

## Internet dependency on academic assessments – A study among engineering college students

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### Abstract

The use of internet has become a viral in educational field especially in completion of assessments. The main objective of this study is to analyse the use of internet in preparation of the assessments among engineering college students of different academic levels and to see the pros and cons of using the internet oriented student assessments. The methodology adopted was a survey based upon predefined questionnaire to achieve the objective among university engineering students. The study was conducted among the students with a random selection of 1000 students from engineering college. The research questions to be answered in this study were (i) how the utilisation of Internet does differ from male students to female students for completing assessments? (ii) What are the Pros and cons of utilization of internet for completing assessments? (iii) How the utilization of Internet does differs from First year students to Final year students? Regarding the advantages of the internet utilization 47% of respondents mentioned as ease of work, 49% observed that its time saving, 34% mentioned search engines/tools and 48 % mentioned that the major advantage is having lots of information. Maximum responses received mentioning the multi-tasking (57%) and the chances of plagiarism (52%) as the major disadvantage. The statistical analysis made in Origin pro with the data gathered and the response percentages on each queries from the respondents. At 0.05 level, p-value > alpha, it is concluded that there is no significant difference in the male and female student responses. Similarly the ANOVA results indicates that the year of study have a significant effect on the approach towards the utilisation of internet.

**Keywords:** Internet dependency; Student assessment; Engineering students; questionnaire

### 1. Introduction

On an observation of mode of communications we can see that internet has become the nerve of world communication. With the blasting growth of internet, students have turned to deep routed clients of the World Wide Web. The use of internet considerably increases the potential of students as they are able to get the international journals for references whereby they can work in a wider perspective.

The utilization of web is currently well known among college under graduate students. Web offers numerous advantages which incorporate access to data every minute of every day which was impractical before, empowers one to work from any area, accessibility and openness of differing assets that one can't discover in a library, state-of-the-art data, quick and more advantageous than the library, a great supplement to library assets. Numerous studies have discovered that Internet use is advantageous for the academic purpose some of them are discussed below.

Eddy Luaran, *et al.*, Malaysia conducted a research to find the dependency level on the internet sources among the TESL students in completing their academic assessments. The research question provides answers to how do the internet usage help in the education and the daily life of the students and also how the internet usage helps to complete the academic assessments. Based on this research it is concluded that the internet is very popular among students, the pertinence of the Internet ought to be stressed ceaselessly so that the Internet can be used to its most extreme to offer the

under graduate students some assistance with producing quality assignments. The data from the Internet when joined with the under graduate students' basic investigation and thinking aptitudes could help the under graduate students to deliver excellent assignments <sup>[4]</sup>.

A study conducted by Osang to evaluate the perception of the students on their challenges they face in the use of Information and Communication Technologies (ICT). Interviews were adopted in gathering data to capture students and to study the real virus on the challenge of access to internet in their locality. It was concluded that internet is very important to open and distance learning students in Nigeria <sup>[6]</sup>.

In a study conducted in University of Dar es Salaam, revealed that most of the under graduate students were not utilizing the Internet because of the insufficiency of PCs with Web access, absence of abilities in Internet utilize and moderate velocity of PCs <sup>[5]</sup>. It was observed that most under graduate students who utilized the Internet did not utilize it for scholarly purposes. Access to the Internet in the college libraries, offices/resources and college PC/ICT are a predominant factor in controlling the internet utilisation <sup>[2]</sup>.

The frequency of using internet was investigated among undergraduate students based on place of usage, time spent, purpose of usage, constraints identified is based on the descriptive survey design. Otunla & Aderonke, based on the survey it was concluded that university digital centre does not provide adequate facilities for the students to gain access to

internet.<sup>[7]</sup> On the off chance that there are sufficient offices on grounds, it will deal with a percentage of the requirements recognized by the respondents and college under graduate students will have more access to the web.

