



UTILIZATION OF SOCIAL MEDIA IN THE DIGITAL AGE AS ACADEMIC RESOURCES AMONG BIOLOGY EDUCATION STUDENTS IN ABIA STATE, NIGERIA

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Abstract

The study investigated the utilization of social media (SM) as academic resources among Biology education students in Abia State Universities, adopting a descriptive survey research design. 123 students randomly drawn from, the 1500 biology education students in, the two universities served as the sample. A self-developed Questionnaire, face validated by experts with reliability coefficient of 0.76 established using Cronbach Alpha, was used for data collection. Data collected were analyzed using descriptive statistics and t-test for significant difference. Results revealed that MOUAU students indicated that Tiktok, Whatsapp and facebook are highly useful SM platforms, Snapchat, Instagram and Youtube are moderately useful, while the other stated SM platforms are just useful. ABSU students, on the other hand, indicated that Whatsapp and Facebook are highly useful, Tiktok and Youtube are moderately useful while Flickr, Tumblr, Spotify, Yelp, TripAdvisor, Angel list and Crunchbase are not useful. For frequency of usage; MOUAU students use Tiktok, Whatsapp and Facebook daily, Snapchat, Instagram, Twitter, Telegram and Youtube several times in a week while other SM platforms are used occasionally. ABSU students indicated that Tiktok and Whatsapp are used daily, Snapchat and facebook, several times a week, Flickr is never used and other platforms are used occasionally. Respondents, from both schools, indicated that Whatsapp and Facebook are utilized (Very High Extent), Tiktok, Snap chat and Youtube (High Extent) and Other SM platforms (Low extent). Also, a non-significant statistical difference was found in the extent of utilization of SM platforms as academic resources between students in the two universities. Recommendations were made among which is the need for educators to incorporate SM platforms usage into their instructional methods to enhance student engagement and academic achievement.

Keywords: Academic Resources, Biology Education Students, Digital Age, Social Media

Introduction

Education, in the 21st century, has gone beyond mere classroom face-to-face interactions as advances in technology has provided opportunities where more information becomes available to the public through a wide range of channels. These wide range of channels previously involving majorly traditional and printed sources, in recent times, have been taken over by digital sources in various formats via the internet. Internet refers to a global system of connections between computers, which allows people to communicate with one another and find information on the world wide web using visuals, sounds, and text in a way



that escapes time, space and the cost limitations of distance (Techopedia, 2020). It is a rapidly growing worldwide system of interconnected computer networks that offers many services, such as remote user login, file transfer, e-mail, and newsgroups, allowing millions of individuals (computer users) receive, process and exchange information (Amponsah et al., 2022). In education today, several research (Mbongo, et al., 2021; Siraj et al., 2015) have shown that teachers and learners, at all levels of education, frequently rely on open resources available on the internet for their academic activities, since the internet promotes online teaching and learning that foster flexibility, interaction, access to more information, and increased engagement between teachers and students. In recent times, a number of web technologies has emerged from the internet and one technology that is making waves with regard to information sharing and communication are the social media networks.

Social media, derived from the social software movement, are collection of internet websites, services and practices that support collaboration, community building, participation, and sharing (Kolhar et al., 2021). Noori et al. (2023) explained that they include different types of platforms or applications such as blogs, wikis, YouTube, Twitter, media (audio, photo, video, text) sharing tools, networking platforms (including Facebook, LinkedIn, Instagram, WhatsApp etc), and other virtual worlds that facilitate social interaction, possible collaboration and useful deliberation across stakeholders. Over time in academics, the use of social media has become increasingly popular among students, teachers and researchers, primarily for obtaining information, conducting research, creating a social image, interacting with the wider community, and expressing emotions with each other (Ali et al., 2020). Ellore et al. (2014) and Rabiun et al. (2016), in their respective studies, agreed that social media networks are supplementary information source as most students, if not all, who have access to these networks through their mobile phones get career interests and relevant information, in the form of educational materials, ideas, guidance, and general knowledge that leads to higher academic performance. Similarly, Siraj et al. (2015) reported that although there are many troubling issues surrounding the abuse of social media platforms, however when properly used social media has the capability of improving teaching/learning culture and productivity within and among academic-based institutions through its features of transformed communication, teaching, learning and research.

