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Research paper



A Statistical Study on Impact of Facebook Usage of Engineering Students at VIT

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Abstract

This study aims to find the influence that Facebook plays as a social networking medium on engineering students at an undergraduate level in VIT, Vellore. Facebook, a prominent online social media and networking site was founded and launched in 2004 by Mark Zuckerberg. Facebook has been under the scanner to study the influence it has on human emotional health, social life and mental health. Facebook has grown to become one of the most prevalent Social Networking Sites (SNS) in this era. A lot of previous studies have tried to study the role Facebook has played not only on students or adolescents but also on adults and all. During this study, we have tried to see the role that Facebook plays in an engineering undergraduate student's life especially the extent to which it affects the students' academic performance. Various studies have shown that Facebook plays a major role in influencing emotions, moods and attitudes of students. We aim to understand the role that Facebook plays buy administering a survey amongst students in the University and analyse the extent to which students are affected by using it. The survey constituted of 16 questions and was administered to about 250 respondents belonging to the undergraduate engineering student pool. The method of sampling done was simple random sampling and data analysis was done using SPSS.

Keywords: *Data analysis; random sampling; SPSS; factor analysis.*

1. Introduction

In today's world, social networking sites play an essential role in a person's circle of communication [10]. Even as a student, it has become an essential mode of connecting with people across the world. In this paper, we have considered undergraduate engineering students of VIT, Vellore to determine the impact that Facebook, as a social media site has on these students. The internet culture has been a key factor in the development of social learning. Gerson et al [3] have tried to explain the relation between social networking sites and subjective wellbeing in their study. Another study shows that youngsters are willing to compromise on their well-being, health, studies and so on in exchange for time spent on Facebook[2]. Statistical reports show that India alone has 195 million registered Facebook users. This makes up a sizeable internet population in the whole world.

By tapping into the usage needs of students, we can estimate the level of addiction that students are at. Studies are also done to see the effect Facebook has on the personality traits of the person[3]. One more study claims that there is a high possibility that Facebook doesn't affect academic performance, but students might time on Facebook depending on their academic performance [9].

Students of an engineering background are usually in the age group ranging from 18-21. At this stage, one expects the student to have well developed confidence. But then Gerson et al., [3] have analysed a 'Reactive' group of individuals. These are the people who are sensitive to the number of likes and the kind of comments received on Facebook for their posts.

Marino et al.[8] have studied the implication of Facebook on Italian adolescents and the role it plays on their personality traits and social norms. This study clearly shows that Facebook has a negative impact on adolescents, and the same was studied for in our study for a higher age group. Some studies also state that students use Facebook to compensate for their missing social life in reality [10]. But on the contrary, another study says that the number of friends or the extent to which an individual is active on Facebook has no correlation to the person's satisfaction [4].

Given the advent of smartphones, we have to consider the use of Facebook via phones which leads to an option of the student being logged in continuously. This can give rise to two situations either where the person is 'Permanently Online' or else 'Permanently Connected'[11]. This factor has also been taken into consideration in the study.

Further, Facebook has been indicated as a teaching aid, and is used by teachers and students to connect beyond the walls of a classroom. The usage of Facebook, as a medium of education depends on the purpose and the activity it is being used for[1]. By this study, we have tried to combine all the aspects involved and made our observations. We have used SPSS software for data analysis.

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2. Literature Review

Facebook has been touted as one of the most popular medium amongst all Social Networking Sites. Kaya and Bicen[6] have done a study on understanding the effects social media has on students, with Facebook taken as a case study. The main findings of their study turned out to be that Facebook was that the students viewed Facebook as a mode of entertainment via which they could share songs, pictures and other files. They also state that students have an idea of social etiquette and do not resort to using foul language on Facebook. Students also seem to be aware of the idea of online privacy and seem to respect that. The study also reveals that students who are more active on Facebook tend to participate in extracurricular activities more but their academic life takes a toll.

Another study by Manasijević et al [7] focuses specifically on the relation between Facebook usage and how it can be used for academic purposes. This study found out that despite its potential to work as a medium for academic use, most students tend to find Facebook as a primarily networking site. They feel it is mostly useful in communicating with friends and not classmates in specific. But apart from that, Facebook has been a vital channel for mainly three factors pertaining to education, creation of academic groups, sharing of course related work and mutual collaboration.

Janković et al [5] did a specific study on the use of smartphones and Facebook on students in Serbia. This study was more detailed in nature and explored on the relation between Smartphone and Facebook usage on Leisure Activities and College adjustment. They found that students were well able to understand the necessity to set time out for each activity and were capable enough of making a distinct demarcation between using Facebook and abusing Facebook.

3. Objectives

According to Facebook, more than half their users log into the account on a daily basis. This shows the extent to which Facebook has penetrated into the lives of people. Our main objective of work is:

1. To understand the key underlying factors which prompted students to rely on Facebook
2. To understand the level to which the students' self-esteem, confidence level, academic performance and health are primarily being affected. No viable source is available online which talks holistically about the impact that Facebook has on Indian youth's mental health.
3. We aim to produce conclusive and substantial research matter about Facebook and its deep rooted effects on the students.

4. Methodology

To collect data for this paper, we opted for a survey based method. This survey was conducted between the periods of August- October 2017. We had administered the survey to 250 students via printed survey sheets and a Google form. In view of our research objectives, we distributed the survey only amongst B. Tech students across all the four years. The mode of sampling was convenience based.

5. Analysis and Results

Data from the questionnaire was entered using SPSS Statistics 20 and results are found. Frequency and percentage gives us statistical analysis to find majority in that particular group. The following table represents frequency and percentage of our survey on Facebook.

