Explaining the Academic Performance of Grade 7 Students as Influenced by Social Media

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Abstract. Social media is prevalent in today's classrooms and schools. Teachers have viewed it as an aid in instruction as students can be engaged in its different platforms. However, the excessive use of social media especially during weekdays can be alarming to both teachers and parents. This study looks at social media network participation and academic performance in Grade 7 students of Baybay National High School. The study was aimed at identifying the correlation between social media and students' academic performance in Mathematics. The study used both qualitative and quantitative research design which involved the survey of students in three Grade 7 sections and the conduct of a standardized test in Mathematics wherein they were categorized according to the number of hours they spent in social media a day. The study revealed that there was a correlation between the number of hours spent on social media a day and students' academic performance. Furthermore, there was a significant difference between the test scores of the students who use social media for less than an hour (0 hour) and those who use for 1-3 hours and 7+ hours. This indicated that students with lesser time spent on social media a day performed better. The study recommended to minimize the use of social media a day and prioritize academic purposes above others. On top of that, it encouraged to make the study a habit for students.

1. Introduction
As of 2015 the world’s largest social networking company, Facebook, has 1.49 billion active users, and the number of users is increasing every year. One of the most interesting things to look at is the increasing number of student users on such social networking sites. As per the survey conducted by Pew Research Center, 72 percent of high school and 78 percent of college students spend time on Facebook, Twitter, Instagram, etc. These numbers indicate how much the student community is involved in this virtual world of social networking. Getting too involved in social media can lead to an addiction that inculcates bad habits. Students prefer to chat with friends for hours, and this leads to a waste of time that could have been used for studying, playing or learning new skills. The study aims to verify the influence of social media in the academic performance of Grade-7 students in Mathematics [1].

1.1 Theoretical and Conceptual Framework
Many have adhered to the use of it including the old and the young particularly high school students. It is a virtual platform that helps people to make new connections, to improve friendly relations with other humans, and to exchange information. However, [2] showed that students spent plenty of time on social media instead of doing homework, studying the courses, and preparing examination [3-5]. A study that utilized students in a US university concluded to a negative relationship between time
spent by students on online social networks and their academic performance [6]. The American Educational Research Association conducted research and it was declared at its annual conference in that social media users studied less and generated lower grades eventually (21stcenturyscholar.org). Similarly, [7] found a continuing drop in grades among student users of social media.

In this study, the independent variables are the gender of students who usually use social media, the platforms they use, the purpose of using these, and the number of hours spent by the students in using Social media during weekdays. Meanwhile, the dependent variable is the academic performance (scores) of the students in Mathematics after the test will be given.

2. Literature Review
As cited in a report by the Pew Research Center (2014), the percentage of young people especially teens who constantly remain online is 24%. Due to the convenience provided by the latest cellphones, the teens who go online daily are 92% while 56% of the teens check their social media websites many times per day. Only 12% of youth go online once daily. According to the report, more than 70% of the young people use several social media networking websites while only 22% of them use single
website. A research model tests how Facebook usage affects the performance of students with different personality traits. In addition, the research tries to justify the relationship among the three i.e. Facebook usage, personality traits and academic performance. Their analysis of 239 students’ data reveals very significant results. Using Facebook has a strong negative impact on the academic performance of students with extrovert personalities. However, a factor of self-regulation among students greatly reduces this negative impact as they have a high level of effective self-control while using social media platforms. Cognitive absorption, which defines the extent of deep involvement, is another personality factor taken into consideration (Rouis, Limayem & Sangari, 2011). The research about finding the relationship between student’s grades and social media networking was done for the University of Jordan. The study indicated that most of the social media network users were females with ages between 20-23 years. Almost 39% of the students spent 3 hours per day on Facebook, while 40% of the students spent 10 hours on social media every week. The results obtained did not indicate any effect of social media on student’s grades or academic achievements. The authors concluded that the students who spend most of their time of the weekdays using social media, must have given time to their studies on weekends in order to maintain their academic grades (Maqableh, Rajab, Quteshat, Masa’deh, Khatib, and Karajeh, 2015).

3. Methodology

The research respondents were stratified as to the number of hours they spent on social media. They were classified into a different category such as the following: 0 hours, 1-3 hours, 4-6 hours, and 7+ hours. Academic performance of students as social media influence was identified with the result of the 20-item standardized test in Mathematics 7 given by the researchers. The gender of students who used social media, platforms they used and as to the purpose of using these were determined as well.

3.1. The Population of Interest

In this study, the research respondents were some of the Grade 7 students of Baybay National High School. A population of three Grade 7 sections was surveyed by the researchers. The students were stratified as to the number of hours they spent on social media. The population of three Grade 7 sections was taken from the Basic Education Curriculum (BEC). Furthermore, a total of 94 students were classified into different categories (0 hours, 1-3 hours, 4-6 hours and 7+ hours).

