Social Media Use in Academic Advising: Can it Impact Science Education Students' Academic Performance?

Adewale Owodunni SAKA [1] Olushola A. HASSAN [2]

[1] *Department of Science & Technology Education, Olabisi Onabanjo University, Ago-Iwoye, Ogun State, Nigeria*
[2] *Department of Science &Technology Education, Olabisi Onabanjo University, Ago-Iwoye, Ogun State, Nigeria*
Corresponding Author's Email: wale.saka@oouagoiwoye.edu.ng

The persistent low quality of graduates from universities in Nigeria has made them unemployable. Several efforts put in place only yielded little results. Hence, this study examined the impact of the use of social media in the academic advising system on science education students' academic performance. The research which adopted ex post facto design used all the one hundred and seventy-two first-year science education students of Olabisi Onabanjo University, Nigeria, for the 2017/2018 session as participants. It also used researchers-designed and validated sheet called Students' Result Collection Sheet (SRGS) to collect data. The data collected were analysed using descriptive and inferential statistics. Results revealed that the use of social media in academic advising significantly impacted the performance of science education student. Results also indicated that gender difference in the use of social media in academic advising has no significant impact on their academic performance. The study recommended the incorporation of social media into academic advising systems in Nigerian universities to improve students' academic performance.

Keywords: *Academic Advising, Gender, Student Performance, Social Media, Science Education*

Introduction

Universities have responsibilities to produce quality personnel needed for national development. The quality of graduates is determined by their employability which is the ability to exhibit the skills required to function effectively in the workplace. However, stakeholders in education have consistently remarked that graduates from Nigerian universities are unemployable. This lamentation implies that graduates churned out by the universities lack adequate skills to contribute meaningfully to societal development. Akinnaso (2017) posited that the Nigerian universities operate far below the expectation and that leads to the production of graduates that lack basics skills to function effectively in the competitive world of work.

Similarly, Professor Anthony Anwuka, the Nigerian minister of state for education in 2018 expressed that government is not pleased with the quality of graduates produced by the universities because they are not employable by industries within the country or beyond. Wahab (2018) also argued that Nigeria's academic towers no longer retain their pride due to the system of education that cannot produce quality graduates. There is a decline in the quality of graduates from Nigeria's universities and that there is an urgent need to enhance it (Kayode, Oduwaiye, Etejere, Sheu & Kutu, 2018). Many factors associated with low quality of graduates are poor leadership and lack of facilities (Asiyai, 2013; Okoro, Aguguam, & Aguguam, 2017; World Education Services [WES], 2017), decentralized examinations (Francis, 2015), frequent labour disputes (Asiyai, 2013; WES, 2017), brain drain, inadequate funding, and lack of vibrant staff development programmes, (Asiyai, 2013).

Francis (2015) noted that several interventions suggested in the literature to reverse the trend yielded little success as the low quality persists. Hence, there is a need to investigate other areas that can contribute to the academic success of the students. Academic success is a measure of multiple factors such as students' needs,

expectation, satisfaction, performance and confidence, but this study refers to academic success as students' academic performance. Academic performance most times reflects the success of a student. Kayode et al. (2018) submitted that institutional supports should be provided to students to aid their academic success. However, the impact of institutional supports as academic advising has little attention (Kalamkarian, 2017). Meanwhile, Crocker, Kahla, and Allen (2014) observed that academic advising is vital for students' progress in higher education.

Academic advising is a process of guiding learners toward successful completion of their studies in a higher institution. It requires a prescription of the sequence of courses to take to fulfil the requirement for completion of a degree. National Academic Advising Association (NACADA, 2003) described academic advising as a collaborative process between adviser and students aimed to help them improve their study and life skills. It is a medium for the advisers to guide the students through their academic careers and personal issues (Crocker et al., 2014). There are three types of academic advising - prescriptive, developmental, and intrusive. First, prescriptive advising is the type that entails the advisers to possess the knowledge of courses to take and rules to follow by the students to graduate. Second, developmental advising requires adviser and students to build confidence and trust in each other. These enable the learners to confide in the adviser on their life interests and challenges. Finally, the intrusive advising demands that the advisers uphold the institutional policy and procedure for advising duties. The advisers are members of the university community who are experienced and can play the academic advisory roles. They provide information about the advancement of the students, the requirement for the degree and review their educational needs frequently, performance and challenges (Moula, Maithya, & Mwinzi, 2011). Therefore, the purpose of

academic advising is to lighten the challenges of advisees (students).

