JOURNAL OF ARTS OF SOCIAL SCIENCES, KONTAGORA (JASSK)
FACULTY OF ARTS AND SOCIAL SCIENCES
FEDERAL UNIVERSITY OF EDUCATION, KONTAGORA, NIGER STATE-NIGERIA
Vol. 1, No 2 September, 2026
E ISSN: 3156-5336

EFFECT OF SOCIAL MEDIA ON STUDENT'S ACADEMIC PERFORMANCE

Ahmad SANI Anwar

Department of Mathematics, Sa'adatu Rimi College of Education,
P.M.B. 3218, Kumbotso, Kano State, Nigeria
Email Address: asanwar10@gmail.com

DOI: https://doi.org/10.5281/zenodo.22802377

Abstract

Social media are growing very fast amongst the students, it become their daily activities. As such, it affects the student academic performance either positively or negatively. Thus, this study is designed to find out the effect of social networks on student's academic performance of Sa'adatu Rimi College of Education, Kombotso. Questionnaire method was adopted to collect the relevant data for the study, and also the reliability and the validity of the questionnaire have been tested and the results have shown that we have a valid and reliable questionnaire. Ninety students were selected as a sample from three different combinations. Simple random sampling technique was employed for selection of the sample. Statistical technique was employed to analyze the data and it was concluded that, despite public views relating to the inappropriate use of social networks among the students in the college, most of the students were interested to use social media positively for their academic activities which indicate that social media have a positive impact on the student's academic performance. Hence, lecturers and the students can use social media as a tool to ease teaching and learning activities at any academic environment.

Keywords: Social media; Simple Random Sample; Questionnaire; Percentage; Correlation Analysis.

INTRODUCTION

When social media come into existence it plays a vital role in changing the communication setting of today's social world. It also significantly influenced the academic life of the students. And it is now commonly used as a tool for teaching and learning in higher institutions. It has been found to enhance student productivity, engagement, motivation, and academic performance. Several social media websites such as Snapchat, Facebook, and Twitter have expanded the possibilities of online networking and have presented a new dimension to educational technology.

Gurcan (2015) had mentioned that social media networking is the fastest-growing form of communication due to its ability to transmit necessary information rapidly. Platforms like WhatsApp and YouTube are widely used to facilitate group discussions, share lecture notes,

and clarify complex topics. The digital age has transformed society, with social media platforms becoming essential to daily life. Social media is used primarily by students for communication, information sharing, entertainment, and social networking. Family connections and collaborative learning affect student social media use and academic achievement. Moreover, mental health affects family connection, collaborative learning, and academic performance. Students' academic performance improved with social media use. Family connection and collaborative learning significantly mitigated the social media-academic performance relationship. Moreover, mental health significantly impacted the relationship between collaborative learning, family connections, and academic success. The insights into students' psychological well-being and academic achievement for global education have been identified on how social media use affects student's academic performance and mental health, advancing education science. Today social media has been accepted by higher institution making it a platform where students connect with their instructors, fellow students and other higher authorities across the board. This therefore called for the study to explore and examine how social media has impacted on student's academic life. However, it also introduced significant challenges which include severe distractions that can diminishes attention, potential threats to students mental health, and quick spread of misinformation. Hence, the need to study the effect of social media on student's academic performance.

Boateng and Amankwaa (2016) studied the impact of social media on student academic life in higher education. They examine how social media has impacted on students' academic life. In their study, they implored a qualitative approach in assessing these impacts. Ten (10) participants were conveniently sampled and interviewed within a period of two weeks. After studying the phenomena that were of interest to the study, and transcribing the various responses of the participants their results revealed that social media is widely used by students of higher institution and the participants are in support of the idea that social media contribute a significant quota to the development of their academic life.

Sivakumar (2020) studied the effects of social media on academic performance of the students in Cuddalore District. Survey method was adapted to collect the relevant data for the study. 1000 students were selected as sample. He employed Random sampling technique for the selection of the sample. He used analysis of variance (ANOVA) to analyze the data. Sivakumar (2020) concluded that despite public views concerning the misuse of social media among students in the society, most of the students were interested to use social media positively for their academic purpose, which indicates that the social media positively impacts the academic performance of the students. Therefore, the social media contributes to improve the academic performance of the students. However, results of ANOVA showed that there is significant difference between academic achievement and impact of social media among Students. Sivakumar (2020) recommended that Teacher Educators and the students can use social media as teaching and learning tool to ease and improve learning process.

