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EXPLORING BIOLOGY TEACHERS' VIEWS ON LEVERAGING SOCIAL MEDIA TO ENHANCE STUDENTS ENGAGEMENT IN TARABA STATE NIGERIA

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ABSTRACT

This study examined Biology teachers perception on the use of social media to improve students classroom engagement in Jalingo, Taraba State. Four research questions were raised and three null hypotheses formulated. The study adopted a descriptive survey design. The population consisted of 104 biology teachers in both public and private secondary schools in Jalingo, Taraba State from which 75 biology teachers were sampled for the study. Questionnaire on Biology Teachers' Perception on the Use of Social Media to Improve Classroom Engagement (SOMPOT) was used for data collection. The data from the pilot test was used to establish the reliability of the instrument and a coefficient of 0.77 was obtained using Cronbach alpha reliability method. Mean and standard deviation were used to answer the research questions. Independent t-test and ANOVA were used to test the hypotheses formulated at 0.05 level of significance. The findings showed that social media can improve students engagement in the classroom. In conclusion, despite the negative aspect of social media, it significance to the improvement of students' engagement in the Biology classroom cannot be overlooked. .It was recommended that biology teachers should go on self-learning and the school should provide gadgets to sustain students engagement in biology classroom in Jalingo, Taraba State.

Keywords: Perception, Biology, teachers, Social media, students' engagement.

INTRODUCTION

Biology is a science subject which explains the existence of life. It is a natural science which is concerned with the study of living organisms, their structures, forms, functions and heredity. It is a fundamental science subject which serves as the basis for understanding the complexities of how the body parts of organisms functions. Gedik and Cosar (2020) stated that, social media is a common term used for online tools and websites that allow mutual interaction by enabling users to share information. Social media is a platform that allows individuals far and near to interact and connect to each other. Social networks are connecting the world like never before (Ahern, 2016) and changing the way people communicate, learn, and teach. Social media is one of the most commonly used applications in the Internet world as viewed by Gedik and Cosar (2020). Social media offers a mechanism for the audience to join, link, and interact with each other and their shared friends through instant messaging or social networking sites. It has been reported that 49% of 18 29-year-olds and 42% of 30-49-year-olds use some forms of social media, but after 50years of age, the percentage of people who use social media decreases. Some examples of social media include Facebook, Twitter, Instagram, and YouTube among others. Though the use of social media platform comes with positive effects such as creating and sharing information with others, which allows us to connect and communicate with others, share a common challenge/interest, Access to Information, allows us to inspire others to do things, Furthermore, social media can increase voter participation as well. Besides, the ugly part of social media there are tons of unnecessary information shared by people and also bullying and harassment on social media has been increased. People can make brutal and negative comments about anything and anyone. The risk factors are many, hence an investigation to ascertain the impact of social media.

Though social media comes along with some disadvantages, social media also has several advantages that can improve students engagement and academic progress in the classroom. However, as internet service and modern telecommunication technology, especially the use of social

media, has increased over the past few decades, experiences and cognitive abilities to integrate into other communities have improved that Social media contains technical and social features that allow students to adjust quickly to the adaptation process while maintaining ties with their home country. Consequently, previous empirical studies have consistently found that students are more likely to use social media to expand their social networks, learn about the host country s culture, form friendships with friends and family, and fulfill various needs in a non-native environment while quickly adapting to their new surroundings.

One of the most important determinants of successful learning according to Ginting (2021) is student s involvement. Student engagement, in general, refers to active participation in a variety of academic and co-curricular or school-related activities, as well as a commitment to achieving learning objectives. Students who are interested in learning are more likely to devote time and effort to achieve their goals. As a result, involvement is viewed as a motivator in obtaining academic success.

Meaningful student involvement throughout the learning environment (Martin & Torres, 2016) as cited by Abla and Fraumeni (2019).When students get involved meaningfully during the period of learning or with the learning environment it can be termed engagement. Any sustained connection a learner has towards any aspect of learning, schools or education is engagement Abla and Fraumeni (2019). It can be agreed that there are times that an activity is introduced to students in either the classroom or even the school at large. It could be that at the first instance the students might have nonchalant attitude towards the activity, He/she might literally be policed to participate, but after enjoying the activity, the student will gets involved that he/she do not need forced because the activity becomes engaging. According to The Glossary of Education Reform, student engagement refers to the degree of attention, curiosity, interest, optimism, and passion that students show when they are learning or being taught, which extends to the level of motivation they have to learn and progress in their education. The National Association of Independent Schools (NAIS) adds more by saying that student engagement is best understood as a relationship between the student and the following elements of the learning environment: The school community, the adults at school, The student s peers, The instruction, and The curriculum. Larry (2022) was of the opinion that, Student engagement is one of those educational buzzwords that seems to have been around forever.

