)	8 (13)	13 (22)	20 (33)	8 (13)	3 (5)	4 (7)	6 (10)	16 (27)	23 (38)

Scale: 5- Several times a day;   4- Once or twice in a day;   3- Weekly;
    2- Fortnightly;   1- Occasionally   0- Never

Note: Values within parentheses indicated percent values

The findings from the table well demonstrated that the usage of smart phone was at high levels by observing the utility as several times a day both in science (88%) and arts (93%) students. The remaining 12 per cent in science students and 7 per cent in arts students expressed the usage as once or twice in a day reflecting the fact that the daily mobile usage became part and parcel of the life. The frequency of utilization on desktop indicated that only 7 percent of the science students were using desktop several times a day and on contrast frequent daily usage was not noticed in arts group. The laptop usage was also at nominal levels, where above one fourth of science students (27%) and nearing to half of arts students (42%) never operated the laptop. The conspicuous point need to be identified that above on tenth of science (17%) and arts (13%) students were using tablet much frequently of several times in a day. Regarding non-utility of tablets usage comparatively low values were observed in science students (33 %) than arts students (38%).

Table 5: Frequency distribution of utilization of digital devices in science and arts students

Computer Skill	Mean Frequency Scores and Standard deviation (SD)				t-Value	P-value	Total Mean	SD
	Science Students(n=60)		Arts Students(n=60)					
	Mean	SD	Mean	SD				
Smart Phone	4.88	0.32	4.93	0.25	0.9447	0.3467 [NS]	4.91	0.29
Desktop computer	2.20	1.38	1.73	1.12	2.0395	0.0436**	1.97	1.27
Lap top	2.03	1.54	1.17	1.36	3.2726	0.0014*	1.60	1.50
Tablet	1.83	1.85	1.53	1.76	0.9094	0.3650 [NS]	1.68	1.80

The mean frequency distribution scores showed the highest mean scores in the utilization of smart phone and the differences not showed any significant differences between science and arts students probably due to higher utility in both groups. Similarly tablet usage was also not showed any significant levels between the two groups of students which were associated with medium levels of usage in the respective students. The utilization of desktop computer found to be significantly higher at 5 percent level in science group against their arts counterparts. The laptop usage though observed at low frequency utilization, the science group students seemed to be utilized significantly at much higher rates than arts group.

The research shows a strong correlation between gender, education level, and electronic device use. Students who identify as males are more likely than females to use technology. Additionally, basic internet and related online service access is necessary for the use of gadgets, and this may differ based on the respondents' socioeconomic status. When it comes to students using more technology than students in rural areas, the same reasoning holds true. Sadly, technology has had a negative effect on people's mental and physical health. Young people typically use their electronics for enjoyment during their free time because there are so many options available. Many physical health issues (such as headaches and sleep difficulties) are linked to the growing prevalence of gadget use among youngsters. In order to safeguard the health of today's and tomorrow's children, parents need to be more aware of their children's device usage restrictions. Students need to be encouraged to engage in more physical activities and outdoor play. Various health awareness programs could be implemented to initiate counseling of students both at home and in school. College students need to learn proper time management strategies. More research needs to be conducted on this topic to better address the issue and improve the techniques in the future [8, 9, 10].

CONCLUSION

The study on the knowledge and utilization of digital facilities clearly represented absolute usage of smart phone in both streams of science and arts. The knowledge levels estimated and frequency and percent distribution of digital devices utility showed higher mean scores in science groups than arts. The knowledge on computer skills especially the MS office applications of word, excel and PowerPoint represented significantly higher mean scores in science students rather than arts students. The other computer applications such as Customizing Desktop Environment, graphic editing and multimedia authoring are reflected by low confidence

levels and utility. The overall study findings emphasized the fact that there is a need to educate the students by organizing digital training facility and encourage them to move to the further studies.

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