



ASSESSING ROLE OF COMPUTERS IN HIGHER EDUCATION LEARNING

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Abstract- This study is based on the research done for undergraduate students to examine the extent of using computer by them on daily basis in their study. The data is collected from the students who are computer friendly. The structured questionnaire was used to collect data. The study focuses on finding the core activities done by students with the help of computer. The findings of study include:

1. The students use computer for their study purpose and non-academic purpose.
2. The students were adopting paper base approach as well as internet and computer base approach for their study. They were keener towards paper-base approach.

Further, the study explains the reasons of using paper base approach and using computer for non-academic purpose more. The study can be used by higher education institute / universities and government to make their policies for higher education accordingly.

Key words: Computer, Higher Education, Undergraduate Students.

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I. INTRODUCTION

As this is computer age and computer technologies have become sophisticated and popular. Understanding how much students are using it in their studies is very important (Butson and Thomson, 2011). Some existing studies also indicate that undergraduate students are having their own computer and internet facilities (Aspolen and Thorpe, 2009; Guidry and Brckalorenz, 2010), but it is not clear to what extent the students are using it for academic purpose. This is general notion that students having computers and laptops use them more frequently for their academic purpose. Therefore, the present study has the following objectives.

II. OBJECTIVES

The main objectives of the present study are:

- To find out the extent of using computers for study purpose by the students.
- To find out the extent of using computer in comparison to paper and pen approach.

III. METHODOLOGY

Data was collected from the students using computers. A structured questionnaire was prepared to know about the students' responses regarding use of computers. Interviews were also taken of the students. 20 Students were selected for questionnaire from the local college after asking three-four questions to judge their computer literacy. But responses from ten students were found suitable for the study.

These students were using computer for the last six months. While interviewing other twenty students, the focus was on knowing the purpose for which they like to work on computer more over paper and pen. In questionnaire, questions were in terms of at what time, they use computer, and for how long. Simple percentage was used to calculate and compare the results.

IV. FINDINGS

The data revealed that students were using web services, Adobe Reader, Microsoft Power Point, Youtube, etc. They were using Google for their academic purpose and youtube, facebook, entertainment websites were used for their non-academic purposes. This computer activity data has been generated on the basis of students' activity on their laptop automatically which shows that there is a low usage of client-side software applications whereas a high usage of browser based services (see table 1). Facebook and Youtube are the top 2 browser based services following Google.

Further probing has been done in this regard, in which their quantum of Academic and non-



academic work in the presence of computer technology was identified. The results were different as compared to the former data collected, it was found that computer are not much used for academic purpose, students are more paper oriented while studying (27.44%, which was 72.56% in the computer activity data – see table 4) While computer activity data was based on how much of what software's and websites are being accessed by students on their laptop, data was depicting that participants were using these websites to record, calling it 'study', following their verbal interaction with the camera while being in their space where they usually study. (Butson & Thomson, 2011). So, a conclusion can be easily, drawn on the basis of the findings of computers activity and data which are as under: -

- Students use paper based approaches while studying rather than using computer technology, or it can be said that computers are not used for academic purposes.
- Students preferred to work in a paper based manner, wherever possible. Usually, hard copies (paper) are used more than digital material.
- Students hardly use computer technology for their academic activities, than what they actually reported.

V. DISCUSSION

So, broadly there were three main themes that were concluded on the basis of the study namely:

- Study purpose vs. Non-study purpose
- Paper and pen Approach vs. Computer Approach:
- Reported Practice vs. Actual Practice

These themes were expected to form a connecting link and help in finding relevant solutions to the research questions about students' Study & Non-study purpose of personal computer, whether they prefer paper based approach and the significant difference in reporting and actual use of computer technology.

Study purpose vs. Non-study purpose

All the participants in computer activity agreed that computer technology plays an important role in their undergraduate academic purpose. Which is quite evident from the rapid increase in the ownership of personal computers over the past 5 years (Aspden and Thorpe, 2009, Guidry and Brcka Lorenz, 2010, Smith and Caruso, 2010, Dahlstrom, 2011) so it seemed implied that students are using computer technologies for their studies, but to our surprise, findings of the above mentioned two studies revealed facts completely

opposite, stating that the primary use of these devices was for non-academic purpose.

If the responses of the participants are to be believed, computer technology is highly being employed by the students for their higher education purpose, further concluding that students are enthusiastic users of both client-side software and web based services for academic use (Sim and Butson, 2013).

But as per the findings, it can be said that personal computers were not as crucial to the academic study of 'computer component third year students, as had been expected (Aspden and Thorpe, 2009, Dahlstrom, 2011, Guidry and Brcka Lorenz, 2010, Smith and Caruso, 2010).

For example the major reason for using personal computers by undergraduate students was for socializing for which facebook and email was accessed in greater amount (proportion), following personal web services such as auction sites and online banking and entertainment as shown in the Computer Activity Data (Sim and Butson, 2013), quite similar to the findings generated by data, suggesting that students use personal computer for non-academic purpose, rather than academic. As far as use of personal computer for academic purpose is concerned, it was limited to Microsoft Word and browser-based searching.