Since the arrival of social media sites, the society has been flooded with the use of social media in everyday life and education. So many research studies have been carried out using college-level students and professors, and their perceptions of social media use for learning and engagement in the classroom, and the research showed that social media can improve learning in the classroom. However, there is limited research on teachers perceptions of social media use and integration into the learning environment to improve students engagement in the classroom. Therefore, this study seeks to examine teachers perceptions of social media as a learning and engagement tool in the classroom.

Purpose of the study

The main purpose of the study was to Investigate the Perception of Biology Teachers on the Use of Social Media to Improve Students Classroom Engagement in Jalingo, Taraba State, Nigeria. Specifically, the study:

1) Ascertained the perception rating of biology teachers on the use of social media to increase classroom engagement?
2) Investigated the perception rating of biology teachers on the use of social media to improve classroom engagement based on gender?
3) Determined the perception rating of biology teachers on the use of social media to improve classroom engagement based on school type?
4) Found the perception rating of biology teachers on the use of social media to improve classroom engagement based on years of experience?

Research Question

1) What is the perception rating of biology teachers on the use of social media to increase classroom engagement?
2) What is the perception rating of biology teachers on the use of social media to improve classroom engagement based on gender?
3) What is the perception rating of biology teachers on the use of social media to improve classroom engagement based on school type?
4) What is the perception rating of biology teachers on the use of social media to improve classroom engagement based on years of experience?

Research Hypotheses

Ho_1: There is no significant difference in the total perception rating of biology teachers on the use of social media to improve classroom engagement based on gender
Ho_2: There is no significant difference in the total perception rating of biology teachers on the use of social media to improve classroom engagement based on school type
Ho_3: There is no significant difference in the total perception rating of biology teachers on the use of social media to improve classroom engagement based on teachers years of experience

METHODOLOGY

The study adopted a descriptive survey research design. The population consisted of 104 biology teachers in both public and private secondary schools in Jalingo, Taraba State. 75 biology teachers were subsequently selected and used for the study through convenience sampling method. The instrument for data collection was a questionnaire titled Questionnaire on Biology Teachers' Perception on the Use of Social Media to Improve Classroom Engagement (SOMPOT) adapted from Jackson (2022). The rating scale was modified into a 4-point scale of strongly agree, agree, disagree and strongly disagree. The questionnaire was divided into two sections: section A determined the socio-demographic information of the respondents; section B contained 10 items to measure teachers perception. The face and content validity of the instrument was ensured by two experts from the Department of Science Education, Taraba State University Jalingo. A pilot test was conducted with 25 biology teachers outside the population which did not take part in the main study. The data from the pilot test was used to establish the reliability of the instrument and a coefficient of 0.77 was obtained using Cronbach alpha reliability method which showed the instrument was reliable. Mean and standard deviation were used to answer the research questions with the benchmark pegged at 2.50 (for research question1 answering). A mean above showed respondents agreed to the item on the list while a mean below that indicated disagreement. Since the items were 10, it implied that the maximum and minimum total rating scores obtainable by respondents are 40 and 10 respectively. The quantified scores of each respondent were used in answering research questions and testing hypothesis. Null hypotheses 1 and 2 were tested using t-test since it involved mean of two groups only while null hypothesis 3 was tested using the analysis of variance (ANOVA) since it involved three groups all at 0.05 level of significance. All statistical analyses were done on the Statistical Package for Social Sciences (SPSS).

Results

Table 1: Perception ratings of biology teachers on the use of social media to increase classroom engagement

S/No	Item	N	Mean	SD	Decision
1	Using social media in the classroom would increase my students engagement in learning activities	75	3.29	0.56	Agree
2	My students would be more likely to ask for help if they could communicate through social media	7	3.16	0.74	Agree

3	Students should be able to view course materials (syllabus, notes, and/or assignments) through social media	5	3.16	0.55	Agree
4	Students should be able to access Educational Management Systems (e.g., Google Classroom, Haiku Learning. Canvas, Blackboard, Schoology. Moodle, ClassDojo, Kahoot, etc.) through social media	75	3.12	0.70	Agree
5	Students should be able to participate in discussion forums through social media.	75	3.19	0.75	Agree
6	It would be easy for students to engage in classroom discussions with other students through social media	75	3.44	0.55	Agree
7	Students would be more motivated to learn if they could use social media during class	75	3.24	0.65	Agree
8	Students would think it is fun to use an interactive social media during classroom instruction	75	3.27	0.55	Agree
9	Videos, podcasts, and blogs are valuable tools for teaching, and they increase student engagement.	75	3.33	0.55	Agree
10	School districts should lift bans and allow schools to use social media in secondary schools so that students will be more engaged	75	3.27	0.68	Agree
	Total		3.25	0.65	Agree

Table 1 above showed that the teachers all agree with items. A total mean of 3.25 and SD of 0.65 was obtained. This showed that biology teachers in Jalingo Taraba State have positive perception on the use of social media to improve classroom engagement.

