



Relationship between Facebook Usage and Academic Performance of College Students under the Royal University of Bhutan

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Authors' contributions

This work was carried out in collaboration between both authors. Author UK designed the study and performed the statistical analysis. Both UK and TL wrote the first draft manuscript, read and approved the final manuscript.

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ABSTRACT

The development of social media like Facebook has changed the lives of many people principally the students. Several opinions are shared on how social media have a negative consequence on college students and lead to worsening their academic performance. Facebook usage is extremely prevalent among most undergraduates and approximately 85% of students use it particularly the first-year college students as it offers students a feeling of community and friendship. Of the total 365 students surveyed, 344 were Facebook users while 21 were non-users. Majority of respondents having Facebook account use mobile phones i.e., 48% of total respondents, 42% use their personal laptops and remaining 10% use college computer. Students are more often subjected to reading social media updates than reading academic-related books. Hence, it revealed that those who spent more time on social media spent less time studying i.e., users spent 0.33 to 1-hour studying per day and non-users spent 2 to 5 hours studying. Pearson's correlation test showed that the time spent on Facebook was negatively associated with students' GPA ($r = -.198$, $p = .000$). More the time a

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student invests on Facebook, the lower the average grade point will be. However, blocking Facebook is not a solution since students can easily access it via their mobile phones. As a result, rather than blocking the site, higher education institutions such as Universities and Colleges may encourage students to use Facebook for educational purposes by offering appropriate arrangements and training.

Keywords: Facebook; social network; grade point average; college student; academic performance; Pearson's correlation.

1. INTRODUCTION

Man is a social being who relies heavily upon his relationships and sociability with other people [1]. The use of the internet as a communication tool has become more commonplace, predominantly among younger generations [2]. About 87% of teenagers have internet access and among those connected teens, 55% have created a profile on social networking sites [3]. While there are numerous social networks available, one type of online application that has grown rapidly in prevalence and popularity in recent years is Facebook [4,5].

Despite the fact that Facebook is now used by a much larger range of people, college students continue to be the most frequent consumers [6,7]. According to reports, 94% of undergraduate students are active Facebook users, investing 10-30 minutes online every day talking with more than 150 people in their contact list [6,8]. Likewise, an in-depth survey showed 92% of university students using Facebook in the Midwest United States [9,10]. Online social media sites have attained considerable notoriety amongst university students in the latest days [11-13]. Facebook was established in 2004 [14] and it has social habits and networks among college students have been transformed [15]. This very social media allows each consumer to create an account to display personal details, upload images, view profiles of many other users, make friends, and communicate with them through messages and many other programs.

Lately, the use and impacts of Facebook have been studied with a growing interest [7,16,17]. The use of social networking sites can also vary among nations, as lifestyles have a variety of effects on their communities [18]. The incorporation into Facebook networking requires a wide range of website-based activities, pleasure and intrigue [19], however, individuals, online or offline mislay control over

primary activity in preference of chatting or checking new social media updates, often temporarily dissociate them from their primary duties [20].

In Bhutan, one of the social networking sites Facebook is as popular as in other countries. Statistics from Facebook have shown that in Bhutan there are more than 76,620 active users of Facebook [21] and this rises. Children below the age of 15 are also taken into account [22] in the data. They constitute up to 6% of customers, which is 4,600 of them altogether. Due to Facebook's astounding growth and the frequency of Facebook usage among younger people, the consequences of this social networking tool must be investigated. The central aim of this study is to make students acquainted with how their academic performance is impaired by social media like Facebook and the specific objectives are to; (i) evaluate the relationship between time spent on Facebook and academic performance of college students; and (ii) assess the frequency of Facebook usage among college students and why they use it.

2. MATERIALS AND METHODS

2.1 Study Area

The study was carried out in four randomly selected colleges of the Royal University of Bhutan, namely: College of Natural Resources (CNR), Sherubtse College (SC), Paro College of Education (PCE) and Gaeddu College of Business Studies (GCBS). The Ministry of Agriculture and Forests formed the CNR as a NRTI in 1992, to train Renewable Natural Resources (RNR) extension workers [23]. It came about as sustainable development in Bhutan needed to be supported. The SC is among Bhutan's oldest colleges and in 1983 it became a fully-fledged degree college and now offers many programs [24].

