

# **Undergraduate Students Expertise Level of Utilising Social Media for Instruction**

**Onojah Amos Ochayi**

Department of Educational Technology, University of Ilorin, Ilorin, Nigeria

*Received 20 April 2020*

*Accepted 22 September 2020*

## **ABSTRACT**

Acclimatising podiums that are not destined for instruction is not a laidback chore but is attainable with suitable strategies and arrangement for educators and scholars. Social networks have amalgamated many students into an online world in exploring relationships, finding and acquiring obligatory evidence for their erudition and research. This research aims to explore availability, utilisation and expertise level of the social media platform for learning, and the influence of gender on the utilisation. A structured questionnaire was administered on 450 students across universities in Kwara state. The reliability coefficient of 0.90, and 0.81 using Cronbach's alpha was deduced. Statistical tools of mean, t-test and Variance (ANOVA) were employed to analyse data for the study. Findings of the study revealed that undergraduates' expert level on utilising social media for instruction was intermediate and there was no noteworthy difference between undergraduates' expertise level in the adoption of social media for instruction. The study concluded that undergraduates have average expertise skill on the adoption of social media for instruction. It was recommended that lecturers in tertiary institutions use most social media platforms to teach students as this will boost their proficiency.

**Keywords:** *Undergraduate Students, Expertize' Level, Social Media, Instruction, Gender, School Proprietorship*

## **Introduction**

Technology integration is cutting across every sector, and any area that ventures and embraces the technology could be ahead of those who do not. The 21st century is considered to be an information age whereby information can be structured and transported easily and faster through several means. Communication being a section in information and communication technology has been perceived as a process of transferring information between two or more individuals, while information has been perceived as the knowledge, facts and data you get about something or someone. Information and communication technology have been the fundamental building stone for modern society, especially in a developed country. In a similar vein, ICT can be referred to as the foremost yardstick that extricates an industrialised country from unindustrialised countries and the immature

countries. Thus, any society who wants to keep abreast with the emerging and contemporary activities needs to explore the adoption of ICT. The span information and communication technology (ICT) is a conjunction of the information technology (IT), as well as the communication technology (CT), was well-defined by Akarowhe (2017) in education as the progression in which telecommunication resources are employed by tutors/facilitators in the tutorial room to impact acquaintance and learn on the student(s). Khattak and Jan (2015) also referred to information and communication technology (ICT) as technologies that provide information through communication. The one-sided communication provided by Web 1.0 has been replaced by two-sided communication provided by Web 2.0 (Aghaei, Nematbakhsh, & Farsani, 2012). Web 2.0 tools such as social networking sites, blogs, and web application emergence have led to users' experiences on how these tools are changing human activities. There have been some innovative practices of sharing information which had emerged such as Flickr for sharing photos, YouTube for sharing videos, Slideshare for sharing presentations and also new mechanisms for content production, sharing, communication and collaboration have also emerged such as blogs and social networking sites such as Facebook, Twitter, and WhatsApp. Social media can be considered an information technology platform in which user communities can search for contents (Miller, 2016). Social media can be viewed as an incorporate tool with some websites and application tools. Social media is a term used to mean the widely used and acceptable resources of communiqué like the gadgets of magazines, radio and television, newspapers, and the internet that grasp or influence individuals intending to connect people in a community. Social media perform two functions, which are: to connect people and share information widely.

Manning (2015) classified social media into email, texters, blogs, message boards, connection sites, social networking sites and game and entertainment. The adoption of social media for instruction is a coin of two sides with advantages and disadvantages in the instructional settings. Whether the coin is fair to learning (in an environment) or not depends on the policies employed in the environment to make learning suitable through social media, the level of creativity of the individual (teachers and students) in the environment, and the positive potential the environment can foresee in learning with social media. Lau et al. (2016) opined that social media represent an engine for aided students, representing an engine in forming and building their academic career interests. Adapting platforms that are not meant for learning is not an easy task but is achievable with appropriate guidelines and planning for both teachers and students (Jamari et al., 2017). Facebook can be a positive tool for teaching and learning and can also be a negative tool that disengages students if it is not appropriately utilised (Said et al., 2014).