Supporting the premise, Noori et al. (2023) posited that social media platforms have made communication faster and information available within seconds, providing opportunities for collaboration and support, delivering a global network of entertainment, helping users form



a sense of self-identity, and offering access to employment opportunities. Naslund et al. (2020) reiterated that with the arrival of social media, a new paradigm of social interaction has evolved through its provision of opportunities for one to connect with distant and diverse community/family relatives, information sources, allowing close and frequent interaction as well as an opportunity in helping individuals solve each other's emotional and other daily life challenges. Summarizing the benefits, Ghafar (2024) concluded that social media platforms have turned human lives into global village as they play a vital role in the modern world, facilitating a variety of activities such as disseminating information, social networking, accessing online resources, advertising, marketing, and most importantly education, in recent times.

Despite the popularity and potential benefits of social media in academic activities, studies have revealed that only a few percentages of students and lecturers use them for academic purposes. For instance, Kolhar et al. (2021) through an online survey revealed that social engagement, direct communication, speed of feedback/results and relationship building are the top four reasons students use social media tools. In their study, Noori et al. (2023) reported that youths mostly use social media platforms for artificial connections, communication, criminal activities, pornography, cyber bullying, exposition to advertising and consumption of virtual items, highlighting majorly the ills of social media utilization on its users. Similarly, Ali et al. (2020) posited that although the level of awareness of social media among members of the academic community is high, there is a large gap between awareness and the actual use of the majority of these tools by the academic community for academic purposes. While several studies have been conducted on social media highlighting its benefits, ills and challenges of utilization, little attention has been paid to the assessment of social media platforms to determine specifically which social media platforms are utilized as academic resources by students, how often students use the various types of social media platforms as information sources, especially for academic purposes as well as the extent to which students utilize each of the social media platforms for academic purposes. Hence, the rationale behind the study to determine social media platforms Biology Education students perceive as useful, frequency of utilization of these platforms and extent of utilization of these platforms as academic resources in Abia State, Nigeria.



Purpose of the Study

The purpose of the study is to investigate the utilization of social media as academic resources among biology education students in Abia State Universities. Specifically, the study seeks to determine:

1. Social media network/ tools perceived as useful academic resources by Biology education students in Abia State Universities.
2. The frequency of social media usage among Biology education students in Abia State Universities.
3. Extent of utilization of social media network/tools for academic activities by Biology education students in Abia State Universities.

Research Questions

The following research questions are formulated to guide the study,

1. What is the perceived level of usefulness of social media as academic resources by Biology education students in Abia State Universities?
2. What is the frequency of usage of social media by Biology education students in Abia State Universities?
3. To what extent are social media networks/ tools utilized as academic resources by Biology education students in Abia State Universities?

Hypothesis

The null hypothesis was tested at 0.05 alpha levels

Ho1 There is no significant difference in the extent of utilization of social media for academic activities among Biology education students in Federal and State Universities.

Method

The study adopted a descriptive survey research design, and focused on Abia State University Uturu (ABSU, a State University) and Michael Okpara University of Agriculture Umudike (MOUAU, a Federal University). The Population of the study comprised the 1500 biology education undergraduate students in the two universities in Abia State. Simple random sampling technique was employed to draw a sample size of 123 biology education undergraduate students (41 from ABSU and 82 from MOUAU), used in the study. The instrument for data collection was a structured questionnaire developed by the researchers. The questionnaire consisted of four sections. Section A, was designed to collect the bio data of the respondents, Section B assessed the frequency of social media usage as an academic resource, utilizing a four-point scale ranging from Daily(4), Several times a Week(3), Occasionally(2)



and Never(1), Section C was framed to investigate the perceived usefulness of social media, employing a four-point scale ranging from Highly useful (4), Moderately Useful (3), Useful (2) and Not useful (1) and lastly, Section D measured the extent of social media utilization as academic resources, using a four-point scale of Very High Extent (4), High Extent (3), Low Extent (2) and Very Low Extent (1).

The questionnaire was validated by three experts from the Department of Science Education, MOUAU and subjected to pilot testing, using students from Nnamdi Azikiwe University, to yield a reliability coefficient of 0.76 established using Cronbach Alpha. The copies of the questionnaire were administered to the respondents and collected on the spot through the help of research assistants at the two universities. The data collected were analyzed using mean and standard deviation to answer the research questions and t-test for significant difference for testing the null hypothesis at 0.05 alpha levels. Mean values of 3.00 – 4.00 indicate Highly Useful/Daily/Very High Extent; 2.50 – 2.99 indicate Moderately Useful/Several times a week/High Extent; 1.50 – 2.49 indicate Useful Occasionally/Low Extent/ while 0.00 – 1.49 indicate Not useful/Never/Very Low Extent.

