

## THE DIGITAL DILEMMA: THE INFLUENCE OF SOCIAL MEDIA ON STUDENTS' PRODUCTIVITY

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**Abstract.** *Social media is a relatively new technology, therefore, it's still hard to define whether its consequences have a good or a bad connotation. The results of implementing such platforms are being reflected, especially, in students when we talk about their academic performance. This study aims to determine the impact of social media on students' productivity. This is a study based on a survey. Students 18 to 24 years of age, who study Software "Engineering" at the Faculty of Computers, Informatics, and Microelectronics at the Technical University of Moldova were eligible for participation. The respondents were stratified according to gender and year of study of Bachelor's degree. The results were rated using a scale from 1 to 5 or percentage analyses. After analyzing the results, we deduced that while social media offers a lot of opportunities such as platforms for education combined with networking, we can't ignore the fact that those same platforms might be a source of distraction, lack of sleep, and tiredness which might evolve to decreased concentration, and in consequence might affect directly productivity.*

**Keywords:** *academic performance, applications, networking, procrastination, time management*

### Introduction

Undoubtedly, the growing phenomenon of social media usage has a ubiquitous presence in the 21st century, extending into most aspects of people's lives. What was once a relaxing activity, a hobby for some, has evolved into even a whole career, as reflected by the increasing popularity of social media usage. As a consequence, every facet of life, including learning, personal development, and communication, has been impacted. Notably, productivity has also undergone certain changes since the utilization of social media platforms. Students who lack time management can easily fall prey to the impact which social media platforms present to its uses (Mensah & Dr. Nizam, 2016).

From a student's perspective, productivity is a keystone in achieving academic objectives, and thus, the impact of social media usage on it should be rigorously analyzed. Although there have been efforts directed towards this area, there is a noticeable gap in understanding how software engineering students – the architects of the visual world – perceive this aspect. To address this situation, this study aims to provide insights into the perceptions of software engineering students regarding how social media impacts their productivity.

The study assesses the manner in which students use social media, examining the purposes they intend to achieve during online browsing, including whether this involves productivity or not. Additionally, the research seeks to understand their opinions on the matter, particularly regarding their productivity.

## **The Rise of Social Media**

It goes without saying that social media has completely changed the way we communicate and engage with one another. It allows people to discover what is happening in the world in real-time, connect and stay in touch with long-distance friends, and access enormous amounts of information at our fingertips (Khanom, 2023). Prior to the rise of those platforms, face-to-face interactions were the main forms of communication. Now, digital communication is the new form. Moreover, social media has become not just a tool for socializing but also for promoting businesses and gaining authority and influence.

Nevertheless, this so-called "weapon" of mass influence has a dual nature. Social media can become a vicious circle of addiction and fake expectations. Many would say that those are just some side effects or bugs, when in reality they were created as features with particular intentions. Former employees of platforms like Facebook, Pinterest, and X (formerly known as "Twitter") confessed, in the 2020 documentary "The Social Dilemma", directed by Jeff Orlowski, that: "the manipulation of human behavior for profit is coded into these companies with Machiavellian precision: Infinite scrolling and push notifications keep users constantly engaged; personalized recommendations use data not just to predict but also to influence our actions, turning users into easy prey for advertisers and propagandists" (Girish, 2020).

In less than a generation, social media evolved from just information exchange to a complex tool that many will confirm is a necessary presence in our lives. In 2004, MySpace reached the first milestone of 1 million monthly users, marking the beginning of a new age, which was quickly overtaken by Mark Zuckerberg's Facebook four years later, in 2008. Since then many platforms have risen to fame, notorious names include Instagram, YouTube, Pinterest, and Reddit. Some of them became worldwide sensations, like the newcomer TikTok, which managed in less than two years to gain an audience of half a billion users by mid-2018. These examples are not enough to highlight the swift rise and broad impact these platforms have and will continue to have on our society.

## **Navigating the Use of Social Media**

The purpose of this paper is to investigate the influence of social media usage on students' productivity, by addressing some concerns related to time management and academic performance. A survey based on students at the Technical University of Moldova's Faculty of Computers Informatics and Microelectronics with a focus on Software Engineering (FAF) provided demographic information that helped us frame this study. Pie charts from the survey show a preponderance of male respondents—62 men to 29 women—which is consistent with the gender distribution seen in technical fields, particularly software engineering. Furthermore, the composition of the academic year is primarily made up of first-year students (73 out of 91 respondents) with a smaller representation from subsequent years. This skew may indicate that newcomers have a greater inclination to engage in activities organized by the university, or that the survey was distributed more successfully among this group of people. The study's sample population is predominantly young male and in the early stages of their university education.

