

SOCIAL MEDIA AS EMERGING DISCOURSE IN BIOLOGY EDUCATION FOR SUSTAINABLE DEVELOPMENT IN ATIBA LGA, OYO STATE

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Abstract

The study investigated social media as an emerging discourse in Biology education among senior secondary school students in Atiba Local Government Area of Oyo State. Using descriptive survey research design, two hundred respondents were randomly selected among Biology students from the Local Government Area. A validated twenty item four point Likert-type questionnaire was used as the instrument for data collection. Five null hypotheses were raised and tested using chi-square statistical analysis at alpha level. Findings revealed that students' exposure to social media had negative influence on their academic performance; student's addictiveness to social media resulted in low Grade Point Average (GPA), and that male student were more addicted to social media than their female counterparts. It was further shown that age influenced the use of social media networks as teenagers and young adults were found using social media than the older age groups. Since the use of social media sites had affected the academic of students negatively, there is the urgent need for parents, teachers and other stakeholders in education to monitor students to make right decisions on the choice of social media network usage to bring about positive academic outcome for a sustainable development in the study area.

Introduction

Social media have been given various meanings based on diverse opinions of people. Obar, and Wildman (2015) defined social media as computer-mediated technologies that allow the creating and sharing of information, ideas, career interests and other forms of expression via virtual communities and networks. Boyd and Ellison (2007), explain that social networking sites are web-based services that allow individuals to construct a public or semi-public profile within a bounded system, articulate a list of other users with whom they share a connection, and view and traverse their list of connections and those made by others within the system. These sites are used to interact with friends, peers and others that are found in groups on these sites. The sharing of information ranges

from news, debates, gossips, feelings or statement of mind, opinions, research etc, through Facebook, Whatsap, Youtube and so on. Teenagers and young adults have especially embraced these sites as a way to connect with their peers, share information, reinvent their personalities, and showcase their social lives. (Boyd & Ellison, 2007).

Peter (2016) found that the average person, swipes, taps and pinches their smartphone about 2,617 times a day, making a grand total of one million times a year. Globally, Internet World Statistics (2016) reported that the number of active users of most popular social media sites as at September 2016 is stated as follows: Facebook has the heighest no of 1,712,000,000 users, the least was Snapchat with 200,000,000 users. Mostused social network in Nigeria as of 2015 was Facebook

with the usage of about 93.72%. The number of users is increasing every year with highest number of student users on such social networking sites. Abhishek (2015) reported that about 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.

Social media like two sides of a coin, bring with it both the negative and positive sides. It helps people to be better informed, enlightened and keeping abreast with world developments. Lee and Barry (2012) reflect on mainly positive effects of social media and other Internet-based social networks. To them, social media are used to document memories, learn about and explore things, advertise and form friendships. For instance, they claim that the communication through Internet based services can be done more privately than in real life. Furthermore, Lee and Barry (2012) discussed that everybody has the possibility to become a content creator. Content creation provides networked individuals opportunities to reach wider audiences.

A number of studies have been conducted to find out the impact of social media on academic performance of students. Jeffrey and Musah (2015) reported a high addiction rate among students in the usage of social media networks which lead to poor grammar and spelling, late submission of assignment, less study time and poor academic performance. Also, Banquil, Chuna, Leano, Rivero, Bruce, and Dianalan (2009) found a continuing drop of grades among students who use social networking sites. This was supported by Kirschner and Karpinski (2010) who found a significant negative relationship between Facebook use and academic performance. They concluded that students

who use Facebook spend fewer hours per week studying on an average than Facebook non users and this resulted in lower mean grade point averages (GPAs). Study by Junco (2012) indicated that time spent on Facebook was strongly and significantly negatively correlated with overall GPA.

Jeffrey and Musah (2015) observed that there were cases where some students experienced improvement in their readings skills as a result of participation on social media networks. They added that, respondents shared ideas, discussed and shared examination questions among themselves on social media networks to improve academic performance. Ahn (2011) adds that Social Network Sites (SNS) provide a platform for the youth to participate in communities that help them to learn, and practice skills within a particular knowledge area. Similarly, Fishman, Lunsford, Mcgregor and Otueye (2005) also indicated that college students produced tremendous volume of writing skills through various social media tools such as blogs, emails and other social media environments.

