



## IMPACT OF SOCIAL MEDIA ADDICTION ON THE SCHOLASTIC PERFORMANCE OF HIGH SCHOOL STUDENTS IN SCIENCE

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### **Abstract:**

Social media has been widely accessible to all with the advent of new technology specifically with the emergence of mobile devices. Many researchers are now studying related to the effects of social media on the different walks and aspects of life. This study aims at correlating the effects of addiction to social media on the academic performance of grade 9 and 10 students in science. In doing so, the study identified all social media activities for the school year 2015-2016. The identified respondents constitute 65 % or 139 students of the total enrolment of grade 9 and 10 students. These respondents are made to answer a survey questionnaire and an adapted tool called Bergen Facebook Addition Scale (BFAS) to gather necessary data. Findings revealed that social media addiction alone is insignificantly related to students' scholastic performance thus, cannot safely attribute the low performance of students in science.

**Keywords:** social media addiction, scholastic performance, academic performance, science, BFAS

### **1. Introduction**

Social media has become pervasive, impacting the social fabric of our society and changing the nature of social relationships, especially the young people (Al-Sharqi, 2015). Social media are websites and applications that enable to create and share content or to participate in social networking benefiting their users (Mao, 2012, Silius, 2010). However, excessive use of social media tools by students has led to debate over whether or not it has changed the very shape and structure of students' social behavior and academic practices, and has thus caused leading educators to redefine their understanding of interpersonal communication and study dynamics (Junco, 2010, Karadkar, 2015, Guy, 2012).

With over 1.5 billion users in January 2016, Facebook has the highest number of social media users of all the social media in the world (Statistica, 2016). Due to its significantly large number of users, Facebook is most frequently attributed to impacting

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people's lives the most. In recent studies, Facebook was attributed to academic, social, financial, occupational, or physical impacts on the people who are hooked to it (Fallahi, 2011; Lee & Stapinski, 2012; Rosen et al., 2013).

In the Philippines, there has been a recorded increase in the number of social media users, dominated by Facebook according to Statistica. With 38.7 million users in 2015, it is expected to increase to 41.2 users by 2016 (Statistica, 2015). They added, most Filipino users are high school and college students.

On the main point, social media has become a very huge help to young students because it helps facilitate and provide flexibility in communicating and sharing resources. Despite its many advantages, the use of social media had also become a threat that may potentially harm its clients, especially students. There had been many studies conducted not long since its existence to evaluate and assess the effects of social media use on students' academic performance over time (Silius, 2011).

Science has been one of the most feared subjects in high school in the Philippines. The last time the Philippines participated in international surveys in the 2003 Trends in International Mathematics and Science Study (TIMSS), the Philippines ranked 34th out of 38 countries in second-year high school science. This is so alarming to note for teachers, administrators, and the country as a whole. In the present context, many factors are considered to find possible ways to improve the scholastic performance of Filipino students in science.

With the advent of new technology, the question if the use of social media can have a significant impact on students in science is still a question. Philippines is considered one of the most social nations in the world due to its enormous number of social media users commonly students (Cruz, 2015). For most teachers, the increase in students who use social media can be a potential threat to students' study habits and can affect their scholastic performance (Karadkar, 2015).

In San Roque National High School High School, a decrease in the National Achievement Test Result (NAT) in science was observed for the past 2 years. The decrease of the mean percentage score of students in science over the years had also been observed as the decrease in the science NAT result. The observed decrease in the scholastic performance of the student in science was attributed to students' increase in social media activity. This assumption is supported by the study of Thuseethan & Kuhanesan (2014), in which they found that most of the heavy or frequent users of social media received low grades, compared to light users. In addition, Skiera, Hinz & Spann (2015) discussed that Facebook activities during class relate negatively to the academic performance of students.

Due to the current condition of students' scholastic performance in the science of San Roque National High School, the researcher was compelled to conceptualize this study. This study will be of great help to teachers, parents, students and future researchers to know the impact of social media on the scholastic performance of the students in San Roque National High School.

## 2. Statement of the Problem

The main objective of the study is to determine the impact of social media addiction on the scholastic performance of High School students of San Roque National High School, San Roque, Macrohon, and Southern Leyte.

The researcher specifically aims to:

- Identify the demographic profile of social media users in terms of sex;
- Get the final mean rating of students in science;
- Determine the social media addiction of students during the school year 2015-2016; and
- Measure the frequency of using social media of respondents.

