Asian Journal of Science Education

Journal homepage: http://jurnal.unsyiah.ac.id/AJSE/

Students' Attitude to Social Media in Distance Education: Implications for Quality Instructional Delivery in Physics

Funke Susan Apata[1*]

[1]National Open University of Nigeria

*Corresponding email: fapata@noun.edu.ng

(Received: August 02, 2021; Accepted: September 17, 2021; Published: October 06, 2021)

ABSTRACT

This study examined students' attitudes to social media (SM) at the National Open University of Nigeria (NOUN) and its implications for quality instructional delivery in physics. The stratified random sampling technique selects the sample size of 640 students that form the representatives from each faculty viz; Arts, Education, Management Sciences, and Science & Technology. The number of social media used for the study is twenty-nine in number. The eclectic integration of instruments developed by researchers made the instruments whose reliability and validity were determined. Two research questions and two hypotheses guided the study. Research questions were analysed using descriptive statistics, while ANOVA and t-test analysis was for the hypotheses. Results showed that the attitude of students towards SM was above average (71.66 %). The mean attitudes of female students (67.81) towards SM were higher than their male (62.31) counterparts. The most known social media is Facebook (90%). Findings on DL students' attitudes in different fields of the study showed no significant difference ($p<0.05$). Students from the faculties of Education and Science & Technology scored the highest mean value in attitude to SM. However, the faculty of Management Sciences recorded the lowest attitude to SM. The recommendation was that e-learning oriented programmes that promote attitudes to social media should be in the curriculum. It concluded that positive attitudes recorded by students to social media in Education and Science could leverage transformation in the instructional delivery of physics. Also, a higher mean value for the female students portends better performance for female students in physics. It recommends social medial driven activities to the school curriculum for enhancing instructional physics delivery in distance education.

Keywords: Student, Attitude, Social media, Physics Education, Distance education, Instructional delivery.

INTRODUCTION

Globally, the systems of education respond to the pressing need of a nation by defining relevant learning objectives, learning contents and pedagogies that empower learners (UNESCO, 2017). Therefore, education in Nigeria will inculcate consciousness, competencies, types of values and attitudes for the survival of individuals and society (Babalola, 2014). Furthermore, the national policy of education (FRN, 2004) stated that education functions to train the mind in understanding the world around; enable a learner to acquire appropriate skills and abilities to contribute to the unity and development of Nigeria.

In pursuance of these goals, the National Open University of Nigeria has the mission and vision of providing distance education (DE) and enabling access to a large number of prospective learners along with a wide geographical spread (NOUN, 2019). According to Zafa (2020), DE is a mode of delivering educational content via a second media to reach the learners in different locations through several modalities such as phone, tablet, television, internet, social media sites, apps, and audio devices. The contents of education have been made available through the World Wide Web to a large segment of the population and helped to move DE to the digital era (Beese, 2014; Aktaruzzaman & Plunkett, 2016; Allen & Seaman, 2017; Fidalgo, Thormann, and Kulyk, 2020). Earlier reports by Bosch (2009) and Mc Carthy (2010) recognized Twitter, Skype, WhatsApp, Opera mini, WeChat and YouTube learning platforms.

Several researchers investigated the impact of social media usage and revealed significant value to learning through online resources (Aligwe, Ugochukwu & Nwafor, 2017; Apuke, 2016; Fasae and Adegbilero-Iwari, 2016). Irwandani and Juariah (2016) also found that social media has several advantages and features that can facilitate creative thinking. Social media technology makes it incredibly easy to connect via web conference with students from all over the world (Sayem, Taylor, Mcclanachan, & Mumtahina, 2017). In s similar manner, Devi, Gouthami, & Lakshimi (2019) asserted that the influence of social media on the teaching and learning environment is growing every year, reinforce class materials, positively influenced discussions and collaborative work. Williams and Adesope (2017) opined that social media are for educational purposes, such as growth in knowledge and information. Mason (2006) asserted that social media have enough capacity for matching the social contexts of learning through information sharing and promoting critical thinking in learners. Irwandani, Achi, Agitha, Putri, and Adyt (2020) reported the Physics Learning Media course assisted by Instagram as an example of social media impacted students creative thinking skills. Furthermore, Widiasih, Permanasari, Riandi, and Damayanti (2018) explained social media could help students that were late to access every step of the weekly learning activity. Also, progress in discussions and assignments share through SM as a motivation strategy.