A similar study with the preference of place and time for accessing internet a lot of questionnaire was distributed comprising of various questions relating to internet access.<sup>[3]</sup> It was clear that the younger generation has accepted the internet as a means for accessing to the relevant information for academic and research work. It concluded that internet plays a key role in day today life of students. It was concluded in a study done using SPSS software package that students are making use of the internet for cause related reading and research need and only one fourth of students use it for entertainment purposes.<sup>[1]</sup>

Now days for the students, all data are on a single click away and hence the web crawling students can access the large number of pages in a simple and free mode. It is evident that the students are inclined towards the internet than to the customary means of references like books and archives. The present study is an endeavor to examine the utilisation of Internet use among engineering college students. The main objective of this study can be listed as follows

- To analyse the frequency of internet use for the education purpose
- To analyse the difference in the approach among male and female students of different year of study
- To identify the pros and cons of using the internet oriented student assessments.

The questionnaire survey conducted based upon predefined questions to achieve the objectives. The study conducted among the students with a random selection of 1000 students from engineering colleges.

The research questions to be answered in this study were:

- (i) How the utilisation of Internet does differ from male students to female students for completing assessments?
- (ii) What are the Pros and cons of utilization of internet for completing assessments?
- (iii) How the utilisation of Internet does differs from First year students to Final year students?

**2. Materials and methods**

After going through the literature and understanding the current requirement it is intended to collect the required information through a structured questionnaire. The study conducted to answer the given research questions as mentioned in the introduction part.

**2.1 Construction of Questionnaire**

The questions were designed collect the information about the utilisation frequency of internet use and the primary purpose of it among students. The questions were also included to identify the major source of references for completing the assessment and if its internet then what is the favorite search engines of the students. Some open ended questions were also included to identify the pros and cons of the use of internet for completing the assessment. The questionnaire survey conducted based upon predefined

questions to achieve the objectives, for which following parameters are identified.

- Gender
- Academic level of students
- Frequency of use.
- Educational purpose of internet browsing
- Search engines used
- Pros and cons of internet based assessment

With the draft questionnaire, the researcher conducted a pilot sample survey to only 100 respondents for finding the effectiveness of questions. After receiving the feedback from the respondents, the questionnaire is fine tuned to get the correct responses from the target community. It is observed in the pilot study that there are possibilities of skipping of the questions, incomplete survey and some ambiguity in responses. Anticipating this it is decided to increase the number of requests to make sure finally the sampling size shall be large enough to proceed with the conclusion.

**2.2 Conducting Survey**

The study was conducted among the engineering college students with a random selection of 1000 students from the engineering college students. The study was spread from first year to final year students to understand the difference in the approach towards the assessment.

The study conducted in different engineering colleges in Oman with the help of an online survey. The web link for the structured questionnaire was send to the selected community of 1000 respondents in such a way that it covers from all the four academic levels of an undergraduate study. The target groups were chosen from different colleges and directly send the link to their e mails.

Among the 1000 requests send for the information, responses received from 780 respondents. Out of these 120 responses were ignored due to the ambiguity in responses, partially completed or unattended questions. Finally altogether it is found that 660 responses are effective for the analysis. The findings of this study are discussed in a descriptive analysis in the next section.

**3. Results & Discussion**

The feedback received from the questionnaire was consolidated and analysed based on the gender and the year of the study. All the 660 respondents are categorized as shown in the **Table 1**. Among the respondents 52% were female and 48% were male candidates. In the male category maximum respondents were from third year whereas from the female category it was from final year as demonstrated in **Fig 1**.

**Table 1:** Academic level wise distribution of respondents

		First year	Second year	Third year	Final year	Grand Total
Male	Frequency	68	43	122	81	314
	Percentage	21%	14%	39%	26%	48%
Female	Frequency	52	62	93	139	346
	Percentage	15%	18%	27%	40%	52%

