



# STEMJAS



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gmail: [fabprezz82@gmail.com](mailto:fabprezz82@gmail.com)



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## **EDITORIAL**

STEM Journal of Anambra STAN (STEMJAS) is a publication of **Science Teachers Association of Nigeria, Anambra State Chapter**. STEMJAS is developed to disseminate information on Science, Technology, Engineering and Mathematics (STEM) to teachers, teacher-trainers, researchers and other interested persons. Articles that are of relevance to STEM education are published in this journal.

We are grateful to the contributors and hope that our readers will enjoy reading these contributions.

Prof. Rita N. Nnorom

**Editor-in-Chief**



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## INFLUENCE OF ONLINE SOCIAL NETWORKING ON SECONDARY SCHOOL STUDENTS' INTEREST IN BASIC SCIENCE

<sup>1</sup>Nwachukwu, Chisom Felicitas, <sup>2</sup>Chikendu, Rebecca Ebonam, <sup>3</sup> Nwankwo, Madeleine Chinyere

[maidynwankwo@yahoo.com](mailto:maidynwankwo@yahoo.com)

+2348025783765

Department of Science Education, Nnamdi Azikiwe University, Awka, Nigeria.

### Abstract

*The study dwells on the influence of online social networking on secondary school students' interest in basic science in Aniocha L. G. A. of Anambra state, Nigeria. The study was guided by three research questions. A survey research design was used for the study. The population comprised all the 3, 721 junior secondary school (JSS) students in Aniocha L.G.A. Simple random sampling technique was used to constitute a sample of 120 students from the population. Instrument for Data collection was a 16-item researcher-constructed questionnaire which was validated by experts and also tested for reliability using Cronbach's alpha which yielded a reliability index of 0. 79. Mean and standard deviation were used to analyze the data. The findings revealed among others that, social networking when wisely utilized, enhances students' interest in doing basic science assessment and improves on class attendance among others. Based on the finding, recommendations were made among which was that Students should be encouraged to utilize social media applications wisely so as to maximally benefit from them.*

**Keywords:** Online social networking, students' interest, basic science





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## **Introduction**

Education has been an effective tool used by nations across the world in development of their region. Being the vehicle of modernization, education is a crucial instrument used for all aspects of progress. According to Alam (2009), through education, leaders are not only taught, trained and adequately guided to acquire relevant skills and knowledge, they are also shown how to adapt to stable public life. Formal education is given in schools, be it at pre-nursery, nursery, basic, secondary or tertiary levels. Secondary education is the focus of this study, precisely at the upper basic level. At this level, science is taught as basic science to students aged between 11-14 years. Basic science is an academic discipline whose aim is to present a holistic picture of science and technology content to the pupils. This is because its content basically encompasses all the various components of sciences being presented to the learner in a holistic manner. They equip students with the necessary introductory scientific and technological knowledge and skills needed to build a progressive society. Basic science forms the bedrock on which further scientific and technological studies rest (Adejoh & Idachaba, 2010); it introduces students to science, a foundational course for scientific disciplines of physics, chemistry and biology. Prior to the advent of technology, students are compelled to come to class or laboratory to learn or practice science. However, these days, technology has made learning easy that students can as well learn from home via online social networking.

Online social networking is a platform that makes social relationship interesting especially when individuals are connected to a network. Emad (2015) defines online social networks as a strong tool for social interaction and connection where family ties and friendship can be improved in a social context. Ogundijo (2014) also posited that online social networks focus on building social relationships among people who share common interest or activities. The definition was extended by Miles (2015) to include all avenues where information is shared. Most social network sites allow users to maintain profiles of themselves and list of their friends. Some online social networks as enumerated by Mansa (2021) are Facebook, Skype, Twitter, Blogs, Badoo, WhatsApp, Instagram and Myspace. Online social networking is a specific case of social networking which may be supplemented with in-person meetings such as after work get-togethers (Gattiker, 2014). The students' interest as observed seem to be more aroused when it comes to learning via online social networks.



Interest here means a force that catches someone's attention. As opined by Nwankwo & Okoye (2015), interest has to do with a learner's predisposition to react positively in certain ways towards certain aspects of the environment. Observation shows that majority of students are interested in the use of online social networking in communicating information both academics and otherwise. By this, majority of students have been influenced by the use of Facebook, WhatsApp and other social networks such that they cannot do without social networks. Arnold and Paulus (2010) for instance noted that online social networks improve student-student interaction and student-teacher interaction; while Teclehaimanot and Hickman (2011) reported increased students' satisfaction with online social networks. The affordance of social technologies in supporting better student engagement and interaction has also been acknowledged by Liccardi et al. (n. d.).

It is clear that majority of students in JSS classes have android phones which they use as fun, entertainment and other purposes and this definitely have some influence on them, be it positive or negative. This is why the researchers in this study want to examine the influence of online social networking on secondary school students' interest in basic science.