Furthermore, e-learning platforms of social media make it possible for quality learning to happen at any time, pace and space that the learner desires (Apata, 2020a; Herliana, F., 2020). Through SM, lecturers track performance in specific tasks and provide necessary learners support and feedback. Investigators have reported that technological tools can nurture the student-teacher relationship by creating positive learning experiences for both parties (Mazer, 2007; Ziegler, 2007). Manu, Ying, Oduro and Boareng (2020) emphasized the openness of using social media and provided the theoretical and pedagogical significance of the platforms in education. Hence, social media is a driver in distance education. A positive attitude is an important concept that motivates students to get immersed in their educational task with the persistence and commitment it deserves. In the earlier study, Anastasi (1957) defined attitude as the tendency to react in a certain way towards a designed class of stimuli. Eagly and Chaiken (2013) found that attitude is a psychological tendency expressed by evaluating a particular entity with some degree of favour or disfavour. Latchanna and Dagnew (2015) explained that attitudes have the potential for affecting students self-fulfilling

prophecies. The implication is attitudes towards social media could determine the learning outcome.

The discipline signifies the level of knowledge acquired. Nyongesa, Kiprop and Chumba (2019) asserted that different media have varied influences on the field of study in the school. The greater the students' exposure to learning, the more he presumably manipulate the learning resources available to him. Therefore, students' discipline could contribute to the acceptance of technological mode of instructional delivery. As such, it takes a knowledgeable student to operate the technology. Gender differences with lower female participation documented for Science and Technology (Thelwall, 2008; Lenhart & Madden, 2007). Also, Abraham and Barker (2020) reported low sustained female participation in physics. However, Issa (2009) earlier found that literacy rates are higher among females than males than their male counterparts. Therefore, gender influence is necessary for the study conducted on social media learning resources in distance education.

Problem of Research

Social media has a positive impact on users to have better opportunities to converse and interact with each other, to make the world a global village. However, there is slow adoption of social media for learning due to peoples' perception of poor usability of the technological applications (Mao, 2004). The author stressed the negative effect of social media on addiction, which could negatively affect other valued learning activities. National Open University of Nigeria (NOUN) as the only single mode institution in the country has not been using social media for their instructional delivery, thus the institution has not leveraged the enormous advantages to enhance students' leaning gains. It is imperative to fill the gap by conducting investigation into attitude of students to social media and its implication on physics instructional delivery.

Presently, information is scanty on students' attitude to social media for online facilitation. As such, this study will provide empirical basis on students' attitude towards social media that could leverage transformation in instructional delivery, the antidotes to challenges facing physics education.

Research Focus

The main objective of this study is to explore the students' attitude to social media in distance education and the implication for quality instructional delivery in physics. Specifically, the study investigated the (i) type of SM the students in Distance Education (DE) know, (ii) attitude of DE students towards the use of social media considering their discipline and (iii) attitude of male and female students in DE towards the use of social media.

METHODOLOGY OF RESEARCH

General Background of Research

A survey research design was employed to collect data for Students' Attitude to Social Media in National Open University of Nigeria, a distance education institution.

Subject of Research

The population for the study comprised all students in different faculties of the National Open University of Nigeria (NOUN). The sample consisted of 640 students who volunteered to complete the administered research instrument for eliciting the required information for the study. With a simple random sampling technique, representatives of the four different faculties: 170, 140, 148 and 182 students were drawn from Arts, Education, Management Science, and Science & Technology respectively were selected. Among the sample were 268 male students and 372 female students. Physics Education students are domiciled in the faculty of education of (NOUN) and offer their cognate courses in the faculty of Science and Technology.

Instrument and Procedures

The adapted instrument for data collection was from an eclectic integration of the previously developed (Yusuf, 2004 & Issa, 2009). These comprise three sections. Section A deals contain demographic information such as the name of faculties, students' gender and field of study. Section B items elicit information from students on attitudes to SM (SASM), using a 4-point Likert scale response format (4 = strongly agree, 3 = agree, 2 = disagree, 1 = strongly disagree). The Section C items elicited information from students on their knowledge of SM (KSM), using a close-ended questions regime, yes/no answer. Three lecturers in the Department of Measurement and Evaluation at the National Open University of Nigeria validated the instrument. The reliability coefficients of SASM and KSM were determined using the Cronbach Alpha procedure. The values obtained were 0.75 (SASM) and 0.80 (KSM). The research assistants ensure the collection of the questionnaires in person; this ensures a 100% rate of return. Data collection took two weeks.

