

**Effect of Internet Usage on Engineering Student's in Kerala: Statistical Analysis**Shiju George<sup>1</sup>, Anish Francis<sup>2</sup>, Shijin P.V<sup>3</sup>, Bobin K. Mathew<sup>4</sup><sup>1</sup>*School of Information Technology, VIT*<sup>2</sup>*School of Electronics & Communication, VIT*<sup>3</sup>*School of Electrical, VIT*<sup>4</sup>*School of Electrical, VIT**Vellore Institute of Technology, Tamil Nadu, India*

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**Abstract** — Technologies are always influencing people for good and bad and the use of internet created revolutionary changes in all facets of life. Many researchers have examined the influence of internet on student. It helps students to broaden their knowledge by accessing to the information world and also by easy communicating to their community. The internet is one of the greatest recent advancement in the world of information technology and has become a useful instrument that has fostered the process of making the world a global village. This is a universal fact that the use of internet has a great impact on the student's academic achievement and social life. The research of pattern of Internet use of engineering students could be important sources of information to an Educational management regarding the development, and evaluation of engineering education. This paper aims at assessing the Internet pattern of students of engineering in Kerala. The collected data was analyzed with ANOVA in MATLAB software. The results are demonstrated with tables and boxgraphs. The research shows that internet usage has a positive impact for engineering students.

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**Keywords-** Internet impact, Engineering college, internet usage, Anova

**I. INTRODUCTION**

The use of the Internet in the educational environment has enabled easy access to many resources, and information sharing has, therefore, significantly increased. Moreover, the prevalence of this sharing has brought additional benefits in that these resources can be used in any location and any time. Although the efficiency of this technology, it is evaluated with use of proportion of the desired results in student achievement does not exactly come out and is difficult to determine. Hence, much research has been conducted over time to understand the reasons for this situation. Since adolescents, especially some university students sometimes, use the Internet for reasons other than educational (they explore the funny view of the Internet). The effect of the Internet in education is, hence, relatively limited. In this study, efficiency and effectiveness of access to resources on the Internet, rather than examination of Internet use has been investigated. In addition, we have sought to identify the impacts of Internet resources used by university students in their project, and which effects of the internet are observed during project elicitation phase. Kerala which is also known as knowledge hub of India has several meritorious technical institutions. As per state government website [1] Kerala has 24 government engineering colleges and 122 self financing engineering colleges. As the research of [2] suggests almost 9300 students are graduating per year. There are lot of technical resources for students which will be helpful in their career. Internet and Wi-Fi facilities are available in many engineering campuses. Mobile phones are banned in engineering campuses but it is used by students for social networking communities like facebook, whatsapp etc. This resources can have positive effect as well as negative effect on student's career. The research presented in this paper, investigate this problem statistically.

The paper is organized in following sections. In section I the statement of the problem is presented, objectives and hypothesis are elaborated in this section., In section II literature review is presented which discusses the status of this problem investigated by other researchers, In section III the work methodology is shown, in section VI, the analysis and findings are presented. Section IV is the major section in which the data tables are demonstrated along with detailed discussion of findings. We conclude the paper in section V.

**II. RESEARCH PROBLEM STATEMENT****2.1. Problem:**

What is the impact of internet usage on student's Performance at Engineering College in Kerala?

**2.2. Objectives**

We developed the following research objectives,

1. To identify the effect of internet usage in academics
2. To identify the effect of internet usage in placements and career
3. To identify the level of internet usages based on duration of access and contents accessed
4. To identify how the internet usage affects the personality of the students

The survey will demand to find the academic usage of resources subjected to the various opted courses in the department. It also gives information about how easily the contents are found and utilised. There is a lot of tendency that students will follow the non-academic content as well. In such case some traits are improved but addiction to extend time limit from daily schedule in resources like games, prone and movies will lead to serious damages to not only the academics part of an individual but also it will destroy the personality and content of students. The focus will be to collect information regarding availability of internet facility in the college campus and other premises like hostel, home and access during the travel time. Most of the institution provides students with internet facility but access to that will be limited due to insufficient infrastructure, setup of workstation, access restriction, time limit .etc. Students perhaps use their own data card to access internet. In our first analysis the type of contents browsed by the students are important. Once the students learn to follow the ethics of disciplined life they will follow the technology trends and involve in societal & self development. Students may concern about displaying their achievements & skills by creating websites, forum to discuss, find solutions of various issues & problems related to academic and non- academic things. Content making and updation in blogs to provide .Majority of students are now utilizing the latest social network applications like facebook, twitter, LinkedIn, whatsapp, chat ...etc. It is important to find out the time spend for the entertainment and professional activities. Continuous over usage may affects our health & leads to vital damages caused by the radiation of gadgets.

