
USING *Whatsapp* TO EXTEND LEARNING INTO UNDERGRADUATE STUDENTS' DIGITAL LIVES: MEASURING ITS EFFECTS ON ACADEMIC PERFORMANCE IN GENERAL STUDIES

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ABSTRACT

This paper examined the impact of Whatsapp in extending learning into undergraduate students' digital lives and how it influenced their academic performance in general studies (peace and conflict resolution). Quasi experimental design with a non-equivalent, non-randomized groups involving 2x2 factorial was adopted for the study. Intact classes of 78 and 82 (200 level) undergraduate students from Federal University Birnin Kebbi (FUBK) and Kebbi State University of Science and Technology (KESUSTA) were purposively selected as sample for the study respectively. The two institutions were assigned to experimental group 1 (Exp.1) and experimental group 2 (Exp.2) through balloting. In this study, two instruments were used: comprehensive GST dummy (CGSTD) and GST achievement test (GSTAT). Pilot study was conducted and reliability index of 0.87 was obtained for the GSTAT using Kuder Richardson (KR-21). Three hypotheses were formulated and tested using analysis of covariance (ANCOVA) and z-test. Results showed that there was a significant difference in the academic performance of undergraduate students exposed to a comprehensive GST dummy and those treated in a blended setting (using Whatsapp), where those treated in a blended setting using Whatsapp performed better. No significant difference was found in the academic performance of the undergraduate students based on gender. In line with the findings of the study, it was recommended that lecturers should engage themselves to studying the best approaches that best suit the students of digital native, and should also endeavour to incorporate social media to supplement the conventional classroom teaching-learning process.

Key words: Social media, Whatsapp, Digital lives, Digital native

INTRODUCTION

The term "Digital Lives" is used to describe the activities and online interactions educational or otherwise, through the utilization of the fast-emerging technologies such as computers and other handheld devices. Digital Lives provide intuition into how youth steer the ever-evolving digital world and respond to the norms that are emerging from it. Digital Lives offer evidence that youths' lives are increasingly played out on digital platforms and that social networks are at the center of this (Shotbolt, 2014). Students in digital age

enjoy the use of technology for learning, they even try to relate it to leisure gaming. Students feel motivated to learn through the use of technology even if concepts become more difficult (Nowell, 2013). In the digital world, students extend their learning to reaching to word libraries, exchanging educational videos, PDF and so on. Current digital native students demand new styles of teaching and engagement, and through innovative technology integration teachers can meet these demands (Banitt, Theis, & Leeuwe, 2013).

Digital technologies shape students' ways of thinking and have also become supportive tools for teaching to middle and high school students (Purcell, Buchanan & Friedrich, 2013). Teachers see digital technologies such as social networking sites, cell phones and texting, generally facilitating youths' personal expression and creativity, encouraging them to learn more often compared to when conventional approach is used (Purcell et al., 2013). In the next few years, university setting would change to an environment where computer laboratories would be replaced with mobile wireless (devices) options (Dede, 2005). Upon all the existing digital technologies, students' lives are centered on social media sites (El-Bialy & Jalali, 2015). These sites also play significant role in changing the way digital native students respond to teaching-learning activities. Integration of mobile devices into teaching and learning offers true flexibility for our students and fit in with their digital lifestyle (Mellow, 2005).

Social media sites have been defined as public web-based services that permit users to create a personal profile, identify other friends on the same site, read and reply to postings made by other users on the spot, send and receive messages either privately or publicly (Boyd & Ellison, 2007). Social media is a website built technology that allow individual or group of individuals to express themselves and interact socially with others. Social media is characterized as Web2.0 e-learning resources that emphasize active participation, connectivity, collaboration and sharing of knowledge and ideas among users (Muniasamy, Ejalani & Valli, 2015). Social interaction within an online framework through the utilization of social media sites helps university students share experiences and collaborate on relevant topics (Liccardi, Ounnas, Pau, Massey, Kinnunen, Lewthwaite, Midy & Sarkar, 2013).