The ethics committee of the University approved the topic of the study. The participants were taught on each social media to enable them to respond from an informed position. Additionally, they were in the know of the purpose of the study. They understand that their names will not be on the instrument to protect their integrity and that of their faculties. The participants were aware that their data be kept confidential and were assured the outcome of the study communicated to NOUN and physics stakeholders. After the instructions, the participants who willingly consented took part. Of the 640 questionnaires sent out, 640 translated to 100% returned.

Data Analysis

Questionnaires administered to the students were retrieved, checked for completion on collection from participants by researcher and the trained research assistants. The collected data were coded and kept confidential. For Analysis procedure using SPSS, the data collected were subjected to descriptive statistics (Frequency and percentages) for the Research Questions to ascertain the level of students' attitude to SM. The three Research Hypotheses have Analysis of variance (ANOVA) for comparing the mean performance different disciplines, and t-test for comparing mean of male and female students.

RESULTS AND DISCUSSION

The results are presented according to the research questions and research hypotheses posed in the study.

Research Question 1: What are the students' attitudes towards social media?

Table 1. Students' attitude towards SM.

S/N	Items	Agreed (%)	Disagree (%)
1	I will like to use SM to explore topics of interest.	550 (85.9)	90 (14.1)
2	I like to share interests and reflections online.	531 (82.9)	109 (17.1)
3	I will work harder if I have access to SM more often.	450 (70.3)	190 (29.7)
4	I can learn many things if I used SM.	586 (91.6)	54(8.4)
5	I can use SM when I want to make abstract learning real.	520 (81.3)	120 (18.7)
6	Knowing how to use SM could assist me to have a worthwhile skill.	530 (82.8)	110 (17.2)
7	Learning SM with the assistance of my classmate could be uninteresting to me.	120 (18.8)	520 (81.2)
8	I will increase my participation in classes when I am allowed to contribute through social media	545 (85.2)	9 5 (14.8)
9	When using SM, I feel a sense of community learning becomes interactive.	570 (89.1)	70 (10.9)

Table 1 showed that responses in each of the nine items favour a positive attitude to SM in distance education. These supported the favourable frequency counts and percentages recorded under the agree column. For instance, 'I will increase my participation in classes when I am

allowed to contribute through SM (N= 545, % = 85.2), I can use SM when I want to make abstract learning real (N=520, %=81.3).

Research Question 2: What type of SM do students in Distance Education (DE) know?

Table 2. The SM that the students in Distance Education (DE) know.

S/N	Social network media	Yes (%)	No (%)
1	Flickr	301 (47.0)	339 (51)
2	Diigy	179 (28.0)	461 (72)
3	Xanga	224 (35.0)	416 (65)
4	Twitter	422 (66)	218 (34)
5	Tumble	221 (34.5)	419 (65.5)
6	Friendster	227 (35.5)	413 (64.5)
7	Twiki	160 (25)	480 (75)
8	Skype	480 (75	160 (25)
9	Stumbler	213 (33.3)	427 (66.7)
10	Technorati	74 (11.5)	566 (88.5)
11	Najialonge	154 (24.0)	486 (76)
12	Facebook	576 (90)**	64 (10)
13	Linkedin	448 (70)	192 (30)
14	Fresqui	144 (22.5)	496 (77.5)
15	Hi5	115 (18.0)	525 (82)
16	WhatsApp	499 (78)	141 (22)
17	Myspace	174 (27.5)	466 (72.5)
18	Yigg	192 (30.0)	448 (70)
19	Live.journal	136 (21.3)	504 (78.3)
20	Google Plus	435 (68)	205 (32)
21	Orkut	244 (38.1)	396 (61.9)
22	Twacle	179 (28.0)	461 (72)
23	Propeller	73 (11.4)	567 (88.6)
24	Reddit	115 (18.0)	525 (82)
25	Bebo	138 (21.5)	502 (78.5)
26	Tagged	143 (22.3)	497 (77.7)
27	Cafemom	109 (17.0)	531 (83)
28	Meetup	137 (21.4)	503 (78.6)
29	Youtube	550 (86)	90 (14)