Subjected to interest in the topics and courses, students may develop; design various applications that will be useful for others. Lectures, tutorials, question banks, general aptitude, software apps, posting of innovation ideas are some of the contribution an individual might do for a healthy professional activity. There are students who are interested to exhibit and exploit their work and ideas to other. This will enhance their confidence to built newer systems. The best practice is to present the subject to the people by competing in the contest, quiz, fest, and workshop, exhibition at national or international levels.

### **2.3. Hypothesis**

For the present study, we have formulated following statements of Hypothesis:

Null hypothesis: No impact of Internet usage on student's Performance at Engineering Colleges in Kerala.

Alternate Hypothesis: Internet usage has positive impact on student's performance at Engineering Colleges in Kerala.

## **III. LITERATURE REVIEW**

The literature survey suggests a number of publications [3-10] regarding internet addiction among university and college students. They have attempted to show there can be negative effect of internet use on these students, which may cause the students to become addicted and to divert from their educational studies. But some other studies show positive results.

In order to assess internet addiction, many new diagnostic tools have been developed in literature. Chan & Law (2008) evaluated the Young's Internet Addiction Test (IAT) .In their study, they defined the three dimensions of the problem: Withdrawal and social problems, time management and performance, and reality substitution. Moreover, this study showed clearly that academic performance was negatively correlated with internet addiction.

Some other works suggested that students are interested use search engines instead of e-libraries to review the literature regarding their project or home work. Brophy & Bawden (2005) compared Google as an internet search engine with academic library resources in their study. Their finding showed that while Google is superior for coverage and accessibility, library systems are superior for quality of results, and that precision is similar for both systems.

We have followed the work of yasar guneri [3,10], and Olubanke [4] due to the similar nature of population. We have also referred to the work of Sunil Mani [2] about engineering education in Kerala for arriving at the inferences

## **IV. WORK METHODOLOGY**

### **3.1. Sample**

Amal Jyothi engineering college under Mahatma Gandhi University was taken for study. The college has NBA accreditation and student's records are well maintained which helped for our research. Also the college has full residential facility, and 24 hours internet enabled in the campus. The students also have counseling facility which is done

periodically as well as good result analysis; feedback system from students Etc.The College has also an efficient placement cell with updated student database. These were good input tools required for the research which made us to choose this college.

The college has more than seven engineering branches, Master of computer applications and Master degree in engineering. We collected data from Final year engineering students Of Information technology, Electrical and electronics, Electronics, Computer Science and first year M.tech students. We used questionnaires for collecting data.

### 3.2. Questionnaire and Data collection

The questionnaire consist of 30 multiple choice questions. The questions were designed based on related research and inputs from engineering college tutors.The questionnaire elicited a variety of data from students. We employed the surveymonkey.com website as well as colleges intranet lab facility for conducting the survey.

The data from the questionnaire was considered as the primary data for the analysis. Apart from this we collected secondary data from students Record, Placement records, feedback reports of students etc along with past studies and inputs from journals and other publication, relevant articles published in news paper and magazines etc.

### 3.3. Tools and techniques

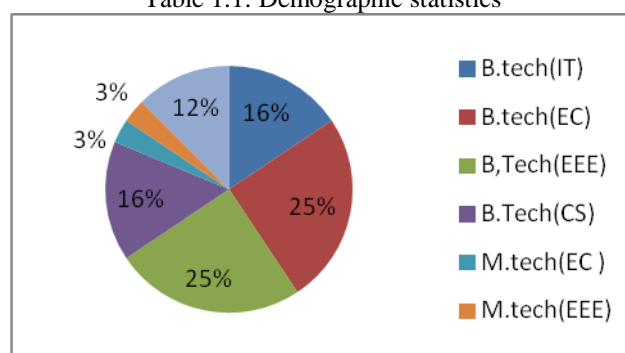
We used one way ANOVA for testing the hypothesis with data collected from the survey. We employed statistical toolbox in MATLAB software for coding the programs to run ANOVA tests.

## V. ANALYSIS AND FINDINGS

To begin the analysis of the data we first demonstrate the demographic statistics of the respondents.