Aforementioned social interaction is utilized through the use of social networks. Social networks are a social structure of bulges that represent individuals or

organizations and the relationships between them within a certain domain (Mustafa & Hamzah, 2011). Social networks are therefore built based on the strength of relationships and trust between the members (nodes) (Liccardi et al., 2013). In education, most of social interactions are for learning purposes. Learning is a relatively permanent change in behaviour as a result of experience. Characteristics of learning include: changing and confirming personal thinking; seeing something in a different way; understanding; applying; memorizing and reproducing; increasing knowledge and so on (Marton, Dall'Alba & Beaty, 2003). All the listed characteristics could be accomplished by learning on social media.

Learning is not simply a knowledge transmission, but a social process where individuals actively participate in a communal practice where the knowledge is collectively constructed (Lave & Wenger, 1991). The rising set of social media tools such as Whatsapp, Twitter, Facebook, Instagram, and Google+ have the potential to enhance learning at all levels of education (Krishnan, Okubo, Uchino & oldberg, 2015). Social network has the potential to reduce social exclusion, thus increasing a student's self-efficacy (Liccardi et al., 2013). It was found that Facebook as a social medium is a distraction for students, digital migrants value video lectures, and have some doubt about current online-learning platforms like the wikis (Krishnan et al., 2015). Krishnan et al (2015) further established that 'Google Documents' help students learn mathematics by enabling them to work together to solve problems; social media games (Words with Friends) teach students about collective problem solving; twitter exposes students to new perspectives on topics they are studying; Whatsapp improve student's social skills; degree from an on-line school like Khan Academy is equivalent to a high-school diploma.

With social media becoming an everyday communication tools for individuals and groups, it is logical to incorporate them into the teaching and learning

process (Griesemer, 2014). Social media technologies are increasingly changing the communications landscape among teachers, students and researchers. Emergence of social media has impacted significantly on how students learn and the way instructors teach. In higher education settings, instructors, researchers, students, and others collaborate on the tasks of knowledge construction (Al-Rahmi & Uthman, 2014). The influence of social media on learning and teaching environments is growing more every year. Social media applications reinforce class material and positively influence collaborative work.

Social media technologies offer the capability to receive, create, send and discuss content with the hope that improvement in students' academic performance would be recorded (Griesemer, 2014). The goal for integrating social media is to improve students' learning experiences and prepare them to enter a workforce that is not geographically constrained and expects them to have highly developed online collaborative skills. Results from a study conducted by Muniasamy et al., (2015) favoured the use of social media as it helped to improve students' learning skills. The researchers further stipulated that social media tools are capable of enriching the language learning experience. Therefore, recommend that educators use these online social media sites in full, blended, or in a face-to-face learning environments.

Social media, hetherto 2005, has brought about the transformation of personal and social changes, specifically, among youths between the ages of 13 to 25 who use the social media intensely as a communication tool and have also considered its integration into learning environment as effective (Gurcan, 2015). Eventhough age matters in the utilization of social media, another determinant is gender. Exposure in using technology is different among age and gender. Gender differences exist in use of social and web based media, consumption patterns, attitudes and culture toward technology (UNESCO, 2015).

In line with Devriesblog (2011), below are some of the impacts of social media sites on education:

It is almost free. This simply means cost of accessing the media sites is reasonably affordable. The only thing needed is to buy the data to get connected. Even though charges to get access to social media depends upon the nature of the site, all the sites are considerably cheap to access.

Building tolerance and understanding of cultural diversity. Without the development of social media sites, we would never get access to understanding other peoples' ideas, views, cultures and religious beliefs. There are so many different cultures in the world and we only had read about them in books. Social media sites give students the opportunity to interact with friends from around the globe, share cultural, political, social and other geographical experiences.

It encourages learning experiences: in the modern age, not all what students learn are directly from the school. With social media sites such as Facebook, wikis, Twetter, among others, students get access to and share opinions with educators all over the world. Parents no longer need to wonder what a teacher thinks, because ideas are shared continuously in an open way.

It cuts down on loneliness. Social media sites give students opportunity to participate in a collaborative learning within and out side the school environment. This simply cuts the barrier between the rich and the poor by creative equal chance to accessing quality education.

It intensifies passion. Passion is a term that has been used a great deal in education. Learning has to be built upon the passions and interests of the students. We now have the opportunity to not only connect with people of different cultures, but to people with common interests.

