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Social Media and Educational Engagement: Analyzing the influence of social networking sites on high school students' grades

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Abstract: As time goes on, more and more individuals rely on social networks. People in the student demographic make up the bulk of social media users due to the amount of time they spend on these platforms. Examining how high school students' use of social media, particularly Facebook, affects their academic achievement is the primary goal of this research. The research relied on students' social media use and grade point averages from four separate classes. We may deduce this link and what it means by using statistical analysis. For everyone right now, social media is essential for communicating with others, sharing and asking information, and following, evaluating, and interpreting current events, among other things. This study aimed to assess the pros and cons of students' use of social networking sites in relation to their study habits and performance. Two hundred and twenty students from a higher education vocational school participated in the research. A questionnaire was developed to obtain students' perspectives regarding digital technology and social media, and here is how the data was acquired. According to the findings, students' study habits and digital technology use are negatively affected. The research offered several recommendations based on the results.

Keywords: Social Networks, Facebook, High School, Performance, Students

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INTRODUCTION

When it comes to 21st-century online applications, social media (SM) is by far the fastest-growing. Social media (SM) has been a century-defining phenomena due to its many uses in fields as disparate as wikis, video streaming, and social networks. With over 955 million users in 2013, Facebook dominated all social media applications, with Twitter coming in second with 500 million users (www.thecountriesof.com). The significance of such programmes is shown by the fact that their user base is equivalent to nations.

According to www.quintly.com, the majority of Facebook users fall into the younger age brackets, with 300 million users falling into the 18–24 age range and 120 million users falling into the 13–17 age bracket. There was almost no difference in the percentage of male and female users, according to the same source. At the end of 2012, there were 2.5 million Facebook users in Jordan, which is comparable to the size of the country's Internet user population. Facebook is accessible to Jordanians via mobile devices and the web, according to recent data. Facebook and the social media sphere are very important to young people, as seen by the high penetration rate of 38%. Access to educational resources and the possibility of distant learning were both made possible by advancements in information and communication technology (ICT). The term used to describe this phenomenon is "e-learning," and it describes how information and communication technologies promote interaction, task management, and teamwork in the classroom. Abu-

Shanab, Ababneh, and Momani (2012) and Abu-Shanab, Momani, and Ababneh (2012) found that students and teachers in Jordan do not make full use of e-learning systems and various applications. These findings highlight the significance of reaching students on their preferred platforms, particularly social media.

According to Asemah and Edegoh (2012), the majority of individuals utilise these networking sites to keep in touch with friends both online and off. On the other hand, people from all walks of life and all corners of the globe utilise hundreds of different social networking sites. Through long-distance connection enabled by social media, several advantages have been realized. These days, educators know that social media sites are great tools for students. Facebook and other social media sites are used by students for a variety of reasons, including entertainment, meeting up with friends, and making new ones. Consistent with the finding that students engage in social networking activities for long periods of time, several have held different social media platforms responsible for the gradual decline in students' grade point averages (Bord and Ellison, 2014). The fact that most pupils engage in non-academic activity on these sites may be to blame. Also, research shows that very few students know about the great prospects for professional and academic networking that these sites provide.

LITERATURE REVIEW

Asiedu, Nasir. (2017). Examining the pros and cons of social media on students' social and academic life, this research seeks to understand their impact. The 204 participants in this research were chosen at random from among students at the University of Ghana and Kwame Nkrumah University of Science and Technology using survey methods. This study's findings suggest that kids shouldn't be totally dissuaded from using social media since the benefits far exceed the drawbacks. Some of the positive and negative effects of social media on students in both institutions were as follows: students in both institutions were able to ask their classmates' opinions on a certain topic without leaving their rooms, they were able to make more friends online than in real life, and they were able to take part in group discussions. On the other hand, students in both institutions reported lower levels of concentration in class, wasted time that could have been studied, less physical interaction (face-to-face), and the promotion of shorthand writing, which can interfere with good grammar writing.

Mohamed, Awil & Ali, Mohamed. (2023). One example of an online platform is a social networking site, where users may make public profiles and engage in user-to-user interactions. The proliferation of social networking sites has increased the number of online contacts, interactions, and communications among individuals all over the world. These social media networks have millions of daily users among students. Because of the time wasted on social media, the mistakes made in language and spelling, and the fact that it takes their focus away from schoolwork, many students have begun to blame these sites for a gradual decline in their GPAs. Finding out how students' use of social media affects their grades in secondary schools in Hargeisa, Somaliland is the driving force behind this study. Four secondary schools, including two public and two private secondary high schools (SHS), participated in the quantitative study. Ilays Secondary School, Noradin Secondary School, Mohamoud A. Ali Secondary School, and 26 June Secondary School are the ones under question. Using a probability selection approach (random number table), a well-structured questionnaire was circulated to students. As a last step, we estimated the impact of SNS on students' grades using a simple linear regression. Students' academic performance was significantly

impacted by social networking sites.