## 3. Framework of the Study

This study is anchored to Abraham Maslow's Theory of Motivation and Turel and Serenko (2012) Socio-cognitive model. Maslow's Theory of Motivation states that the social need of human beings is the third most important requirement after our physical and safety needs — the third tier in his hierarchy of needs. Even our self-esteem comes after this social dependence. This is the reason why students tend to be more engaged in social media than in their classes and assignments to fulfill their more important needs.

Turel and Serenko's Socio-cognitive model emphasizes that 'abnormal' social networking arises due to the expectation of positive outcomes, combined with internet self-efficacy and deficient internet self-regulation eventually leads to compulsive and/or addictive social networking behavior (Turel and Serenko, 2012).

### 3.1 Hypothesis

The study hypothesized that a higher level of social media addiction results in low scholastic performance in science.

## 4. Methodology

### 4.1 Research Design

This study utilized a cross-sectional correlation research design. A correlational design is part of the non-experimental research design. The reason it is non-experimental is that it does not involve manipulating the variable of interest. The correlational design simply aims to determine the relationship between two variables, as well as how strongly these variables relate to one another. Due to the nature of the correlation research design, the researcher decided to use it in his study which aims at finding the relationship between social media addiction and students' scholastic performance.

## **4.2 Locale of the Study**

The study was conducted in San Roque National High School, San Roque, Macrohon, Southern Leyte. The school had a total student population of 413 for the school year 2015-2016. It has 15 teaching staff, 1 school head, and 3 non-teaching staff. The school is located in a coastal barangay 9 kilometers from the town. The barangay is fully connected to the power grid. It is accessible by all means of land transportation. The area is connected to the 3rd and 4<sup>th</sup> generation (3G & 4G/LTE) mobile data connection which makes mobile internet connection access to its populace.

## **4.3 The Population**

The school has a total population of 413 junior high school students. The respondents of the study will be taken from grade 9 students and 10 students who have active social media accounts.

## **4.4 The Sample**

The researcher took 65% of the total 216 population of grade 9 (mean age = 14) and 10 (mean age = 15) students for the school year 2015-2016. 65% corresponds to 139 students. Respondents were all active Facebook users during the previous school year.

## **4.5 Research Instrument**

The study adopted a tested questionnaire to determine the students' level of social media addiction called the Bergen Facebook Addiction Scale (BFAS, Andreassen, Torsheim & Brunborg, 2012). This scale comprised 18 items, three for each of the six core features of addiction: salience, mood modification, tolerance, withdrawal, conflict, and relapse. Each item is scored on a 5-point scale using anchors of 1: Very rarely and 5: Very often. Higher As suggested by BFAS developers, the polythetic scoring scheme was used to determine the Facebook addicts in the sample. This scheme suggests those who answer 3 or above on at least four of the six items are Facebook addicts (Jafarkarimi, *et al.* 2016). Apart from answering the BFAS, the respondents also completed a profile section to determine the students' age, year level, type of social media used, and academic performance.

## **4.6 Data Collection**

The school head's permission was obtained before the conduct of the study in a formal letter. A formal was also given to the concerned teachers to obtain the final mean rating of the respondents in science. The identified students were asked to answer an 18-item questionnaire. Respondents answered the questionnaire based on their social media activity during the school days of the school year 2015-2016. After completing the questionnaire, the researcher summed up the respondents' responses. From the sum, the researcher identified if the respondent is a social media addict or not. Upon completion of the data collection, the researcher subjected the results to a data analysis procedure.

#### 4.7 Data Analysis Procedure

The study used a correlation data analysis method. Point biserial at 5% alpha was specifically used to check the null hypothesis ( $H_0$ ) which states that, a *higher level of social media addiction does not result in low scholastic performance in science*. Aside from using the specified statistical tool, the researcher did also get the means, frequency, and percentage of the data gathered. In doing the actual analysis the researcher used SPSS 22.0.

### 5. Results and Discussions

#### 5.1 Demographic Profile of Respondents

The study was conducted on 139 grade 9 and 10 students of San Roque National High School from the previous school year 2015-2016. All respondents are identified to have a social media account. Generally, there were more females who took the survey than males. Most of the respondents are grade 9 students ( $N=72$ ) with a mean age of 14 years old. This means female grade 9 students are more active users of social media compared to other groups of students.