### **Statement of the Problem**

Basic science being an important secondary school subject which lays the foundation for every other scientific endeavor is one subject that needs to be taught properly at the junior secondary school level of education. Presently, the manner in which the subject is being taught has not been satisfactory in terms of enhancing students' interest in the subject, a construct which is very necessary for high performance in the subject. Teachers teach the subject both theoretically and conventionally leading to students' lack of interest in the subject.

However, researchers have tried many methods like demonstration, discussion and others to increase students' interest in the subject. These have not yielded enough result. Interestingly, the advent of online social networking seems to be the answer to the problem of students' interest in the subject when properly channeled.

The present study therefore aims at investigating the influence of online social networking on students' interest in basic science in Aniocha L.G.A. of Anambra State, Nigeria.



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## **Purpose of the Study**

The main purpose of the study was to examine the influence of online social networking on junior secondary students' interest in basic science. Specifically, the study sought to find out the influence of online social networking on students' interest in:

1. Doing basic science assessment in Aniocha L. G. A. of Anambra state, Nigeria.
2. Basic science students' class attendance in Aniocha L. G. A. of Anambra state, Nigeria.
3. In reading basic science text books in Aniocha L. G. A. of Anambra state, Nigeria.

## **Research Questions**

The following research questions guided the study:

1. What is the influence of online social networking on students' interest in doing basic assessment in Aniocha L. G. A. of Anambra state, Nigeria?
2. What influence does online social networking has on students' interest in basic science class attendance in Aniocha L. G. A. of Anambra state, Nigeria?
3. How does social networking influence students' interest in reading basic science textbooks in Aniocha L. G. A. of Anambra state, Nigeria.

## **Method**

The study adopted a survey research design. The design was used because, according to Awotunde and Ugoduluwa (2004), survey is a design that is used to collect data from sample of population with respect to one or more variables. The study was done in Aniocha L. G. A. of Anambra state of Nigeria.

A sample of 120 JSS2 students was selected from a population of 2,271 JSS 2 students in the L. G. A. using simple random sampling technique. The instrument used for data collection was a 16-item structured questionnaire developed by the researchers and arranged in three clusters. The response options were strongly agree (SA), agree (A), disagree (D) and strongly disagree (SD) weighted 4, 3, 2 and 1 respectively. The instrument was face and content validated by two experts, one from science education department and the other from educational foundation department with a bias in



measurement and evaluation; both from Nnamdi Azikiwe University, Awka. A reliability index of 0.79 was determined using Cronbach's alpha. This, according to Nworgu (2015) was considered high enough for the study. The questionnaire was distributed by the researchers themselves and collected on the spot to ensure a 100% return rate. The research questions were answered using statistical mean while the homogeneity of the students' response was determined using standard deviation.

## Results

**Research Question 1:** what influence has social networking on students' interest in doing basic science assessment? Answer to research question 1 is shown in Table 1

**Table 1: Influence of social networking on students' interest in doing basic science assessment**

S/N	Items	$\bar{X}$	SD	Decision
1	With social networking, I am interested in participating in science online quizzes	2.85	1.03	Agree
2	Social networks contribute to my success in doing my assignment at home	2.66	0.91	Agree
3	Social networking helps me evaluate myself as I chat and brainstorm on concepts learned in the class	2.82	0.96	Agree
4	With social networking, I am well informed and prepared for examinations	2.03	0.78	Disagree
5	Social networks provide apps to students for examinations	2.31	0.88	Disagree
<b>Grand Mean</b>		<b>2.53</b>		



Analysis in Table 1 shows the mean scores of 2.85, 2.66, 2.82, 2.03 and 2.31 for items 1 to 5 respectively. Items 1, 2 and 3 were accepted because their mean scores are greater than 2.50. Conversely, items 4 and 5 were rejected due to their mean scores being less than 2.50. However, with a grand mean of 2.53, one concludes that online social networking helps JSS students develop interest in doing basic science assessment.

**Research Question 2:** What is the influence of social networking on students’ interest in basic science class attendance? Answer to this research question is shown in Table 2

**Table 2: Influence of social networking on students’ interest in basic science class attendance in Aniocha L.G.A**

S/N	Items	$\bar{X}$	SD	Decision
1	Social networking makes me remain active during basic science lessons than during other school subjects.	2.81	0.83	Agree
2	Social networking keeps me busy and attentive during basic science class	3.04	0.71	Agree
3	With the emergence of social networking, I remain passive during basic science class	1.96	1.0	Disagree
4	With social networking, I am more interested in attending virtual classes than physical classes	2.40	0.82	Disagree
5	Online social networking makes me develop more interest in basic science class as I can	2.74	0.79	Agree



have access to learning materials online

**Grand Mean** **2.59**

Data presented in Table 2 shows that the respondents agree with items 6, 7 and 10 but disagreed with items 8 and 9 based on the criterion mean standard. However, with grand mean of 2.59, one notices that online social networking increases students' interest in attending basic science classes in Aniocha L.G.A.