Concerns have been raised about possible links between heavy social media use and depression, cyber bullying, online harassment and 'trolling'. Specifically on education, media networking had great impact on the lives of the youths. According to Abhishek (2015), the most important things in a student's life are studying, learning good habits and gaining knowledge to become a person with moral character. Jeffrey and Musah (2015) and Junco (2012) opined that actively and frequently participating in social networking can negatively affect students' grades or hamper their journeys to their future careers.

Statement of problem

Today's world is a global village. Everyone is connected to one another in this vast network generated by the Internet. In the past, the communicating and free sharing of thoughts among people were restricted by long distance, nationality and religion. But now, these barriers cannot stop the flow of information and knowledge. The new world of social networking allows free sharing of thoughts. However, there are controversial issues about the problems associated with social media networks in the society. However, this optimal learning process is seriously jeopardized by students becoming entrapped by the ploys of social networking. Biology, as a branch science, has wider area of syllabus with its peculiar scientific names and diagrams to be memorised and understood. Biology requires more time to be studied by students for them to perform better. Students had exchanged their study times with social networking websites. Parents, teachers and all stakeholders on education are worried about low performance of students at the senior school certificate examination. Getting too involved in social media can lead to an addiction that inculcates bad habits such as porn watching which can result into falling prey of sexual predators. 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. Often, some students are not old enough to accurately analyze the world "like" or comment on social or political issues, and this leads sometimes to serious controversies. It is on these notes that the study investigated how time spent, age and gender influence on social networking and academic performance of Biology students.

Purpose of the study

Major objectives of the study are to:

- (i) identify social network sites and their usage among students;
- (ii) find out how SSSC students networked and participated on Social Media;
- (iii) ascertain the amount of time invested by students on social media network;
- (iv) find out the effects of social network participation on the students' academic Performance;
- (v) ascertain the difference in students usage of social media Network by gender; and
- (vi) ascertain how age has influenced students usage of social media network.

Hypotheses

The following hypothesis guided the study

- Ho1 Students' exposure to social media network has no significant influence on their academic performance in Biology
- Ho2 Students' addictiveness to social network has no significant influence on their academic performance Biology
- Ho3 Uses of social media do not significantly influence the academic performance of Biology students.
- Ho4 There is no significant difference between male and female students usage of social media network.
- Ho5 Age does not have significant influence on the use of social media.

Methodology

Research Design

The research is a descriptive survey

meant to find out how social network participation affects academic performance of students in Biology in senior secondary schools in AtibaLGA, Oyo state.

Population of the Study

The population in this research covers all senior secondary school students offering Biology in Atiba Local Government Area of Oyo State.

Sample and Sampling Techniques

The sample was made up of two hundred senior secondary school students, male and female, randomly selected from four schools in AtibaLGA of Oyo State.

Research Instrument

A self-developed twenty items four point Likert-type questionnaire was used to get the desired information from the students, in relation to the effects of social media on the academic performance of senior secondary school students.

Validation of instrument

The instrument was given to three experts in the area of educational research to validate the content. The reliability of the research instrument was determined using a split half test using the odd and even

numbered items to form the two halves. The two halves were administered to selected fifty students from a secondary school not selected for the main study. Pearson correlation coefficient was used to determine the reliability of the instrument. A co-efficient value of 0.75 obtained indicated that the research instrument was reliable; hence it was adopted for getting the desired data for the study.

Method of Data Collection

The researcher collected the needed data through the use of questionnaire and its administration in the selected schools. The administration of the questionnaire were carried out by the researcher and collected back immediately.

Method of Data Analysis

The administered questionnaires were analysed using chi-square statistical method at 0.05 level of significance.

Results

Hypothesis 1: Student's exposure to social media network has no significant influence on their academic performance.

Table 1

Exposure of Students to Social Media Network and Their Academic Performance.