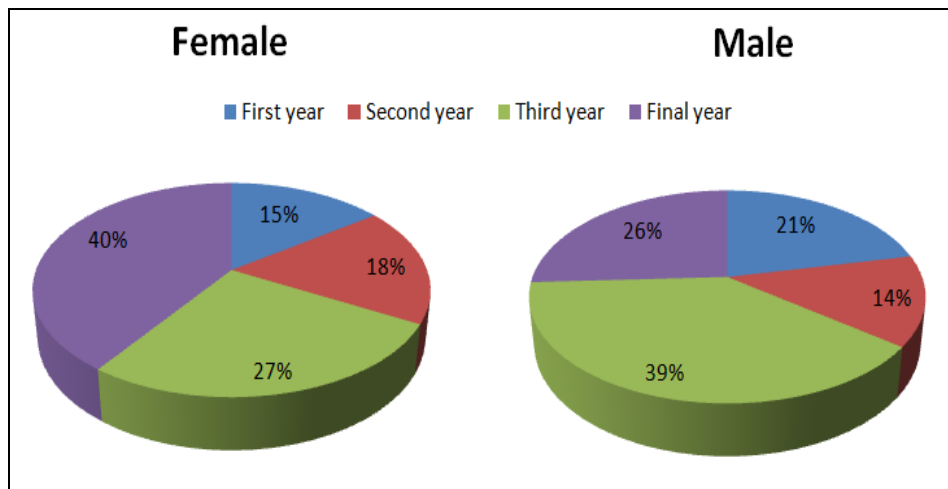


Fig 1: Categories of Respondents

**3.1 Frequency of internet browsing for education purpose**

The distribution by gender for the frequency of internet browsing is shown in

Table 2. In total 63% of the respondents utilizes the internet browsing for education purpose. One fourth of the respondents were utilising internet weekly or twice in a week. Very few respondents were there who were browsing the internet for education purpose rarely or monthly. It is observed from the Pie diagram shown in Fig 2 that the

frequency of internet browsing is almost same in male and female students.

Table 2: Frequency of internet browsing

	Female	Male	Grand Total
Daily	64%	63%	63%
Twice a Week	20%	13%	17%
Weekly	7%	9%	8%
Monthly	7%	11%	9%
Rarely	2%	4%	3%

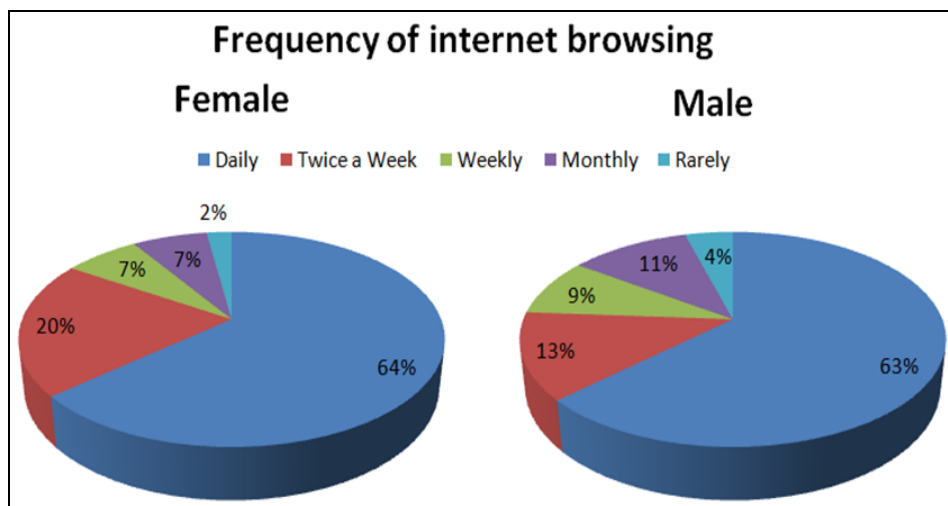


Fig 2: Distribution by gender of frequency of internet browsing

Referring to the Fig 3 it is clear that the level 4 / Final year students are making the maximum utilisation of the internet for education purpose daily and none of them are in the category of rarely utilising or monthly utilising. The internet utilisation for educational purpose is increasing proportionate to the academic level of the students. This may be because of

the final year projects and more open ended assignments in the final year and the third year. Whereas it is visible that some of the first year students are coming under the category of rare utilisation of internet for their study purpose. The major cause of this can be the problem with awareness and lack of seriousness.