Calunsag, Christian & Calunsag, Cliven. (2023). In Zamboanga del Norte, Philippines, this research set out to find out how much of an effect students' use of social media had on their grades. A total of 120 participants were chosen from seven different university campuses using the descriptive correlation approach. According to the findings, social media has become more valuable, widely used, and accepted by both students and professionals. On the other hand, kids whose social media usage is excessive yet unrelated to schoolwork tend to have worse grades. In order to show the academic potential of social media, we will focus on its impacts, advantages, and disadvantages.

Asogwa, & Ekene Odoh, Cornelius. (2023). Researchers in Enugu State looked at how pupils' use of social media affected their grades in high school. A total of four hypotheses and research questions used to direct the investigation. This study used a descriptive survey research approach. A total of 42,970 male and female students enrolled in SSS III made up the study's population. Using stratified and purposive selection approaches, 372 secondary school students were chosen to participate in the research. Of them, 168 were male and 204 were female. The validated structured questionnaire "Influence of Social Networking Sites usage on Students' Academic Achievement (ISNUSAP)" served as the data collection instrument. Its overall reliability coefficient (r) was 0.81, and the sections of the instrument had r values of 0.76, 0.79, 0.72, and 0.84, respectively. We used percentages to answer research questions 1 and 3, and mean and standard deviation to answer questions 2-4. We used t-test statistics to test hypotheses 2-4, and we used ANOVA at the.05 level of significance to test hypotheses 1 and 3. Facebook, Whatsapp, and Instagram were determined to be the most popular social media platforms among students in the survey. Students' academic performance in secondary schools in Enugu State was shown to be substantially correlated with the number of social media sites they utilised. Researchers concluded that secondary schools may benefit from having more guidance counsellors on staff to help pupils cope with the negative aspects of social media. They suggested this idea to the Post Primary Schools Management Board.

Abu-Shanab, Emad & Al-Tarawneh, Heyam. (2015). More and more, individuals can't imagine their lives without social media. People in the student demographic make up the bulk of social media users due to the amount of time they spend on these platforms. The purpose of this research is to examine how high school students' use of social media, particularly Facebook, affects their academic achievement. The research relied on students' social media use and grade point averages from four separate classes. We may deduce this link and what it means by using statistical analysis. The findings corroborated the study's hypotheses and demonstrated a connection between the various Facebook impact factors and students' Internet and Facebook use habits. The last section addresses the conclusions and future research.

RESEARCH METHODOLOGY

The survey used in this research measured students' views and behaviour on Facebook using 18 questions. The sample was comprised of all eleventh graders from a public school located in northern Jordan. In Jordan, high school students have the option to pursue a curriculum focused on information technology. Without seeing their final scores from all five classes, students filled out the survey. For this study, the replies were gathered, entered into SPSS, and analysed. The five subjects that piqued their attention were: accountancy, mathematics, Arabic, English, and religious studies.

The Instrument and Sample

Following prior study, the instrument in question made use of a preexisting collection of items pertaining to SN usage. The research just offered a model and a collection of products; neither were evaluated. This study built on the previous one by doing an empirical test of our research topic using their suggested instrument. In order to evaluate the content analysis and survey dimensions, the authors of this research pilot tested the instrument on ten master students. The next step was to change up the survey questions in an effort to get students to be more precise when they gave their names. Students were given the instrument to fill out, and they were asked to record how often they used the Internet and Facebook. With a sample size of 96, the 18-item Cronbach's Alpha was 0.888. The social sciences generally agree with this assessment. A student's name and a question about Facebook use duration were included of the study's instrument.

The 220 students that volunteered to participate in the research, 33% were female and 67% were male. The ages of the pupils ranged from eighteen to twenty. We used IBM-SPSS Statistics 22 to examine the data that we gathered. In order to find out if there was a statistical difference in the means of male and female students, we computed the frequency distributions, means, and standard deviations of their values. Then, we used an independent-samples t-test. P values less than 0.05 were used to determine whether there was a significant difference between the sexes.

DATA ANALYSIS

The averages and standard deviations of the perceptional items' answers from the sample. Item descriptions and statistics are included in Table 1. Two items were rated highly by students (Q3 and Q9), nine were rated moderately, and seven were rated lower (Table 1). Additionally, it is clear that the most contentious topics were Q12 (the impact of anxiety and despair) and Q18 (the process of creating Facebook friends). The bigger the standard deviation figure, the more contentious the resulting problem is likely to be.