S/N	Statement	SA	A	D	SD	Total
1	I usually have unlimited access to Facebook and this has affected my academic performance negatively.	48	128	10	14	200
2	I engage in academic discussions on twitter and this has improved my academic performance.	110	32	36	22	200
3	I make use of whatsapp to disseminate knowledge to my class mate.	54	94	48	4	200
4	I solely rely on information gotten from Wikipedia to do my assignments without consulting other sources.	146	30	8	16	200
Total		358	284	102	56	800

Chi-square calculated (75.90) is greater than chi-square table (5.991). Degree of freedom (df) = 9 at 0.05 level of significant. Decision: H₀₁ is rejected. This implies that students' exposure to social network had a significant influence on their academic performance.

Hypothesis 1: Student's exposure to social media network has no significant influence

on their academic performance.

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Table 2

Students Addictiveness to Social Network and Academic Performance.

S/N	Statement	SA	A	D	SD	Total
1	Addiction to online social networks is a problematic issue that affects my academic life.	122	54	16	8	200
2	Online social networks distract me from my studies.	92	62	46	0	200
3	Hours spent online can never be compared to the number of hours I spend reading.	112	46	34	8	200
4	There is no improvement in my grades since I became engaged into these social networking sites.	42	30	66	62	200
Total		368	192	162	78	800

Chi-square calculated (151.907) is greater than chi-square table (5.991). Degree of freedom (df) = 9 at 0.05 level of significant. Decision: H_0 is rejected. This implies that students' addictiveness to social network had a significant influence on their academic performance.

Hypothesis 3: Use of social media do not significantly influence the academic performance of the students.

Table 4

Use of Social Media and Students' Academic Performance

S/N	Statement	SA	A	D	SD	Total
1	The usage of Wikipedia for research has helped improve my grades.	54	114	22	10	200
2	Engaging in academic forums on yahoo reduces my rate of understanding.	12	8	124	56	200
3	I use materials gotten from blogging Sites to complement what I have been Taught in class.	112	36	16	36	200
4	I will not perform well in my academics even if I stop using social media.	44	28	68	60	200
Total		222	186	230	162	800

Chi-square calculated (14.130) is greater than chi-square table (5.991). Degree of freedom (df) = 9 at 0.05 level of significant. Decision: H_0 is rejected. This implies that social networks had significant influence on students' academic performance.

Hypothesis 4: There is no significant difference between male and female students' usage of social media.

Table 5

Gender and Use of Social Media.

S/N	Items	SA	A	D	SD	Total
1	Male and female students use social media networks differently in different frequencies.	48	124	8	20	200
2	Female students use social networking sites more to explicitly foster social connections.	134	54	0	12	200
3	Gender determines the level of social media network usage.	22	142	12	24	200
4	Males are more effective at using social networking sites for nonacademic purposes.	122	34	32	12	200
Total		326	354	52	68	800

Chi-square calculated (46 .500) is greater than chi -square table (5.991). Degree of freedom (df) = 9 at 0.05 level of significant. Decision: H_{04} is rejected. This implies that male use social network more than females.

Hypothesis 5: Age does not have significant influence on the use of social media.

Table 5

Age Use of Social Media.

S/N	Items	SA	A	D	SD	Total
1	Age has impact on the use of social media.	86	68	10	36	200
2	Social media become boring has I grow older.	12	166	14	8	200
3	Social media is not relevant to people of older generation.	22	20	64	94	200
4	The younger generations are the most active users of social media.	132	48	20	0	324
Total		252	302	108	138	800

Chi-square calculated (132.074) is greater than chi -square table (5.991). Degree of freedom (df) = 9 at 0.05 level of significant. Decision: H_{05} is rejected. This implies that age had a significant influence on the use of social media with the younger generations as highest users.

Discussion of Findings

The study focused on social media as an emerging discourse in Biology education for sustainable national development. Two hundred senior secondary school biology students were randomly selected from Atiba LGA of Oyo State. Five null hypotheses were generated for the study. Data analysis was done with the use of chi-square statistical method.