Table 2: Male and Female biology teachers' total rating of perception on the use of social media to improve classroom engagement

Gender	N	Mean	SD
Male	50	31.86	3.25
Female	25	33.68	2.48

Table 2 above showed that female biology teachers have a higher mean rating (mean = 33.68, SD = 2.48) of perception on the use of social media in improving classroom engagement than their male colleagues (mean 31.86, SD = 3.25).

Table 3: Public and Private school biology teachers' total rating of perception on the use of social media to improve classroom engagement

School type	N	Mean	SD
Public	38	32.82	2.99
Private	37	32.11	3.26

Table 3 above showed that public school biology teachers have a higher mean perception rating (mean = 32.82, SD = 2.99) on the use of social media in improving classroom engagement than private school biology teachers (mean= 32.12 SD = 3.26).

Table 4: Biology teachers' total rating of perception on the use of social media to improve classroom engagement based on years of experience

Years of Teaching Experience	N	Mean	SD
1-3	31	32.81	3.17
4-6	25	32.12	2.42
6-above	19	32.37	3.89

The table 4 above showed that biology teachers with fewest years of experience (1 to 3 years) have the highest mean perception rating (mean= 32.81, SD=3.17) those who have taught for 4 to 6 years (mean=32.12, SD= 2.42) and 7 years above (mean = 32.37, SD= 3.89).

Table 5: t-test result on male and female biology teachers' perception on the use of social media to improve classroom engagement

Gender	N	Mean	SD	df	T	Sig.
Male	50	31.86	3.25	73	-2.461	0.016
Female	25	33.68	2.48			

Table 5 above showed that there is a significant difference in mean perception of male and female biology teachers on the use of social media to improve classroom engagement ($p=0.0.16 < 0.05$)

Table 6: t-test result on public and private school biology teachers' perception on the use of social media to improve classroom engagement

School type	N	Mean	SD	df	T	Sig.
Public		32.82	2.99	73	0.982	0.330
Private		32.11	3.26			

From table 6 above, it could be concluded that there is no significant difference in mean perception of public and private schools' biology school teachers on the use of social media to improve classroom engagement ($p=0.330 > 0.05$)

Table 7: ANOVA result of biology teachers' perception of use of social media to improve classroom engagement based on years of experience

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	6.767	2	3.383	0.341	0.712
Within groups	713.900	72	9.915		
Total	720.667	74			

Table 7 above showed that based on years of experience, there is no significant difference in the perception of biology teachers on the use of social media to improve classroom engagement.

Discussion of Findings

The findings of the study revealed that biology teachers have a positive perception on the use of social media for improving classroom engagement since they responded positively to all the items. This positive perception corroborates the findings of Saidu and Alabi (2022), Jackson (2022) and Onyebuenyi and Ojiri (2019). This infers that social media could be used by biology teachers to improve the classroom engagement for active learning purposes. It was also found that female biology teachers had a better perception on the use of social media to improve classroom engagement of students. This supports the findings of Jackson (2022), Saidu and Alabi (2022) but contradicts the finding of Mkpa (2020) who found relatedly that male teachers had higher perception on the use of social media. A significant difference was found in the difference in perception of male teachers. A finding which contradicts Saidu and Alabi (2020) but similar to Mkpa (2020).

Furthermore, it was found that public school biology teachers had higher perception than private school teachers; however, this difference was not significant. Comparatively, Saidu and Alabi (2020) found mean perception of ICT for teaching to be higher among

private school teachers even though the difference was not significant as well. Teacher with fewer years of experience in teaching biology had a higher mean perception rating than those with higher years of experience, although the difference in mean perception was not significant. This supports the finding of Jackson (2022) and also that of Albalawi (2017) who found that mathematics teachers perception of using social media in their teaching does not significantly differ based on the years of experience of teachers. Although it is believed that the younger teachers are more acquainted with social media and it translated into the slightly higher mean perception rating they showed.

CONCLUSION

The study concluded that biology teachers have positive perception on the use of social media to improve students' engagement in biology. Furthermore, female biology teachers have significantly higher perception on the use of social media to improve students engagement in biology. However, based on the type of school and years of experience, the teachers showed even perception on the use of social media to improve students engagement in biology.

RECOMMENDATIONS

1. Biology teachers should engage themselves in self-learning and attend workshops, seminars on how to navigate through the social media and know websites to get useful information.
2. Biology teachers should try as much as they can to create the mindset in students that social media is not just for Facebook, Whatsapp, Twitter, Snapchat etc.
3. ICT and related subjects should be taken more seriously at such facilities and gadgets that will aid in practicals should be provided by the government and school**.**

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