Native age students (millennials) are defined as having a focus on social interaction and connectedness with family, friends and colleagues, and preferring constructivist-based approaches to learning and social activities. Students of native age handle digital

technologies effectively and this has impacted on their social and educational lives. With the increasing advancement in technology and attempt to meet up with the 21st century goal of making learning student centered, it is imperative for teachers to create a medium through which these students could be guided toward effective utilization of digital technologies for an improved academic performance. Furthermore, for universities to meet the needs and expectations of new generations of students, characteristics, skills and learning styles of these generations of digitally cultured students need to be considered. A study on social media addiction was conducted within the same metropolis by Ogunlade, Ogunlade, Ajibde and Bawa (2016) and it was found that Whatsapp with 97.5% was the major social media site that students accessed frequently. Hence the need to examine the effect of Whatsapp on undergraduate students' academic performance in general studies.

Purpose of the Study

The main purpose of this study was look into the effect of Whatsapp on academic performance of undergraduate students in general studies in Kebbi state. Specifically, the study intended to:

1. Determine whether there is a difference in academic performance of the undergraduate students exposed to a comprehensive GST dummy and those treated in a blended setting (using Whatsapp).
2. Examine whether the academic performance of undergraduate students treated in a blended setting (using Whatsapp) would vary based on gender.
3. Determine whether there is an interactive effect of gender in the academic performance of undergraduate students exposed to a comprehensive GST dummy and those treated in a blended setting (using Whatsapp).

Research Questions

1. Is there any difference in the academic performance of undergraduate students exposed to a comprehensive GST dummy and those treated in a blended setting (using Whatsapp)?
2. Is there any difference in the academic performance of undergraduate students treated in a blended setting (using Whatsapp) based on gender?
3. Is there any interaction effect of gender in the academic performance of undergraduate students exposed to a comprehensive GST dummy and those treated in a blended setting (using Whatsapp)?

Research Hypotheses

1. There is no significant difference in the academic performance of undergraduate students exposed to a comprehensive GST dummy and those treated in a blended setting (using Whatsapp).
2. There is no significant difference in the academic performance of undergraduate students treated in a blended setting (using Whatsapp) based on gender.
3. There is no significant interaction effect of gender in the academic performance of undergraduate students exposed to a comprehensive GST dummy and those treated in a blended setting (using Whatsapp).

METHODOLOGY

Quasi experimental design with a non-equivalent, non-randomized groups involving 2x2 factorial was adopted for the study. In this design, two independent groups (Exp. 1 & Exp. 2) were involved. Both groups were pretested to ascertain the benchmark for the study. Exp. 1 was exposed to a comprehensive GST dummy and Exp.2

was exposed to both the comprehensive GST dummy and Whatsapp collaborative page for interaction among the respondents as well as the instructor. After four weeks of instruction, posttest was conducted for the two groups to ascertain the efficacy of the Whatsapp collaborative page created to supplement the individualized learning.

Population, Sample and Sampling Techniques

All the undergraduate students in Kebbi state represented the population of the study, Federal University Birnin Kebbi (FUBK) and Kebbi State University of Science and Technology Aliero (KESUSTA) were purposively selected to represent target population of the study. 200 level intact (science GST groups) of 78 and 82 from FUBK and KESUSTA were allocated to Exp.1 and Exp. 2 respectively through balloting.

Research Instruments

In this study, two instruments were used: comprehensive GST dummy (CGSTD) and GST achievement test (GSTAT). The GSTAT consisted two of sections, while section 1 sought information on gender, section 2 consisted of 20 objective questions with 3 options of A, B & C. To ensure face and content validity, the instruments were validated by five experts (two from FUBK and three from KESUSTA, GST units). Pilot study was carried out at Usmanu Danfodiyo University Sokoto (UDUS) and reliability index of 0.87 was obtained for the GSTAC using Kuder Richardson (KR-21).

Data Analysis Techniques

Descriptive statistics (mean scores), inferential statistics analysis of covariance (ANCOVA) and z test were used to test the three research hypotheses for the study at 0.05 level of confidence.

RESULTS

Table 1: Sample Distribution Based on Gender

Groups	Male	Female	Total
Exp.1	50	28	78
Exp.2	54	28	82
Total	104	56	160

From table 1, it could be seen that the study involved 160 respondents in all, where the Exp.1 carried 78 respondents (50 males and 28 females), and Exp.2

carried 82 respondents (54 males and 28 females). Thus, of the 160 respondents, 104 were males while the remaining 56 were females.