**= The SM Medium that the majority of the students used.

From Table 2, most DE students generally use Facebook (N =576, %=90) among the SM, followed by Youtube (N=550, %=86,), WhatsApp (N=499, %=78), and Linkedin (N=448, %=70) in that order. The least ones are Propeller (N=73, %=11.4), Technorati (N=74, %=11.5) and Cafemom (N=109, %=17). Facebook is more general use if compare to other SM because it has the mission statement to give people the power to share and make the world more open and connect. Also, its platform caters to a wide variety of people, incorporating many different media aspects from photos to messenger to text.

Hypothesis 1: There is no significant difference in the attitude of students towards the use of SM considering their discipline.

Table 3. ANOVA of the students' use of SM by discipline.

Discipline	N	Mean	Std Deviation	Std Error
Art	170	36.90	10.971	1.416
Education	140	37.90	12.926	2.322
Management sci.	148	37.32	10.519	1.702
Science/Technology	182	37.90	10.002	1.187

	Sum of	df	Mean	F	P
Between Groups	39.350	4	13.117	0.111	0.954
Within Groups	23210.630	634	118.422		
Total	23249.980	638			

Table 3 showed that the mean attitudes of students according to the disciplines are Arts (36.90), Education (37.90), Management Science (37.32) and Science & Technology (37.90). Science and Education students had the highest mean scores of attitudes towards SM for online learning. The ANOVA results in the table revealed no significant difference in the attitudes among the students based on the discipline since P-value is greater than 0.05; the hypothesis is therefore not rejected.

Hypothesis 2: There is no significant difference between the attitude of male and female students in distance education (DE) institutions toward the use of social media.

Table 4. t–test on the attitude of male and female students of distance education towards the use of SM for learning.

Variable	N	Mean score	Std dev.	DF	T-Cal	P
Male	268	62.31	6.204	638	-14.58	000
Female	**372**	**67.81**	**2.988**			

Significant at 0.05 level

Table 4 showed that female students obtained high mean score in attitude to social media (Mean = 67.81; SD = 2.988) than their male counterparts (mean =62.31; SD = 6.204). However, t-test indicated there is significant difference (t = - 14.588; df = 638; P<0.05). The stated null hypothesis was rejected.

The finding of the study shown in table 1 revealed a positive attitude to social media. This finding supports Silius et. al., (2010) that online social media such as Facebook, Linkedin or Twitter received a lot of attention. Also, SM gained popularity in the world. Reasons might be possible because of the SM's ability in removing time and space barriers in education (Apata, 2020a). While it contradicts the report of Umar and Idris (2018) that SM usage has a negative influence on psychosocial behaviour and academic performance. The finding also disagreed with Asdaque et. al., (2010) that the use of SM networking revealed poor

performance among college students in two federal universities in Pakistan. Furthermore, Asemah et. al., (2013) asserted that internet dependence significantly affects students' academic performance and emotional traits negatively. Similarly, Oluwatoyin (2011) stated that educators tend to look at social media as encouraging some adverse conventional literacy abilities (writing, grammar, vocabulary) that could be disruptive to learner's reading skills needed within the school environment. In addition, Farah and Yanda (2015) reported that students have the habit of creating and chatting with associates using social networking platforms as against using them for their academic purposes.

Facebook is the most used by the students in this study. This report was in agreement with Rauniar et. al., (2014) that there is widespread usage of Facebook and YouTube during the political uprising in Tunisia and Egypt. The result obtained could be explained that the diverse roles performed by facebook might be responsible for the popularity. In addition, Facebook is more general use if compare to other SM because it has the mission statement to give people the power to share and make the world more open and connect. Also, its platform caters to a wide variety of people, incorporating many different media aspects from photos to messenger to text.

Generally, findings on discipline concerning DE students' attitudes showed that faculties of education and Science & technology had marginally high mean value towards SM. The two faculties might be promoting programmes that motivate students' attitudes towards SM. The students from the science and technology faculty might be at an advantage technologically inclined already. While the nature of education as knowledge-driven could position its students to have research on social media, and thus develop an attitude in it before the commencement of this study. Gender on students' attitude showed that female students have a high attitude towards social media than their male counterparts. The report supports the earlier finding of Tüfekci, (2008), who reported that female is more likely to use social media than their male counterparts.