Description	No. of respondents	Percentage%
B.Tech(IT)	50	16
B.Tech(EC)	80	25
B,Tech(EEE)	80	25
B.Tech(CS)	50	16
M.Tech(EC )	10	3
M.Tech(EEE)	10	3
Faculty	40	12
<b>Total</b>	<b>320</b>	<b>100</b>

Table 1.1: Demographic statistics



Graph 1.1: Demography

Of the respondents in the student category 55% were male and 45% were students.280 were students and 40 were from faculty.

We first analyzed the first objective regarding internet usage and academics. The primary data response is tabulated below. The response showed that internet usage helps in academics for students. The response is tabulated in Table 1.2

STATEMENT	EXCELLENT HELP	AVERAGELY HELP	RARELY HELPFUL	NO HELP
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Internet in studying the course material	224	42	14	0
Internet for preparing Miniproject and main project	270	10	0	0
Internet for assignments ,labs and seminar	245	35	5	0

Table 1.2: Student's Response

80% of the students stated that internet is helpful for understanding the course material. More than 15% opinioned that internet is average help in studying the course material. The respondents had almost unanimous opinion that internet is helpful for preparation of engineering project works. The students have a Miniproject at 6<sup>th</sup> semester and a main project at 8<sup>th</sup> semester. 97% of students pointed out that internet are helpful in that matter. Almost similar opinion was also for internets role in preparation of assignments, understanding labs and preparation of seminar.

The anova test done has following result.

Source	SS	Df	MS	F	Prob>F
Columns	125181.6	3	41727.2	193.26	0.0028
Error	1727.3	8	215.9		
Total	126908.8	11			

Table 1.3: Anova test for student's response

Null hypothesis: Internet usage has no signifance with academics performance of students.

The ANOVA table shows the between-groups variation (Columns) and within-groups variation (Error). SS is the sum of squares, and df is the degrees of freedom. The between-groups degrees of freedom are number of groups minus one, which is  $4 - 1 = 3$ . The within-groups degrees of freedom is total degrees of freedom minus the between groups degrees of freedom, is 11. MS is the mean squared error, which is  $SS/df$  for each source of variation. The  $F$ -statistic is the ratio of the mean squared errors the  $p$ -value is the probability that the test statistic can take a value greater than or equal to the value of the test statistic

The small  $p$ -value of 0.0028 indicates that differences between groups means are significant and hence to reject null hypothesis. Hence we accept the alternate hypothesis that internet has the effect with academics of students.

This hypothesis is cemented by taking the response of the faculty. The faculty were informed to refer the respondent student's academic record, student counselling registers, and placement record, before answering the questionnaire. The response of the faculty is shown as below. A secondary data of student's internet usage, about time of internet was prepared by checking internet lab login registers, and popular sites and contents accessed by the students were collected using questionnaire. The social networking sites were banned in the college network.

STATEMENT	EXCELLENT AID	AVERAGE	RARELY	NO AID
Is student performance improves with internet usage	20	7	2	1
Is students internet usage helps in placement	22	6	1	1

Is students internet access affects behavior	10	10	20	0
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Table 1.4: Faculty response

The response shows that majority of the faculty agrees that internet usage is helpful for the students academics. More than 80% of the faculty agreed that internet usage improves the performance.

Regarding the internet access and behavior resulted in a fuzzy response. But still 50 % of teachers felt that internet does not have any negative effects on personality. This is to be investigated in a higher level of study since the social networking sites are banned as well as the mobile phone usage in the campus is strictly prohibited.

The anova test of the faculty response is as follows:

Source	SS	Df	MS	F	Prob>F
Columns	422	3	140.66	3.51	0.00691
Error	320.667	8	40.83		
Total	742.5	11			

Table 1.5: Anova table on faculty response

As in the previous analysis we can see that P value is very low. Hence we reject the null hypothesis and accept the alternate hypothesis that internet usage affects the students positively.

## VI. CONCLUSION

Internet has vast ANOVA tests were applied to the data collected. It was found that null hypothesis can be rejected. We can accept the alternate hypothesis that students performance improves with the internet usage. The study points out that deeper research is needed to investigate the effect of social media websites in student's life, and cross examination of student's performance and content accessed by students in an open connectivity campus. However, because of a relatively small sample of population questioned, especially those who use participatory technology in the learning process as well as the type of participatory resources that they use, the results of this study can be seen as a starting point for future research.

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