Table 2: Pretest and Posttest Mean Scores for the Exp.1 and Exp.2

Groups	N	Pretest Mean	Posttest Mean
Exp.1	78	8.79	11.77
Exp.2	82	8.50	13.39

From table 2, it could be observed that Exp.1 had a mean score of 8.79 before the treatment and 11.77 after the treatment, and Exp.2 got a mean score of 8.50 before

the treatment and 13.39 during posttest. Meaning, the treatments exposed to the two groups were effective.

Hypotheses Testing

HO₁: There is no significant difference in the academic performance of the undergraduate students exposed to a

comprehensive GST dummy and those treated in a blended setting (using Whatsapp).

Table 3: Posttest ANCOVA Result for the Exp.1 and Exp.2

Source of Variation	Type III Sum of Squares	Df	Mean Square	F	Sig.
Corrected Model	924.776 ^a	4	231.194	58.438	.000
Intercept	977.826	1	977.826	247.160	.000
Pretest (covariate)	777.795	1	777.795	196.599	.000
Groups (Treatment)	94.827	1	94.827	23.969	.000
Error	613.217	155	3.956		
Total	26513.000	160			
Corrected Total	1537.994	159			

Result from table 3 showed that $F(1,155)=23.97$, $P=0.00$, meaning, there was a significant difference in the academic performance of the undergraduate students exposed to a comprehensive GST dummy and those treated in a blended setting (using Whatsapp). The highest mean score of 13.39 from table 2 indicated that the result

is in favor of Exp.2 (those treated in a blended setting (using Whatsapp)).

HO₂: There is no significant difference in the academic performance of undergraduate students treated in a blended setting (using Whatsapp) based on gender.

Table 4: Posttest z-Test Result for the Exp.2 Based on Gender

Gender	N	Mean	Variance	Z	P	Remark
Male	54	13.05	11.56	0.59	0.55	Not sig.
Female	28	13.5	9.37			

Table 4 showed the result of z-test in respect of hypothesis two. The mean score for the male and female were 13.05 and 13.50 respectively, while the variances were 11.56 and 9.37 respectively. The z-test result 0.59, $p>0.05$ (two tailed) revealed that there was no significant difference in the academic performance of

undergraduate students treated in a blended setting (using Whatsapp) based on gender.

HO₃: There is no significant interaction effect of gender in the academic performance of the undergraduate students exposed to a comprehensive GST dummy and those treated in a blended setting (using Whatsapp).

Table 5: Posttest ANCOVA Result for the Interaction Effect of Exp.1 and Exp.2 Based on Gender

Source of Variation	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	924.776 ^a	4	231.194	58.438	.000
Intercept	977.826	1	977.826	247.160	.000
Pretest (covariate)	777.795	1	777.795	196.599	.000
Groups * Gender	1.032	1	1.032	.261	.610
Error	613.217	155	3.956		
Total	26513.000	160			
Corrected Total	1537.994	159			

From table 4, $F(1,155)=0.26$, $P=0.61$, indicated that there was no significant interaction effect of gender in the academic performance of the undergraduate students exposed to a comprehensive GST dummy and those treated in a blended setting (using Whatsapp).

DISCUSSION

The primary aim of instructional technology is to facilitate learning and improve performance. The treatments exposed to both groups were found effective in improving undergraduate students' academic performance. This simply means the dummy given to both groups could be learnt in an individualized manner. In addition, the second finding indicated that despite the positive influence of the dummy, those students exposed to the dummy and Whatsapp collaborative page performed significantly better than those exposed to only the dummy. This revealed that collaborative learning through social media plays significant role in improving students' performance. This is in agreement with the assertion that social media sites give students opportunity to participate in a collaborative learning within and out side the school environment (Devbriesblog, 2011). The result does not go contrary to the finding of Muniasamy et al., (2015) that the use of social media helped to improve students' learning skills.

It was also found by the study that the utilization of social media (Whatsapp) has nothing to do with gender. The finding contradicted the declaration made by UNESCO,

(2015) that gender disparity exist in the use of technology for learning among students and that it sharply defines who could perform better in the use of technology for learning.