JOURNAL OF ARTS OF SOCIAL SCIENCES, KONTAGORA (JASSK)
FACULTY OF ARTS AND SOCIAL SCIENCES
FEDERAL UNIVERSITY OF EDUCATION, KONTAGORA, NIGER STATE-NIGERIA
Vol. 1, No 2 September, 2026
E ISSN: 3156-5336

With the aim of exploring the effect of social networking sites to the lifestyles of teachers and students in higher educational institutions, Seguya et al. (2012) conducted a research at four private universities in Bangladesh and one university in Uganda. Seguya et al. (2012) selected a sample of one hundred teachers and one hundred students respectively from four private universities in Bangladesh and one university in Uganda. Both qualitative and quantitative methods were applied during data analysis in their study. The results indicated that social networking sites had several impacts on the lifestyle of students and teachers with the positive effects outweighing the negative effects. Seguya et al. (2012) findings confirmed that students can formulate group discussions so as to exchange their ideas, communicate to their teachers and appeal to their friends about assignments. Teachers share course related materials with their students, enables research work, creates student groups to collaborate on projects and communicate with their fellow teachers from other universities. Thus, their principal conclusion was that the use of social networking sites should be incorporated into teacher's and student's lifestyles as its beneficial nature takes over its adverse side.

Research Questions

The main research question of the study was has social media affect the student's academic performance? To answer these questions and analyze how this effect has taken place, the following question were considered: How do the students use social media?
Do social media affect the student's academic performance negatively or positively?

MOTIVATION

What motivates us to do this work is to find out how social media affect the student's academic performance be it positively or negatively. That is because a lot of people jumped into the conclusion that social media affect the student's academic performance negatively without using any statistical analysis to back their claims. Now, we employed correlation analysis to help us to decide.

METHODOLOGY

This research is aimed at finding out how social media affect the student's academic performance. This chapter is organized under the followings:

- Design of the study
- Population
- Sample and sampling techniques
- Data collection
- Data analysis procedure

- **Design of the study**

JOURNAL OF ARTS OF SOCIAL SCIENCES, KONTAGORA (JASSK)
FACULTY OF ARTS AND SOCIAL SCIENCES
FEDERAL UNIVERSITY OF EDUCATION, KONTAGORA, NIGER STATE-NIGERIA
Vol. 1, No 2 September, 2026
E ISSN: 3156-5336

This research is an ex-post factor type; this was considered appropriate because it attempts to investigate a cause and effect relationship between an independent and dependent variable, it also shows how independent variable correlates itself with the dependent variable without manipulations.

- **Population**

The target population is the NCE II and NCE III students from the department of Mathematics, Sa'adatu Rimi College of Education, Kumbotso.

- **Sample and sampling techniques**

A sample of ninety NCE II and NCE III students from three different combinations, Computer/Mathematics (CSC/MAT), Mathematics/Biology (MAT/BIO), Mathematics/Physics (MAT/PHY) from the department of Mathematics, Sa'adatu Rimi College of Education ware selected. The sampling technique used was simple random sample.

JOURNAL OF ARTS OF SOCIAL SCIENCES, KONTAGORA (JASSK)
FACULTY OF ARTS AND SOCIAL SCIENCES
FEDERAL UNIVERSITY OF EDUCATION, KONTAGORA, NIGER STATE-NIGERIA
Vol. 1, No 2 September, 2026
E ISSN: 3156-5336

- **Data collection**

The data of this research are the numbers of hours spent online by the students selected from three different combinations, CSC/MAT, MAT/BIO, MAT/PHY from the department of Mathematics, Sa'adatu Rimi College of Education, Kumbotso together with their corresponding CGPA and the method of the data collection was questionnaire method.

- **Reliability analysis of the questionnaire**

Cronbach's alpha is employed for the reliability analysis of the questionnaire, which is given by $\propto= \left(\frac{K}{K-1}\right)\left(\frac{S_y^2 - \sum S_i^2}{S_y^2}\right)$.

Where

K = The total number of questions

S_y^2 = The total variance

$\sum S_i^2$ = The sum of variance

And also, when

- $\propto= 0$: This implies that there is no consistency between the various items of a multiple item scale;
- $\propto< 0.6$: This implies that there is a poor reliability between the various items of a multiple item scale;
- $0.6 <\propto< 0.7$: This implies that there is a fair reliability between the various items of a multiple item scale;
- $0.7 <\propto< 0.8$: This means that there is a very good reliability between the various items of a multiple item scale;
- $0.8 <\propto< 0.95$: This means that there is a good reliability between the various items of a multiple item scale;
- $\propto= 1$: This implies that there is complete consistency reliability between the various items of a multiple item scale.