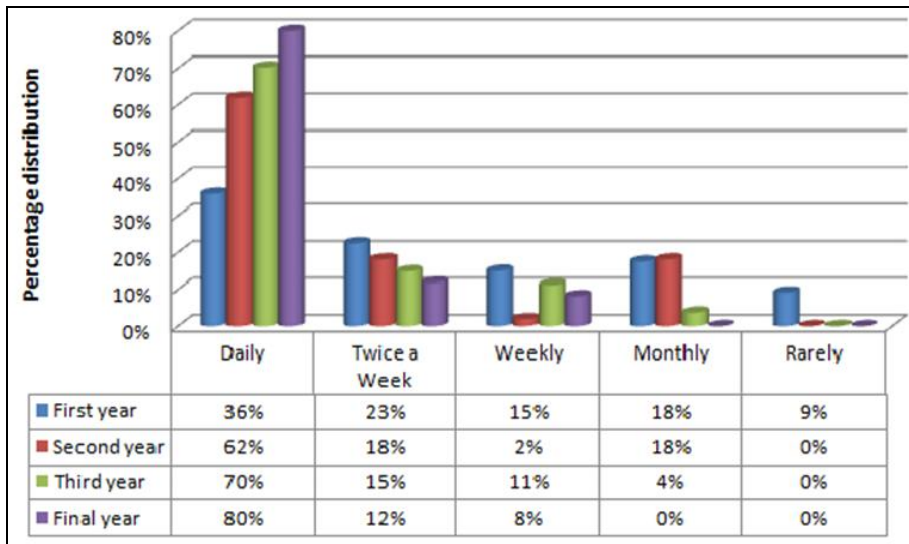


Fig 3: Distribution by year for frequency of internet browsing

**3.2 Primary use of internet for education purpose**

The objective of the question is to analyse how the primary use of internet for education purpose varies within each group of students. It is observed from the pie chart shown in Fig 4 that the male respondents are maximum utilising the internet

for study purpose whereas the female respondents utilizes in their projects and preparing the class assessments. Altogether around 50% of the students are utilising the internet for their project work or in the preparations of the assignments. This is almost same in the female and male respondents.

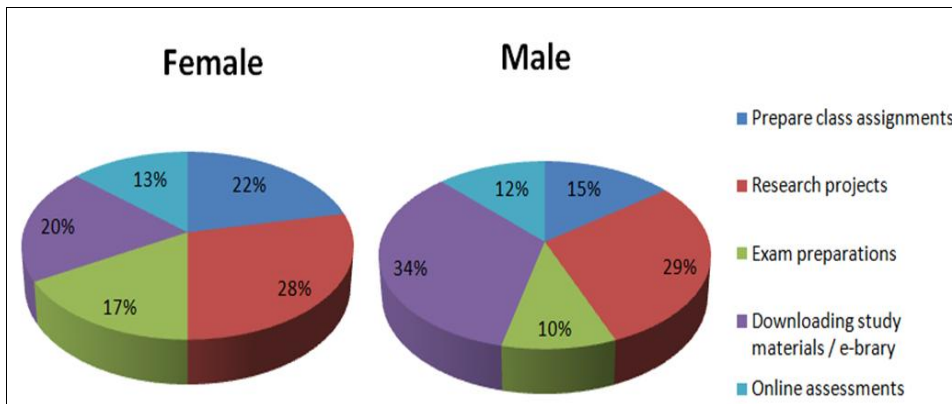


Fig 4: Distribution by gender of primary internet use for education purpose

In the survey it is observed that 83% of the respondents were saying yes to the internet oriented assessments in the curriculum. In the analysis based on the year of study of the respondents it is observed that the fourth year respondents are considering the research projects as the primary purpose of

the study and the first year students are using internet for the downloading study materials and the electronic library references. This indicates that priorities and the purposes of the internet utilisation varies depends upon the year of study. The variations are clearly shown in Fig 5.