Implication for Physics Education

The laudable physics objectives in distance education institutions have instructional delivery challenges (Rawatee, 2014; Yanfang, 2016). Also, diversity in locations and preferences of physics students have resulted in low learning gains (Barros & Elia, 2012). Therefore, there is a need for urgent change in the instructional delivery system to meet the needs of the learners.

Problem-solving and higher-order thinking skills that form the core of physics require quality instructional delivery channels through SM, the custodian of information and resources. Evidence abounds that SM could provide instructional delivery through its technical requirements and affordances for any academic context (Mason, 2006; Williams & Adesope, 2017; Widiasih et. al., 2018; Devi *et al.,* 2019; Irwandani *et.al.* 2020). These qualities leveraged for students' optimum learning gains. Apata (2020b) found that technological

applications could provide a learning environment that enhances lecturers' instructional delivery in physics. Obi (2018**)** reported that physics teachers could adopt new strategies by channelling assignments or discussions on social media platforms to inculcate the habit of using these sites for academic work.

Furthermore, the technology makes it incredibly easy to connect via web conferences with students from all over the world (Sayem et. al., 2017). Khaddage and Knezek (2013) and Susanna (2021) asserted that technological devices enable education to take place in a much broader context than the confines of school walls and provide every school gesture that results in students' motivation for learning. Also, Teclehaimanot and Hickman (2011) found social media interfacing through computer devices has become more prevalent and enhanced students' interaction. Therefore, students' attitude that is veritable to SM could leverage; (i) critical thinking, (ii) information sharing, (iii) student's feedback, (iv) recorded session, (v) breaking the barriers of diversity, and (vi) class management among others to have instructional delivery and optimum performance required in physics.

CONCLUSION

In conclusion, findings of positive attitude of students to social media in Education and Science serves to leverage transformation in instructional delivery of physics. Also, the higher mean value for the female students towards social media portends better performance for female students in physics. It recommended that social medial driven activities put in the school curriculum to enhance instructional delivery of physics. Also, learners should be encouraged to join associations that promote social media for learning. Finally, lecturers should use technology-driven instruction to stimulate the attitude of male and female students towards social media.

Acknowledgement

I am grateful to The Management of National Open University of Nigeria for advancement of Physics Education.

References

Abraham, J., Barker, K. (2020). Motivation and engagement with physics: a comparative study of females in single-sex and co-educational classrooms. *Research in Science Education*. 50. 2227 – 2242.

Aktaruzzaman, M., & Plunkett, M. (2016). An Innovative Approach toward a Comprehensive Distance Education Framework for a Developing Country. *American Journal of Distance Education, 30*(4), 211-224.

Allen, I. E., & Seaman, J. (2017). Digital Compass Learning: Distance Education Enrollment Report 2017. *Babson survey research group*.

Aligwe, H. N., Ugochukwu, N. S., and Nwafor, K. A. (2017). Social media use pattern and the image implication among university undergraduate students in Southeast, Nigeria. *Journal of humanities and social sciences*. 2(2), 231-249.

Anastasi, C. (1957) Attitude of in-service and pre-service primary school teachers. *Journal of Education Psychology*. 36 (3) 1-5.

Apata, F. S. (2020a). Assessment of zoom application for physics learning during COVID-19 School Closure in Nigeria. *Journal of Information, Education, Science and Technology*. 6 (3). 42 – 53.

Apata, F. S. (2020b). Physics teachers' perception and attitude to innovative teaching strategies in senior secondary schools. *Journal of Information, Education, Science and Technology.* 6 (3), 34 – 42.

Apuke, O. D. (2016). The influence of social media on the academic performance of undergraduate students of Taraba State University, Jalingo, Nigeria. *Research in Humanities and Social Science.* 6 (19) 63-72.

Asdaque, M. M., Khan, M. N., & Rizvi, S. A. A. (2010). Effect of internet on the academic performance and social life of university students in Pakistan. *Journal of Education and sociology*, *4*(3), 21-27.

Asemah, S. E., Okpanachi, R. A., & Edegoh, O. N. (2013). Influence of social media on the academic performance of the undergraduate students of Kogi State University, Anyigba, Nigeria. *Research on Humanities and Social Sciences*. 3(12) 43-57.

