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# EFFECT OF NETWORK DISCONNECTION ON THE GRADE POINT AVERAGE OF 300 LEVEL LIS STUDENTS IN FEDERAL UNIVERSITY DUTSIN-MA, KATSINA STATE.

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**Abstract**
*This study sought to examine how network disconnection impacted the academic performance of 300 level LIS students in Federal University Dutsin-Ma. The one-shot case study, quasi-experimental pretest-posttest research design was used in conducting the study. The study specifically investigated the effect of network disconnection on the respondents grade point average. The study population comprised two hundred and twenty-six (226) 300 level students in Library and Information Science department of Federal University Dutsin-Ma, Katsina State, Nigeria, who registered for the 1st semester, 2020/2021 academic session. Purposive sampling was used to select 221 out of 226 registered students who sat for the examinations and agreed to participate in the study. An online questionnaire was used as the instrument for data collection in the study. The elicited data were analyzed using descriptive and inferential statistics. Frequency counts and percentages were generated for the demographic variables and the mean score was generated for the GPA of the respondents. Two null hypotheses were tested at 0.05 level of significance using the Wilcoxon signed rank test. The findings revealed a statistically significant increase in 300 level LIS students GPA in the semester they sat for examinations without internet access (Md = 3.00, n = 221) compared to the semester they sat for examinations with access to internet (Md = 2.91, n = 221), z = -3.150, p = .002,*

*effect size (r = .14). Also, students with no deficiency were found to have higher mean GPA score (3.30) compared to the mean GPA score (2.39) of students with deficiency. Recommendation was made that future research should compare the effect that social media alongside cognitive ability and teacher pedagogy have on academic performance for a particular group of students.*
***Keywords:*** *Network Disconnection, Internet, Social Media, Grade Point Average, FUDMA.*

**Introduction**

The internet, a virtual world, where netizens from all over the world converge to socialize and exchange information has become a similitude of the real-life world removing the geographical boundaries hitherto set by unavailability of smartphones, internet access and social media. Social media is now the commonest means of communication preferred by different category of users . The most popular platforms include Facebook, Instagram, Twitter, WhatsApp, Telegram, TikTok, Snap Chat, YouTube and LinkedIn. Majority of the users are students who make use of these social media platforms for various purposes ; and the burgeoning increase in the number of student users of social media could be attributed to the influx of smartphones which is projected to support their teaching and learning needs.

Contrary to the beliefs that the influx of smartphones supports learning and research needs of students, observed with dismay that like a double-edged sword which could be used for good or mischief, these smartphones have through the provision of internet, facilitated students' addiction to social media thereby affecting their academic life negatively. Terminologies used in chatting such as “plz”, “u”, and “d” which are short forms of the original words “please”, “you” and “the” are being used by students in examinations and this has negatively affected their assessment scores Khan & Rizvi cited in Mukhtar et al., 2018) and has a propensity for affecting their grade point average (G.P.A.). Also, time spent on social media instead of study has also affected students negatively due to the low attention span given to studies because they are distracted by social media .

While social media usage remains beneficial to students especially in providing them with an avenue to have virtual group discussions among other benefits , the disadvantages associated with its usage can be more detrimental if usage is not censored . It is for these reasons that several authors such as , Badasyan and Sylva (2018), Mukhtar et al. (2018), Ahmad (2019), , , and studied the effects of internet access and social media usage on students' academic performance. However, results on students' academic performance in the absence of internet usage was not reported in these studies.

The insecurity problems bedeviling Nigeria occasioned a situation whereby respondents in this study sat for examinations while internet access was completely unavailable in the local government area where the university is situated. Comparing students' academic performance based on their GPA in semesters that examinations were written while there was internet access and the semester that examinations were written without internet access would have been largely impossible since suspension of internet access for the purpose of such research is not practically viable. Here in lies the novelty of this research.

**Review of Related Literature**

Academic performance is often measured by the total scores' students earn in all courses taken in a given semester which is then subjected to some arithmetic calculations based on the credit units of each course and converted to a grade point average using a particular scale. Students' performance is largely dependent on their ability to recall and pen down in their examination booklet, a large chunk of has been read and assimilated (Kpolovie, Joe & Okolo, 2014 cited in . Unfortunately, several factors affecting students' ability to read, assimilate, and reproduce what they have retained in their memory abound. The major factors include abundance of affordable smartphones, widespread internet access, and proliferation of social media platforms.

posited that smartphones facilitates access to surfing the internet, communication, and exchange of information on social media. Smartphones remain the commonest device through which social media platforms can be accessed and provision of internet access makes it possible. The internet is the bedrock of all forms of virtual information exchange. It is the global medium that connects people regardless of their geographical location . Without internet access, installation and use of social networking applications on smartphones will not be possible. It is for this reason that emphatically reported that internet and hardware device must be provided to have desired results in terms of use.