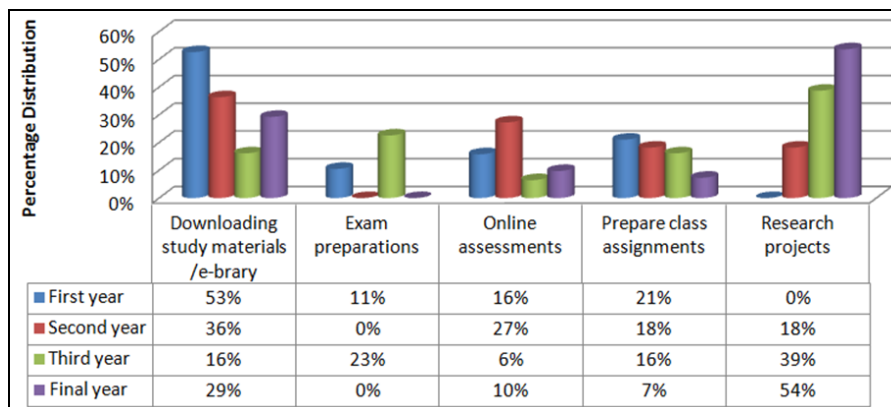


Fig 5: Primary use of internet for education purpose

3.3 Tools used for the internet assistance

The tools used for the internet assistance changes as the uses changes. In the higher levels mainly they are focusing to Technical publications, whereas in the first year mostly utilising the Wikipedia information and Google. The variations are demonstrated in the bar chart shown in Figure 4 6. It is also observed that the in first and second year of study the respondents are not referring to any technical

publications. This trend is changing once they are in third and fourth year. The major sources of references you often using for completing assignments are mentioned as internet, lecture notes and text/library books. In this also Final year students are utilising the e-book references and library books. The lower level respondents are mostly dependent on lecture notes and internet.

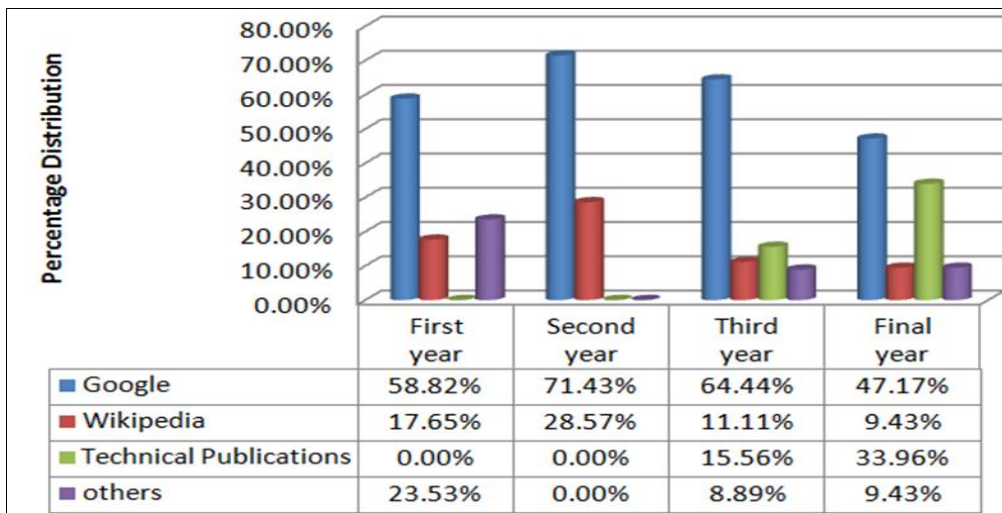


Fig 6: Tools used for the internet assistance

3.4 The Pros and Cons of utilising internet in assessments.

The study also collected the responses on the advantages and disadvantages of the internet utilisation in academic assessments. The responses indicate different advantages of using internet. Regarding the advantages of the internet

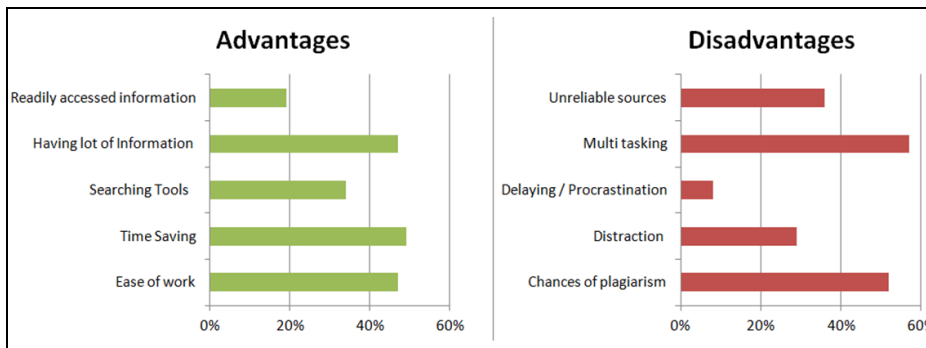
utilisation 47% of respondents mentioned as ease of work, 49% observed that its time saving, 34% mentioned search engines/tools and 48 % mentioned that the major advantage is having lots of information as shown in Table 3.