Fausto-Sterling (2012) also agreed that gender is shaped by the dynamics of physical, social, and emotional experiences and becomes the basis of future identity transformations. Gender differences in ICT (especially social media) use are explored in their social complexity since one must consider that gender is not universal (Eduarda, 2017). There are about five times more men than women among those who study computing at a tertiary level (Organisation for Economic co-operation and Development (OECD), 2015), which may be related to feelings of incompetence (low self-efficacy) by girls and women. Bujala (2012) established that men are likely to have more time for social network use because of gender expectations and roles. Kasahara (2017) reported that females were most likely to prevent

certain people from accessing their social media content; males were more likely to use a gaming console for about six hours per day.

Idemudia et al. (2017) stated that behaviours that accompany seeking data differ for men and women. Additionally, social media tools' employment further reinforces this belief, whereas males square measure the primary to adopt the tools, their focus is on exploiting the tools for job-related activities. Hu et al. (2017) explained that developed cultural intelligence enables individuals to master personal and vicarious experiences through social media attendance. Social media has been used to connect students in an online classroom setting or distance learning settings to help with communication.

### **Statement of the problem**

Globally the internet is a blessing to humankind as it harbours much information and offers tones of services to individuals. A major and important one of those services is the World Wide Web (WWW), a host for social media platforms. On social media, information spreads faster. Through the advent of social media platforms, wrong social norms and ethics is believed to have erupted, which is of major concern to those who value good information and follow good ethical social conducts. Social networks have united many undergraduates into an online world where they spend countless hours browsing profiles, meeting people, exploring relationships, finding and acquiring necessary information. In applying evaluative actions similar to what they use traditional resources for, students seemed to have developed their strategies; for instance, checking disclaimer notes to assess the quality of information accessed through social media.

Even though intellectuals had correspondingly investigated the insinuations or consequences stimulated by social media exploitation, different results have been grasped with mutually optimistic and adverse paraphernalia of utilising the social media platform (Wohn & LaRose, 2014). Hence, this study explores the expert level of undergraduate students in the usage of social media for instructional purposes.

The subsequent interrogations were reacted in this article.

1. What are social media platform available to undergraduates for learning?
2. What is the level of expertise of undergraduates on the adoption of social media for instruction?
3. How do students' gender influence undergraduates' adoption of social media for instruction?
4. What is the influence of school proprietorship on undergraduates' expert level on social media adoption for instruction?

In addition, the succeeding hypotheses were tested in this research at 0.05 level of significance.

H0<sub>1</sub>: There is no substantial difference between male and female undergraduates' expertise' level on social media adoption for instruction.

H0<sub>2</sub>: There is no significant difference between undergraduates' expertise towards adopting social media based on school ownership.

## Methodology

This section presents the methods and techniques that were used in collecting and analysing data for this study. This research adopted the descriptive research design which utilises quantitative survey method. The method describes and interprets events as they appear without any form of manipulation. It affords the researcher an ample opportunity to collect a large volume of information on respondents' expert level of adopting Social Media for instruction in Kwara state, Nigeria. The populace of this research were all undergraduate students in Nigeria. The target population, however, comprise all undergraduate students in three universities in Kwara state, Nigeria. These three universities were chosen due to the access to conduct a study in their institutions. One hundred and fifty undergraduate students each were sampled across the three universities. Therefore, 450 copies of the questionnaire were distributed across the three universities in Kwara State.