And now, the calculation of the reliability using the Cronbach's alpha

$$\propto= \left(\frac{K}{K-1}\right)\left(\frac{S_y^2 - \sum S_i^2}{S_y^2}\right)$$

And for easy calculation calculations we employed MS Excel, in which we found K, $S_y^2$and $\sum S_i^2$to be 11, 10.5 and 4.9.

And by substituting the values of K, $S_y^2$and $\sum S_i^2$ in the previous equation, we have

JOURNAL OF ARTS OF SOCIAL SCIENCES, KONTAGORA (JASSK)
FACULTY OF ARTS AND SOCIAL SCIENCES
FEDERAL UNIVERSITY OF EDUCATION, KONTAGORA, NIGER STATE-NIGERIA
Vol. 1, No 2 September, 2026
E ISSN: 3156-5336

$$\propto = \left(\frac{K}{K-1}\right)\left(\frac{S_y^2 - \sum S_i^2}{S_y^2}\right) = \left(\frac{11}{10}\right)\left(\frac{10.5 - 3.4}{10.5}\right) = 1.1 \times 0.68 = 0.75.$$

$$\therefore \propto = 0.75.$$

Now, having the value of $\propto = 0.75$, And since $\propto$ falls within the range of $0.7 < \propto < 0.8$. This means that there is a very good reliability between the various items of a multiple item scale. This also indicates that the data set will provide stable and consistent results.

- The validity of the questionnaire

In this study we test the validity of the questionnaire by using correlation analysis with the help of SPSS. And below is the result.

Correlations

		T0TAL
LEVEL	Pearson Correlation	.586**
	Sig. (2-tailed)	.000
	N	81
COMBINATION	Pearson Correlation	.761**
	Sig. (2-tailed)	.000
	N	81
AGE GROUP	Pearson Correlation	.637**
	Sig. (2-tailed)	.000
	N	81
GENDER	Pearson Correlation	.573**
	Sig. (2-tailed)	.000
	N	81
SMARTPHONE	Pearson Correlation	-.384**
	Sig. (2-tailed)	.000
	N	81
USING SOCIAL MEDIA	Pearson Correlation	.726**
	Sig. (2-tailed)	.000
	N	81
SOCAIL NETWORKS PREFFERENCE	Pearson Correlation	.774**
	Sig. (2-tailed)	.000
	N	81
NUMBER OF HOURS	Pearson Correlation	.418**
	Sig. (2-tailed)	.000

JOURNAL OF ARTS OF SOCIAL SCIENCES, KONTAGORA (JASSK)
FACULTY OF ARTS AND SOCIAL SCIENCES
FEDERAL UNIVERSITY OF EDUCATION, KONTAGORA, NIGER STATE-NIGERIA
Vol. 1, No 2 September, 2026
E ISSN: 3156-5336

ONLINE	N	81
EFFECT OF SOCIAL MEDIA	Pearson Correlation	-.577**
	Sig. (2-tailed)	.000
	N	81
CGPA	Pearson Correlation	.261*
	Sig. (2-tailed)	.019
	N	81
GROUPS OF CGPA	Pearson Correlation	.668**
	Sig. (2-tailed)	.000
	N	81
TOTAL	Pearson Correlation	1
	Sig. (2-tailed)	
	N	81

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

And since the correlation is significant at both 0.01 and 0.05 level, we conclude that all the questionnaire items are valid.

- Data analysis procedure

The statistical technique used in this research is correlation analysis which attempts to find out the degree to which variables are associated, it also try to find out the extent to which variables tend to move together. The formula for calculating Karl Pearson's correlation coefficient is given as:

$$r_{xy} = \frac{S_{xy}}{\sqrt{S_{xx}S_{yy}}}$$

Where

$$S_{xx} = \sum x^2 - \frac{(\sum x_1)^2}{n}$$

$$S_{yy} = \sum y^2 - \frac{(\sum y)^2}{n}$$

$$S_{xy} = \sum xy - \frac{(\sum x \sum y)^2}{n}$$

And also the correlation coefficient r_{xy} is the measure of the strength of relationship between x and$y$. Where x and y represent the dependent variable (number of hours spent online by the students) and independent variable (CGPA of the students).