CONCLUSION

Even though some may have the impression that incorporating social media into teaching-learning process is a distraction, it should also be considered as alternative way to cover topics in a collaborative way, to extend students' learning digital lives and as a means for introducing additional topics.

RECOMMENDATIONS

Based on the findings of this study, it was recommended that:

1. Lecturers should engage themselves to studying the approaches that best suit the students of native age.
2. Lecturers should endeavor to incorporate social media (particularly Whatsapp) to supplement the conventional classroom teaching-learning process.

REFERENCES

- Al-Rahmi, W. M., & Uthman, N. S. (2014). The impact of social media use on academic performance among university students: A pilot study. *Journal of Information System Reseach and Innovation*, 1(1), 1-10.

- Banitt, J., Theis, S., & Leeuwe L. V. (2013). *The effects of technology integration on student engagement*. Minnesota: Catherine University .
- Boyd, D. M., & Ellison, N. B. (2007). Social network sites: Definition, history and scholarship. *Journal of Computer Mediated Communication*, 13, 210-230.
- Dede, C. (2005). Planning for neomillennial learning styles. *EDUCAUSE Quarterly*, 1, 7-12.
- Devriesblog. (2011, 11 22). *Five tips for faculty on interacting with students via social media*. Retrieved from <http://www.devriesblog.com2011/02/28-five-tips-for-faculty-on-interacting-with-students-via-social-media>
- El-Bialy, S., & Jalali, A. (2015). Go where the students are: A comparison of the use of social networking sites between medical students and medical educators. *Journal of Medical Internet Research*, 1(2), 1-11.
- Griesemer, J. A. (2014). Using social media to enhance students' learning experience. *Quality approaches in higher education*, 1(3), 8-11.
- Gurcan, H. I. (2015). Contribution of social media to the students' academic development . *International Journal of Information and Education Technology*, 5(12), 965-968.
- Krishnan, S., Okubo, Y., Uchino, K., & oldberg, K. (2015). Using a social media platform to explore how social media can enhance primary and secondary learning . *berkeley Education and Learning* , 1(1), 1-7.
- Lave, J., & Wenger, E. (1991). *Situated Learning: Legitimate Peripheral Participation*. Cambridge, UK, and New York: Cambridge University Press.
- Liccardi, I., Dunnas, A., Pau, R., Massey, E., Kinnunen, P., Lewthwaite, S., Midy, M. & Sarkar, C. (2013). The role of social networks in students' learning experiences. *International Journal of Educational Research*, 1, 224-237.
- Marton, F., Dall'Alba, G., & Beaty, E. (2003). Conceptions of learning. *International Journal of Educational Research* , 19(3), 270-277.
- Mellow, P. (2005). The media generation: Maximise learning by getting mobile . *ASCILITE*, 1, 469-476.
- Muniasamy, V., Ejalani, I. M., & Valli, A. (2015). An effective contribution of social media networks in foreign language learning case study: Community diploma college, King Khalid University, KSA . *International Journal of Emerging Technology and Advanced Engineering*, 5(1), 438-442.
- Mustafa, S. E., & Hamzah, A. (2011). Online social networking: A new form of social interaction. *International of Social Science and Humanity*, 1(2), 96-104.
- Nowell, S. D. (2013). *Stories of digital lives: teacher-student relationships in secondary schools and digital space*. Tulsa, Oklahoma: Oral Roberts University.
- Ogunlade, O. O., Ogunlade, A. A., Ajibade, S., & Bawa, N. (2016). Assessment of undergraduates' addiction to social media sites. *International Journal of Topical Educational Issues*, 1, 164-173.
- Purcell, K., Buchanan, J. & Friedrich, L. . (2013). *The impact of digital tools on student writing and how writing is taught in schools* . Washington, D.C.: National Writing Projec.
- Purcell, K., Buchanan, J., & Friedrich, L. (2013). *The impact of digital tools on student writing and how writing is taught in schools*. Washington: Pew Research Center's Internet & American Life Project .
- Shotbolt, V. (2014). *How do teenagers in the UK navigate their digital world?* Shoreditch, East London: Bold Creative.
- UNESCO. (2015). Reading in the mobile era. . *UNESCO*, 19-22.