The result supports the survey results of Duggan and Brenner (2013), which states that women constitute 67% of the total Facebook users around the world. Social media offers an accessible avenue to throw emotions and feelings. Women being so expressive in their feelings and emotions (Parkins, 2012; Gard & Kring, 2007) find Facebook a perfect place to express themselves. Due to women's nature and the current trend of socialization makes Facebook is considered the widely used social media platform for most women.

**Table 1:** Demographic Profile of Respondents

Year Level	Sex	N	%
Grade 9	Male	33	24
	Female	39	28
Grade 10	Male	32	23
	Female	35	25

#### 5.2 Respondents' Mean Rating in Science the School Year 2015 – 2016

With permission from the school head and the consent of the class advisers, students' final mean ratings were obtained from the school registrar. The consolidated data is presented in Table 2. The obtained mean rating of students shows females have a higher grade in science compared with males. Higher grades of females imply female have higher scores in science activities and accomplishes requirements better than males. The rating however does not imply that females are more intelligent than males. The rating only reflects the scholastic performance of students in science class and does not completely speak of their intellectual capacities.

A study conducted by Farooq, Chaudhry, Shafiq, & Berhanu (2011) on 600 secondary students, supports the result of the gathered data that, females dominate over males in academics. Despite the result, females still perceived themselves as academically weak during the conduct of admissions or diagnostic tests according to a study

conducted by Macphee, Farro & Canetto (2013). They added the idea that females tend to stereotype themselves as weak in academics compared to male students sprouted from the social views of people toward females. However, though men are seemed to be inferior in grades compared to females, males have a wider scoop of competence in the subject and can easily put into practice their learned ideas compared to females in STEM subjects.

**Table 2: Mean Rating of Respondents**

Year Level	Sex	Rating Mean
Grade 9	Male	80.9
	Female	83.2
Grade 10	Male	78.4
	Female	81.3

### 5.3 Social Media Addiction

Social media addiction was obtained using a standardized questionnaire called Bergen Facebook Addiction Scale. As suggested by BFAS developers, the polythetic scoring scheme was used to determine the Facebook addicts in the sample. This scheme suggests those who answer 3 or above on at least four of the six items are Facebook addicts (Andreassen et al., 2012). Table 3 shows the numbers of social media addicts and non-addicts.

Social media addiction results of grade 9 and 10 students of San Roque National High School are comparable to the number of active social media users at each level. This implies that females are more social media addicts for both grade 9 and 10 students than males. Females' noticeable number of social media addicts can be supported through the emotional and social characteristics of women. According to Parkins (2012), women are found to be the more expressive gender. The women's expressiveness according to the latter mentioned researcher can all be traced back to the society which creates this stereotype. Social media a very accessible tool and easy to use offers women of all ages a very fertile soil for them to express their feelings and emotions. Gard et al (2007) also added that women have more guts to express themselves than males, especially in public areas like social media. However, despite of these claims social media offers anonymity to its users which can hide basic information like the users' true gender. They emphasize that if this is the case social media can offer a perfect camouflage for expressive males.

**Table 3: Social Media Addicts and Non-addicts**

Year Level	Sex	Social Media Addiction	
		Social Media Non-addicts	Social Media Addicts*
Grade 9	Male	18	15
	Female	21	18
Grade 10	Male	19	14
	Female	20	15

\*Students who scored the average of 3 in 4 out of 6 categories of Bergen Facebook Addiction Scale

### 5.4 Weekly Social Media Usage of Respondents

Generally, most of the sampled respondents use social media 1 to 2 times a week. This will tell that most of the students do not use social media frequently. Since students are too busy during school days, they tend to use social media on weekends. On a closer look at the table generally, female respondents devote more time using social than males. This can be accounted to the results obtained in Table 1 and Table 3, which showed more females are social media users and addicts compared with males.

Time of use of social media is directly related to social media addiction according to a study by Thompson & Loughheed (2012). The more time a person devotes to social media activity increases the possibility of his or her greater addiction to the said activity. They also reported that women tend to be spending almost 62% of their internet time on Facebook compared to 44% for males which proves the results gathered in San Roque National High School. Furthermore, Thompson & Loughheed observed that there were significant differences in the percentage of females versus males. According to the study when expressed in the minutes spent daily examining others' Facebook profiles, females consume 24 minutes while males only consume 10 minutes. Though the record speaks that females use social media longer there is also a possibility that males utilize other internet applications that are not considered social networking sites. One point is clear to the students, that they spend a significant amount of time, almost two hours a day (117 minutes), using social networking sites.