The research tool for this research was a researcher designed questionnaire. The questionnaire was divided into three major sections (A-C). Section A sought demographic information on respondents' institution and gender. Section B hunted information on the kind of social media available to students for learning. Respondents were required to tick from the list of social media, the ones they own or have access to. The response mode for this section B is 'Yes' and 'No'. Section C is to garner information on undergraduate students' expert level of adopting social media for instruction. The response mode is based on a 4-point Likert-type rating scale of strongly Unskilled, Beginner, intermediate, and Advanced. A research instrument is valid to the extent to which it precisely and adequately measures what it is designed for. Since the intended instrument for this study was adapted from previous studies, it was given to the researcher's supervisor to critique. Three other lecturers in the Department of Educational Technology, University of Ilorin validated the instrument. Their corrections, modifications, and suggestions were strictly adhered to by the researcher to ensure the instrument's relevance and suitability for the present study.

For the instrument's reliability, the researcher administered 25 copies of the questionnaire on undergraduate students at Osun State University. The Cronbach alpha steadfastness statistic was used to regulate the research gadget's trustworthiness at the significance level of 0.05. The result recorded 0.90 on social media available to students for learning; and 0.81 on undergraduate students' expert level in adopting social media for instruction. This illustrates that the instrument was exceedingly dependable for this study. The researchers pursued the authorities' permission to involve their students in the study via an official letter to institutions' head. After that, the researcher administered copies of the questionnaire on the respondents to complete and retrieve them immediately. The completed questionnaire was coded and duly analysed.

Ethical issues were considered in the course of this study. The purpose of the research was made known to the participants, for them to give informed consent. Participation was purely voluntary as no respondent was coerced to take part in the study, and withdrawal from participation by any of them did not attract sanction. Confidentiality and anonymity were upheld as neither the respondents' data nor those of the institutions were divulged. All information supplied was used mainly for the research and treated with the utmost confidentiality. The researcher also ensured that all cited works in this study were duly acknowledged and included in the list of references to avoid plagiarism. Both descriptive and

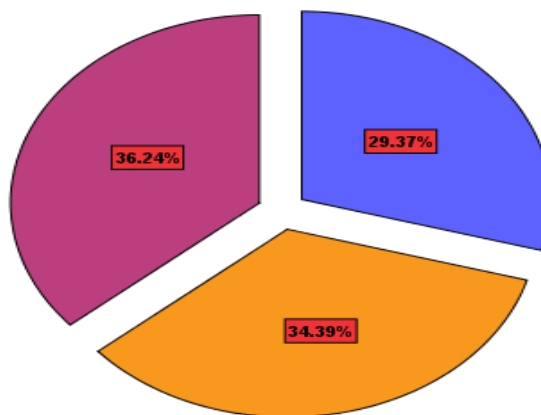
inferential statistics were used to analyse and interpret the data obtained for this study. The statistical tools of Regularity count and proportions were employed to react to the research questions raised. The first hypothesis was tried with the independent t-test since they equivalence one capricious individually at two echelons. The second hypothesis was trialled with the use of variance (ANOVA) because they liken one variable separately at three stages. Turkeys’ posthoc analysis was adopted to check how significant is the transformation for each school possession. Every one of the suppositions was verified at 0.05, side by side of significance.

**Results**

This chapter presents the analysis and results obtained from the data gathered based on the research questions stated in the study. The data presented provide a summary of the major characteristics of the respondents that were involved in the study. Four hundred fifty copies of questionnaires were distributed, but 378 were retrieved and properly filled amounting to 84.0% return rate. This was thus used for the analysis.

*Table 1. Demographic Distribution by Institutions*

School Ownership	Frequency	Per cent	Cumulative Per cent
School A	111	29.4	29.4
School B	130	34.4	63.8
School C	137	36.2	100.0
Total	378	100.0	



*Figure 1. Charts on respondents’ institutions*

As displayed in Table 1, the respondents comprised 111 from school A, 130 from school B and 137 from school C. This was further shown in Figure 1.