Salvador (2017) stressed that academic advising is vital to help students to navigate the path to graduation. Young-Jones, Burt, Dixon, and Hawthorne (2013) found that academic advising had a significant influence on their needs and expectations. Meeting the needs and aspiration of the students can improve their performance. Similarly, Woods et al. (2017) explored the academic advising practices of 19 community colleges in the Florida college system. The results indicated that academic advising improved students' success and should be flexible for the benefit of the students. It implies that an adviser should not be rigid on the form of advising to use. The study of Crocker et al. (2014) also found that academic advising accounted for 10.9% of the variation in grade point average (GPA) in a semester. The study then concluded that academic advising impacted the achievement of students as depicted by the grade point average. Dey (2020) found that academic advising plays a significant role in students' success and retention at higher institutions.

However, Borray and Millichap (2017) argued that the task of academic advising is a complex task due to the enormity of challenges before the academic advisers and the students. Students prefer flexible approaches based on open communication, respect, and compassion to build confidence between them and the advisers (Manz, 2020). Reynolds (2013) maintained that purposeful advising is learning-directed and should thus focus on clear, reasonable and positive goals and not just informative messages to the students.

Academic advising needs reform to make it easy for both advisers and the advisees. Pasquini and Steele (2016) found that technology can scaffold the advising process and provide support practices to higher education students. Allen and Seaman (2016) noted the use of technology for advising helps the academic paths of the students and also reduce advisers'

administrative workloads. It gives them extra tools to help students to meet their career goals. Several technology-mediated tools are in use for academic advising in higher institutions in some countries to make advisory roles easier and surmountable. Examples are Smartforks, Navigate, Civitas illume/Inspire for Advisers and Hobson's Starfish. These tools need Information and Communication Technologies (ICTs) hardware and software and network communication to function effectively.

In the Nigerian educational context, the use of ICTs for administrative conveniences such as academic advising, result processing, payment and registration are still at the stage of infancy. As a developing nation, lack of necessary infrastructures to provide internet access inhibits the usage of ICTs in universities. Nigeria is not among the top ten (10) on global ICT due to low spending on ICT projects (Okonji, 2018). Besides, Adeoye, Oluwole, Afolabi and Blessing (2013) lamented that the Nigerian economy is in crisis and thus makes the cost of ICT facilities to be enormous. The researchers argued that the entire system of education in Nigeria is underfunded which makes the educational system non-ICT-driven. This situation implies that many of Nigeria's universities may be unable to build and sustain the use of sophisticated academic advising software which is the trend in universities in the developed nations. Hence, this study adopted the use of social media powered by mobile phones for advising purpose.

Russell, Nazione and Smith (2012) recommended that scholar and practitioners should adopt the use of social media to build advising relationship with the students. The researchers noted that informative messages posted by the advisers on social media strengthen the connection with the students. This suggestion is in tandem with the finding of Borray and Millichap (2017) that the use of social media enhanced the interaction between students and the adviser. Also,

Gaines (2014) found that the use of electronic message (e-mail) in academic advising impacted students' academic success. Indeed, the study found that students preferred e-mails for academic advising. The study also reported that students like to use Facebook for the non-academic engagements. Similarly, the study of Larson (2011) demonstrated that technology could complement academic advising and be a tool to improve performance of students. Junco, Heiberger and Loken (2011) also found that the use of social media has a substantial impact on students' engagement, academic performance and relationship building.

Morton, Wells, and Cox (2019) observed that perceptions of learners on the usefulness of social media determine their use. This suggests that students need information on the benefits of social media in academic advising to encourage them to use the tools. Junco et al. (2011) reiterated that social media assists in academic advising but lamented that only a few studies focused on this area. Although Young-Jones et al. (2013) discussed the need for further research to explore the concept and practice of academic advising, Junco, Mastrodicasa, Anguiar, Longnecker, and Rokkum (2017) suggested studies on the impact of the rapport building in academic advising on students' learning outcomes. Nigerian students are digital natives and have access to mobile phones which can build supports. Hence, this study examined the impact of the use of social media tools in academic advising on science education students' academic performance. The study used e-mails, Facebook and WhatsApp channels for academic advising.

Although the use of mobile phones and social media have become integral parts of the lives of the students, there are still conflicting reports about the gender divide in the use of technologies. Ehrke (2018) stated that the difference in the perceived benefits of mobile phones between males and females caused the digital divide. The

females also have a greater demand on their time which limits their use of technologies. Gada (2017) similarly found a significant difference in the use of technology across gender and attributed it to the prevalent gender inequalities in education and the tech-savvy nature of the males. The study of Goswami and Dutta (2016) also indicated that males used technologies more than females but found no gender difference in their use of social media. On gender issue in the use of social media, the report of Liu (2019) showed no significant gender difference in the knowledge of social media concepts. Yet males had a higher rate of use of resource-based social media tools while females used relationship-building platforms more than males. On the contrary, the report of Rizwan, Wan, Cervantes, and Gwiazdzinski (2018) indicated that females used social media more than males. The purpose that the social media served in the different studies might have accounted for the conflicting findings.