**Table 4:** Social Media Users among Respondents in a Week

Year Level	Sex	Social Media Users		
		1 to 2 times a week	3 to 5 times a week	6 to 7 times a week
Grade 9	Male	18	6	9
	Female	17	10	12
Grade 10	Male	19	5	9
	Female	16	7	12

### 5.5 Social Media Addiction and Scholastic Performance of Students

The main goal of the study is to identify the social media addiction of students and correlate it with their scholastic performance. Using the point biserial correlation method, the strength of the correlation or the *r*-value was obtained. Based on Table 5 the relationship between social media shows a negative correlation for both grade 9 and 10 respondents. The negative value of *r* means that the increase of one variable will result in a decrease in the other. The negative values of *r* support the hypothesis that the increase in social media addiction among students would result in a decrease in their scholastic performance. However, the very small values of *r* such as -0.033 for grade 9 and -0.195 for grade 10 are evident to say that the relationship is weak. Rules tell us when the numerical *r*-value is between 0.01 and 0.30 means a weak relationship between variables.

From the analysis also, the *p*-values or the alpha for both grades 9 and 10 are 0.795 and 0.110 respectively. The computed alpha values are larger compared to the set alpha which is 5% (0.05). When the actual alpha is greater than the specified alpha, it means

failing to reject the null hypothesis which states that a *higher level of social media addiction does not result in low scholastic performance in the science of students*. The result might be counterintuitive to us yet a study conducted by Zaffar, Mahmood, Saleem, and Zakaria (2015) supports the gathered information from respondents. In their conducted study they concluded that there is linear interaction between Facebook addiction and anxiety as well as depression, however, there was no correlation found between Facebook addiction, loneliness & academic performance. This will tell us that their other factors or determiners that affect the academic performance of students along with social media addiction. These are yet to be known by future researchers.

Thuseethan & Kuhanesan (2014) found out in their study the relationship between social media usage and academic performance can also be affected by the number of hours the respondents use social media. This means relating social media addiction and scholastic performance alone will not satisfactorily result in a significant relationship. Many researchers including Jafarkarimi, Sim, Saadatdoost, & Hee (2016) believe that to get a more accurate result of the relationship between social media addiction and the scholastic performance of students, it is necessary to focus on the nature of social media addiction. Ainin, Naqshbandi, Moghavvemi & Jaafar (2015), added not only addiction can be solely related to negative performance. In fact, there are accounts that social media usage/addiction can also contribute to a positive result in the performance of students. Holistic treatment of the problem is indeed necessary to insure a more comprehensive result.

**Table 5:** Relationship between Social Media Addiction and Scholastic Performance of Students

Year Level	r-Value	Description	p-Value	Description
Grade 9	- 0.033	Negative; weak	0.795	Not significant relationship; Fail to reject H <sub>0</sub>
Grade 10	- 0.195	Negative; weak	0.110	Not significant relationship; Fail to reject H <sub>0</sub>

**Note:** When the r-value is greater than or equal to 0.01 or less than or equal to 0.30 means a weak relationship between variables. A negative r-value means a negative or inverse relationship between variables. A P-value greater than the 5% alpha means the study fails to reject the H<sub>0</sub> hypothesis.

## 6. Conclusion

After gathering all the data and doing the analysis, the researcher concludes that social media addiction alone is insignificantly related to students' scholastic performance. Though the study gathered insufficient data to prove the hypothesis, yet it strengthens the claims of Maslow's theory of motivation and Turel and Serenko's Socio-cognitive model. Both theories emphasize that the students' prevalent addiction to social media is caused by their pursuit of fulfilling their social needs.

### Conflict of Interest Statement

The author declares no conflicts of interest.



### About the Author

Benedicto Mindajao has collective teaching experience of eight years in the Department of Education, a year in private education institutions, and two years in ecclesiastical service. He teaches science to junior high school students at Butuan City School Arts and Trades. Aside from his teaching duties, he is the head designate of the science department. His research interest is mostly in the application and effects of technology on education.

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