

# The Impact of Social Media on Engineering Students - A Review

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**Abstract-Social media, with its ability to connect people globally and share information interactively, is becoming increasingly recognized as a powerful tool in various fields, including education. The integration of social media into daily life has transformed communication across all professions, including engineering. Drawing on surveys, case studies, and literature, it highlights how platforms like Facebook, Instagram, LinkedIn, WhatsApp and YouTube are reshaping the profession. This paper presents a review of the multifaceted impact of social media on the engineering students academic performance, focusing on collaboration, communication and knowledge sharing, also it addresses how social media affects students' mental health and cyber bullying.**

**Key Words: Engineering, social media, students, impact**

## I. INTRODUCTION

India has embraced the internet with open arms, and its digital population has seen exponential growth over the past decade. What began with basic email communication and Orkut has evolved into a dynamic digital ecosystem dominated by global platforms such as Facebook, Instagram, Twitter, LinkedIn, and YouTube. As of 2024, India has over 700 million active internet users, with social media deeply woven into daily life, especially among youth and students. According to Mehmood S and Taswir T [1], Indians spend an average of 2 to 3 hours daily on social media, making it one of the largest user bases in the world.

Students are one of the most important users of virtual world and social networks worldwide. For engineering students in particular, social media has become more than just a means of entertainment or casual interaction. It plays an increasingly significant role in academic collaboration, peer learning, skill

development, and career advancement [2]. Platforms like LinkedIn and ResearchGate have emerged as virtual professional spaces where students can showcase projects, connect with industry experts, and find research opportunities [3]. YouTube tutorials, Udemy, GitHub repositories, and Discord study groups help students acquire practical skills beyond what is taught in traditional classrooms.

However, this widespread integration of social media also raises concerns about mental health, internet addiction, privacy, and ethical dilemmas [4]. The ease of access and the addictive design of many platforms often lead to procrastination and decreased academic performance for some students, while constant online comparison can negatively impact their self-esteem and well-being.

This paper is a review of how social media has made an impact on engineering students covering various aspects like, its impact on their academics, communication and collaborations, effect on students mental health, sleeping habits and so on.

## II. ACADEMIC IMPACT

Chunduri R and D S N Nireesha [5] observed that, if social media is used effectively for constructive purpose such as learning or sharing information online, it can prove to be a helpful tool for engineering students. On the other hand, excessive social media use can negatively affect their academic performance. Studies done by Arianna G T et al. [6] and Khondhaker Al Momin et al. [7] indicated social media platforms like Facebook, Instagram, and Twitter significantly enhance student engagement, collaboration, and

communication, contributing to improved academic outcomes. However, Mingjie T. et al. [8] observed that social media is convenient for engineering students in problem and project based learning. The information technology literacy of engineering students is usually high and using social media in learning is not difficult for them. Teachers' praise students, who actively share knowledge and can act as incentives promoting them to make further contributions.

Nagaraju Kuppugari [9] did a study to examine usage of social media by the engineering students of SPSR Nellore district, A.P, India The study revealed, YouTube is the most favoured social network of the students. While, useful platforms like LinkedIn and Twitter are underutilized.

Monika Singh [10] conducted a study of the students at a private engineering college in Lucknow, U.P, India and mentioned a unique impact of social media. The study observed that more than half of the students use of short words in their notes and answer sheet. Jaiprakash H L et al. [11] conducted a study at Vidya Vikas Institute of Engineering and Technology, Mysore, Karnataka, India. He observed that students are well aware of advantages and disadvantages of social media and also highlighted that student's use Facebook the most.

S.Vennila F S et al. [12] noted, social networking helps the students who use it for assignment purposes. Achmad S et al. [13] divided the purpose of using social media into three parts, for information, learning media, and references. They observed that social media is good as a learning media. Joehanna K N et al.'s [14] main objective of the study was to determine if social media usage had an effect on the Academic Performance of Engineering students in University of Santo Tomas. The study stated that one can easily be distracted and get off-track when undertaking academic related activities.

Abdulkaifi H et al. [15] stated, engineering students maximize their social media usage to enhance their academic achievement in the absence of official educational platforms in Yemeni universities. Also, they observed that 81% of engineering students have personal laptops and 98% have smartphones, which indicates that students can communicate with internet sites easily. On the other hand, Usiade R E et al. [16] observed that engineering students at Delta State Polytechnic Otefe, Nigeria are influenced negatively to a great extent by the social media network because

their attention are focused on chatting and music while their academic activities are neglected and left to suffer. Manoj Kumar Sinha and Gulshana Begum [17] explained that social media is used to share ideas quickly with others so that improvement can be made with ease.

### III. COLLABORATION AND COMMUNICATION

A study conducted by the Indian Institute of Technology (IIT) Delhi found that 75% of youth surveyed reported using social media daily to communicate with peers. These statistics underline the integral role of social media in facilitating social connectivity and fostering relationships among Indian youth, enabling them to maintain connections and expand social networks in the digital realm. [18].