*Table 2. Demographic Distribution by Gender*

Gender	Frequency	Per cent	Cumulative Per cent
Male	228	60.3	60.3
Female	150	39.7	100.0
Total	378	100.0	

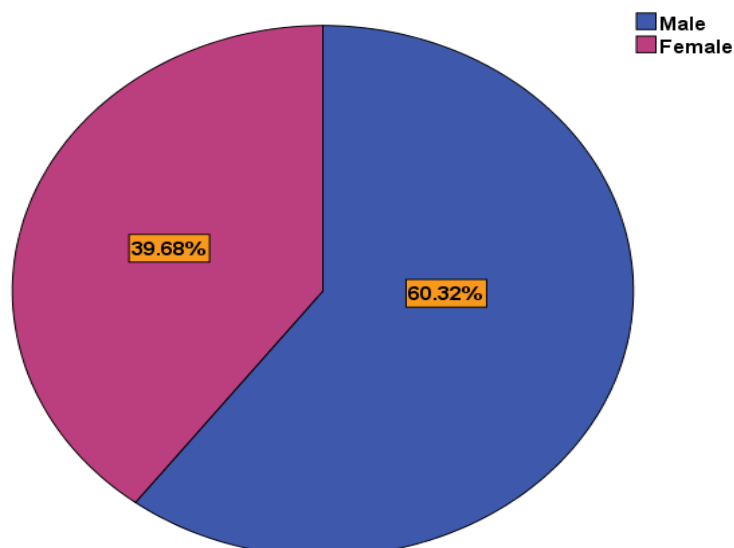


Figure 2. Pie chart showing respondents' gender

As displayed in Table 2, the male respondents were more than their female counterparts. However, this is just a nominal scale and does not necessarily influence the expertise' level of students towards the adoption of social media for instruction until it is statistically proven accordingly. This is further shown in Figure 2.

**Research Question One:** What social media platform are available to undergraduates for learning?

Among the social media tools that students can adopt worldwide, the social media platform that was available and accessible to undergraduates for learning are Facebook, WhatsApp, Wikis, Twitter, Blogs, Email and YouTube. Lecturers engagement with their students in using this media for lectures could be responsible for its adoption; otherwise, it could be students' interest in that tools.

**Research Question Two:** What is neck and neck of Expertize of undergraduates on the adoption of social media for instruction?

Table 3. Expertise level of undergraduates on the adoption of social media for instruction

Social Media	Advanced	Intermediate	Beginner	Unskilled	Remarks
Facebook	96 (25.4%)	177 (46.8%)	66 (17.5%)	39 (10.3%)	Intermediate
WhatsApp	261 (69.0%)	102 (27.0%)	15 (4.0%)	3 (0.8%)	Advanced
Wikis	12 (3.2%)	135 (35.7%)	105 (27.8%)	126 (33.3%)	Intermediate
Twitter	111 (29.4%)	105 (27.8%)	123 (32.5%)	39 (10.3%)	Advanced
Blogs	48 (12.7%)	84 (22.2%)	120 (31.7%)	126 (32.5%)	Unskilled
Email	120 (23.8%)	132 (34.9%)	105 (27.8%)	51 (13.5%)	Intermediate
YouTube	18 (4.8%)	120 (31.7%)	281 (21.4%)	159 (42.1%)	Beginner
Instagram	201 (53.2%)	66 (17.5%)	111 (29.4%)	0 (0%)	Beginner

The expertise' level of undergraduates in adopting social media for instruction was investigated and presented in table 3. The result indicated that undergraduates' level of expertise on the adoption of social media for instruction was intermediate.

**Hypothesis One:** There is no substantial difference between the expertise' level of male and female undergraduates' on the adoption of social media for instruction.

Table 4. t-test analysis of male and female undergraduates' expert level

Gender	N	Mean	Std. Deviation	Df	T	Sig. (2-tailed)	Remarks
Male	228	3.24	.30	376	1.68	0.29	Accepted
Female	150	3.36	.26				
Total	378						

Table 5 indicates that  $t(376) = 1.68$ ,  $p > 0.05$ . This means that the stated null hypothesis was not rejected. This was due to the t-value of 1.68, resulting in a 0.29 significance value that was greater than 0.05 alpha value. It was deduced that there was no substantial difference between the expertise' level of male and female undergraduates' on the adoption of social media for instruction.