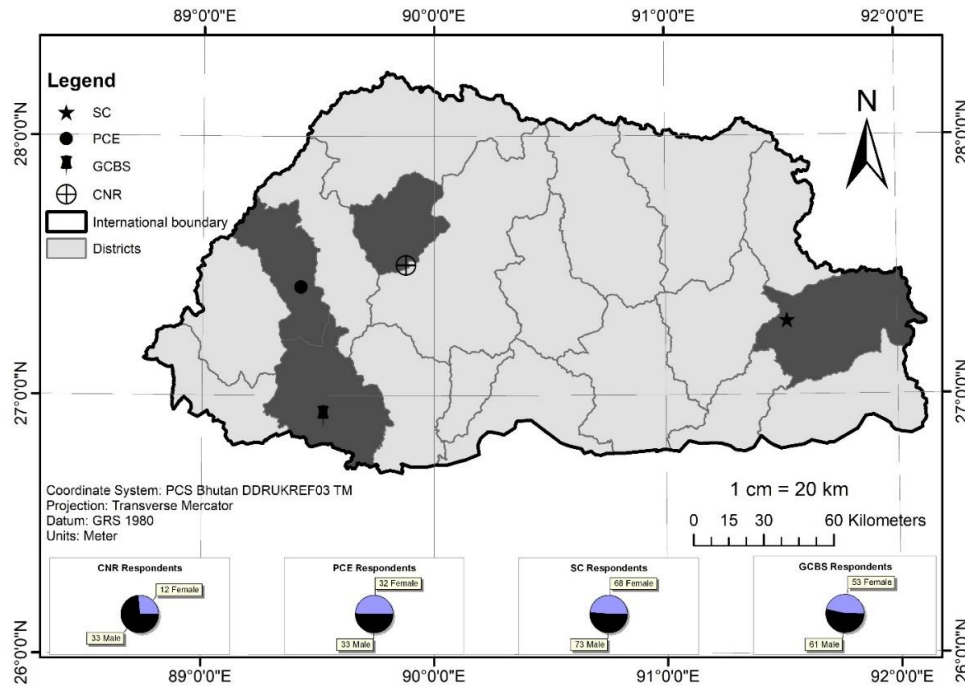


Fig. 1. Bhutan map showing the location of colleges where the survey has been carried out and the number of correspondents from each college

The PCE was officially opened as a pre-school teacher education center in 1975 and a demonstration school at the Rinpung campus [23]. PCE is also one of the Paro district's active teacher training centers. The GCBS is the first government college to offer full-time, contemporary business and management education in Bhutan under the Royal University of Bhutan [25]. GCBS now offers various undergraduate programs and Masters in Business Administration (MBA).

2.2 Total Target Population

During the collection of data, the target population was 4,165 in four colleges (CNR, SC, PCE, GCBS). Of the 4,165 population, 12% were CNR students, 39% were SC students, 18% were PCE students and 31% were GCBS students. The survey respondents were undergraduate students regardless of academic achievement.

2.3 Sample Size and Sampling Technique

Out of 4,165 students from four different RUB colleges, 365 undergraduate students have been chosen. All 365 participants were randomly chosen first, second, third, and fourth-year

students from various programs. The number of respondents for this study was determined based on the sampling guide for the sample size estimation using the Yamane formula:

$$n = \frac{N}{1+Ne^2} [26]$$

$$n = \frac{4165}{1+(4165 \times 0.05^2)} = 364.95 \approx 365$$

where n= sample size; N= total population; e= error

In addition, different sample numbers (respondents) from various colleges have been chosen based on the total proportion of students. There were 45 respondents chosen from the CNR, and 141, 65, and 114 from SC, PCE, and GCBS respectively. Simple random sampling and purposive approaches were employed for this research. Simple random sampling has been used to prevent bias and ensure that every undergraduate pupil had an equal chance of being selected. In all the factors considered by the researcher, randomization works well for generating comparable representative groups which are basically the same [27]. Purposive sampling was used in the selection of respondents as we have only targeted undergraduate students.

2.4 Questionnaire Survey

Semi-structured questionnaires for this study were used since respondents were informed, long, and constrained time for data collection. Semi-structured questions have been designed so respondents can easily fill in, save time and concentrate on the topic. Questionnaires have been used as the primary data collection method [28]. In order to generate multiple measures for reliability, interviewees were requested to tell us how long they spend on Facebook (hours or minutes per day on average) and how often they log in to Facebook (times per day).

