The Impact of Social Networks on Tertiary Education

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Abstract: *Since the inception of the Internet and the integration of email technology into our personal and work lives especially in academics, our ways of communication began to metamorphose. The Internet, which is consortium computer networks, is transforming educational processes and interpersonal communication especially through Social Networks. Young people, born into a world of laptops and cell phones, text messaging and tweeting, continually spend time exposed to digital technology and streaming so much that they perhaps experience fundamentally different brain development that favors constant communication and multitasking. Although what is been done by the common ought to be seen as the norm, a popular opinion believes that Social Networks serve only as distractions to academic achievement by school-age people. Two multiple regression analyses were done using Statistical Package for Social Sciences computer software which analyzed the responses of students to questionnaire. It is seen that students who spend more time on Social Networks end up not having enough Study Time, and so affects their academic achievements. Since Social Network is very common in our society today, what matters to us now is **how** Social Networks are used than **how much** they are used.*

Keywords: *Study Time; Academic Achievement; Examination Anxiety; Digital Natives*

I.   Introduction

When Microsoft founder, Bill Gates, wrote "The Internet changes everything", back in 1999, he was specifically talking about business but, as it turns out, the Internet has changed, and is changing much more than business. It has changed the economy, politics, science, communication, education, and the world culture. The most relevant to this study is the fact that the Internet is transforming education and interpersonal communication.

Since the inception of the Internet and integration of the email technology into our personal and work lives, our ways of communication began to change. However, it was not so until the creation of Social Network Interfaces that we have seen such a massive harnessing of the potential of the now-pervasive online connectivity in our everyday lives.

Small & Vorgan [1] said "We know that technology is changing our lives. It's also changing our brains". He suggests that "digital natives"- young people born into a world of laptops and cell phones, text messaging and tweeting- spend 8hours a day exposed to digital technology, on average Lin [2]. As a result, "digital natives" may experience fundamentally different brain development that favours constant communication and multitasking, according to Prensky [3], and Small & Vorgan [1].

"Social Network" is still a new enough idea that it continues to be defined by scholars, professionals, and the press. It is hard to find a definition everyone agrees on, partly because the tools for Social Network changes with advances in technologies, and popular sites or trends seem to lose popularity as quickly as they came into limelight and were touted as The Next Big Thing. We can look at some commonly used definitions, and from these definitions, we can start to parse underlying elements common to all of them.

According to Jantsch [4], "Social Network" can be defined as "the use of technology combined with social interaction to create or co-create value."

Brian Solis [5] defines Social Network as "a shift in how people discover, read, and share news and information and content. It is the fusion of sociology and technology, transforming monologue to dialogue."
Anvil Media [6], a search engine marketing firm, provides a definition derived from sociology:

An umbrella term that defines the various activities that integrate technology, social interaction, and the construction of words and pictures. This interaction, and the manner in which information is presented, depends on the varied perspectives and the "building" of shared meaning, as people share their stories and understandings.

There are certain common aspects of these definitions. All mention the **intersection of technology, social interaction, and information sharing.** These may seem simple elements but they are transforming many aspects of education.
According to Davis et al [7], the definition of Social Network does not include educational learning and content management system such as Blackboard, eLearning Suite, WebCT, and Desire2Learn as these educational

platforms serve specific instructional purposes framed by institutions and are not designed to support user-generated content as the primary purpose of exchanges and interactions on the platforms. More so, they remain inaccessible to the general public who are neither university personnel nor enrolled students.

Education, in its general sense, is a form of learning in which the knowledge, skills, values, beliefs and habits of a group of people are transferred from one generation to the next through storytelling, discussion, teaching, training, and or research. Any experience that has a formative effect on the way one thinks, feels, or acts may be considered educational. According to Adeyemo [8], tertiary education also referred to as third stage, third level, and post-secondary education, is the educational level following the completion of a school providing a secondary education. Tertiary education includes universities as well as institutions that teach specific capacities of higher learning such as colleges, polytechnics, technical training institutes, community colleges, nursing schools, research laboratories, centers of excellence, and distance learning centers.