**Hypothesis Two:** There is no momentous difference between undergraduates' expertise towards adopting social media based on school ownership.

Table 5. ANOVA analysis of students' expertise based on School Ownership

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.
Corrected Model	.453 <sup>a</sup>	2	.227	.684	.506
Intercept	2346.408	1	2346.408	7079.693	.000
Experience	.453	2	.227	.684	.506
Error	48.720	375	.331		
Total	3150.000	378			
Corrected Total	49.173	377			

a. R Squared = .009 (Adjusted R Squared = -.004)

Table 5 indicates that  $F(2, 377) = 0.68$ ,  $p = 0.51$ . This means that the stated null hypothesis was accepted. This resulted from the F-value of 0.68, resulting in a 0.51 significance value that was greater than 0.05 alpha value. It was deduced that there was no momentous difference between undergraduates' expertise towards the adoption of social media based on school ownership.

Table 6. Turkeys' Posthoc Analysis on Students' Expertise based on School Ownership

(I) School Ownership	(J) Years of Experience	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Federal	State	.1182	.10249	.483	-.1245	.3609
	Private	.0944	.14768	.799	-.2553	.4440
State	Federal	-.1182	.10249	.483	-.3609	.1245
	Private	-.0238	.14234	.985	-.3608	.3132
Private	Federal	-.0944	.14768	.799	-.4440	.2553
	State	.0238	.14234	.985	-.3132	.3608

Based on observed means. The error term is Mean Square (Error) = .331.

The Turkey HSD post hoc test revealed that the differences which existed between students' level of expertise in the use of social media for instruction from federal, state and private tertiary institutions were not statistically significant. Although, the mean difference in students' expertise level between undergraduates who attend the federal and state-owned universities was 0.12, the mean difference in students' expertise level between undergraduates who attend the federal and private-owned universities was 0.09 while the mean difference in students' expertise level between undergraduates who attend the state and private-owned universities was 0.02. Nevertheless, the minor difference was not statistically significant.

## **Discussion**

The social media platforms available and accessible to undergraduates for learning are Facebook, WhatsApp, Wikis, Twitter, Blogs, Email and YouTube. Jamari et al. (2017) conducted a study on students' perception of the concept of learning through Social Media. The findings established that adapting platforms that are not meant for learning is not an easy task but is achievable with appropriate guidelines and planning for both teachers and students. Their study only focused on students' perception of using social media tools for instruction but not on the available tools for students. Ada, Stansfield, & Baxter (2017) also investigated some empirical evidence on utilising mobile learning and social media to enhance learner feedback. The research's focus is to examine whether social media enhances learners' feedback during and after lectures. The findings deduced that lecturers receive better and speedy feedback from their learners when the social media platform is adopted against the traditional instruction method.

The level of expertise of undergraduate students on the adoption of social media for instruction was intermediate. Ochayi et al. (2020) conducted quantitative research on scholars' aptitude in applying social media for scholarship in Nigeria. The research embraced the research technique through which four hundred and fifty (450) students have arbitrarily appraised campuses transversely in Nigeria on which a structured questionnaire was directed on the undergraduates. Their research revealed that the proficiency level of undergraduates on the utilisation of social media for learning was high. The study scrutinised how students utilise social media for learning but not the students' expert' level on adopting social media tools for instruction. Besides, Eze et al., (2018) examined in research on the consumption of e-learning conveniences in the didactic conveyance organisation of Nigeria and through the verdict detailed that adequate e-learning amenities that are obtainable for utilisation would expand the level of the espousal of e-learning services nevertheless these facilities have not been completely exploited as designated by some lecturers.