2.5 Analysis

One of the principal variables to compare with the findings of the study was the past academic performance of respondents. The association between the use of Facebook and the academic performance of students was studied using Pearson's correlation test. Statistical Package for the Social Sciences (SPSS) was used to generate both inferential and descriptive statistics of the study. Map of the study area was developed using ArcGIS 9.0. Microsoft Excel 2007 was also used for entering, cleaning, and coding data.

3. RESULTS

3.1 Demographic Information

The response rate of the questionnaire was 100%. Out of 365 respondents, 54.8% ($n = 200$) of the respondents were male and 45.21% ($n = 165$) were female as shown in Table 1. From the

total respondents, 27.7% ($n = 101$) were first year students, 26.6% ($n = 97$) second year students, 31.2% ($n = 114$) third year students, and 14.5% ($n = 31$) were fourth year students. To represent the target population on possibility of an effect of Facebook on the academic performance of RUB undergraduate students, all undergraduate students were taken into account while determining sample size [29].

3.2 Purpose of using Facebook

During the survey, students stated various reasons for using Facebook as depicted in Fig. 2. The majority of students ($n = 197$) used Facebook for texting/chatting, while the fewest ($n = 11$) used it for business. The remaining 77 respondents (22.4%) reported that they use Facebook for academic purposes, learning and information, 32 respondents (9.3%) for entertainment, and 27 respondents (7.8%) for networking. This indicated that chatting was the primary reason for logging in to Facebook, with learning coming in second followed by academic purposes.

3.3 Frequency of Facebook Usage

Facebook user respondents ($n = 344$) reported using Facebook in an average of 1.87 ± 1.08 hours per day as shown in Table 2. Furthermore, the mean total Facebook login frequency was 2.89 ± 1.05 times per day. It also showed that the age range of the respondents was between 18-46 years old with 22 ± 3.64 as mean age and the student's average grade point average (GPA) was found to be 3.17 ± 2.02 .

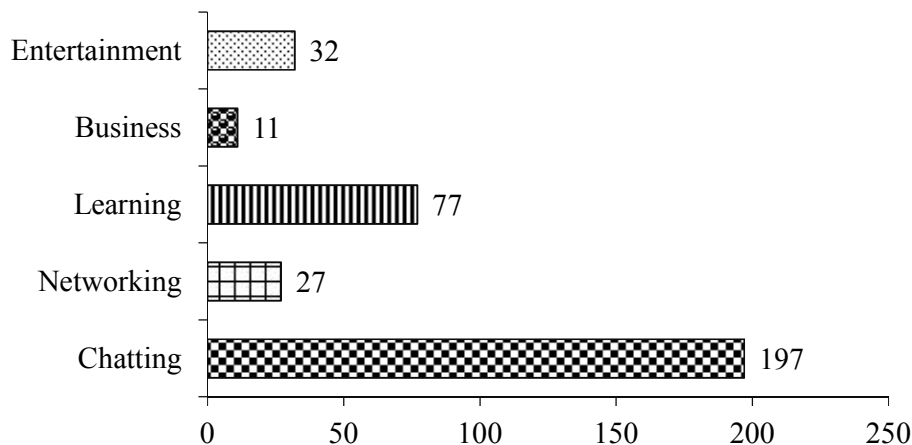


Fig. 2. Reasons for using Facebook stated by the respondents

Table 1. Respondents' information

SI No.	Category	Attribute	Number	Percentage (%)
1	Sex	Male	200	54.8
		Female	165	45.2
2	Course classification	Degree	320	87.7
		Honors	45	12.3
3	Year	1 st Year	101	27.7
		2 nd Year	97	26.6
		3 rd Year	114	31.2
		4 th Year	53	14.5
4	Facebook	User	344	94.2
		Non-User	21	5.8

Table 2. Respondents average age, academic performance and time spent on facebook

Variables	Means ± Standard Deviation
Age	22 ± 3.64
Cumulative GPA	3.17 ± 2.02
Average duration time spend on Facebook per day	1.87 ± 1.08
Frequency login in Facebook Per day	2.89 ± 1.05

3.4 Device Used to Login Facebook Account

The majority of respondents having Facebook account visit Facebook by their mobile phone (48%, *n* = 177) and 42% (*n* = 152) of them use personal computer, and remaining 10% (*n* = 36) of respondents were found using college computers as shown in Table 3. Use of mobile phones increased the approachability and flexibility of being in touch. Smart features available on Facebook like reading news feed, location tagging, and status updates were popular on mobile phones.