Table 1. Item descriptions, means and standard deviations

	Item description	N	Min	Max	Mean	Std. Dev
Q1	I find that I spent more time than I intended on the Facebook	220	1	4	2.65	1.04
Q2	I refuse to spend time on family activities to stay on the Facebook	220	1	4	1.88	0.99
Q3	I feel excited and thrilled when using the Facebook	220	1	4	3.03	0.98

Q4	I look for making more friends on Facebook	109	1	4	2.04	1.05
Q5	I spend long hours daily on Facebook	111	1	4	2.33	1.08
Q6	I neglect my assignments to spend more time on the Internet	111	1	4	2.06	1.06
Q7	I stay late at night when using the Internet and Facebook	112	1	4	2.38	1.06
Q8	My academic performance declined because of using Facebook	111	1	4	2.05	1.01
Q9	Life without Facebook is boring and empty of joy	110	1	5	3.13	1.04
Q10	I don't tell my family the exact hours I spent on Facebook	111	1	4	1.71	1.07
Q11	I am disconnected from my friends because of using the Facebook	111	1	4	1.32	0.65
Q12	I am depressed and nervous when I am forbidden from using the net	220	1	4	2.35	1.18
Q13	I suffer from eye strain because of using the net	112	1	4	1.90	1.01
Q14	My Facebook use influenced negatively my academic performance	110	1	4	1.85	1.02
Q15	My use of Facebook and the net causes isolation from my world	220	1	4	1.96	0.90
Q16	My use of Facebook is causing me to abandon my study	220	1	4	2.01	1.03
Q17	My use of Facebook is causing me to neglect my religious duties	112	1	4	1.75	1.06
Q18	I feel relieved because of my new relations on Facebook	220	1	4	2.28	1.16

Table 2 shows the estimated survey dimensions, which were also derived from the means of individual items. For the purpose of avoiding extreme values, the amount of time spent on Facebook and the Internet

was transformed from a continuous scale (open question time) into a seven-level categorical scale (1-7). Precisely one degree was allotted every two hours, with the exception of replies greater than eleven, which were each allotted seven. Three characteristics were viewed as somewhat important (entertainment, health impact, and SN relationships) and three were perceived as lowly important (performance, perceived time spent on Facebook, and isolation), according to the results. A relatively little amount of time was spent on the web, with an average of 2.13 minutes. At last, this research found a connection between the five dimensions and both grade point average and Facebook use. Researchers assigned a value to each student's name based on their average grade in the five classes that made up their GPA. Instructors in each subject reported their students' grades. It was unexpected to see that Facebook use was strongly connected with all five dimensions (PI, EI, HI, II & SNCs). These findings provide credence to our study's central hypothesis, which is that Facebook use is connected with all of the variables we examined. In addition, the only dimension that is connected to the GPA is the one that pertains to time consumption. This indicates that there was a negative association between the amount of time students spent on Facebook and their GPA. A few characteristics came very near to being statistically significant when connected with GPA, but they were not at the 0.05 threshold (alpha values were marginally more than 0.05). There was a negative link between students' reported levels of SN connections and their grades, suggesting that lower-achieving students were more likely to be negligent with their work.

Table 2. The means and standard deviations of the dimensions explored

Dimension	Items	N	Min	Max	Mean	Std. Dev
Performance index	Q6, Q8, Q14, Q16, Q17	220	1	4	1.935	0.803
Entertainment index	Q1, Q3, Q9	220	1	4	2.935	0.753
Health Influence	Q12, Q13	220	1	4	2.137	0.912
Isolation index	Q2, Q11, Q15	220	1	3.67	1.720	0.610
SN Connections	Q4, Q18	220	1	4	2.177	0.982
Consuming time index	Q5, Q7, Q10	220	1	4	2.137	0.859

Table 3. The correlation matrix

Dimension	PI	EI	HI	II	SNCs	CTI	GPA
Performance index (PI)	1.000						
Entertainment index (EI)	0.590**	1.000					
Health Influence (HI)	0.514**	0.532**	1.000				
Isolation index (II)	0.488**	0.493**	0.479**	1.000			
SN Connections (SNCs)	0.261**	0.522**	0.299**	0.243**	1.000		
Consuming time index (CTI)	0.569**	0.572**	0.472**	0.318**	0.416**	1.000	
GPA	*-0.182*	-0.047	0.005	0.024	*-0.180*	-0.186*	1.000
Time spent daily	0.493**	0.489**	0.376**	0.389**	0.233*	0.502**	-0.058

*Significant at the 0.05 level
** Significant at the 0.01 level

In terms of monthly family income level, the averages for male and female students were 2.05 (SD=0.87) and 2.18 (SD=1.03), respectively. To find out how much of a difference there was in the students' household income based on gender, we used an independent-samples t-test. In this case, the gender gap in values was not determined to be statistically significant (df=215, t=0.972, p>0.05). Most students have smartphones between the ages of 15 and 20, according to Table 3.