Babalola, O. (2014). Aims, goals and objectives: A tripod of educational focus in curriculum development. *Journal of Social Science Research.* 5 (3). 803 – 810.

Barros, S. S & Elia, F. M. (2012). Teacher's attitude and practices. Retrieved on 15th February, 2017 from http//www.physics.ohio-state.edu/-jossem/ICPE/D2.html

Beese, J. (2014). Expanding learning opportunities for high school students with distance learning. *American Journal of Distance Education*, *28*(4), 292-306.

Bosch, T.E. (2009). Using on-line social networking for teaching and learning: Facebook use at the University of Cape Town. *Communication Theory and Research, 35*(2), 185 - 200.

Devi, K. S., Gouthami, E., & Lakshimi, V. V. (2019). Role of social media in teaching – learning process. *The International Journal of Emerging Technologies and Innovative Research*. 6 (1), 96 – 103.

Eagly, A. H., & Chaiken, S. (2013). *The psychology of attitude*. Forth Worth, TX: Harcourt Brace Jovanovich college Publishers.

Fasae, J. K., & Adegbilero-Iwari, I. (2016). Use of social media by science students in public Universities in Southwest Nigeria. *The Electronic Library*, 34(2), 213-222.

Farah, H., & Yanda, A. (2015). The use of social networking among senior secondary school students in Abuja Municipal Area of Federal Capital Territory, Nigeria. *Journal of Education and Practice, 6(15)*.

Federal Republic of Nigeria (FRN). (2004). *National Policy on Education (4th*ed*)*. Abuja NERDC press, Lagos.

Fidalgo, P., Thormann, J., Kulyk, O. *et al.* (2020). Students' perceptions on distance education: A multinational study. *International Journal of Educational Technolology in Higher Education.* **17(**18). https://doi.org/10.1186/s41239-020-00194-2

Herliana, F., Halim, A., Farhan, A., & Kasli, E. (2020). Identification of Lecturer Difficulties in Implementing of Blended Learning in the Covid-19 era. *Asian Journal of Science Education, 2*(2), 106-113.

Issa, A. I. (2009). Teachers' awareness of and attitude to assistive technologies for special education in Nigeria. Ph.D thesis, Science Education Department, University of Ilorin, Nigeria.

Irwandani, I. and Juariah, S. (2016). Pengembangan Media Pembelajaran Berupa Komik Fisika Berbantuan Sosial Media Instagram Sebagai Alternatif Pembelajaran *J. Ilm. Pendidik. Fis. Al-BiRuNi* 05 33–42

Time, W. I. (1796). Young Scholar Symposium on Science Education and Environment 2020 (YSSSEE 2020). In *Journal of Physics: Conference Series* (Vol. 2021, p. 011002).

Khaddage, F. & Knezek, G. (2013). "iLearn Via Mobile Technology: A Comparison of Mobile Learning Attitudes among University Students in Two Nations," *2013 IEEE 13th International Conference on Advanced Learning Technologies*. 256-258.

Latchanna, G. & Dagnew, A. (2015). Attitude of Teachers towards the Use of Active Learning Methods. *Journal of all India Association for Educational Research*. 2 (7). 71 – 73.

Lenhart, A., & Madden, M. (2007). Teens, privacy and online social networks: How teens manage their online identities and personal information in the age of MySpace.

Manu, B. D., Ying, F., Oduro, D., & Boateng, S. A. (2021). Student engagement and social media in tertiary education: The perception and experience from the Ghanaian public university. *Social Sciences & Humanities Open*, *3*(1), 100100.

Mao, J. (2004). Social media for learning: A mixed methods study on high school students' technology affordances and perspectives. *Computers in Human Behaviour*. 33. 213 – 223

Mason, R. (2006). Learning technologies for adult continuing education. *Studies in Continuing Education, 28*(2), 121-133.

Mazer, R. E. & Joseph P. (2007). I'll See You On "Facebook": The Effects of Computer-Mediated Teacher Self Disclosure on Student Motivation, Affective Learning, and Classroom Climate. *Communication Education*, 56:1 , 1-17.

Mc- Carthy, J. (2010). Blended learning environment: using social networking sites to enhance the first year experience. *Australasian Journal of Educational Technology, 26*(6), 729-740.