JOURNAL OF ARTS OF SOCIAL SCIENCES, KONTAGORA (JASSK)
FACULTY OF ARTS AND SOCIAL SCIENCES
FEDERAL UNIVERSITY OF EDUCATION, KONTAGORA, NIGER STATE-NIGERIA
Vol. 1, No 2 September, 2026
E ISSN: 3156-5336

The value of r_{xy} ranges between x and -1 and $+1$ i.e $-1 \leq r_{xy} \leq +1$.The type of relationship is represented by the correlation coefficient which is given by:

- $r_{xy} = +1$: Perfect positive correlation;
- $0 < r_{xy} < +1$: Moderate positive correlation;
- $r_{xy} = 0$: No correlation;
- $-1 < r_{xy} < 0$: Moderate negative correlation;
- $r_{xy} = -1$: Perfect negative correlation.

Another way for calculating Karl Pearson's correlation coefficient is by using Excel, the method is as follows:

a. Enter your data: Place your first variable's data in one column for example, C2:C22 and place your second variable's data in another column for example, D2:D22.
b. Select an empty cell: Click the cell where you want the correlation coefficient to appear.
c. Type the formula: You can either enter =PEARSON(C2:C22, D2:D22) or =CORREL(C2:C22, D2:D22).
d. And finally press Enter Key: Then Excel will compute the coefficient.

RESULTS AND DISCUSSION

This chapter presents the results of the data to answer the research questions. Questionnaires have been given to ninety NCE II and NCE III students, which comprises 40 NCE II students and 50 NCE III students respectively, from three different combinations, CSC/MAT, MAT/BIO, MAT/PHY from the department of Mathematics, Sa'adatu Rimi College of Education and analyzed in this study. The data collected from this study is used to answer the following questions: How do students use social media?
Did social media affect the student's academic performance e it negatively or positively?

In this study we have found that, out of the 90 questionnaires that were distributed among the students, only 9 students are not using social media, meaning that 81 students out of 90 students are using social media. That implies that 90% of the students are using social media. And since the aim of this study is to find out how social media affect the student's academic performance, we are going to focus on the 81 students that are using social media.

Table 1: No. of Hours spent online per day and their frequency distributions

No. of Hours spent online per day	Frequency
1 Hour	33
2 Hours	17
3 Hours	07
4 Hours	19
5 Hours	05

JOURNAL OF ARTS OF SOCIAL SCIENCES, KONTAGORA (JASSK)
FACULTY OF ARTS AND SOCIAL SCIENCES
FEDERAL UNIVERSITY OF EDUCATION, KONTAGORA, NIGER STATE-NIGERIA
Vol. 1, No 2 September, 2026
E ISSN: 3156-5336

Table 1 shows that, out of 81 students that are using social media 50 (61.7%) students spent at most 2 hour online per day, and 31 (38.3%) students spent 3 – 5 hours online per day. This means that majority of the students are not addicted to social media. And this answers our first research question which says, how do students use social media?

.

Table 2: CGPA Groups and their frequency distributions

CGPA Group	Frequency
0 – 1 points	01
1 – 2 points	10
2 – 3 points	50
3 – 4 points	07
4 – 5 points	13

Table 2 shows that out of 81 students that are using social media only 11 (13.6%) students have at most 2 points as their CGPA, and 70 (86.4%) students have 2 – 5 points as their CGPA. This means social media do not have negative effect in the student's academic performance.

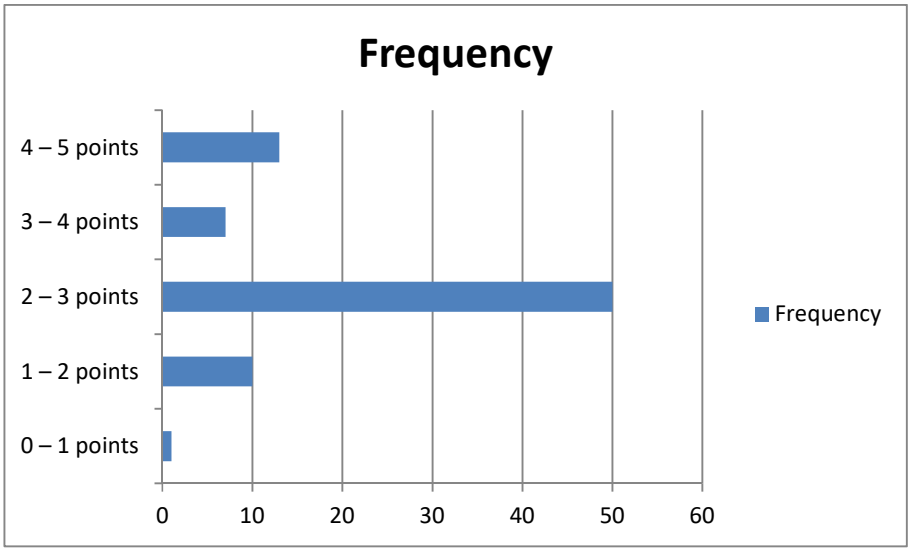


Figure 1: Bar chart of the CGPA Groups against their frequencies.