Table 4. The distribution of students having smartphone according to age

Gender	none	5≤A*<10	10≤A<15	15≤A<20	20≤A<25	25≤A
F	-	-	25 (36.10%)	40 (55.60%)	4 (5.60%)	2 (2.80%)
M	-	-	48 (32.40%)	93 (62.80%)	3 (2.00%)	4 (2.70%)

Note: A* Age

The computed mean values for this age group of pupils are 3.76 (SD =0.68) for female students and 3.66 (SD =0.56) for male students. To find out how many students in this age bracket own smartphones, we used an independent-samples t-test to compare the means of male and female students. The results showed that there was no statistically significant difference in the values between the sexes [df=218, t=1.168, p>0.05]. Table 4 shows how much time male and female students spent using their smartphones. According to the findings, a large number of pupils spend around fifteen minutes every day using their smartphones.

Table 5. The spending time on smartphone of the students in one day

Gender	none	h*<1	1≤h<2	2≤h<3	3≤h<4	5≤h
F	-	7 (9.70%)	34 (47.20%)	13 (18.10%)	11 (15.305)	7 (9.70%)
M	-	19 (12.80%)	74 (50.00%)	25 (16.90%)	20 (13.50%)	10 (6.80%)

Note: h* hour

When looking at how much time students spend on their smartphones, the averages for male students were 3.51 (SD=1.09) and female students were 3.68 (SD=1.14). To determine the amount of time students, spend on their smartphones, we used an independent-samples t-test to look for statistical differences in the means between the sexes. In this case, the gender gap in values was not determined to be statistically significant [df=218, t=1.017, p>0.05]. Students were also asked how they typically use their smartphones in relation to this topic. Appendix B contains the students' responses. There were five areas in which the responses of both male and female students were examined: amusement, telephone calls, applications, text

messages, and studying. Calling friends (90%), messaging (70%), listening to music (75%), viewing videos (70%), and most notably utilising social networking sites (85%) are the most common uses for smartphones among both male and female students. Ten percent of pupils are really utilising it to help them study. The results of the computer use by male and female students are shown in Table 5. The majority of male students (around 70%) spend at least two hours every day glued to their computers. About 55% of the pupils are female.

Table 6. The spending time on computer of the students in one day

Gender	none	h<1	1≤h<2	2≤h<3	3≤h<4	5≤h
F	1 (1.40%)	10 (13.90%)	16 (22.20%)	39 (54.20%)	3 (4.20%)	3 (4.20%)
M	5 (3.40%)	14 (9.50%)	22 (14.90%)	104 (70.30%)	2 (1.40%)	1 (0.70%)

When looking at how much time students spent on computers, the averages for male students were 3.58 (SD=0.84) and female students 3.58 (SD=0.97). In order to find out how much time students spent on computers compared to one another, we used an independent-samples t-test. In this case, the gender gap in values did not reach statistical significance [df=218, t=0.035, p>0.05]. In relation to this inquiry, we also wanted to know how the students planned to use their time online. Table 6 shows the results of the students' responses. The results showed that among the many things that students enjoyed doing online, the majority of female students preferred social networking sites, music, movies, Twitter, gaming, checking email, studying, and surfing the web. There is a little shift in these rankings for male students.

CONCLUSION

The purpose of this research was to quantify the impact that Facebook has on high school pupils. Participants' survey responses and grade point averages from five different classes were analysed. Students also indicated how much time they spend on social media and the web generally. The findings provided strong evidence in favour of the paper's premise, as students' levels of academic performance (PI), entertainment, health, isolation perception, and Facebook connection were all positively correlated with the amount of time they reported spending on the social media site. Both the amount of time students reported spending on Facebook and their GPA as an hourly metric showed a strong correlation with one another. Spending more time on Facebook was associated with a poorer GPA, according to these results. This research found that students' performance and social activities in the actual world were adversely affected by Facebook, even if there are advantages of Facebook in the literature. The goal of using Facebook is to live an active life in cyberspace. This research is groundbreaking because it establishes a link between students' actual grades and their self-reported estimations of their GPA, as determined by a survey. The timing is also significant, since studies on the benefits and drawbacks of Facebook are at odds with one another. However, using participants' own accounts to gauge their Facebook use was a weakness of this research. Measuring how much time students spend on Facebook without compromising their privacy is a challenging task.

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