Results

Research Question 1: What is the level of perceived usefulness of social media as academic resources by biology education students in Abia State Universities?

Table 1: Level of perceived usefulness of social media as academic resources by biology education students in Abia State Universities

S/N	ITEMS	MOUAU			ABSU		
		Mean	SD	REMARK	Mean	SD	REMARK
1	Tiktok	3.06	1.02	Highly Useful	2.85	1.14	Moderately Useful
2	WhatsApp	3.44	0.95	Highly Useful	3.51	0.86	Highly Useful
3	Snapchat	2.80	1.06	Moderately Useful	2.39	1.25	Useful
4	Facebook	3.07	1.10	Highly Useful	3.05	1.13	Highly Useful
5	LinkedIn	2.38	1.21	Useful	2.37	1.28	Useful
6	Instagram	2.60	1.17	Moderately Useful	2.17	1.23	Useful
7	Twitter	2.41	1.22	Useful	2.00	1.19	Useful
8	Telegram	2.34	1.20	Useful	2.07	1.22	Useful
9	Pinterest	2.21	1.13	Useful	1.95	1.23	Useful
10	YouTube	2.79	1.30	Moderately Useful	2.66	1.34	Moderately Useful
11	Flickr	1.79	0.93	Useful	1.46	0.80	Not Useful
12	Medium	1.80	0.97	Useful	1.56	0.86	Useful
13	Tumblr	1.82	0.96	Useful	1.32	0.68	Not Useful
14	Spotify	1.85	1.06	Useful	1.44	0.83	Not Useful
15	Yelp	1.80	0.94	Useful	1.44	0.77	Not Useful
16	TripAdvisor	1.83	1.02	Useful	1.41	0.76	Not Useful
17	Angel List	1.80	0.96	Useful	1.39	0.76	Not Useful



18	Crunchbase	1.73	0.94	Useful	1.32	0.60	Not Useful
Grand Mean		2.30		Useful	1.94		Useful

Source: Field Work, 2024

Data in Table 1 reveals that Biology Education students in MOUUAU indicated that Tiktok, WhatsApp and Facebook are highly useful social media platforms, since they have mean scores above 3.00, Snapchat, Instagram and YouTube are moderately useful with mean scores of 2.80, 2.60 and 2.79 respectively while other stated social media platforms were perceived as useful with mean score ranges of 1.50 – 2.49. ABSU Biology Education students, on the other hand, indicated that WhatsApp and Facebook are highly useful social media platforms with mean scores above 3.00, Tiktok and YouTube are moderately useful with mean scores of 2.85 and 2.66 respectively, while Flickr, Tumblr, Spotify, Yelp, TripAdvisor, Angel list and Crunchbase are not useful with mean scores less than 1.49. A grand mean of 2.30 for MOUUAU and 1.94 for ABSU, reveals that respondents from both schools agreed that SM platforms to them are useful academic resources.

Research Question 2: What is the frequency of usage of social media by biology education students, in Abia State Universities?

Table 2: Frequency of usage of social media Platforms by biology education students in Abia State Universities

S/N	ITEMS	MOUUAU			ABSU		
		Mean	SD	REMARK	Mean	SD	REMARK
1	Tiktok	3.46	0.83	Daily	3.24	1.05	Daily
2	WhatsApp	3.87	0.54	Daily	3.71	0.63	Daily
3	Snapchat	2.98	1.04	Several times a week	2.90	1.21	Several times a week
4	Facebook	3.60	0.82	Daily	2.98	1.22	Several times a week
5	LinkedIn	2.28	1.19	Occasionally	2.29	1.25	Occasionally
6	Instagram	2.76	1.20	Several times a week	2.39	1.25	Occasionally
7	Twitter	2.55	1.20	Several times a week	2.07	1.26	Occasionally
8	Telegram	2.74	1.27	Several times a week	1.80	1.13	Occasionally
9	Pinterest	2.22	1.15	Occasionally	1.85	1.18	Occasionally
10	YouTube	2.73	1.18	Several times a week	2.24	1.28	Occasionally
11	Flickr	1.88	1.11	Occasionally	1.46	0.89	Never
12	Medium	1.76	1.02	Occasionally	1.63	0.96	Occasionally
13	Tumblr	1.74	1.01	Occasionally	1.51	0.89	Occasionally
14	Spotify	2.15	1.21	Occasionally	1.63	1.03	Occasionally
15	Yelp	1.76	1.03	Occasionally	1.68	1.02	Occasionally
16	TripAdvisor	1.85	1.06	Occasionally	1.56	0.96	Occasionally
17	Angel List	1.79	1.04	Occasionally	1.73	1.08	Occasionally
18	Crunchbase	1.83	1.06	Occasionally	1.71	1.02	Occasionally
Grand Mean		2.44		Occasionally	2.12		Occasionally