There was no substantial difference between the expertise' level of male and female undergraduates' on the adoption of social media for instruction. Through their study, Suleiman and Aliyu (2013) examined the practice of Internet facilities in training and research. The study was a descriptive research design and was deduced that there is already evidence that gender discriminations are being imitated in school with girls utilising e-learning tools and the internet not as copious as the boys. Their study only focused on one university in Nigeria, where the students were used as respondents. In another study by Lone et al. (2018) on gender disparity in awareness and search engines by college faculty. They



surveyed Baramulla District and established a substantial modification in using Google search engine based on gender as male students preferred Google search engine more than the female. There was no momentous difference between undergraduates' expertise towards adopting social media based on school ownership. In a research carried out by Ochayi et al. (2020) on the title secondary school teachers' utilisation of mobile Learning devices for instructional purposes in Osun State. Their findings established that there was no significant difference between teachers' utilisation of mobile learning devices for instructional purposes based on school ownership meaning that teachers who worked with private schools did not significantly differ in their utilisation of mobile devices for instruction with their counterparts' teachers that teach with public schools.

### Conclusion

Beyond the availability, accessibility, and the ease of using a particular technology, the extent of technical-know-how is germane and could influence the output of adopting any technology for instruction. This study concluded that undergraduate Students are averagely expert in adopting social media for instruction in Nigeria. It was therefore recommended that undergraduate students explore other appropriate social media for instruction based on the findings. Lecturers in tertiary institutions should explore most of the social media platforms in teaching students as this will boost their skills in utilising the social media platforms for instructional purposes. Tertiary institutions management should imbibe the adoption of several social media platform for instruction as this will make the students more expert in the use of social media for instruction. Curriculum planners should design policies that will make it mandatory for their lecturers to integrate their instructional activities and lectures into the social media platform, thereby helping students get used to the platform. Practice makes perfection; the more students use the social media platform, the more they become expert in it. Philanthropist and stakeholders in education should assist in the procurement of necessary gadgets which will assist in adopting social media for instruction.

### References

- Ada, M. B., Stansfield, M., & Baxter, G. (2017). Using mobile learning and social media to enhance learner feedback: some empirical evidence. *Journal of Applied Research in Higher Education*, 9(1), 76–90.
- Aghaei, S., Nematbakhsh, M. A., & Farsani, H. K. (2012). Evolution of the world wide web: From WEB 1.0 TO WEB 4.0. *International Journal of Web & Semantic Technology*, 3(1), 1-10.
- Akarowhe, K. (2017). Information Communication Technology (ICT) in the Educational System of the Third World Countries as a Pivotal to Meet Global Best practice in Teaching and Development. *Journal of Computer Science and Information Technology*, 5(2), 23-45.
- Bujala, A. (2012). Gender differences in internet usage. *Acta Universitatis Kodziensis*, 43, 49-67.
- Eduarda, F. (2017). Gender and ICT: Gender stereotypes in schools. *First Monday*, 22(10), 2. <http://dx.doi.org/10.5210/fm.v22i110.7062>
- Eze, S. C., Chinedu-Eze, C. V., & Bello, A. O. (2018). The utilisation of e-learning facilities in the educational delivery system of Nigeria: a study of M-University. *International Journal of Educational Technology in Higher Education*, 15(1), 34.
- Fausto-Sterling, A. (2012). The dynamic development of gender variability. *Journal of Homosexuality*, 59(3), 398–421. <http://dx.doi.org/10.1080/00918369.2012.653310>.
- Hu, S., Gu, J., & Zhang, S. (2017). Social Media Usage, Self-efficacy and Cultural Intelligence: A Longitudinal Empirical Research in China. WHICEB 2017 Proceedings page 40.