Education can take place in formal or informal settings. Formal education occurs in a structured environment whose explicit purpose is teaching students. Usually formal education takes place in a school environment, with classrooms of multiple students learning together with a trained teacher. Informal learning occurs in a variety of places, such as at home, work, and through daily interactions and shared relationships among members of society. It is worthwhile to mention here that all through this study, the emphasis is strictly on formal education, which offers us the structure to discretely measure the effects of Social Network on Tertiary Education.

Palm Beach Study Time theory [9] was postulated in 1864 by Professor Palm Beach of the University of California. It explains that Study Time is a useful tool for predicting, and controlling learning outcomes behaviours. The theorist stated that academic achievement is a function of the time spent on a task needed to complete the task. This provides a basis for the impact of study time on students' learning outcomes.

Graven, L. J. et al [10] speculated that the more a student consumes time while studying, the more accurately his or her retention of the materials studied, and the less his or her anxiety towards the test or examination.

Crede and Nathan [11] in their researches at the University of Wisconsin said that study time, ability, and attitude inventories were factors found to compete with standardized test and grades as parameters of academic performance.

According to Ukpong, D. E. & George, I. N. [12], and Nathalie, Louge [13], long study time and skill measures tend to improve prediction of academic performance more than short study sessions. And it is worthwhile to know that no single factor determines the academic achievement of students. It has been the effort of so many factors such as gender, IQ, study habit, and study time.

Flowtown [14] found that a curve exists for users of Social Network with regards to age. He discovered that the use of Social Network varies greatly with age, with the oldest generation participating less often than younger ones. The generation of 18-29 year old users has been referred to by many names-millennial, avant-garde, and most simply, generation Y, many of who are traditional college-aged adults. This group of 18-29 year old users has been crowned as digital natives, a generation who has never known a world without the Internet (Jones, et'al.[15]; Palfrey & Gasser, [16]; Prensky, [3]; Small & Vorgan, [1]).

In the words of Davis, et al [7], given the high volume of Social Networking Technology, an obvious and popular concern among faculty, administrators, and parents is the widespread notion that students spend far too much time on non-academic activities related to the Internet and Social Networks. Countless articles in popular newspapers, periodicals, and blogs have raised these very same concerns according to Bart, [17], Ingram, [18], Ojalvo, [19], and Schulten, [20]. The most salient concern among scholars, educators and the public, however, is related to the effects of Social Networking sites on the time dedicated to studying and offline activities. Popular opinion believes that Social network serves only as a distraction to academic achievement. Studies confirm this fear as mentioned in Hernandez [21], Kirschner & Karpinksi [22], Phillips [23]. However, numerous studies as well contradict this fear according to Junco [24]. In particular, findings point to the idea that **how** Social Networks are used matters more than **how much** they are used.

It is in the light of this background that we embark on this research work to:-
1. find out how much Social Networks are used against Study Time of students, and
2. find out how Social Networks are used in relation to Academic Achievement.

II. Method

This study was carried out on students of Public Administration Department, and Computer Engineering Technology Department of Plateau State Polytechnic, Barkin Ladi-Nigeria. The students were randomly picked from National Diploma programmes (ND), and Higher National Diploma programmes (HND), sex and different age brackets. A paper-and-pencil self-administered Questionnaire was designed to capture the Academic Level, gender (Sex), Age bracket, CGPA range, Use of Social networks, types of Social Networks

used, Average Time Spent on Social Networks in a day, types of educational Network sites used, Average Time Spent in a day on educational Networks, and the Average Study Time in a day of each student under study. 125 questionnaires were administered, completed and returned.

Statistical Package for Social Sciences (SPSS) computer program was used to analyze the coded data obtained from the responses of the students. Two Regression analyses were done with:

- The dependent variable- Study-Time against the independent variables- Average Time spent on Social Network per day, Academic Level, Age and Gender.
- The dependent variable- Academic Achievement (CGPA) against the independent variables- Average Time spent on Educational Networks per day, Average Time spent on Social Network per day, Academic Level, Age and Gender.

Except for minor discrepancies and unfilled sections, the bias level was not serious enough to undermine the result of the study, and so was ignored.