Source: Field Work, 2024



Table 2 shows that MOUAU Biology Education students use Tiktok, WhatsApp and Facebook daily since they all have mean scores above 3.00, Snapchat, Instagram, Twitter, Telegram and YouTube are used several times in a week with mean scores ranging from 2.50 – 2.99 while other social media platforms itemized above are used occasionally. ABSU Biology Education students, on the other hand, responded that Tiktok and WhatsApp are used daily, Snapchat and Facebook are used several times a week, Flickr is never used with mean of 1.46 while other social media platforms itemized are used occasionally, with mean scores between 1.50 – 2.49. A grand mean of 2.44 for MOUAU and 2.12 for ABSU, reveals that respondents from both schools agreed that SM platforms are occasionally used.

Research Question 3: To what extent are social media networks/tools utilized as academic resources by biology education students in Abia State Universities?

Table 3: Extent to which social media networks/ tools are utilized for academic activities by biology education students in Abia State Universities

S/N	ITEMS	MOUAU			ABSU		
		Mean	SD	REMARK	Mean	SD	REMARK
1	Tiktok	2.90	1.10	High Extent	2.95	1.08	High Extent
2	WhatsApp	3.51	0.89	Very High Extent	3.34	0.93	Very High Extent
3	Snapchat	2.57	1.16	High Extent	2.56	1.21	High Extent
4	Facebook	3.07	1.11	Very High Extent	3.00	1.19	Very High Extent
5	LinkedIn	2.28	1.20	Low Extent	2.17	1.35	Low Extent
6	Instagram	2.40	1.22	Low Extent	2.10	1.12	Low Extent
7	Twitter	2.33	1.18	Low Extent	1.98	1.16	Low Extent
8	Telegram	2.37	1.21	Low Extent	1.95	1.17	Low Extent
9	Pinterest	2.32	1.21	Low Extent	1.85	1.20	Low Extent
10	YouTube	2.85	1.31	High Extent	2.56	1.42	Hight Extent
11	Flickr	1.73	1.02	Low Extent	1.73	1.10	Low Extent
12	Medium	1.79	1.04	Low Extent	1.73	1.06	Low Extent
13	Tumblr	1.78	1.08	Low Extent	1.61	1.01	Low Extent
14	Spotify	1.85	1.09	Low Extent	1.56	0.94	Low Extent
15	Yelp	1.93	1.15	Low Extent	1.66	0.98	Low Extent
16	TripAdvisor	1.96	1.16	Low Extent	1.61	1.01	Low Extent
17	Angel List	1.84	1.14	Low Extent	1.44	0.80	Very Low Extent
18	Crunchbase	1.95	1.16	Low Extent	1.56	0.96	Low Extent
Grand Mean		2.30		Low Extent	2.07		Low Extent

Source: Field Work, 2024



Data in Table 3 shows the extent to which social media networks/tools are utilized as academic resources by biology education students in Abia State Universities. MOUAU and ABSU respondents both indicated that WhatsApp and Facebook are utilized to a Very High Extent since both have mean scores above 3.00, Tiktok, Snap chat and YouTube (High Extent) with mean between 2.50 – 2.99, Other social media platforms listed above (Low extent) with mean ranging from 1.50 to 2.49 except Angel list which ABSU Biology Education students indicated a very low extent of utilization with mean of 1.44. Grand mean of 2.30 for MOUAU and 2.07 for ABSU, further reveals that respondents from both schools agreed that SM platforms are used at a low extent for academic purposes.

Hypothesis One: There is no significant difference in the extent of utilization of social media for academic activities among biology education students in MOUAU and ABSU.

Table 4: t-test showing difference in the extent of utilization of social media for academic activities among biology education students

Schools	N	Mean	SD	t-cal	p-value	Remark
MOUAU	82	2.30	0.72	1.737	0.085	Not Significant
ABSU	41	2.30	0.60			

Data in Table 4 shows that there is no significant difference in the extent of utilization of social media as academic resources among biology education students with p-value of 0.085 at 0.05 level of significance. Thus, the null hypothesis is not rejected.