Figure 1 is skewed to the right, meaning that as the students are using social media positively, the higher the number of the student's in the department of Mathematics, the higher their academic performance.

Table 3: Effect of Social Media and their frequency distributions

Effect of Social Media	Frequency
Positive	47
Negative	34

JOURNAL OF ARTS OF SOCIAL SCIENCES, KONTAGORA (JASSK)
FACULTY OF ARTS AND SOCIAL SCIENCES
FEDERAL UNIVERSITY OF EDUCATION, KONTAGORA, NIGER STATE-NIGERIA
Vol. 1, No 2 September, 2026
E ISSN: 3156-5336

Also considering the student's responses on the question, how do social media affect their studies? Out of the 81 students that are using social media, 47 students choose "Positively" while 34 students choose "Negatively", which means that 58% choose that social media affect their studies positively while 42% choose that social media affect their studies negatively. And this is a clear attestation to our previous findings.

- ❖ Calculation of Karl Pearson's correlation coefficient by using Excel

Despite the fact that all our previous findings in this study tell us that there is a positive effect of social media on the student's academic performance, yet we employed Karl Pearson's correlation coefficient to give us a final say.

We were able to obtain the following data from the student of both NCE II and NCE III

Number of hours spent online by the students	CGPA of the students
4	2.5
4	2.3
4	2.8
4	2.5
1	3
1	2.57
1	3.5
2	2.69
3	2.49
2	2.85
1	2.8
1	2.74
4	3.5
4	3.69
2	1.8
2	2.83
2	1.52
2	3.72
2	2.8
1	2.8
3	3.5
3	2.93
4	4.33
4	3.25
4	2.8
4	2
4	1

JOURNAL OF ARTS OF SOCIAL SCIENCES, KONTAGORA (JASSK)
FACULTY OF ARTS AND SOCIAL SCIENCES
FEDERAL UNIVERSITY OF EDUCATION, KONTAGORA, NIGER STATE-NIGERIA
Vol. 1, No 2 September, 2026
E ISSN: 3156-5336

4	3
5	3.76
4	2.7
3	3.3
3	3.47
1	3
1	2.5
1	3.5
1	3.87
1	3.94
2	1
2	3
2	2.5
2	2.5
2	2
2	2.9
2	3.79
1	3
5	2.5
1	2.7
1	2.44
1	2.75
1	2.4
1	2.78
1	2.76
1	1.54
1	3.5
1	3.5
1	3.8
5	3.5
2	2.35
3	3.75
4	3.58
4	2.98
3	3.25
1	2.5
1	2.48
1	2.53
1	2.37
1	2.42
1	2.59
2	1.56

JOURNAL OF ARTS OF SOCIAL SCIENCES, KONTAGORA (JASSK)
FACULTY OF ARTS AND SOCIAL SCIENCES
FEDERAL UNIVERSITY OF EDUCATION, KONTAGORA, NIGER STATE-NIGERIA
Vol. 1, No 2 September, 2026
E ISSN: 3156-5336

2	2.79
2	2.96
4	4.12
4	2.89
4	2.68
4	2.78
3	2.72
1	2.59
1	2.5
1	2.3
1	2.3
4	3.37

And after carefully following the method for calculating Karl Pearson's correlation coefficient by using Excel in chapter three, we obtained $r_{xy} = 0.166339848$. And since r_{xy} falls within the range of $0 < r_{xy} < +1$. We conclude that there is moderate positive correlation, which means that the more the students use social media positively, the more their CGPA increases. Furthermore, our findings coincides with that of Boateng and Amankwaa (2016), Sivakumar (2020) and Seguya et al. (2012) of which all of them are in agreement with the fact that social media affects the student's academic performance when used positively.

