



SCIENCE EDUCATION UNDERGRADUATES' PERSPECTIVES ON SOCIAL MEDIA PLATFORMS FOR LEARNING IN NIGER STATE PUBLIC UNIVERSITIES

*¹Yaki, A. A., ²Gaiya, D. and ³Shuaibu, A. E.

¹Department of Science Education, School of Science and Technology Education Federal University of Technology Minna,

²Department of Integrated Science, School of Science, Kaduna State College of Education Gidan Waya, Kaduna State

³FCT Universal Basic Education Board, Area II, Garki, Abuja

*Corresponding Author: yaki.aa@futminna.edu.ng

Abstract

The recent development of Information and Communication Technology (ICT) has led to the creation of a social media platform for social interaction and learning. Therefore, the study examined social media platforms for learning: pre-service biology education students' perspectives in Niger State. The study adopted a descriptive cross-sectional design. The population of the study were all science education students in a public university in Niger State. The sample was made up of one hundred and eighty-two (182) students. Three research questions and two hypotheses were formulated to guide the study. A questionnaire on students' usage and perceptions on social media platforms for learning was used as instrument for the study. The instrument was validated by experts in science education. The instruments were pilot tested, and it yielded a reliability coefficient of 0.74 and 0.72. The findings of the study indicated that the respondents utilized SMP such as WhatsApp, YouTube, Facebook, Instagram, and Twitter, for learning. The findings also show that the respondents in this population have a high and positive perception of social media platforms. There was no significant gender difference in the perception of pre-service undergraduates' science education teachers. It was recommended among others that pre-service teachers should be directed on the use of social media for instructional purposes

Keywords: Social Media Platforms, Utilization, Perception and Pre-service Science Education Teachers

Introduction

In the last decade, the world has witnessed unprecedented development and innovation because of information and communication technology which is impacting every sector of human endeavours. Technology has transformed the world into a global village by removing the physical boundaries that isolate countries. Hence, ICT has influenced every aspect of human life, teaching and learning are no exception. ICT and its applications have impacted classroom instruction and its application has been adopted for several educational purposes.

Therefore, virtual learning, Social Networking Platforms (SMP) and e-assessment, among others have been embraced as an innovative way for classroom engagement which could influence students' performance. Social networking platforms have significantly impacted the way people live and communicate in the 21st-century. The social media platforms have effectively removed distance as a limitation to effective

communication because it has provided users with unlimited access to interaction with one another. Social media platforms have been used largely for social interaction and business endeavours. However, social media platforms are also being used for teaching and learning.

Related literature has reported that social media platforms improve students learning outcomes. It is also reported to foster students collaborative and communicative skills which are important in the 21st century. Al-bahrani, Patel, & Sheridan (2015) viewed social media as technological platforms that allow the provision of information and users interact with this information. Similarly, other researchers see social media platforms as avenues collaboration, communication and interaction or exchange of ideas among individuals irrespective of time, space (Asemah & Edegoh, 2012). Social media platforms are Facebook, WhatApps, Messenger, Twitter, Youtube, Google talk and Instagram, among others. Most



Yaki, A. A., Gaiya, D. and Shuaibu, A. E.

undergraduates students constantly explore these platforms for different purposes and they put in a lot of efforts and valuable time exploring these social media platforms (Al-bahrani, Patel & Sheridan 2015).

In Nigeria, the use and possession of some technology devices in school by students is seen to have a positive impact. For instance, in most public secondary schools in Nigeria, students are punished if found in the possession of some digital devices such as phones notepad, computers and audio players among others. These devices provide students with access to social media platforms. Thus, the evolving landscape of ICT requires constant attempts to measure students perception of social media platforms for teaching and learning processes.

Asemah and Edegoh (2013) reported that undergraduates have access to social media to a very great extent and Facebook is the most utilized by undergraduate students. Al-bahrani, Patel, and Sheridan (2015) reported that students prefer to use SM platforms ranked in this order Instagram, Facebook, Twitter, and YouTube. They concluded that social media are effective tools for student interaction and probably learning. Creighton, Foster, Klingsmith, and Withey (2013) reported that university students use Email, YouTube, Wikipedia, and Facebook for academic purposes, 75 of the population of this study use social media for project writing, similarly, 70% use the social media platforms for individual studies while 53% of respondents use it for note sharing. Therefore, in this study, SMP are applications that utilize the internet to create and share user-generated data, it provides the users to make comments, review, forward, and share information among others (Kaplan and Haenlein 2010). Nevertheless, students' perception of social media for academic purposes has not been fully exploited especially in the population of this study.