**Research Question 3:** What influence do online social networking have on basic science students' interest in reading basic science textbooks in Aniocha L. G. A? Table 3 presents answer to research question 3.

**Table 3: Influence of online social networking on students' interest in reading basic science text books in Aniocha L. G. A.**

S/N	Items	X	SD	Decision
1.	Social networking increases the number of hours I spend in reading basic science	2.92	0.78	agree
2.	social networking diverts my attention from reading basic science text books at home	2.01	0.69	disagree
3.	I hardly read basic science textbooks while on social networks	2.48	0.88	disagree
4.	Social networking inspires me to read foreign materials on basic science.	2.62	0.72	agree
5.	With social networking, I discover other basic science textbooks more unique to read up.	2.55	0.95	agree
6.	Online social networking enables me to access and read up other textbooks written locally on basic science	2.72	0.81	agree
<b>Grand Mean</b>		<b>2.55</b>		

Data presented in Table 3 reveals that online social networking is capable of encouraging basic science students to develop interest in reading basic science textbooks. This is evident from the grand mean of 2.55 which is higher than the criterion mean of 2.50. However, respondents seem to disagree with this assertion as



observed from their opinions in items 13 and 14 with mean scores of 2.01 and 2.48 respectively which are each less than the cut-off mean of 2.50.

### **Summary of Findings**

1. Engaging in online social networking increases students' interest in doing basic science assignment such as in participating in online quiz, self-evaluation when brainstorming concepts and submission of home assignments via online.
2. Online social networking influences students' interest in class attendance. Class attendance here refers to both virtual and face-to-face conventional classrooms.
3. Online social networking influences students' interest in reading basic science textbooks and particularly it enables students to have access to both local and foreign materials.

### **Discussion**

The outcome of this study reveals that online social networking catches students' attention towards participation in basic science self-assignment through online quiz, self-evaluation, brainstorming on concepts and home assignments. The findings agree with that of Ahn (2011) who, in his study reported that in the western world, the use of social networks in education had reduced the stress teachers and learners pass through when conducting physical assessment for tens and hundreds of pupils and students. Ahn further maintained that students' Apps are today being utilized to access the educational outcomes of students after a short and long period of learning exercise, be it online or physical in the classroom.

Still in line with the findings of the present study, Alexander and Salas (2008) in their study discovered that university students had no need to knock at the teachers' door for submission of their assessment or schedule examination as assessments have been demystified since technology came into education. Davis, Canche, Deli-Amen and Rios-Aguilar (2012), further concurred with the finding and observed that home assignments, debates, reports and seminars are now online-based and depends on students' ability to meet up with academic schedules matters. Students now submit their assessment online and get feedback like assessment results.

From research question two, it was found that online social networks make students interested in attending both basic science online and physical classes. The finding



agrees well with that obtained by Almahrani (2017) who discovered that students' participation in social networking does not discourage them from attending classes. Citing Chicago University as an example, Almahrani maintained that despite the fact that students use a lot of social networks like yahoo, google, Askme.com and lots more, they still find the classroom experience more enjoyable than being physically cut off from one another.

However, contrary to the finding of the study, Bell (2013) maintained that though students are less stressed when taught through social network and media irrespective of their locations, the need for classroom activities was remarkable especially for workshops, experiments and activity-based learning.

Results from Table three reveals that online social networking (if well-channeled) is capable of encouraging basic science students to develop interest in reading basic science textbooks. This is because, being most of the times online, students have access to basic science text materials both foreign and local. Through online social networking too, students have access to books that are unique and rich in basic science content. The result aligns well with Anthony (2016) who asserts that some student-academics suffer set-back as a result of distraction from social media. Anthony further noted that social media has negative implications on students' academic performance when it is not properly utilized. The finding is also supported by Soraly (2010) who in his study posited that social networks aid students to learn online. Majority of students interviewed confessed that they spend many hours online than reading their books. This assertion was contradicted by earlier work done by David (2014) who noted that students of middle and high school spend hours on social networks and chat apps than students on higher degrees like M. Sc. and PhD. This last statement was the reason why the researcher added the phrase "when properly channeled"

## **Conclusion**

Online social networking if well-directed, has great and positive influence on students' interest in basic science. With online social networking, students are able to participate in online assessments. It also draws students' attention to online and physical classroom activities. Basic science text materials, both foreign and local ones are also assessed using online social networking notwithstanding the fact that some students could be carried away and abuse this opportunity available to them.





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## **Recommendations**

Based on the findings of the study, the following recommendations are proffered:

1. Students should be encouraged to utilize social networking sites wisely so as to maximally benefit from them.
2. Students should be given assignments to keep them busy so as to avoid the negative influence of online social networks.
3. Parents should monitor what their children view while surfing the net at home
4. Students should be properly guided on where and how to assess information that will be beneficial to them while engaging on online social networking.



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