In most Nigerian Universities, academic advising is done face-to-face with academic advisers placing contact hours at the door for students to adhere. Some advisers do not attend to the students outside the schedule regardless of the challenges facing the students. Meanwhile, literature has revealed that academic advising has been a neglected factor in student success. Yet, students' academic success can be improved when social media is part of academic advising. However, studies in this area in the literature are sparse. This study, therefore, examined the impact of social media use in academic advising on science education academic performance. Also, given the gender influence on the students' use of mobile technologies, this study examined the impact of social media use by gender on students' academic performance.

Objectives of the Study

The main objective of this study was to:
1. Examine the impact of social media use in academic advising on the academic performance of science education students.
2. Investigate the impact of social media use in academic advising by gender on the science education students' academic performance.

Statement of hypotheses

The following hypotheses guided the study.

$H_0$1: There is no significant impact of academic advising (social-media supported and face-to-face) on science education students' academic performance.

$H_0$2: There is no significant impact of social media use in academic advising by gender on science education students' academic performance.

Methodology

This section describes the research design, target population, sample and sampling techniques, instrumentation, and the method of data collection.

Research Design

This study employed a survey research design of ex-post-facto type. This design requires that the researcher begins to investigate after a phenomenon or event has occurred and thus removes the researcher's interference (Salkind, 2010). Therefore, this study used the design to explain the difference in the academic performance of science education students across the semesters (first and second).

Target Population

The target population for the study consisted of all the first-year undergraduates of Faculty of Education, Olabisi Onabanjo University (OOU), Ogun State, Nigeria in the 2017/18 session.

Sample and Sampling Techniques

The sample consisted of one hundred and seventy-two (172) first-year undergraduates of science education drawn purposively from the Faculty of Education, OOU. The participants were selected for two reasons. First, they were new students as evidence in the literature has revealed that year of study influences how students of higher institutions perceive academic advising. Thus, first and second-year students are likely to seek academic

advising than others (Muola, Maithya, & Mwinzi, 2011). Second, one of the researchers was the level adviser to this set of students.

Instrumentation

The study used a researchers-designed Students' Result Collection Sheet (SRGS) to collect data. The SRGS has columns for matriculation number, sex, students' previous grade point average (PGPA) and current grade point average (CGPA). Two lecturers in the Faculty of Education of OOU validated the instrument.

Method of Data Collection

Traditionally, academic advising in OOU is done face-to-face with level advisers placing contact hours at the door for students to work with and through 'regulated' phone calls. Some advisers adhere strictly to the contact hours regardless of challenges facing the students probably due to the enormity of official assignment before them or other personal reasons. However, at the first meeting with the students, there was an understanding that the students could contact the level advisers through WhatsApp, Facebook, and e-mails in addition to the usual face-to-face meeting. This is because the jobs of academic staff are not limited to teaching or staying in the office all the times whereas students could have issues bothering them any time of the day. Consequently, the students used social media freely during the first (harmattan) semester for academic advising purpose. Students called and sent messages to the advisers through dedicated and personal WhatsApp, Facebook, e-mail channels apart from face-to-face interactions. However, in the second (rain) semester, interactions were face-to-face with occasional phone calls due to the adviser's inability to cope with the time and data required for the support.

Since the evidence in the literature has indicated that the use of social media tools in academic advising could improve students' academic success, the study examined the impact of social media use in advising on the academic performance of science education. The researchers, subsequent upon the approval of the Head of Department to use the results of 2017/2018 session, collected the data using the SRGS.

The data collected were analysed with descriptive and inferential statistics. The descriptive statistics used mean and standard deviations as the inferential statistics involved the use of t-test statistical analysis. The hypotheses generated were tested at 0.05 level of significance.

Results

This section presents the findings and interpretations of the data analysis based on the research question and hypotheses.

Research question: What is the distribution of first-year students in science education in the Faculty of Education by gender?

Table 1:

Descriptive statistics of students' demographic data by gender

Gender	Number of students	%
Male	52	30.2
Female	120	69.8
Total	172	100

Table 1 revealed that the majority of the participants were females (69.8%). The remaining 30.2% of the participants were males.

Test of hypothesis

H_{01}: There is no significant impact of academic advising (social-media supported and face-to-face) on science education students' academic performance.