Unlike the internet that is more of a service provided to drive online information exchange, social media platforms are the vehicles driven by internet services to deliver textual, audio, and/or video interaction between friends, connections, and acquaintances on social media. Examples of these platforms are Facebook, Instagram, Twitter, YouTube, TikTok, LinkedIn, etc. and students constitutes a significant number of social media users. Studies conducted by , and , lends credence to this fact as the results from their studies shows that students in secondary and tertiary institutions use social media for both academic and non-academic purposes. They stated further that the use of social media for non-

academic purposes is more prevalent and this more often than not, affects their GPA negatively.

To this end, several authors have investigated the impact and effect of social media on academic performance of students. Inal et al. (2012) examined the relationship between internet use and academic performance of high school students in Turkey. The findings revealed that time students spent on internet negatively correlated with their academic standing. This implies that as internet use increases, their academic performance decreases. The study concluded that internet use adversely affected the academic performance of respondents in the study.

studied the impact of social media usage on the academic performance of tertiary institution students in a Ghanian polytechnic. The findings revealed that majority of the respondents (98.5%) spent about 30 – 180 minutes on social media on a daily basis with Facebook being the most utilized. Majority of the respondents (74.2%) responded negatively when asked if social media improved their academic performance however, the result from the Pearson correlation reveals that a strong and positive correlation exist between use of social media and students' academic performance ($r = .75$, and p-value = < .001).

Tamal et al. (2019) investigated the adverse impacts of social networking sites on academic results. Several correlation analyses (Spearman, Pearson, Kendall tau, and Point Biserial) were utilized to ascertain the relationship between the independent variable (time spent on social media) and the dependent variable (semester grade point average) for male and female students. Additionally, linear regression analysis was run to find out the influence of the independent variable on the dependent variable for the two groups. The findings from the correlation test reveals that the independent variable strongly and negatively correlated with the dependent variable for both groups and the regression analysis carried out indicated that the time spent on social media negatively impacted students SGPA. The researchers developed an android application (social media tracker) to help cut down the time students spend on social networking sites.

Olebara et al. (2021) sought to determine the effect of social media on students' academic activities among other variables. The findings revealed that the negative association between social media and academic activities was found to be statistically significant. This implies that the more the time students spend on social media, the lesser the time they will have for their academic activities. The study however could not establish the relationship between social media and academic performance due to inability of respondents to ascertain their current grades owing to the industrial strike action embarked upon in all public

universities as at the time of data collection.

An ample number of studies have been conducted to investigate the effect of social media on students' academic performance, even though the literature reviewed shows no study has been conducted to investigate the difference in the GPA of students in the semester they wrote examination while having access to internet and social media, and the semester they wrote exam without access to internet and social media. This study therefore examined the effect, network disconnection had on the academic performance of 300 level library and information students in federal university dustin-ma by comparing the difference in the grade point average (GPA) in examinations written while having and not having access to internet and social media.

**Research Question**

- What is the effect of network disconnection on the GPA of 300 level LIS students in Federal University Dutsin-Ma based on their academic standing?

**Hypothesis**

$H0_1$: There is no significant difference in respondents GPA in the semester they sat for exams with internet access and without internet access.

$H0_2$: There is no significant difference in respondents GPA in the semester they sat for exams with internet access and without internet access irrespective of their academic standing.

**Methods**

The one-shot case study, quasi-experimental pretest-posttest research design was used in conducting the study. The study population comprised two hundred and twenty-six (226) 300 level students in Library and Information Science department of Federal University Dutsin-Ma, Katsina State, Nigeria, who registered for the 1st semester, 2020/2021 academic session. Purposive sampling was used to select 221 out of 226 registered students who sat for the examinations and agreed to participate in the study. The respondent's GPA and their demographic information were elicited from the students using an online questionnaire. The elicited data were analyzed using descriptive and inferential statistics. The best G.P.A. of respondents in the semester they sat for examinations while having access to internet and social media was taken as the pretest outcome while their G.P.A. in 1st semester 300 level was taken as the posttest outcome to increase internal validity and eliminate some of the biases associated with quasi-

experimental studies such as maturation. Frequency counts and percentages were generated for the demographic variables and the mean score was generated for the GPA of the respondents. Wilcoxon signed rank test was used in testing the hypotheses.