The researchers however were expecting a higher academic use instead of the higher non-academic use, because of the fact that now-a-days, powerpoint slides, academic article and assignment guidelines are supplied in digital formats.

Paper and pen Approach vs. Computer Approach

Due to the widespread ownership of personal computers by students, it was being considered that these devices assist students in their academic areas. But the findings suggested by data showed that students follow a paper and pen based approach in their daily study routines. So there is a significant difference between how students perceive the usage of computer technology and how they use it reality.

It would be interesting to engage ourselves in this thought that what could be the possible reason behind the inclination of students towards paper based approach, either they are not comfortable using the technology or it might be due to the traditional ways of teaching and learning in higher education. It can be rightfully said that the manner in.



Reported Practice vs. Actual Practice

Perception data supports learning in higher education, which supplements huge literature on the place of computer technology. The other main objective of this study was to determine whether there is a difference between the perceived use of computer and its actual use by the student more efficient in learning, if they employ technology (Smith et al., 2009). Also, many studies reveal that computer technology has got an important role in supporting undergraduate study (Aspden and Thorpeee, 2009, Dahlstrom, 2011, Guidry and Brckalorenz, 2010, Smith and Caruso, 2010).

Which an institution employs technology in their day-to-day operations, or say while classroom teaching, directly would impact the fair use of technology by students in their higher education learning. Students are wholly dependent over the teaching staff for representing the academic use of the computer technology (Smith and Caruso, 2010), though they are well equipped with the comfort of using technology, and to be in sink with the fact that technology is integral to higher education (Dahlstrom, 2011).

Since, most institutions usually make the resources available in digital formats (i.e. Microsoft Word and Portable Document Formats), it is ironical to observe that the concerned participants of this study has relied on downloading and printing relevant resources, it might be because they are so not aware about certain capabilities that digital formats offer.

VI. CONCLUSION

The study was based on computer activity and data which targeted third year undergraduate students' regarding the use of their personal computers in their independent study sessions at a local college in Delhi NCR. On the basis of findings of the data sets there lies a significant difference between the common assumptions and views held by the current literature regarding the used computers and how personal computers are being actually employed by students. Both are contradictory. One however cannot generalize the findings from this study as it is conducted on limited participants. In other words, the objective is to determine the difference between how students perceive that they are using computers and how they are actually using it. And if the results from computers activity data (Table 2 and Table 3) are considered then there is a considerable difference.

The naturally – occurring practice data in this study did not support such claims made by the

literature that student perceive themselves as using technology in academics, making them more efficient in learning and engaging (Dahlstrom, 2011). Therefore, the perception data cannot be relied upon as it fails to reveal authenticity on account of clear differences between the literature and the naturally occurring practice data in the study of computer activity and the data.

Studies based on perception data might have led to the assumption that computers are being highly used in higher education study (Sim and Butson, 2013). As suggested by the current literature on computer use in academics that students will become is merely used to access documents which are then printed by students to be stored in a ring binder. And this was supported by the preference that the participants in this study indicated, that their dependence on paper and pen based approaches assist them in their routine studies and moreover, they all used ring binders to store and categories their material.

The study concluded that students are active users of technology for academic reasons were low. Students are found inclined towards paper-based approach of studying and to restrict the used computers for non-academic activities. We are certain of this fact that the revealing of this study would definitely provide a clear and reliable picture regarding the importance of technology in higher education and how students are currently employing their personal computers or like devices. On second thoughts, the study could have been conducted on large and diverse groups of students, therefore findings can't be generalized. Careful collection of data should be made a pre-requisite on account of significant difference between perception and practice data.

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ANNEXURE

Table 1 : Student use of client-side software and browser-based services

Participants	Percentage(%)	
	Client-side Software	Browser-based Services
1	15	85
2	97.36	2.64
3	13.75	86.25
4	18.05	81.95
5	16.43	83.57
6	13.25	86.75
7	14.20	85.80
8	12.93	87.07
9	4.27	95.73
10	25.14	74.86

Table 2 : Student self-perception measure of their academic and non-academic computer use (Sim and Butson, 2013)

Participants	Percentage(%)	
	Academic Use	Non-Academic Use
1	60	40
2	60	40
3	70	30
4	30	70
5	30	70
6	40	60
7	40	60
8	50	50
9	40	60
10	50	50

Table 3 : Computer activities for comparison of academic vs. non-academic use (Sim and Butson, 2013)

Participants	Percentage(%)	
	Academic Use	Non-Academic
1	10	90
2	90	10
3	10	90
4	10	90
5	20	80
6	10	90
7	10	90
8	10	90
9	10	90
10	10	90

Table 4: A summary of each participant's academic with / without technology involvement

Participants	Academic Work	
	With Technology	Without Technology
Participant 1	46.36%	53.64%
Participant 2	15.30%	84.7%
Participant 3	1.02%	98.98%
Participant 4	47.10%	52.9%
Total Average	27.44%	72.56%