III. Results

3.1 Hypothesis 1
Social Networking affects the Study Time of students.

In order to test this hypothesis, a multiple regression analysis was run to predict Study Time from Time Spent on Social Networks, Time spent on Educational Networks, Age, Gender, Academic Level, Network Usage, and Type of Network Used. The Assumptions of linearity, independence of errors, homoscedasticity, unusual points and normality of residuals were met. Some variables statistically significantly predicted Study Time $F_{(7,111)} = 9.852$, $p < .0005$, adj. $R^2 = .344$. The variables Time Spent on Social Networks per day, and Age added statistically significantly to the prediction, $p < .05$, while the remaining variables do not statistically significantly add to the prediction of Study Time. Regression coefficients and standard errors can be found in Table 1.0 below.

Table 1.0 Summary of Multiple Regression Analysis for Study Time

Variable	B	SE$_B$	B
Intercept	4.70	.640	
Soc_Net_Time	-.927	.143	-.654*
Edu_Net_Time	-.077	.141	-.044
Acad_Level	.000	.141	.000
Gender	.058	.142	.031
Age	-.432	.193	-.186*
Net_Usage	.108	.413	.034
Net_Type	.016	.176	.013*

Note. * $p < .05$; B= unstandardized regression coefficient; SE$_B$= Standard error of the coefficient; B=standardized coefficient

Details of the result (Model Summary, ANOVA, and Coefficients tables) can be obtained in Appendix A

3.2 Hypothesis 2
Social Networks affect the Academic Achievements of students.

Multiple regression analysis was run to predict Academic Achievement (CGPA) from Time Spent on Social Networks, Time spent on Educational Networks, Age, Gender, Academic Level, Network Usage, and Type of Network Used. The Assumptions of linearity, independence of errors, homoscedasticity, unusual points and normality of residuals were met. Some variables statistically significantly predicted Study Time $F_{(7,110)} = 2.849$, $p < .01$, adj. $R^2 = .100$. The variable, Academic Level added statistically significantly to the prediction, $p < .05$, while the remaining variables do not statistically significantly add to the prediction of Academic Achievement. Regression coefficients and standard errors can be found in Table 2.0 below.

Table 2.0 Summary of Multiple Regression Analysis for Study Time

Variable	B	SE$_B$	B
Intercept	2.385	.507	
Soc_Net_Time	-.143	.114	-.149
Edu_Net_Time	-.024	.112	-.021
Acad_Level	.263	.112	.213*
Gender	-.018	.113	-.014
Age	.093	.153	.059
Net_Usage	-.231	.330	-.109
Net_Type	-.071	.140	-.082

Note. * $p < .05$; B= unstandardized regression coefficient; SE$_B$= Standard error of the coefficient; B=standardized coefficient

Details of the result (Model Summary, ANOVA, and Coefficients tables) can be obtained in Appendix B

IV. Discussion

In hypothesis 1 above, the result shows that there is significant negative effect of Social Networks on the Study Time of students. It is seen that students who spend more time on Social networks end up not having enough Study Time. This outcome agrees with other researches that tilt to the idea that Social Networks are distractions to students.

The study also shows that the Ages of the students contribute adversely on their Study Time. This outcome buttress the earlier study by Flowtown [14] which indicated that college-age (18-29years old) students are the most age-brackets that use Social Networks, and it affects their Study Time.

Surprisingly, the effects of gender, Academic level, and usage of Educational Networks do not statistically significantly predict Study Time of the students, although all of the variables indicate positive contributions to its effective prediction.

In hypothesis 2 above, the results show that Time Spent on Social networks does not statistically significantly predict the Academic Achievement (CGPA) of the students. This result does not conform to quite a number of earlier research studies which retort the fact that the Time Spent on Social Networks adversely affects the Academic Achievement of students. This mixed result is possibly due to the weakness of self-reported measures of the Academic Achievement (CGPA), and the sample size used.

V. Conclusion

It is a popular perception that Social Network serves as a distraction to academic achievement in tertiary education. Numerous studies for and against the effects of Social Networks in academics have mixed results. In particular, findings point to the idea that **how** Social Networks are used matters more than **how much** they are used. From our research on the effects of Social Networks in Tertiary Education, there is a high degree of the negative effect of Social Networks on Tertiary Education, as regards the Study Time, and Academic Achievement of students.