**Results and discussion**

**Table 1: Demographic Characteristics of Respondents**

| Demographic characteristics (n = 221) | | |
|---|---|---|
| Variable | Frequency | Percentage |
| Gender | | |
| Male | 148 | 67% |
| Female | 73 | 33% |
| Marital Status | | |
| Never Married | 212 | 95.9% |
| Married | 9 | 4.1% |
| Mode of Entry | | |
| UTME | 91 | 41.2% |
| DE | 11 | 5% |
| Intra-University Transfer | 119 | 53.8% |
| Academic Standing | | |
| In Good Standing (No Deficiency) | 149 | 67.4% |
| Not In Good Standing (Have Deficiency) | 72 | 32.6% |

Table 1 shows that majority of the respondents (67%) are male while 33% are females. A large percentage of the respondents (95.9%) are single while few of the respondents (4.1%) are married. Intra-university transfer respondents (51.8%) are more than the unified tertiary matriculation examination (UTME) respondents (41.2%) and the direct entry (DE) respondents (5%). 67.4% (149) of the respondents are without deficiencies while 32.3% (72) of the respondents have deficiencies. The unified tertiary matriculation examination (UTME) refers to respondents that got

admitted to university directly from secondary school. The direct entry (DE) refers to respondents who got admitted to university after attending a post-secondary institution awarding A-Level certificate while intra-university transfer refers to respondents who spent one or two years in the university but transferred to another department because their GPA was too low for them to continue in their initial program or they felt they will do better in another program in the same university.

**Table 2: GPA of respondents**

| Overall Mean GPA (n = 221) | | |
|---|---|---|
| | Mean | Std. Dev. |
| Best GPA in Exam Written with Internet Access | 2.92 | .72 |
| GPA in Exam Written without Internet Access | 3.00 | .74 |

The mean GPA for all the respondents (n = 221) in the semester they sat for examination without internet access (x = 3.00) is higher than the mean GPA for the semester they sat for examination with internet access (x = 2.92) as shown in Table 2 above. This implies that not having access to social media due to absence of internet services may have helped in improving their GPA.

**Table 3: GPA of respondents in good standing**

| Mean GPA of Respondents in Good Standing (n = 149) | | |
|---|---|---|
| | Mean | Std. Dev. |
| Best GPA in Exam Written with Internet Access | 3.18 | .667 |
| GPA in Exam Written without Internet Access | 3.30 | .587 |

Further analysis reveals that the mean GPA for respondents without deficiency (n = 149) was higher in the semester they sat for examination without internet access (x = 3.30) than in the semester they sat for examination with internet access (x =

3.18) as depicted in Table 3.

**Table 4: GPA of respondents not in good standing**

| Mean GPA of Respondents not in Good Standing (n = 72) | | |
|---|---|---|
| | Mean | Std. Dev. |
| Best GPA in Exam Written with Internet Access | 2.50 | .646 |
| GPA in Exam Written without Internet Access | 2.39 | .631 |

Results for respondents with deficiency (n = 72) in Table 4, shows a drop in their GPA in the semester they took examination without internet access (x = 2.39) against the semester they took examination with internet access (x = 2.50) implying that lack of internet access may not necessarily have a positive effect on their GPA unlike respondents with no deficiency.

**Table 5: Cross-tabulation between academic standing and gender**

| Cross-tabulation between Academic Standing and Gender (n = 149) | | | | | |
|---|---|---|---|---|---|
| | | | Gender of respondents | | |
| | | | Male | Female | Total |
| Academic Standing | In Good Standing (No Deficiency) | Count | 91 | 58 | 149 |
| | | % within academic standing | 61.1% | 38.9% | 100% |

Table 5 reveals that 91 (61.1%) male respondents out of 149 are without deficiencies. Also, 58 (38.9%) out of 73 female respondents are without deficiencies. This shows that the female respondents with no deficiencies are more than the male respondents.

**Table 6: Cross-tabulation between academic standing and mode of entry**

| Cross-tabulation between Academic Standing and Mode of Entry (n = 149) | | | | | | |
|---|---|---|---|---|---|---|
| | | | Mode of Entry | | | |
| | | | UTME | DE | Intra-University Transfer | Total |
| Academic Standing | In Good Standing (No Deficiency) | Count | 73 | 8 | 68 | 149 |
| | | % within academic standing | 49% | 5.4% | 45.6% | 100% |

Results in Table 6 above shows that 73 (49%) of the respondents joined the department from year 1, 68 (45.6%) joined the department via intra-university transfer while 8 (5.4%) joined the department in year 2 via direct entry. This implies that despite the intra-university transfer respondents (53.8%) being more than the UTME respondents (41.2%), the UTME respondents (49%) without deficiencies are more than the intra-university transfer respondents (45.6%).

***Hypothesis***
***Hypothesis One***
$H0_1$: Network disconnection does not have any significant effect on 300 level LIS students mean GPA.