Engineering students use various social media platforms which enables better communication with classmates for project work, lab coordination, and group studies [7]. These virtual study circles extend traditional group study sessions into a continuous, borderless support system. In general, engineering students frequently join GitHub or Stack Overflow to collaborate on coding projects, debug code snippets, and share solutions to practical lab work. During the COVID-19 pandemic, various Discord servers and Slack channels emerged as hubs for organising virtual hackathons, webinars, coding competitions, and collaborative software development sprints.

Quantitative study performed by Majji H C et al. [19] showed that by using social media strategically, engineering students can increase their visibility, network with potential employers, and learn about new job opportunities.

Beyond college walls, students connect with peers from other universities through public Facebook Groups, Reddit threads or Telegram channels dedicated to GATE and GRE preparation. These communities fill learning gaps by providing additional practice questions, recorded lectures, and real-world advice from seniors who have cleared competitive exams or landed internships.

### IV. MENTAL HEALTH

Multiple studies show that the prolonged use of social networks have been known to cause negative effects

on the psychological state of users. One of the common topics of concern is Social Media Fatigue (SMF). This refers to the state of emotional exhaustion caused by the constant notifications, overload of knowledge and the pressure to maintain an idealized presence online. This type of strain often accompanies with the Fear of Missing Out (FOMO), in turn equating to increased levels of Anxiety and Depressive behaviors [4]. The constant need to stay perfect and keep up the facade is rather stressful and serves as a detriment to one's amour proper. This is particularly common in engineering students due to the intense academic workload and performance expectations [16]. Beyond this, unsafe communication can have various psychological consequences, the manifestations of which are observed as cyberbullying and online harassment. However, Social networking can also be a helpful source for those who experience mental health issues. Online mental health communities, student discussion forums, and pages run by campus counselling centers allow students to share experiences and access resources anonymously, reducing the stigma around mental health struggles [20].

#### V. INTERNET ADDICTION AND SLEEPING HABIT

Internet addiction is defined as the preoccupancy and compulsive, excessive use of the internet and social media impairing normal life experiences. Among the Indian engineering student population, one can see how social media platform and online gaming leads to addictive behaviors. Social media also fosters "doomscrolling"- endless consumption of content, which can create chronic distraction and poor time management. Signs of the same may present themselves as lack of care towards one's obligations, absence from traditional tactile interactions, neglecting of academic responsibilities, and various physical and psychological afflictions.

A. Fedrik Akshay A et al. [21] adopted a descriptive research design and collected data from 160 students, 87 males and 73 females from various courses such as Engineering, Management, Arts and Science and covered various institutions in Chennai. The findings indicate social media occupies the most important part of the student's life. It consumes most of their productive hours and results in anxiety, depression, loneliness, attention deficit, hyperactivity disorder,

and addiction. The students who are addicted to dopamine spend excess time on social media sleep fewer hours during night time. This makes them stressed and sleepy in their daily classes reducing concentration levels.

#### VI. CYBER BULLYING

Hostile and aggressive behavior by an individual or a group through means of an electronic medium is cyber bullying. This is a widespread problem among youths, and there are severe consequences on their psychological state. Cyberbullying attacks can be followed and occur without a time limit, reaching the victims at home or any other personal space and with the help of a device.

Indian engineering students are not immune. In recent times, cases of online harassment, hateful comments, or trolling on college forums and social media pages have increased. Many students do not report harassment due to fear of retaliation or lack of awareness about reporting channels. Measures directed at cyberbullying prevention include awareness creation, encouragement for responsible use of information technology, and policies and structures that will provide adequate protection to young persons in information technology systems. Study by R Sivakumar [22] indicated that many incidents of cyber bullying happen in India and they go unreported. They are reported only when they result in crimes like murder or suicide. Cyber bullying can be due to the lack of adequate knowledge which leads to unhealthy communication and hence could lead to crime [23].

The National Crime Records Bureau (NCRB) has reported a notable increase in cyberbullying cases, with youth being particularly vulnerable to online abuse and harassment. Privacy and data security concerns are also prevalent among Indian youth on social media platforms [24].

#### VII. CONCLUSION

As technology advances, social media is becoming the standard for everyone, and it is clear that people enjoy it every day. We discovered that social media has a wide range of effects at different levels, particularly on

engineering students. In social media, students have achieved a high level of quality and the rate of knowledge collaboration has increased significantly. Young people benefit more from their regular usage of social media. We must be vigilant to prevent misinformation that is frequently disseminated on social media, which may lead to a drop in productivity and creativity. We must recognize its value and learn to utilize social media without being reliant on it. One should not be careless since it has many advantages, but it also has certain drawbacks.

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