These characteristics may indicate a particular pattern of social media usage among the sample, which could be indicative of their proclivity towards technology. This group is frequently linked to high levels of social media use and technological innovation. Nonetheless, the concentration of first-year students could introduce bias because it reflects the priorities of those who are just getting used to university life in terms of socializing and leisure. Given that the study's results may disproportionately reflect male social media usage patterns in this context, several research limitations are mentioned, including the possibility of gender bias. Further, because most of the students are first-years, the year bias may not fully represent upper-year students' social media usage patterns because they may have different priorities and time management techniques.

The results of this study can only be applied to the particular group of FAF students at the Technical University of Moldova due to sample size and diversity limitations. The survey results

are shown in a bar chart (Fig. 1). Participants were asked to rate how frequently they used different applications on a scale of 1 to 5 where 5 was the most frequently used. After examining the chart, we can see that YouTube seems to have the largest percentage of users who give it a rating of 5 suggesting that it is the most used application on the list. This result is in line with global internet trends as YouTube is consistently ranked among the most popular websites globally. Because of its extensive content library and function as the main platform for watching videos, YouTube has become very popular.

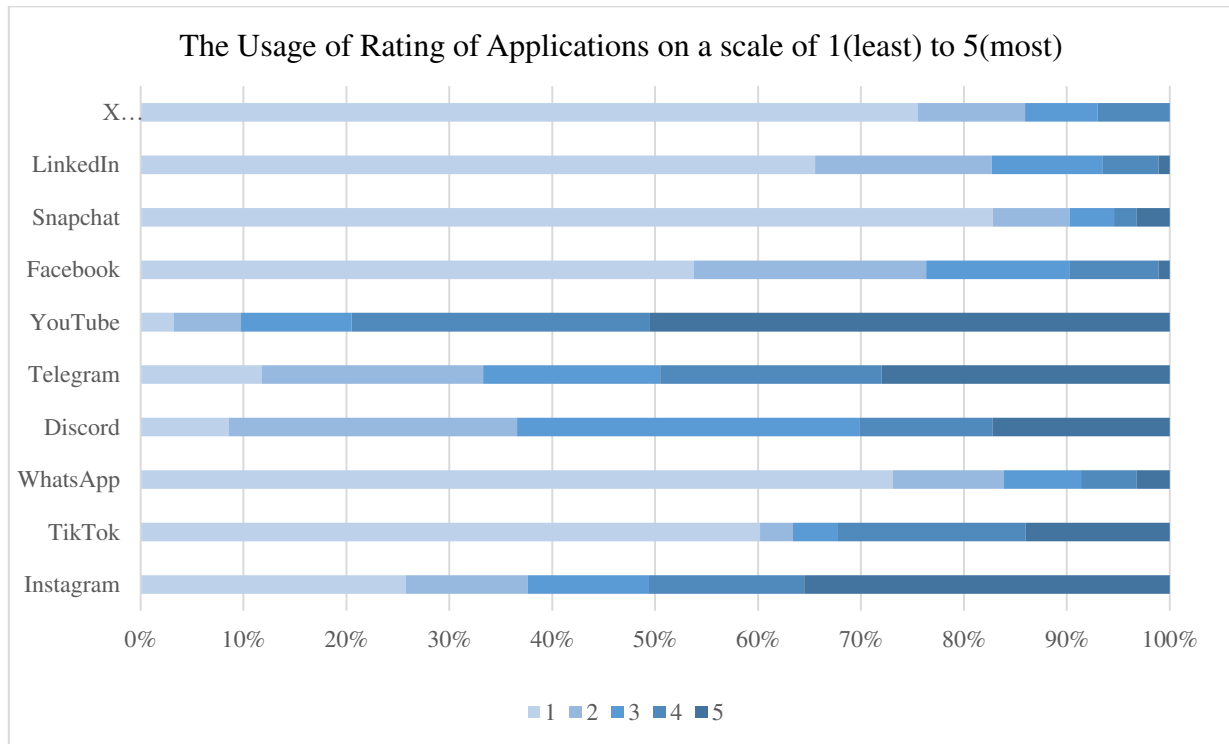
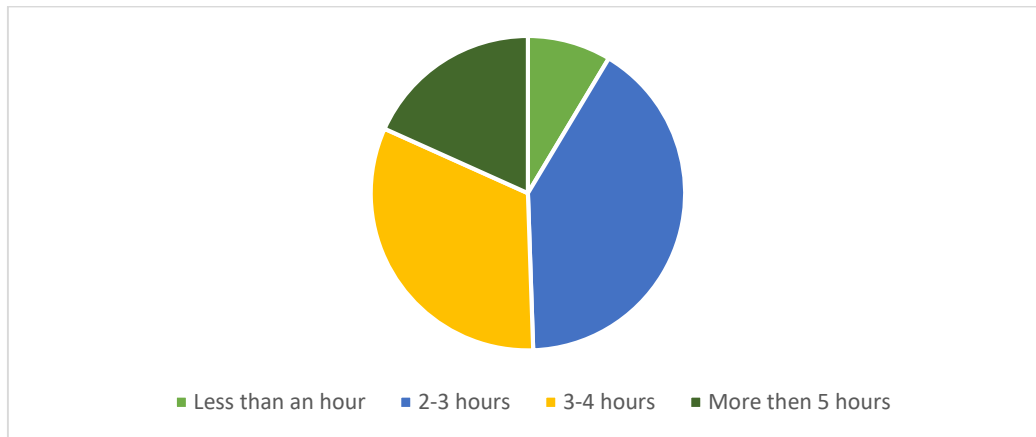