**Table 7: Effect of network disconnection on GPA of 300 level LIS students**

| | N | Mean | Median | Z | p value | r |
|---|---|---|---|---|---|---|
| Exam with Internet Access | 221 | 2.92 | 2.91 | -3.150 | .002 | .14 |
| Exam without Internet Access | 221 | 3.00 | 3.00 | | | |

In order to establish if there was a statistically significant increase in respondents GPA in the semester, they sat for examination with internet access and the semester they sat for examination without internet access, a Wilcoxon signed rank

test was ran. Table 7 above shows that there is a statistically significant increase in 300 level LIS students GPA in the semester they sat for examinations without internet access (Md = 3.00, n = 221) compared to the semester they sat for exam with internet access (Md = 2.91, n = 221), z = -3.150, p = .002, with a small effect size (r = .14). Therefore, the null hypothesis which states that network disconnection does not have significant effect on the GPA of 300 Level LIS students is hereby rejected. This is an indication that network disconnection prevented 300 Level LIS students in federal university dutsin-ma from accessing the internet and other social media platforms which helped in improving their academic performance in as evident in their GPA scores. This finding gives credence to the findings of where they reported that improvement in students' academic performance is often accompanied by less students engagement on the internet for social networking purposes.

***Hypothesis Two***

*$H0_2$:* Network disconnection does not have any significant effect on 300 level LIS students mean GPA irrespective of their academic standing.

**Table 8: Effect of Network Disconnection on GPA of 300 Level LIS Students without Deficiency**

| | N | Mean | Median | Z | p value | r |
|---|---|---|---|---|---|---|
| Exam with Internet Access | 149 | 3.12 | 3.00 | -5.089 | .000 | .29 |
| Exam without Internet Access | 149 | 3.30 | 3.25 | | | |

The results of the Wilcoxon signed rank test as presented in Table 9 generally shows a statistically significant increase in the GPA of 300 Level LIS students with no deficiency in the semester they sat for examination without internet access (Md = 3.25, n = 149) compared to the semester they sat for examination with internet access (Md = 3.00, n = 149), z = -5.089, p = .000, with a small effect size (r = .29). Therefore, the null hypothesis which states that network disconnection does not have significant effect on the GPA of 300 Level LIS students based on their academic standing is hereby rejected in the case of respondents with no deficiency. This points to the fact that network disconnection significantly impacted the academic performance of students with no deficiency. This finding corroborates that of Tamal et al. (2019) where they found decrease in time spent on social media to be inversely proportional to the increase in the grade point average of students.

**Table 9 – Effect of Network Disconnection on GPA of 300 Level LIS Students with Deficiency**

| | N | Mean | Median | Z | p value | r |
|---|---|---|---|---|---|---|
| Exam with Internet Access | 72 | 2.50 | 2.36 | -1.559 | .119 | .12 |
| Exam without Internet Access | 72 | 2.39 | 2.43 | | | |

Results in Table 9 revealed that there was no statistically significant increase in the GPA of 300 Level LIS students with deficiency, in the semester they sat for exam without internet access (Md = 2.43, n = 72) compared to the semester they sat for examination with internet access (Md = 2.36, n = 72), z = -1.559 and p = .119. Therefore, the null hypothesis which states that network disconnection does not have significant effect on the GPA of 300 Level LIS students based on their academic standing is hereby accepted in the case of students with deficiency. This implies that the absence of internet services did not translate to improvement in students' academic performance in the case of students with deficiency. This finding is in contrast with the findings of where they reported that less students engagement on the internet for social networking purposes translates to improved academic performance. This is also an indication that network disconnection significantly impacted the academic performance of students with no deficiency more than students with deficiency.

**Conclusion and Recommendation**

The decline in students' academic performance witnessed in our citadels of learning across our primary, secondary, and tertiary institutions have been attributed to excessive internet and social media use as evident in literature. But like a double-edged sword, internet and social media have their merits and demerits depending on how they are put to use as substantiated by previous studies. Exploiting the advantage presented by the absence of internet connectivity during the first semester of the 2020/2021 academic session in federal university Dutsin-ma, this study sought to unearth the effect that inaccessibility to internet and by extension, social media has on students' academic performance. The findings revealed that 300 level LIS students in federal university Dutsin-ma had better GPA scores in the semester they sat for examination without internet access compared to the semesters they sat for examination with access to internet. Also, while network disconnection generally helped in improving the students' academic performance, it is possible that other factors such as cognitive ability,

teacher pedagogy, etc. could also enhance their academic performance since the increase in GPA scores was witnessed in students with no deficiency more than the students who had deficiencies. It is therefore recommended that future research should compare the effect that social media alongside cognitive ability and teacher pedagogy have on academic performance for a particular group of students.

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