From Table 1, chi-square calculated was 75.90 was greater than the table value of 5.991. Therefore, the hypothesis which states that student's exposure to social media network has no significant influence on his academic performance is not accepted. This implies that student's exposure to social network had a significant influence on his or her academic performance. This is in line with the study of Kirschner and Karpinski (2010) who found a significant relationship between facebook use and academic performance. Junco (2012) also indicated that time spent on Facebook was significantly and negatively correlated with overall GPA.

Table 2 shows the result of chi-square calculated (151.907) greater than the table value (5.991), thus, the null hypothesis is not accepted, which means that student's addictiveness to social network had a significant influence on their academic performance. As observed by Abhishek (2015), students get addicted to social media because of many reasons among which is the freedom they get to upload whatever they want and also talk to whom they want, they make new friends and comment on the lives of people. The result corroborates Jeffrey and Musha (2015), who stated that a high addiction rate among students in the usage of social media networks led to poor grammar and spelling, late submission of assignments, less study

time and poor academic performance. Also Banquit, Chuna, Leano, Rivero, Bruce, Dianalan, Matenzo, and Timong (2009) found a continuing drop of grades among students who use social media networking sites.

From Table 3, calculated chi-square (14.130) is greater than the table value (5.991). The null hypothesis which states that the use of social media does not significantly influence the academic performance of students is not accepted. This implies that the use of social media influenced academic performance. The result is in line with the Kirschner and Kerpinski (2010) which showed a negative impact of social media on students' academic performance. Junco (2012) got a negative correlation between facebook users and overall GPA. Khan (2009), Choney (2010), Enriquez (2010), and Kerpinski and Duberstein (2009) findings showed negative impact of social media on academic performance of students even in the developed world.

The finding however contradicts the study of Jeffrey and Musha (2015) who reported an improvement in the reading skills as a result of participation on social media networks. They added that respondents shared ideas, discussed and shared examination questions among themselves on social media networks to improve academic performance. Fishman, Lunsford, McGregore, and Otuleye (2005) also reported that college students produced tremendous volume of writing skills through various social media tools such as blogs, e-mail and other social media environment.

Table 4 shows a calculated chi-square of 46.500 which is greater than the table value (5.991). The null hypothesis which states that there is no significant difference

between male and female students' usage of social media is not accepted. This means that, there is disparity among the two sexes in the usage of social media networks. This result is in line with the report of Lin and Subrahmanyam (2007) which showed that boys have been online more than girls in previous decades because of earlier forms of technology such as video or computer games.

Result from Table 5 showed calculated chi-square of 132.074 which is greater than the table value of (5.991). The null hypothesis which states that age does not have significant influence on the use of social media is not accepted. This implies that age determined the level or rate of use of social media. The result is in line with the observation of Lewis (2008) that student now use social media for the majority of daily activities and information gathering as opposed to older age groups who used resources like the television or newspaper. Boyd (2007), Ito, Baumer, Bittauti, Boyd, Cody and Herr (2009) also noted that teenagers and young adults had embraced social media sites as a way to connect their peers, share information, and showcase their social lives. Ahn (2011) stated that social network sites (SNS) provide a platform for the youth to participate in communities that help them, learn practice skills within a particular knowledge area. Fishman, Lunsford, McGregfore, and Otuleye, (2005) also indicated that a lot of college students are involved in social networking sites.

Conclusion

The study was conducted to find the impact of social media on teaching and learning of Biology in senior secondary schools in Atiba LGA of Oyo state, as emerging discourse for sustainable development in Nigeria. From the study, it can be concluded that:

Student's exposure to social media had negative influences on their academic performance in Biology. Student's addictiveness to social network resulted into low GPA, lack of time to study and late submission of assignments. Social media, if used positively, can improve academic performance of students in Biology.

Male used social media than their female counterparts and teenagers, young adults used social media than the older age groups.

Recommendations

Based on the findings of this study, the following recommendations are made:

Students should be educated to make right decision on the choice of social media networks usage and participation to bring about positive academic outcome.

Students should be advised and monitored both at home and in school to limit the time spend on social media sites per day and encourage them to substitute those hours to read novels and relevant academic books to improve their knowledge.

Students should be oriented about the dangers of addiction to social media network sites; they should be introduced to sites that will add values to their academic work and research.

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