Table 3: The pros and cons of utilisation of internet in assessment

Advantages	% responses	Disadvantages	% responses
Ease of work	47%	Chances of plagiarism	52%
Time Saving	49%	Distraction	29%
Searching Tools	34%	Delaying / Procrastination	8%
Having lot of Information	47%	Multi-tasking	57%
Readily accessed information	19%	Unreliable sources	36%

The survey also demands the respondents to mention the disadvantages of the internet utilisation. The consolidated responses are demonstrated in the Table 3. Maximum responses received mentioning the multi-tasking (57%) and the chances of plagiarism (52%) as the major disadvantage.

The other points came up in the survey was unreliable sources (36%), distraction (29%) and delaying (8%). The chart in Fig 7 demonstrates the pros and cons of utilisation of internet in academic assessment.





**Fig 7:** The responses on pros and cons of utilisation of internet in academic assessment

**4. Statistical Analysis**

The statistical analysis made using the software Origin pro with the data gathered and the response percentages on each queries from the respondents. A paired sample t test is done to analyse the significance between the male students and female students. In the statistical analysis the t for the test is -

0.30096, and the p-value is 0.76671. At 0.05 level, p-value > alpha, it is concluded that there is no significant difference in the male and female student responses. The trend of utilisation of internet in academic assessments and the tools are similar in male and female students. The final result of the paired t test is shown in

**Table 4.**

**Table 4:** Paired sample t test results from origin pro 9

	Descriptive Statistics			
	N	Mean	SD	SEM
Female	660	0.2413	0.18684	4.18%
Male	660	0.245	0.21102	0.04718
Difference	-0.0037			
Test Statistics				
t Statistic	DF	Prob>t		
-0.30096	19	0.76671		

Balance One-Way Repeated Measures ANOVA performed and it is found that calculated P value is < 0.05. If P value is < 0.05 then we can conclude that calculated F value is greater than the critical table F value. In this study we can conclude

that the year of study have a significant effect on the approach towards the utilisation of internet. It indicates that at 0.05 levels the population means are significantly different. ANOVA test results are demonstrated in Table 5.

**Table 5:** ANOVA test results from origin pro 9

Tests of Within-Subjects Effects						
	Sum of Squares	DF	Mean Square	F	Prob>F	
First Year	3.51471	3	1.17157	44.56217	1.05E-11	
Second Year	3.51471	1.68008	2.09199	44.56217	2.03E-07	
Third Year	3.51471	1.94862	1.80369	44.56217	2.69E-08	
Fourth Year	3.51471	1	3.51471	44.56217	3.49E-05	
Tests of Between-Subjects Effects						
	Sum of Squares	DF	Mean Square	F	Prob>F	
Intercept	10.55875	1	10.55875	208.196	1.71E-08	
Error	0.55787	11	0.05072			

**4. Conclusions**

It is evident that the students are inclined towards the internet than to the customary means of references like books and archives. The present study was an endeavor to examine the utilisation of Internet use among engineering college students. The main objective of this study was to analyse the frequency of internet use for the education purpose and to analyse the difference in the approach among male and female students of different year of study. The study also indented to analyse the student opinion pertaining to the pros and cons of using the internet oriented student assessments. The conclusions derived out of this study can be stated as follows.

- The internet utilisation for educational purpose is increasing proportionate to the level of the students. This may be because of the final year projects and more open ended assignments in the final year and the third year. Whereas it is visible that some of the first year students are coming under the category of rare utilisation of internet for their study purpose.
- Altogether around 50% of the students are utilising the internet for their project work or in the preparations of the assignments especially in fourth year respondents. The final year students mainly they are focusing to

Technical publications, whereas in the first year mostly utilising the Wikipedia information and Google.

- Regarding the advantages of the internet utilisation 47% of respondents mentioned as ease of work, 49% observed that its time saving, 34% mentioned search engines/tools and 48 % mentioned that the major advantage is having lots of information.
- Maximum responses received mentioning the multi-tasking (57%) and the chances of plagiarism (52%) as the major disadvantage.
- The paired sample t test made in Origin pro reveals that, p-value > alpha, hence concluded that there is no significant difference in the male and female student responses.
- ANOVA results indicate that at 0.05 levels the year of study has a significant effect on the approach towards the utilisation of internet.

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