CONCLUSION

In table 1 we have found that, out of 81 students that are using social media 61.7% of the students spent at most 2 hour online per day, and 38.3% of the students spent 3 - 5 hours online per day. This means that majority of the students are not addicted to social media. Also in table 2 we have found that out of 81 students that are using social media only 13.6% of the students have at most 2 points as their CGPA, and 86.4% of the students have 2 - 5 as their CGPA. This means social media do not have negative effect in the student's academic performance. Figure 1 told us that as the students are using social media positively, the higher the number of the student's in the department of Mathematics, the higher their academic performance. And also in table 3 considering the student's responses on the question on how do social media affect their studies? We have found that, out of the 81 students that used social media, 58% of the students choose that social media affect their studies positively while 42% of the students choose that social media affect their studies negatively. And also after carefully following the method for calculating Karl Pearson's correlation coefficient using Excel, we obtained r_{xy}= 0.166339848$. And since r_{xy} falls within the range of $0 < r_{xy} < +1$. We conclude that there is moderate positive correlation, which means that the more the students use social media positively, the more their CGPA increases.

In this case, we are advising parents, governments and the college management to encourage the students to use social media in a positive way, as that will increase their academic

JOURNAL OF ARTS OF SOCIAL SCIENCES, KONTAGORA (JASSK)
FACULTY OF ARTS AND SOCIAL SCIENCES
FEDERAL UNIVERSITY OF EDUCATION, KONTAGORA, NIGER STATE-NIGERIA
Vol. 1, No 2 September, 2026
E ISSN: 3156-5336

performance. The government and the college management can encourage not only the students but also the lecturers by constructing well equipped e-libraries and installing a strong wireless networks all of which can be used by both the lecturers and the student effectively. As for the parents they encourage their children to use social network effectively by buying them smartphones and let them be supervised.

References

Ahmed, I. and Qazi, T. (2011). A look out for academic impacts of social networking sites (snss): A student based perspective. *African Journal of Business Management*, 5 (12):5022–5031.

Boateng, R. and Amankwaa, A. (2016). The impact of social media on student academic life in higher education. *Global Journal of Human-Social Science: G Linguistics and Education*, 16(4):965.

Chatti, M., Amine, J. and Quix, C. Connectivism in International Journal of Learning Technology 5, 1, pp. 80-99,2010.

Creswell, J. W. (2017). Qualitative inquiry and research design: Choosing among five approaches. Slovac Republic Russian Journal of Sociology, 3(1): 30-33.

Dewing, M. (2010). *Social Media: An Introduction* (Vol. 1). Library of Parliament.

Ellison, N. B. (2010). Social network sites: Definition, history, and scholarship. *Journal of Computer - Mediated Communication*, 13(1):210–230.

Gurcan, H. I. (2015). Contribution of social media to the student;s academic development. *International Journal of Information and Education Technology*, 5(12):965.

Seguya, A., Al-Mamun, A., and Clament, C. K. (2012). Effect of social networking sites to the lifestyles of teachers and students in higher educational institutions. *International Journal of Basic and Applied Scieces*, 1(4):498–510.

Sivakumar, R. (2020). Effects of social media on academic performance of the students. *The Online Journal of Distance Education and e-Learning*, 8(2):615.

Appendix

QUESTIONNAIRE FORM FOR RESEARCH

This questionnaire is designed for research purposes only; the information provided will be treated as confidential.

Please tick the appropriate answer.

1. Level
   NCE II ☐ NCE III ☐
2. Combination _____
3. Age group
   15 – 20 years old ☐ 21 – 30 years old ☐ 31 – above years old ☐
4. Gender
   Male ☐ Female ☐
5. Do you have smartphone?

JOURNAL OF ARTS OF SOCIAL SCIENCES, KONTAGORA (JASSK)
FACULTY OF ARTS AND SOCIAL SCIENCES
FEDERAL UNIVERSITY OF EDUCATION, KONTAGORA, NIGER STATE-NIGERIA
Vol. 1, No 2 September, 2026
E ISSN: 3156-5336

Yes ☐ No ☐

6. Do you use social media?
   Yes ☐ No ☐
7. Which social media platform do you prefer?
   WhatsApp ☐ Facebook ☐ Twitter ☐ Snapchat ☐ YouTube ☐
8. How many hours do you spend online per day?
   1 Hour ☐ 2 Hours ☐ Hours ☐ 4 Hours ☐ 4 Hours ☐
9. How does social media affect your study?
   Positively ☐ Negatively ☐
10. Recent CGPA? _____
11. Based on the answer in no. 9, which group of the CGPA do fall?
    0 – 2 points ☐ 2 – 3 points ☐ 3 – 5 points ☐