Literature Review

The critical role of academic excellence in individuals and national economic development has necessitated the search for environments that promote it. There seems to be a correlation between social media platforms usage and academic performance. Nevertheless, social media platforms have

been reported to negatively affect because students are attracted to abandon their academic work in preference to interact with friends. Several undergraduates could be abusing the use of Facebook and Twitter (Al-bahrani, Patel & Sheridan (2015). Consequently, assessing preservice biology teachers' perception of social media platforms for learning create awareness of the need to integrate technology into teaching and learning.

Perception is the extent to which an individual believes that using a device, or technology will impact positively on their job performance. Chen and Lishing-Hang (2011) reported that perception positively influences an individual's attitudes towards utilization of technology or a new product. Misrara and Amin Embi (2016) observed that in the 21st-century WhatsApp is the most popular and used social media platform. Similarly, Romakrishnan and Johnsi Priya (2016) reported that WhatsApp is ranked highest by college students in term of usage compared to other platforms.

Gasaymeh (2017) reported a positive perception of the social media platform for educational purposes. Yuen (2010) reported a positive perception of Taiwanese student towards SMP for educational purposes. Meishar-tai and Ronen (2016) reported that teachers have a positive attitude towards SMP which could be attributed to the positive perception. On the contrary, Amshah and Thabian (2017) ranked Facebook as the most used social media platform followed by WhatsApp, YouTube, and Instagram, while Twitter was ranked the lowest.

Jain, Verma & Tiwari (2012) reported positive impact SMP by providing an avenue for students and teachers to interact with each other to gain knowledge, perform assignment and gained knowledge. The SMP enhances learning by providing the opportunity for students to interact in an exciting way to make learning flexible. The understanding of pre-service teacher perception of Social Media Platform (SMP) is a step in the right direction to create a conducive learning environment that will add value to the educational evolving instructional landscape. Gender is the division of humanity based on sex into two separate groups, male and female It is seen as the biological difference between



Yaki, A. A., Gaiya, D. and Shuaibu, A. E. male and female. It is linked to academic task and perception of technology. Adedoja and Morakinwo (2016) using the Technology Acceptance model evaluated the effect of gender on students' perception of technology. The finding shows that gender does have a significant effect on students' perception of technology devices and platforms.

Statement of the Problem

The increased use of social media networking sites has become an international phenomenon in the past several years. Started as a hobby for some computer literate people, social networking has become a social norm and way of life for people from all over the world. 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 (Hanson, 2011).

SMP provides an opportunity that allows students to socially interact with each other or engage in outside the classroom. Social media platforms usage has been viewed to have a negative influence on university students' academic accomplishment (Junco, 2012, & Creighton, Foster, Klingsmith, & Withey, 2013). On the contrary, previous literature has reported positive effects on academic achievements (Hanson, 2011; Wodzicki, Scwammlein & Maskaliuk, 2012). Nevertheless, their paucity of studies that investigated student perspectives such as the perception of these platform for academic endeavours. Social media platforms could also be used for negative interaction such as cyberbullying, internet fraud and illegal association, among others. Consequently, it is left to be seen whether students explore these platforms for learning and pre-service undergraduates' teachers' perception has not been fully explored, especially in this population. Thus, this study investigated Social Media Platforms for Learning: Pre-service Science Education Teachers' Perspectives in Niger State.

Research Question

1. What are the social media platform utilized for learning among pre-service science education teachers on a social media platform

2. What is the perception of pre-service science education teachers on a social media platforms?
3. What is the perception of pre-service science education teachers on a social media platform based on gender

Research Hypothesis

1. There is no significant difference in the perception of the social media platform for learning between male and female pre-service science education teachers.