VI. Recommendations

In view of the findings, the following recommendations are made:-
1. Academic institutions and organizations should develop Educational Networking sites that are well designed to support user-generated content as the primary purpose of exchanges and interactions on the platforms.
2. Researchers intending to embark on further studies in this regard should self-reported measures, as this can be misleading.

Acknowledgment

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APPENDIX A

Table 3.1
Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.619[a]	.383	.344	.742	2.479

a. Predictors: (Constant), Type of Net. Used, academic level, gender, age, Time on EDU NET per day, Time on SOC Net per day, Usage of Network

b. Dependent Variable: Study Time per day

Table 3.2
ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	37.935	7	5.419	9.852	.000[b]
	Residual	61.057	111	.550		
	Total	98.992	118			

a. Dependent Variable: Study Time per day

b. Predictors: (Constant), Type of Net. Used, academic level, gender, age, Time on EDU NET per day, Time on SOC Net per day, Usage of Network

Table 3.3
Coefficients[a]

Model	Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.	95.0% Confidence Interval for B Lower Bound	95.0% Confidence Interval for B Upper Bound	Correlations Zero-order	Correlations Partial	Correlations Part	Collinearity Statistics Tolerance	Collinearity Statistics VIF
1 (Constant)	4.700	.640		7.349	.000	3.433	5.967					
Time on SOC Net per day	-.927	.143	-.654	-6.476	.000	-1.211	-.643	-.589	-.524	-.483	.545	1.836
Time on EDU NET per day	-.077	.141	-.044	-.545	.587	-.357	.203	-.144	-.052	-.041	.839	1.193
academic	.000	.141	.000	-.002	.999	-.280	.280	-.046	.000	.000	.925	1.08

Model	B	Std. Error	Beta	t	Sig.	Lower Bound	Upper Bound	Zero-order	Partial	Part	Tolerance	VIF
level												1
gender	.058	.142	.031	.411	.682	-.223	.340	.088	.039	.031	.976	1.025
age	-.432	.193	-.186	-2.233	.028	-.815	-.049	-.026	-.207	-.166	.801	1.248
Usage of Network	.108	.413	.034	.262	.794	-.710	.927	-.347	.025	.020	.323	3.098
Type of Net. Used	.016	.176	.013	.094	.926	-.333	.366	-.348	.009	.007	.292	3.423

a. Dependent Variable: Study Time per day

APPENDIX B

Table 4.1
Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.392[a]	.153	.100	.58709	1.927

a. Predictors: (Constant), Type of Net. Used, gender, academic level, age, Time on EDU NET per day, Time on SOC Net per day, Usage of Network
b. Dependent Variable: CGPA

Table 4.2
ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	6.874	7	.982	2.849	.009[b]
	Residual	37.914	110	.345		
	Total	44.788	117			

a. Dependent Variable: CGPA
b. Predictors: (Constant), Type of Net. Used, gender, academic level, age, Time on EDU NET per day, Time on SOC Net per day, Usage of Network

Table 4.3
Coefficients[a]

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B		Correlations			Collinearity Statistics	
	B	Std. Error	Beta			Lower Bound	Upper Bound	Zero-order	Partial	Part	Tolerance	VIF
1 (Constant)	2.385	.507		4.701	.000	1.380	3.391					
Time on SOC Net per day	-.143	.114	-.149	-1.254	.212	-.368	.083	-.282	-.119	-.110	.548	1.826
Time on EDU NET per day	-.024	.112	-.021	-.218	.828	-.247	.198	-.076	-.021	-.019	.849	1.178
academic level	.263	.112	.213	2.335	.021	.040	.486	.232	.217	.205	.925	1.082
gender	-.018	.113	-.014	-.157	.876	-.242	.207	-.004	-.015	-.014	.974	1.027
age	.093	.153	.059	.607	.545	-.211	.396	.160	.058	.053	.802	1.247
Usage of Network	-.231	.330	-.109	-.702	.484	-.885	.422	-.259	-.067	-.062	.318	3.145
Type of Net. Used	-.071	.140	-.082	-.508	.613	-.350	.207	-.278	-.048	-.045	.294	3.403

a. Dependent Variable: CGPA