Table: 2
Summary of t-test analysis on the impact of social media tools used on science students' academic performance

Types of academic advising	N	Mean	S. Deviation	S. Error	df	T	Sig. (2 tailed)
Usage of social media tools	172	2.897	0.746	0.569	342	3.547	0.000
No usage of social media tools	172	2.604	0.789	0.602			

Table 2 showed that on average, science education students performed better when social media supported the face-to-face academic advising, Mean=2.897, SE=0.569 than when there was no use of social media, Mean=2.604, SE=0.602. This difference was significant, t(342)=3.547, p=0.000< 0.05 however the effect was weak, r =0.19. The significant results indicate that the hypothesis which states that there is no

significant impact of academic advising (social-media supported and face-to-face) on science education students' academic performance is rejected.

H$_{02}$: There is no significant impact of social media use in academic advising by gender on science education students' academic performance.

Table: 3
Summary of t-test analysis on the impact of social media tools use in academic advising by gender on academic performance

Gender	Number	Mean	S. Deviation	S. Error	df	t	Sig. (2 tailed)
Male	52	2.810	0.844	0.117	170	1.010	0.314
Female	120	2.935	0.700	0.064			

Table 3 showed that on average, the female students performed better when social media supported the face-to-face academic advising, Mean=2.93508, SE=0.063866 than their male counterparts, Mean=2.810, SE=0.844. The impact of the use of social media by gender in academic advising on students' academic performance was not significant t (170) =1.010, p=0.314 > 0.05. The impact is however strong (r = 1.01>1). The non-significant outcomes thus connote that the hypothesis which states that there is no significant impact of social media used in academic advising by gender on science education students' academic performance is retained.

Discussion
 The study found that first-year female students in the science education of the

Faculty of Education of OOU in 2017/2018 session outnumbered male students. The female students might have decided to enrol in science education to play down the belief that the biological difference between them makes them unfit to pursue science education. This finding negates the reports of Newal *et al.* (2018) that female students have less interest in science.

This study hypothesized that there is no significant impact of academic advising (social-media supported and face-to-face) on science education students' academic performance. However, the results indicated that students significantly performed better in the first semester when they used social media for academic advising compared to when they did not use the tools in the second semester. This suggests that the use of social media in

academic advising significantly impacted on the academic performance of science education students. Although the effect size was weak, academic advising supported with social media is still to the benefits of the students. This finding corroborates that of Junco *et al.* (2011) that the use of social media had a substantial impact on students' engagement, academic performance and relationship building. Borray and Millichap (2017) posited that the use of technologies would strengthen the relationship between students and the adviser. Nigerian university students as digital natives like the social media which could have improved the rapport between them and the adviser. The confidence-building might have strengthened their disposition to study and lessen their burdens which ultimately resulted in the improved academic performance. Lack of opportunity to build such rapport through academic advising in the second semester might have affected their academic performance.

This study also investigated the impact of social media use in academic advising by gender on the science education students' academic performance. The finding revealed no significant impact of social media use in academic advising by gender on science education students' academic performance. This means that the performance of male and female students did not differ significantly when social media was part of the advising process. The finding aligns with that of Goswami and Dutta (2016) that no gender difference existed concerning students' usage of social media to improve academic performance. During the first semester, social media was used with flexibility by both male and female students. Thus, several academic advising channels provided could have solved the challenges that could inhibit their gender difference in learning. Grimus (2013) maintained that the continuous usage of mobile devices breaks gender difference in the use of technologies. However, female students had a higher mean performance than their male

counterparts. The gender gaps might be due to the composition of the participants that favoured female in terms of number. This could have reflected the strong effect of social media use in academic advising by gender on science education students' academic performance as revealed by the findings.

Conclusions

The study examined the impact of the use of social media-tools in academic advising on science education students' academic performance. The study concluded that the use of social media-tools in academic advising has a significant impact on the academic performance of science education students. However, this finding cannot be generalized to other samples because the participants were selected from just one department in the Faculty of education of OOU. Therefore, further studies should select more participants either from the same population or different populations for more findings on the impact of the use of social media in academic advising on students' academic performance. Another study should also explore how each social media tool (EMail, Facebook and WhatsApp) impact students' performance since this study did not focus on that.

This study also established that there is no significant impact of gender in the use of social media tools in academic advising on academic performance of the science students. This finding too should not be generalized. The number of females in the study might have affected the result. Hence, further research should ensure the same number of males and females to support generalisability.

Based on the findings, the study recommends that advisers should incorporate the use of social media tools into the academic advising systems in the universities. However, this should also be regulated by applying terms and conditions to control the excesses of the students. The university systems should also integrate ICT-powered academic advising tools to lessen the workloads of advisers. This will

enable them to have more time to focus on their tripod roles of teaching, research and community service.

While working on the more advanced tools to assist the students, university managements should support academic advisers with data subscription to help their advisory responsibilities. Moreover,

students need orientation on how the use of social media in academic advising can help their academic success. The students should also be supported with free Wi-Fi while on campus to ease the financial burden that the purchase of data could place on them.

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