Research Methodology

The study adopted a cross-sectional descriptive research survey design. According to Creswell, (2015), descriptive research is concerned with the collection and analysis of data to describe, evaluate, or compare current or prevailing circumstances or perception. The population of this study comprises of all pre-service undergraduates' science education teachers in Niger State. This made up Ibrahim Badamasi Babangida University (IBBU) and the Federal University of Technology Minna. A stratified random sampling technique was used to select

one hundred and eighty-five (185) participants as the sample size for this study. The male students were ninety (90), while the females were ninety-five (95).

The research instruments utilized for data collection was a structured questionnaire called students' utilization and perception of SMP (SUPSMP). The instrument contains three sections; section A focused on demographic information (gender, age, and department). section B contained items on students' utilization of SMP, the rating scale of Strongly Utilized (SU), Utilized (U), Not Utilized (NU), and Strongly Not Utilized (SNU) and rated 4, 3, 2, and 1 respectively. Section C contains items on students' perception of SMP the rating scale of Strongly Perceived (SP), Perceived (P), Not Perceived (NP), and Strongly Not Perceived (SNP) and rated 4, 3, 2, and 1 respectively.

The questionnaire was validated by two experts each from educational technology and psychometric testing. The instrument was pilot tested, and Cronbach alpha test was used to determine the reliability of the instrument, and it yielded the reliability co-



Yaki, A. A., Gaiya, D. and Shuaibu, A. E. efficiency (r) of 0.76 and 72 for SMP utilization and perception, respectively. This was considered suitable for the study. This agrees with Hair, et al (2010) who reported that the reliability (r) value of above 0.60 is adequate for research in the field of education.

Procedure for Data Gathering

The respondents' cooperation was solicited and encouraged to give unbiased responses. The researchers informed the respondents of the objectives of the study and assured them that their responses will be treated with the utmost confidentiality. The researcher collected the needed data through the administration questionnaire to the sampled undergraduates. The administration of the questionnaire was carried out by the researcher and two other research assistants. A total of one hundred and eighty-five (185) copies of the questionnaire was distributed to

elicit responses from the student were retrieved on the spot by the researcher.

Data generated were analyzed using descriptive statistics (mean rank, mean and standard deviation) to answer the research question. Inferential statistics (independent t-test) was used to test the formulated hypothesis at 0.05 level of significance using Statistical Packages for Social Sciences (SPSS 21.0).

Results

The results were presented based on the stated and formulated hypothesis as presented below

Research question one: What are the social media platform utilized for learning among students of Federal University of Technology Minna? To answer this research question, mean and standard deviation were use and the finding is as presented in Table 1.

Table 1: Mean-Rank of Social Media Platform Utilization for Learning

S/No.	Items	N	Mean	Rank	Remark
1	WhatsApp	185	3.68	1	Utilized
2	You tube	185	3.51	2	Utilized
3	Twitter	185	3.20	3	Utilized
4	Instagram	185	2.88	4	Utilized
5	Google+	185	2.62	5	Utilized
6	Messenger	185	2.58	6	Utilized
7	Skype	185	2.50	7	Utilized
8	2go	185	2.23	8	Not Utilized
9	Face Book	185	2.10	9	Not Utilized
10	BBM	185	1.80	10	Not Utilized
	Grand Mean	185	2.70		Utilized

Table 1 shows the mean rank of SMP utilized by the respondents for learning. The findings indicated that WhatsApp is the most utilized by the students with the highest mean of 3.68 and rank first. Youtube, Twitter, Instagram and Google+ are also used by the respondents and were rank 2nd, 3rd, 4th, and 5th respectively. On the contrary, the table shows that the respondents in this population do not utilize 2go, Facebook and BBM for learning. response and standard deviation of the social media networking site platform available for learning. The decision means of

2.50 and above is considered as utilized, while the mean of below 2.50. is not utilized. Therefore, the grand mean shows that pre-service undergraduates students utilized SMP for learning.

Research Question Two: 2. What is the perception of pre-service science education teachers on a social media platform for learning? To answer this question, the mean rank was used and the analysis presented in Table 2.



Yaki, A. A., Gaiya, D. and Shuaibu, A. E.