National Policy on Education- 4th edition (FRN, 2004) Nigeria Educational Research and Development Council (NERDC), Yaba Lagos.

Nyongesa, S. C., Kiprop, C., Chumba, S. (2019). Influence of social media on students' discipline in secondary schools in kenya. *Global Journal of Arts, Humanities and Social Sciences*. 7 (9), 41-63.

Obi, U. (2018). Investigation Into The Senior Secondary School Physics Students Accessibility To Social Media Networks In Federal Capital Territory-Abuja. *Journal Of Education In Developing Areas*, *26*(1), 357-365.

Enikuomehin, O. A. (2011). ICT, CGPA: Consequences of social networks in an internet driven learning society. *International Journal of Computer Trends and Technology*, *2*(2), 11-20.

National Open University of Nigeria. (2019). Vision, Mission and Objectives. Year book. Published by Natioan Open University of Nigeria.

Rauniar, R., Rawski, G., Yang, J., & Johnson, B. (2014). Technology acceptance model (TAM) and social media usage: an empirical study on Facebook. *Journal of Enterprise Information Management*.

Rawatee, M (2014).Students perceptions on physics teaching and its impacts on science subject choices in Trinidad and Tobago High Schools. *Caribbean Teaching Scholar*. 4 (2), 123-138

Sayem, A. S. M., Taylor, B., Mcclanachan, M., &Mumtahina, U.(2017). Effective use of zoom technology and instructional videos to improve engagement and success of distance students in engineering. Proceedings, *AAEE2017* Conference, Manly, Sydney, Australia. (pp1-6)

Silius, K., Miilumäki, T., Huhtamäki, J., Tebest, T., Meriläinen, J. & Pohjolaine, S. (2010). Students' Motivations for Social Media Enhanced Studying and Learning. *Knowledge Management & ELearning: An International Journal*. 2 (1), 51 - 67

Susanna, F. H., Elisa, A. F., & S Rizal, M. (2021). The Effect of Self-regulation and Motivation to Outcomes Learning Using Blended Learning Approach. *Turkish Journal of Computer and Mathematics Education (TURCOMAT), 12*(6), 4226-4233.

Teclehaimanot, B., & Hickman, T. 2011. Student-teacher interaction of Facebook: What students find appropriate. *TechTrends.* 55(3), 19-30.

Thelwall, M. (2008). Social Networks, Gender and Friending: An Analysis of MySpace Member Profiles. *Journal of the American Society for Information Science and Technology, 59*(8), 1321-1330

Tüfekci, Z. (2008). Gender, social capital and social network(ing) sites: women bonding, men searching. Paper presented at the annual meeting of the American Sociological Association Annual Meeting, Sheraton Boston and the Boston Marriott Copley Place, Boston, MA, Retrieved June 6, 2009 from http://www.allacademic.com/meta/p242696_index.html.

Umar, T. I. & Idris, M. (2018). Influence of social media on psychosocial behaviour and academic performance of secondary school students. *Journal of Education and entrepreneurship*. 5(2), 34 – 46.

United Nations Educational Scientific and Cultural Organization (UNESCO, 2017). Education for sustainable development goals: Learning objectives.

Widiasih, W., Permanasari, A., Riandi, R., & Damayanti, T. (2018). The social media whatsapp to support physics learning problem solving on online tutorial activities in distance education. *International Conference on Mathematics and Science Education of Universitas Pendidikan Indonesia*, *3*, 269-275.

Williams, C & Adesope, R. Y. (2017). Undergraduates' Attitude Towards the Use of Social Media for Learning Purposes. World Journal of Education. Vol. 7, No. 6. 90 -95.

Ding, Y. (2006). Improving the teaching and learning in Modern Physics with contemporary strategies. *The China Papers*, 10.

Yusuf, H. T. (2004). Secondary school teacher's attitude to and use of community resources in social studies teaching in Ilorin, Nigeria. An M. Ed project University of Ilorin.

Nurul Mostafa Kamal, Z. (2020). What do we mean by Distance Education? Theories and Practices: A Study for New Beginning. *Theories and Practices: A Study for New Beginning (April 9, 2020)*.

Ziegler, S. G. (2007). The (mis) education of Generation M. *Learning, Media and Technology*, *32*(1), 69-81.