- Idemudia, E. C., Raisinghani, M. S., Adeola, O., & Achebo, N. The Effects of Gender On The Adoption of Social Media: An Empirical Investigation. *Completed Research Paper*.
- Jamari, D., Mohd Zaid N., Mohamed H., Abdullah, Z. & Aris, B. (2017). Learning Through Social Media: Students' Perception. *Man In India*, 97(19), 263-273.
- Kane, G. C., Alavi, M., Labianca, G., & Borgatti, S. P. (2014). What's different about social media networks? *MIS Quarterly*, 38(1), 275-304.
- Kapoor, K. K., Rana, N. P., Patil, P., Dwivedi, Y. K., & Nerur, S. (2018). Advances in Social Media Research: Past, Present and Future. *Information Systems Frontiers*, 20(3), 531-558.
- Kasahara, G. M. (2017). Gender Differences in Social Media Use and Cyberbullying in Belize. All Theses, Dissertations, and Other Capstone Projects. 753. <https://cornerstone.lib.mnsu.edu/etds/753>.
- Khattak, R., & Jan, R. (2015). The Impacts of ICT on the Students' Performance: A Review of Access to information Resources. *Research on Human Social Science*, 5(1), 85-94.
- Kim, B. & Park, M. J. (2017). Effect of personal factors to use ICTs on e-learning adoption: comparison between learner and instructor in developing countries. *Information Technology for Development*, 24(4), 706-732.
- Lau, M. C., Kwong, E. M., Lai, K. P., Li, J. W., Ho, J. C., Chan, T. F., Wong, C. K., Jiang, Y.J., & Tse, W. K. (2016). Pathogenesis of POLR1C-dependent type 3 treacher Collins syndrome revealed by a zebrafish model. *Biochimica et biophysica acta. Molecular basis of disease*, 1862(6), 1147-1158.
- Lone, J. A., Ahmed, S. & Bashrat, M. (2018). Gender disparity in awareness and the use of search engines by college faculty: A survey of Baramulla District- J&K. *International Journal of Research in Humanities, Arts and Literature*, 6(9), 297-304
- Manning, J. (2014.) Social media, definition and classes of. In K. Harvey (Ed.), *Encyclopedia of social media and politics* (pp. 1158-1162). Thousand Oaks, CA: Sag
- Miller, D., Costa, E., Haynes, N., McDonald, T., Nicolescu, R., Sinanan, J., Spyer, J., Venkatraman, S., & Wang, X. (2016). *How the World Changed Social Media*. London: UCL Press. 3.
- Ochayi, O. A., Aderogba, O. A., Aneh, O. A., & Titilope, A. A. (2020). Secondary school teachers utilisation of mobile Learning devices for instructional purposes in Osun State. *Journal of Education and Policy Review*, 12(1), 19-43.
- Ochayi, O. A., Obielodan, O. O., Onojah, A. A., Ajala, S. A., Sotuminu, R. E. & Suleiman, K. S. (2020a). The Proficiency of Undergraduates in Utilising Social Media for Learning in Nigeria. *Indonesian Journal of Curriculum and Educational Technology Studies*, 8 (1), 32-41.
- Organisation for Economic Co-operation and Development (OECD), (2015). Students, computers and learning: Making the connection. Paris: OECD. <http://www.oecd.org/publications/students-computers-and-learning-9789264239555-en.htm>.
- Said, M. N. H. M., Tahir, L. M., & Ali, M. F. (2014). Facebook as a tool: Exploring the use of Facebook in teaching and learning. In *Proceedings of International Conference on Teaching and Learning in Computing and Engineering (LaTiCE)*, 2014. IEEE.
- Suleiman, I. & Aliyu, M. (2013). The use of Internet facilities in teaching and research by academic staff of school of management and information technology, Modibbo Adama University of technology Yola. *The Information Manager*, 13(1-2), 59-69.
- Wohn, D. Y., & LaRose, R. (2014). Effects of loneliness and differential usage of Facebook on college adjustment of first-year students. *Computers & Education*, 76, 158-167.

### **Acknowledgments**

Not applicable.

### **Funding**

Not applicable.

### **Conflict of Interests**

No, there are no conflicting interests.

### **Open Access**

This article is licensed under a Creative Commons Attribution 4.0 International License, which permits use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons licence, and indicate if changes were made. You may view a copy of Creative Commons Attribution 4.0 International License here: <http://creativecommons.org/licenses/by/4.0/>