119-125

Table 2 Perception of SMP for Learning among Pre-service Science Education Teachers

S/No.	Statement	N	Mean	SD	Remark
1	Social media platform enhances students' creative skills.	185	3.42	0.86	Positive perception
2	SMP enhanced students' participation in achieving learning goals.	185	3.62	0.84	Positive perception
3	SMP assist me to do my assignment	185	3.24	0.98	Positive perception
4	SMP help me engage in meaning interaction with my course mates	185	3.48	0.49	Positive perception
5	I obtain and share academic contents with my colleagues	185	2.82	1.20	Positive perception
6	SMP help me engage in academic collaboration to increases understanding of topics discussed in class.	185	3.26	1.04	Positive perception
7	SMP are user friendly				
8	SMP enhances group discussions and exchange of ideas to gain more knowledge	185	2.56	1.24	Positive perception
9	SMP allow me to express my ideas freely than the traditional face to face interaction.	185	2.64	0.86	Positive perception
10	SMP allow me to receive announcement or critical information from my tutor and course mates	185	3.24	0.98	Positive perception
Grand Mean			3.14		Positive perception

Table 3 shows the perception of pre-service undergraduates' science education students on SMP. The decision mean to agree is 2.50 and above for positive perception while less than 2.50 is negative perception. The result indicates that students have a positive perception of SMP because the mean of all the items were 2.50 and above. Specifically, the respondents perceived that SMP enhanced their creative skills, performance, learning interaction and exchange of ideas. They also perceive SMP to be user friendly and easy to use. Consequently, the grand mean of 3.14 indicates that the respondents in the population have a positive perception of

the social media platform for learning purposes.

Research Question Three: What is the perception of pre-service science education on a social media platform for based on gender? This research question was translated into hypothesis one.

Research Hypothesis One: There is no significant difference in the perception of the social media platform for learning between male and female pre-service science education teachers. To test this formulated hypothesis, independent t-test was used, and the result presented in Table 3.

Table 3: Summary t-test analysis of the difference in the mean perception of male and female Pre-service Science education on SMP for Learning.

Respondent	N	Mean	SD	df	P	t	Decision
Male	90	4.10	1.62	183	0.13	1.145	Ns
Female	95	3.64	1.86				

Table 3 shows an independent t-test result of male and female pre-service undergraduates science education students on SMP for learning. The results show there is no significant difference in the perception of

male and female students on SMP for learning $t(183)=1.15$, $p(0.13) > 0.05$. Therefore, the hypothesis which states that there is no significant difference in the perception of the social media platform for



Yaki, A. A., Gaiya, D. and Shuaibu, A. E. learning between male and female pre-service science education teachers was not rejected. Indicating that the mean perception difference between male and females was not significant.

Discussion of Results

The social media platforms provide information, entertainment, and educational possibilities, therefore investigating pre-service teacher perception of these platforms for learning could be a step in the right direction. The study investigated Social Media Platforms (SMP) for Learning: Pre-service Science Education Teachers' Perspectives in Niger State. The finding of the study shows that pre-service science education teachers utilize SMP for educational purposes. The mean rank result shows that WhatsApp, YouTube Twitter and Instagram are the most used social media platform for learning among the respondents of this population. The finding agrees with Misrara and Amin Embi (2016) who observed that in the 21st-century WhatsApp is the most popular and used social media platform. Similarly, Romakrishnan and Johnsi Priya (2016) reported that WhatsApp is ranked highest by college students in term of usage compared to other platforms. This finding could be attributed to the user friendly and ease of use of the WhatsApp platform. It appears to be cheaper compared to other platforms and could be a factor that influences pre-service teachers' usage.

The finding of the study showed that pre-service science education have a positive perception of SMP for learning. This finding concurs with the findings of Gasaymeh (2017) who reported a positive perception of the social media platform for educational purposes among students. The finding also agrees with Yuen (2010) reported a positive perception of Taiwanese student towards SMP for educational purposes. This result could be attributed to the fact SMP encourage students to actively participate in interaction and collaboration with the supervisor to achieve learning objectives.

The findings also show that gender does not influence teachers' perception of social media platform. This finding is supported by Adedoja and Morakinwo (2016) who adopted the Technology Acceptance model and

evaluated the effect of gender on students' perception of technology. The finding showed that gender does not have a significant effect on students' perception of technology devices and platforms. These findings could be attributed to the fact that both male and female teachers are influenced by technology in the same manner. This result could also be attributed to the fact that the respondents are either digital natives or digital immigrants, hence, technology is part of their daily routines.