Figure 1. Usage prevalence of apps

A sizable portion of users rate Instagram usage at level 4 and TikTok at level 3, two platforms popular for short-form video content. Instagram's regular feature updates appear to be successful in increasing user engagement while TikTok's algorithmic growth can be attributed to its promotion of a highly personalized user experience. Snapchat Telegram and Discord exhibit a more evenly distributed user base across all usage levels. Discord is increasingly being used for different types of group communications and is frequently connected to gaming communities. Telegrams' surge in increased use could be attributed to its standing as a secure messaging app with large group capabilities. Given its niche appeal especially to younger demographics Snapchats dispersed usage levels may be indicative of that.

WhatsApp usage is low, which might be due to the more attractive apps out there with the same features. Fewer people seem to be rating their usage of Facebook which was once the most popular social network at the highest level suggesting that users' engagement with the platform is more moderate. This may be a sign of a wider trend in which younger users are gravitating toward newer platforms and Facebook's user growth has slowed down. The usage level of LinkedIn is moderate to low which is consistent with its purpose as a professional networking platform and implies that it may be used less frequently and more deliberately than social or entertainment-focused apps. Ultimately the X (Twitter) application shows a lower usage frequency in comparison to other applications with the majority of users rating their usage between levels 1 and 3. Twitter's unique appeal to individuals interested in news politics and industry-specific discourse may have an impact on usage patterns.

The interviewees were also asked to evaluate the time spent daily on social media (Fig. 2). The majority of respondents mentioned that they spend about 2–3 hours (40%) and 3–4 hours (33%) daily. A smaller, yet substantial, part of the evaluated group said that their usage of the platforms is less than an hour (9%). Among the subjects, there was a significant amount that mentioned that they use social media for more than 5 hours (19%), which raises a flag regarding a need for evaluating the awareness of spending time productively.



**Figure 2. Hours spent daily on social media**

Next, the subjects needed to evaluate how much of the total time spent that they mentioned earlier was allocated to academic purposes. The majority, particularly 57%, said that they use social media for learning for about less than an hour, which takes us back to our statement regarding the influence of social media on productivity. Another group said that they spend nearly 2–3 hours for this purpose (32%). We should emphasize that only 11 percent of students allocate more than 3 hours from their total usage to academic purposes.

These two datasets help understand that while social media is a significant part of the daily routine of a student, the amount of hours used constructively is much less. This could imply that social media platforms might be indeed a source of distraction, even though they might give some benefits also.

When asked to specify the purposes for using social media, as presumed, a vast majority indicated that they were mostly using the platforms for communication with friends and family (37%) and for entertainment, particularly scrolling and watching videos (36%), things for which one might reassess and reduce the average time spent. It must be brought to attention that only 27 percent of respondents answered that they use social media for academic purposes, a very small portion.

### **Unraveling the Impact of Social Media**

When faced with the challenge of rating the impact the time spent on social media has on their productivity, the students' opinions vary on a scale from 1 (lowest) to 5 (highest). The vast majority of the respondents rated this as a 3 (42%), while the extremes 1 and 5 were less popular (14% and, respectively, 5%). This highlights the tight connections between the benefits and the negative aspects of using social media as a software engineering student and the co-existence of both advantages, as well as disadvantages, in everyday life.

Among the underlined values brought by social media, the students' most popular choice remains the possibility of networking, which has been aforementioned as the top choice of question no. 6 (Fig. 3). The possibility to make new acquaintances and the opportunity to keep in touch with friends is ubiquitous at FAF, being linked directly to an increase in students' productivity. Software engineering students stand as direct beneficiaries of the proven phenomenon of 'knowledge spillover,' where peer communication elevates performance through the shared exchange of ideas (Cornelissen, Dustmann, & Schönberg, 2013). This tendency is reflected in

responses to question no. 9, with 26% of students emphasizing the significance of 'Friends' and another 25% prioritizing 'Information' as integral elements in their social media experience.