Discussion

Result in table 1 revealed that MOUAU students indicated that for academic purposes, Tiktok, WhatsApp and Facebook are highly useful social media platforms, Snapchat, Instagram and YouTube are moderately useful, while Tumblr, Flickr, Spotify, Medium, Yelp, Telegram, Twitter, TripAdvisor, Pinterest, LinkedIn, Angel list and Crunchbase are just useful. ABSU students, on the other hand, indicated that WhatsApp and Facebook are highly useful, Tiktok and YouTube are moderately useful, Snapchat, Medium, Twitter, LinkedIn, Pinterest, Telegram and Medium are useful while Flickr, Tumblr, Spotify, Yelp, TripAdvisor, Angel list and Crunchbase are not useful for academic purposes. The respondents, from MOUAU and ABSU, indication of Facebook, Tiktok, WhatsApp, Snapchat, Instagram and YouTube as highly and moderately useful social media platforms could be attributed to the entertainment-oriented nature associated with them. Grand mean scores of 2.30 for MOUAU and 1.94 for ABSU, further revealed that respondents from both schools, both recognized social media as useful academic resources. The findings concur with the findings of Shen (2019), Noori et al.



(2023) and Ghafar (2024) who reported in their respective studies that social media platforms are useful academic resources that can enhance academic performance of learners, when its usage is monitored and not abused.

Data from table 2 revealed that MOUAU students for academic purposes utilize Tiktok, WhatsApp and Facebook on daily basis, Snapchat, Instagram, Twitter, Telegram and YouTube several times in a week while Flickr, Tumblr, Spotify, Yelp, Medium, TripAdvisor, Pinterest, LinkedIn, Angel list and Crunchbase are used occasionally. On the other hand, ABSU students indicated that Tiktok and WhatsApp are used daily, Snapchat and Facebook, several times a week, Flickr is never used, while Tumblr, Spotify, Yelp, Medium, TripAdvisor, Pinterest, LinkedIn, Angel list and Crunchbase are used occasionally for academic purposes. Grand mean of 2.44 for MOUAU and 2.12 for ABSU, further revealed that the respondents from both schools agreed they occasionally use SM platforms for academic purposes. The findings lay credence to that of Abdullahi et al. (2024), Ahmad (2019) and Zubairu (2023), who opined in their respective studies that social media sites such as Twitter, WhatsApp, Facebook, Instagram are the most used because they capture the attention of many students and thus have negative and positive effects on their academic grade points aggregate.

Finally, data in table 3 revealed that the respondents, from both MOUAU and ABSU, agreed that for academic purposes, WhatsApp and Facebook are utilized by them to a very high extent, Tiktok, Snapchat and YouTube to a high extent while Tumblr, Instagram, Pinterest, Twitter, Spotify, Yelp, Medium, TripAdvisor, Pinterest, LinkedIn, Telegram, and Crunchbase are utilized at a Low extent. The hypothesis tested in table 4 confirms that there is no significant difference between the mean responses of ABSU and MOUAU biology education students on their extent of utilization of social media for academic activities. The findings of the study agree with the findings of Ahmad (2019), Ndubuaku et al. (2020) and Wordu et al. (2021) who reported in their respective studies that the extent of utilization of social media platforms among students of various universities are the same

Conclusion

The study investigated the utilization of social media as academic resources by Biology education students in Abia state, using MOUAU and ABSU. Based on the findings, the researchers concluded that biology education students from, MOUAU and ABSU, perceived social media as useful academic resources. In frequency of utilization, the study revealed that biology education students', from both universities, occasionally use social media for academic purposes. Finally, the researchers also concluded that biology education students, from both



MOUUAU and ABSU, utilize social media platforms to a low extent, which proved not statistically significant when tested.

Recommendations

Based on the findings of the study, the following recommendations were made;

1. Educators should incorporate social media platforms into their instructional methods to enhance student engagement and academic achievement. This integration should involve designing activities that align with learning objectives and assessing student learning outcomes.
2. Institutional administrators should provide necessary infrastructure support, including reliable internet connectivity and digital devices, to facilitate seamless social media integration. Additionally, they should offer professional development opportunities for educators to enhance their social media literacy and pedagogical skills.
3. Curriculum designers should revise biology education curricula to incorporate social media-based resources and activities, promoting essential skills and competencies for the 21st century.
4. Educators should emphasize critical thinking and information literacy skills, teaching students to evaluate online sources effectively, maintain academic integrity, and avoid academic dishonesty.
5. Parents and guardians should encourage responsible social media use among students, monitoring their online activities and ensuring a balance between academic and personal uses.
6. Future research should investigate the impact of social media on biology education outcomes, exploring effective strategies to maximize benefits and mitigate challenges.

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