Conclusion

Higher institutions in the 21st-century are perpetually confronted with social, technological and economic changes which substantially impact educational practices of pre-service science education teachers. The need to continually assess nascent digital platforms and technologies that could impact students' perception and usage. Therefore, this study investigated social media platforms for learning: pre-service science education teachers' perspectives in Niger State. Given the findings of the study, it was also concluded that the respondents of this population utilize the social media platform for learning. The population of this study have a positive perception of the social media platform for learning. Gender does not impact students' perception of social media platforms for learning.

Recommendations

Based on the findings of the study the following recommendations were made:

1. Training and orientation should be provided for pre-service teachers to effectively utilized SMP for learning
2. The student should be enlightened on the importance of the social medial platform for academic and meaningful interaction to achieve learning objectives.

References

- Adedoja, G., & Morakinyo, D. A. (2016). Gender influence on undergraduate's students' acceptance of mobile learning instruction using the Technology Acceptance Model (TAM). *Asian Journal of Education and e-Learning*, 4(2), 65-70.



- Yaki, A. A., Gaiya, D. and Shuaibu, A. E. Amshah, A. & Thabian, B. (2017). The use of Jordanian university students for richness of innovation of interactive communication networks and gratification achieved. *Journal of Al-Quds Open University for Research and Studies*. 2, (42) 14-29.
- Al-Bahrani, A., Patel, D. and Sheridan, B. (2015). Engaging students using social media: The students' perspectives. *International Journal of Economic Education*. 19 56-50
- Asemah, E. S. and Edegoh, L. O. N. (2013). Influence of new media sexual contents on the Sexual behaviour of Kogi State University Students. *Journal of Research and Contemporary Issues*. 7 (2), 1-10.
- Chen, S. F., & Lishing-Hang, L. (2011). Recent related research in technology acceptance model; A literature review. *Australian Journal of Business and Management Research*, 1(9), 124-138.
- Creighton J. L., Foster, J. W., Klingsmith, B., & Withey, D. K. (2013) I just look it up: undergraduate students' perception of social media use in their academic success. *The Journal of Social Media in Society*. 2(2) 26 – 46.
- Creswell, J. W. (2015). *Educational research : Planning, conducting, and evaluating quantitative and qualitative research* (5th Ed.). Los Angeles: SAGE.
- Gasaymeh, A. M. (2017). University Students' use of WhatsApp and their Perceptions Regarding its Possible Integration into their Education. *Global Journal of Computer Science and Technology: G Interdisciplinary*, 17(1), 1 – 12.
- Hair, J. F. J., Black, W. C., Babin, B. J., & Anderson, R. E. (2010). Multivariate data analysis: A global perspective (7 ed.). Upper Saddle River, NJ: Pearson Prentice Hall.
- Hanson, K. (2011). Blog enabled peer-to-peer learning. *Journal of Dental Hygiene*, 85(1), 6-12.
- Jain, N., Verma, A., Verma, R., & Tiwari, P. (2012). Going social: The impact of social networking in promoting education. *IJCSI International Journal of Computer Science*, 9(1), 483-485.
- Junco, R. (2012b). Too much face and not enough books: The relationship between multiple indices of Facebook use and academic performance. *Computers in Human Behavior*, 28(1), 187-198.
- Kaplan, A. M., & Haenlein, M. (2010). Users of the world unite the challenges and opportunities of social media. *Business Horizons*, 53(1), 59-68.
- Mistar, I. B. and Amin, E. M. (2016). Students' perception of the use of WhatsApp as a learning tool in the ESL classroom. *Journal of Education and Social Sciences*, 4, 06-104.
- Ramakrishnan, N. and Johnsi Priya. J. (2016). Mobile chatting behaviour of arts and science college students. *International Journal of Research – Granthaalayah*, 4, (7) 32-39.
- Wodzicki, K., Schwammlein, E., & Maskaliuk, J. (2012). "I wanted to learn": study-related knowledge exchange on social networking sites. *Internet & Higher Education*, 15(1), 9-14.
- Yuen, A. H. K. (2010). Blended learning in higher education: An exploration of teaching approaches. Proceedings of the 18th International Conference on Computers in Education.