Table 1: Frequency and Percentage Analysis

	Frequency	Percentage
Gender		
1. Male	185	74.0
2. Female	65	26.0
Age		
1. 18 Years	76	30.4
2. 19 Years	51	20.4
3. 20 Years	60	24.0
4. Above 20 Years	63	25.2
Year of study		
1.1st Year	82	32.8
2.2nd Year	34	13.6
3.3rd Year	66	26.4
4.4th Year	68	27.2
I)Facebook Account		
A. Yes	235	94.0
B. No	3	1.2
C. Used To Have	8	3.2
D. Intend To Make	4	1.6
II)Uses Of Facebook	112	44.8
A. For N/W And Talking To Friends	19	7.6
B. For Connecting With People	7	2.8
C. For Educational Purposes	104	41.6
D. For Fun And During Spare Time	7	2.8
E. Neither	1	0.4
F. All Of Them		
III)How Often Do You Use Facebook		
A. Once	35	14.0
B. 2-6 Times A Week	38	15.2
C. Everyday	162	64.8
D. Do Not Access At All	15	6.0
IV)How Facebook Is Accessed		
A. Fb App		
B. Fb Website	100	40.0
C. Both App And Web	60	24.0
D. Neither	80	32.0
	10	4.0
V) Amount of time spent		
A. More Than 12 Hrs	9	3.6
B. 6-12 Hrs	7	2.8
C. Less Than 6 Hrs	61	24.4
D. Not More Than 1 Hr	171	68.4
E. Neither	2	0.8
VI) Facebook is a true way Of Communication		
A. Strongly Agree	49	19.6
B. Agree	121	48.4
C. Neither	50	20.0
D. Disagree	24	9.6
E. Strongly Disagree	6	2.4
VII) Facebook Helps In Communication Skills		
A. Strongly Agree	23	9.2
B. Agree	77	30.8
C. Neither	60	24.0
D. Disagree	58	23.2
E. Strongly Disagree	32	12.8
VIII)Facebook as a medium of Social Life		
A. Strongly Agree		
B. Agree	24	9.6
C. Neither	88	35.2
D. Disagree	66	26.4
E. Strongly Disagree	42	16.8
	30	12.0
IX) Socially active more on		
A. Fb		
B. Real Life	19	7.6
C. Equally Active	162	64.8
D. Not Active On Either	46	18.4
	23	9.2
X)Member Of		

A. Multiple sites	177	70.8
B. Only Fb	65	26.0
C. Not A Member Of Any Site	8	3.2
XI) Facebook Is a Distraction While Studying		
A. Strongly Agree		
B. Agree	35	14.0
C. Neither	57	30.8
D. Disagree	48	19.2
E. Strongly Disagree	77	22.8
	33	13.2
XII) Facebook Affects Academic Grades		
A. Strongly Agree	11	4.4
B. Agree	32	12.8
C. Neither	59	23.6
D. Disagree	90	36.0
E. Strongly Disagree	58	23.2
XIII) Stay up at night to browse Facebook		
A. Strongly Agree	26	10.4
B. Agree	65	26.0
C. Neither	53	13.2
D. Disagree	68	27.2
E. Strongly Disagree	58	23.2
XIV)Facebook Affects Moods And Thoughts		
A. Fb Affects Me Often		
B. Partially Affected	34	13.6
C. Not Affected At All	105	42.0
	111	44.4
XV) Facebook is emotionally consuming		
A. Yes		
B. No	31	12.4
C. Depends On Issue	122	48.8
	97	38.8
XVI) Different person on Facebook and real life		
A. Always		
B. Never	14	5.6
C. Depends On Situation	160	60.0
	76	34.4

From Table 1, we observed that male frequency is more than female. 18 years has taken the survey most.i.e.1st years. Out of 250 students, three-fourth use fb account. They mainly use it for talking with friends without meeting each other. Students use fb application so they can download it in mobile and use it anywhere. Students open fb every day but only one hour to check updates and their friends' photos. Facebook doesn't affect students' moods and thoughts. According to survey, students' are not finding this site as emotional because it contains only fun and creative thoughts. Students approach Facebook as themselves. Students are members of multiple sites to know some knowledge about every sites. Many of the students agree in telling that fb is helpful in communication and gives us social life as everyone can communicate around the world. Students are not interested to browse at night as it will affect their sleep. So it doesn't affect their academic grades.

6. Factor Analysis

Table 2: KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.639
Bartlett's Test of Sphericity	Approx. Chi-Square	320.127
	df	15
	Sig.	.000

The above table describes KMO sampling to test the validity of questionnaire which is greater than 0.6. In order to decrease the variables of questionnaire, we do factor analysis.

Table 3: Factor Analysis

Factor 1 Variables	Component Values
Fb is a way of communication	0.702
Fb helps in communication skills	0.815
Fb gives social life	0.824
Staying up at night to browse through fb	0.482
Factor 2 Variables	Component Values
Fb is distraction while studying	0.875
Fb affects academic grades	0.874

Factor analysis generally used for developing questionnaire. The factor analysis we have done is exploratory analysis. As based on the component values defined, it assumes the factors. This provides us measures which are separated among unique factors. Factor analysis gives us two factors. First factor is about how Facebook is useful in communication and life that is four variables. Second factor is about students' academic grades. We expect the factors to be independent so we used VARIMAX. The output is calculated by bridge between the factors.

7. Conclusions

In this study we have determined the personal, behavioural effects of using Facebook by the engineering students of VIT. We have limitations also. Here, we used convenience sampling method to collect data from students. As it is an observational study, the sampling method fills its purpose. Humans need social networking websites to connect and communicate with people in a positive way. Online social networking may trigger bad impressions on people. Like two sides of coin, it has positive effects by connecting and communicating with friends and negative effect as it affects youth and we wastes a lot of precious time. So it should be used as a creative and imaginative tool not as harmful tool that may costs our life.

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