3.2. Research Design

The research designs of this study were both qualitative and quantitative. First, the qualitative research design was used to determine the number of hours spent by students in using social media, the type/kind of social media commonly used, and the purpose of using it. This was done with the use of a questionnaire. Second, the quantitative approach was utilized through the use of a standardized test available on the internet. The reason behind choosing this design was that this study focuses on measuring the academic performance of students in Mathematics particularly in Algebra as by social media influence. The result of the test was collected and analyzed.

3.3. Data Collection

In this study, both primary and secondary sources were included. The primary data of this research study was collected from the scores of the test questionnaires which were prepared by the researchers. There were 94 respondents who answered these test questionnaires. The gathered data led this research study on the investigation of the influence of social media in the academic performance of the students. The secondary data source of this research study used the review of related works of literature which were gathered from different published research articles.

3.4. Sampling Technique

Stratified Sampling was used in selecting the sample respondents. The student’ population was stratified according to the number of hours of using social media within a day. The first stratum consisted of all students who used social media for less than an hour per day (0 hour). The second stratum consisted of all students who spent 1-3 hours in social media. The third stratum consisted of all students who spent 4-6 hours in social media. The fourth stratum consisted of all students who spent 7 hours and above in social media.

3.5. Analysis of Data

Answers obtained from standardized test in Mathematics 7 were analysed to find the possible influence of social media. The range of the scores per category was equal or close to zero. The researchers used Pearson correlation to determine if there is a correlation between social media and
students’ academic performance. It was then proceeded with the use of F-test and a post hoc test to determine the treatment group/s which showed a significant difference. This helped in concluding and determining the future directions of the research.

4. Results and Discussions

The current findings revealed that majority of the respondents were females who used social media for social purposes such as Facebook. When they were asked about the number of years they were using social media and the number of hours they spent on studying Mathematics, more than a half of them responded below 2 years and below 2 hours respectively. Furthermore, the result of the survey as to the number of hours the students spent on social media varied from 0 hour, 1-3 hours, 4-6 hours, and 7+ hours. A significant difference related to the number of hours’ students spent on social media was found, and indicated that their academic performance was affected by their usage. This was justified by Paul, Baker, Cochran (2012) in one of their written article which proved that social media affects students’ academic performance. The researchers further said that as time spent on social media increases, the academic performance of students was seen to deteriorate. This was evident on the results computed with the use of Pearson’s Correlation, ANOVA one-way factor, and Post Hoc test (LSD). However, the correlation value showed a weak relationship between variables, thus the factors mentioned above can interfere in the relationship of social media usage and students’ academic performance. This was similar to the result which showed that the treatment group 0 hour and 4-6 hours showed no significant difference with each other so as 1-3 hours with 4-6 hours and 7+ hours. This was because the social media platform students used and on how they will use it can affect their academic performance. Some students spent time on social media and yet their performance in the academic year still remained the same. This can also be that they study Mathematics for a number of hours. Moreover, students can form study groups which facilitate better means through which students improve their studies. Lecturers can connect with students and provide study materials which can be helpful and useful to students. This can be possible through Facebook.

5. Conclusion

Based on the result of the test statistics conducted in the scores of the students in each category, it is concluded that students who perform better are those who use social media in less than an hour. The study also touches on how the students use the social media and their study habits in the subject. The result proposes that majority of the respondents used social media in socializing followed by gaming and lastly in academic purposes. In the study habit, majority of the respondents study in less than 2 hours followed by 3-5 hours and lastly is the 6-8 hours. The thought that students know how to use social media appropriately may act as a hindrance to those who may require closer supervision especially to the Grade 7 respondents. Teachers will have to guide the students on how to use this in a way that would benefit them. Overall, it is concluded that, if not use properly, social media can prove to be deteriorating to the academic performance of students in Mathematics. Therefore, to increase the productivity of students in their learning towards Mathematics subject the following recommendations are proposed:

1. **Minimize time spent in using social media per day.**

   Social media can be helpful and can also do the opposite. Too much exposure to social media may cause addiction and might lead in doing unnecessary task instead on doing projects or home works. This study recommends for students to minimize using social media for longer period but instead to put more time on studying and practicing math problems.

2. **Use social media for academic purposes.**

   One advantage of social media is that it can be a source of information of most of everything in the world. In Mathematics, Youtube can be a great source of learning. In Youtube, there are plenty of tutorials on how to solve problems and even definite discussions on topics about Math. Another is Google, which is the most useful site in social media in which its users can access almost everything. This research suggest that social media does not always give negative impact in learning Mathematics but also can aid learning as long it is used for right or educational purposes.
3. Make study a habit
A good study habit is a good practice in learning Mathematics. This study suggests that learning Mathematics cannot be attained easily by just doing nothing. It needs a lot of practice to learn and to master it. Making study as a habit is a good start in learning Mathematics.

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