3.5 Effects of Facebook on their study timing and other habits

During the survey, 59% of respondents acknowledged that their study habits and timetable had changed, while 35% disagreed. Additional examination on the study habit found that they were not only linked to time spent online, but also to the multi-tasking factor. Students were discovered to be using Facebook

while studying. When respondents' time spent on Facebook and time spent studying were compared, it was discovered that those who spent more time on Facebook spent less time studying, as shown in Fig. 3.

3.6 GPA and Facebook Usage

Respondents who do not use Facebook had GPAs between 3.5 and 4, while Facebook users received GPAs from 0 to 4 in their recent semester-end examination (Table 4). It was also found that Facebook users spend only 0.33 to 1-hour studying per day and non-users spend 2 to 5 hours studying in a day. Furthermore, the average hours spent on Facebook (AHSF) per day was 5.6 and the average hour spend studying (AHSS) per day was 0.7. In the case of non-users, they spend 4.9 hours on an average per day studying and doing academic-related tasks. For every additional 93 minutes spend on Facebook, GPAs dropped an average of 2.45points [30]. Hence, time spends on Facebook will greatly hamper students' academic performance.

Table 3. Devices used by respondents to login Facebook

Device	Total user	Percentage (%)
Mobile Phones	177	48.5
Personal Computer/ Laptop	152	41.6
College Computer	36	9.9

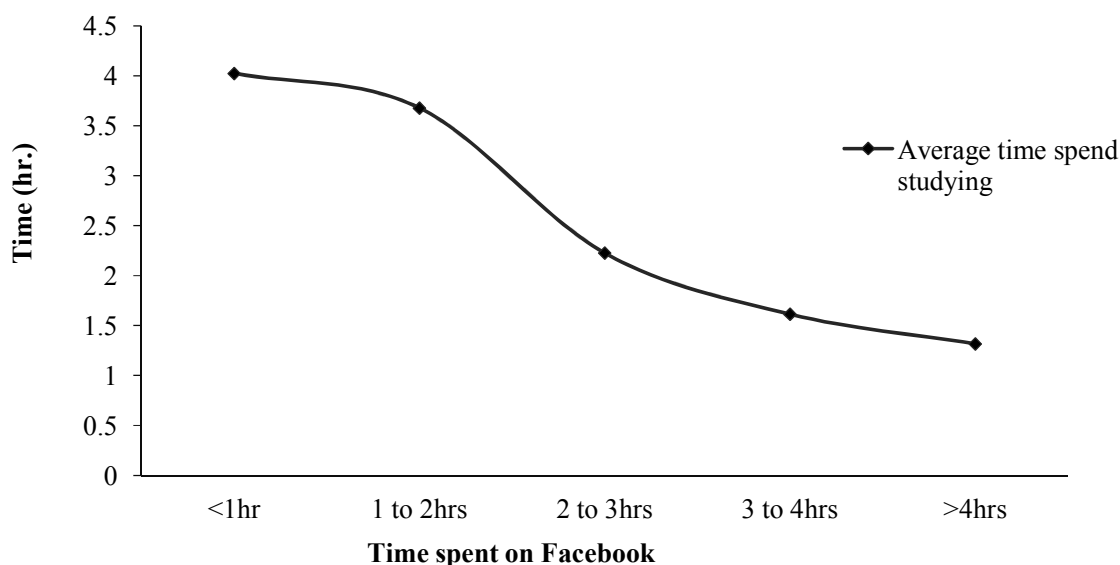


Fig. 3. Association of average time spent on Facebook and time spent on doing academically related works by the respondents

Table 4. Time spent on Facebook and time spend studying by respondents

Respondents	Frequency	Percentage	AHSF/day	AHSS/day	GPA
User	344	94.2%	5.6hrs	0.7hrs	3
Non-user	21	5.8%	Nil	4.9hrs	4

The main hypothesis is that students who spend more time on Facebook tend to have a lower average grade point. This has been validated with Pearson's correlation test, and the gathered data suggest that the association is significant as displayed in Table 5. Based on the result, the time spent on Facebook ($r = -.198, p = .000$) was negatively associated to students' GPA. More the time a student invests on Facebook, lower the average grade point will be.