Besides this, responsible interviewees mentioned social media as being on the positive side a source of entertainment and highlighted the good side of spending their time online (20% of respondents). It is argued scientifically that periodic and relatively short breaks can reduce and even prevent stress, which not only leads to greater achievements but can even improve productivity (Coffeng, Van Sluijs, Hendriksen, Van Mechelen MD, & Boot, 2013). Thus, this form of relaxation provides for FAF students not only a mean of enjoying their free time but also an opportunity to become more focused and motivated to proceed further with their tasks.



Figure 3. “What are three benefits of using social media?”

On the other hand, 55% of the respondents mentioned in that social media is time consuming as it can become addictive very quickly, leading to a decrease in their efficiency as software engineering students. The interviewees mentioned that this form of distraction most of the time share useless content that creates unrealistic expectations, affects mental health and leads to procrastination (Fig. 4). Moreover, they mentioned that the more they use it per day, the more it affects them in a negative way.



Figure 4. “What are three benefits of using social media?”

Additionally, students are concerned with social media being a cause for their lack of sleep and tiredness. This is, in their opinion, directly connected to a decreased concentration and low attention span, which directly affect productivity. Some of the respondents also mentioned that this form a laziness induced by social media goes unnoticed, until its effects are visible, emphasizing the need of raising awareness of the bad effects of social media on productivity until it is not too late.

When posed with the question whether they could quit social media, 41% of FAF students mentioned “Yes”, expressing a willingness to disengage from these platforms. In contrast, 34% replied with “No”, indicating a hesitation to stop using social media. Additionally, 25% of the respondents remained uncertain, opting for the response that they could not provide a definitive answer on their ability to quit social media. This variety of responses underlines the diverse impact social media has on each individual, highlighting the complex relationship students have with these platforms, which cannot be uniformly generalized for the whole FAF community.

## Conclusions

Overall this paper has demonstrated the impact of social media on the productivity of students in the field of Software Engineering at the Technical University of Moldova. The survey results indicate a substantial engagement with social media among the students, with platforms like YouTube, WhatsApp, TikTok, and Instagram being the most utilized. According to the research, the majority of the time spent on these platforms is for entertainment and communication, with fewer users using them for academic objectives. Taking this into consideration, it is not surprising that academic performance is negatively impacted by these platforms more often than not. Also, we noticed that the majority of the students are aware of the addictive nature of these platforms and the impact they have on mental health.

Despite the drawbacks, the study also highlights the positive aspects of social media for example stress relief, endless knowledge resources as well as social connections. The vast majority of our respondents (57%) stated that they use these platforms for academic purposes, compared to other surveyors from Bangalore (10%) [6].

In conclusion, this survey outlined the dualistic nature of social media's impact on student productivity. It calls for a balanced approach that recognizes the value of these platforms for networking, learning, and relaxation, while also acknowledging and addressing the potential for distraction, addiction, and negative psychological effects. In the end, developing digital literacy and responsible social media use among students could help them navigate this digital world more effectively, ensuring that social media serves as a tool for enhancement rather than an obstacle to their academic and personal growth.

## References

- [1] S. O. Mensah and I. Dr. Nizam, "The Impact of Social Media on Students Academic Performance - A Case of Malaysia Tertiary," *International Journal of Education*, p. 14021, 2016.
- [2] M. T. Khanom, "Using Social Media Marketing in the Digital Era: A Necessity or a Choice," *International Journal of Research in Business and Social Science*, p. 93, 2023.
- [3] D. Girish, "'The Social Dilemma' Review: Unplug and Run," 9 September 2020. [Online]. Available: <https://www.nytimes.com/2020/09/09/movies/the-social-dilemma-review.html>.
- [4] T. Cornelissen, C. Dustmann and U. Schönberg, "Peer Effects in the Workplace," September 2013. [Online]. Available: <https://www.econstor.eu/bitstream/10419/89994/1/dp7617.pdf>.
- [5] J. K. Coffeng, E. M. Van Sluijs, I. J. Hendriksen, W. Van Mechelen MD and C. R. Boot, "Physical Activity and Relaxation During and After Work are Independently," *Journal of Physical Activity & Health*, 2013.
- [6] R. Rupashree and T. Somasundaram, "Is Social Media Hampering the Academic Performance Among Teenagers in this 21st Century?," *Journal of Interdisciplinary Cycle Research*, vol. XII, 2020.