4. DISCUSSION

The research results have shown that most students visit Facebook with their own laptops and mobile phones. In the research carried out in the United States, Ahmed and Qazi [31] drew the same statement. ChildnetInternational [32] reported that anyone who spends over 171 minutes per day on the internet is considered as an internet addict person. The study found that RUB undergraduate students spend a significant amount of time on Facebook (approximately 5.6 hours per day), which is significantly more than the time an online addict spends on the internet [32]. The finding is also higher than the results

reported by Haridakis and Hanson [33], Pempek et al. [9], and Coyle and Vaughn [34].

However, it is more comparable to the findings reported by Young and Rodgers [35]. The study showed that students log in to Facebook about 3 times a day on average. The average frequency of logging in to Facebook per day was less compared to the earlier study findings described by Young and Rodgers [35] where they reported students logging in to Facebook 6 times a day.

The correlation result indicated that there is a significant negative relationship between time spent on Facebook and students' GPA. This finding was found to be contradicting with the findings of a study conducted in Pakistan. In the study conducted in Pakistan, where 6 universities and 1000 students are taken, the result indicated that there is no significant relationship between times spends on Facebook and a student's GPA [36]. Similarly, a meta-analysis conducted by Marker et al. [37] concluded that general use of social networking sites and the time spent studying for school are not interrelated or connected.

Table 5. Pearson's correlation test showing strong negative association between time spent on Facebook and student's GPA

	Time spent per day on Facebook	GPA
Time spent per day on Facebook	1.000	-.198*
GPA	.365	1.000

* Significant at $p < .01$

The finding, however, is consistent with the findings of Karim et al. [38], Nwazor and Godwin-Maduikwe [39], and Skiera et al. [40] who found a negative relation between Facebook activities and the academic performance of students. Students are so engrossed in social media that they are online almost 24 hours a day [39]. Even in schools and lecture halls, it has been noted that some students are constantly on Facebook while lectures are taking place [17]. Times that should have been spent learning, doing scholarly research, and innovating have been squandered by the need to meet new people online and spend time debating trivial things.

Similarly, using a mobile phone to log in to Facebook, has a negative, mild, and notable correlation with a student's GPA. Prior research has also found that mobile internet users are prone to multitasking, such as using Facebook while studying [41], and that multitasking tasks are negatively correlated with students' GPA [42]. Past research has also found that multitasking practices not only decrease study time but also the brain's ability to retrieve information successfully [43].

Nevertheless, Varda and Ioannou [44], Chugh and Ruhi [45], Fewkes and McCabe [46], Pimmer et al. [47] and Vivian [48] stated numerous advantages of studying or teaching using Facebook as a tool, such as increased contact between teachers and students, better results, comfort for learning, and greater commitment.

Overall, the findings of this particular indicate that most students spend a significant amount of time on Facebook, are conscious that their online activities can be disruptive, and feel that they will always manage their recreational Facebook use in order to study, do schoolwork, and eventually thrive academically. However, Facebook use distracts them from learning, contributes to procrastination, and diverts time that would otherwise be devoted to academics. As a result, academic achievement appears to be influenced by students' online activities. Nevertheless, a thorough examination of all findings, including students' detailed accounts of their experiences

with Facebook sites, and making students aware of how their online behavior affects the learning process may actually assist them in limiting their use of this application.

5. CONCLUSION

Universities and colleges have restricted Facebook because they are concerned that students' time devoted to Facebook will affect their academic performance. The study's findings also revealed a negative, moderately significant relationship between time spent on Facebook by the students and their academic performance. However, blocking Facebook is not a solution since students can easily access it via their mobile phones. As a result, rather than blocking the site, higher education institutions such as Universities and Colleges may encourage students to use Facebook for educational purposes by offering appropriate arrangements and training.

Many studies have reported how Facebook can still help and be utilized properly, even though it has an adverse impact on students like distracting them from their academic work and consuming much of the valuable time. In order to schedule a project, for example, students can create online groups and engage in group conversations about class or project content. Past studies have also stated some remarkable findings on the benefits of Facebook usage. This study therefore recommended educators to develop a blueprint on maximizing the use of social media like Facebook as education tools, and the administration of colleges or schools should take into account laws and regulations on social media use in colleges or schools.

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COMPETING INTERESTS

Authors have declared that no competing interests exist.

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