SOCIAL IMPACT OF MOBILE LEARNING TABLETS ON EDUCATION AND SUSTAINABLE DEVELOPMENT: EVIDENCE FROM A PRIVATE NIGERIAN TERTIARY INSTITUTION

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ABSTRACT

The advent of Information and Computer Technology (ICT) has suddenly turned the world into a global village. One of the ICT gadgets that appeared to be instrumental to the growing global socialization is mobile learning tablet. This study focused on ascertaining the social impact of mobile tablets on education and sustainable development. Recently, a private university in Nigeria with a population of over 8000 distributed Samsung tablet to all students. Using the clustered sampling technique, 220 students participated in the survey study. Simple descriptive statistics and t-test statistics were used in data analysis. The findings were: Out of the five most preferred websites indicated by respondents, the fairly academically inclined website visited by the respondents was Google (87.9%); 81.4% of the respondents were either always or sometimes using the mobile learning tablets for social networking; 48.2% of the respondents used the mobile tablets for chatting sometimes or always. 47.3% of the respondents reported that the mobile tablet had more negative social impact on them.; 58.3% of the respondents concurred they were predominantly using the mobile learning tablet for non-academic purposes; gender factor tended not to have a significant effect on the use of mobile tablets [t=-.825; p=.411]. Hours of usage had a significant social impact amongst the undergraduate students [t=-11.9; p=.000]. Those who used the mobile learning tablet more frequently tend to experience more negative social impact. Based on the findings, it was recommended that management of educational institutions need to exert more control on the use of mobile learning devices to experience more sustainable development-oriented social impact in the system.
Keywords: social impact, education, adolescents, mobile learning tablets, Nigeria.

1 INTRODUCTION

In a UNESCO report, Shuler and Winters [1], defined mobile learning as the utilization of mobile technologies, such as smartphones, mobile phones, e-readers and tablets to facilitate learning. They argue that these devices offer 'unparalleled access to communication and information'.

It is imperative that homo sapiens socialize. Socialization clearly promotes life and development. Consider the social interaction between mothers, fathers and the children. Without this social interaction families, and by extension communities and nations would literally be non-existent. Compare a young girl with an unwanted pregnancy, who tried everything she could to terminate the pregnancy to no avail. Out of dread of humiliation, she eventually dumped the helpless baby in a nearby dustbin. The fate of this baby is apparent. The significance of social interaction is multifarious. It clearly extends into the field of education and consequently national development. The impact of socialization is double-edged. It could be positive or negative. The illustration above is an example of the negative impact of socialization. In situations where parents express an unconditional positive love to every member of the family, the impact on development is phenomenal. It is bound to accelerate self-actualization and overall community and national development. With the advent of Information and Computer Technology (ICT), the spate and scope of

social interaction around the world has increased astronomically, with attendant advantages and disadvantages.

Some studies that investigated the use of mobile learning gadgets in teacher education contexts commonly reported their positive contributions. Mobile tools were found to have potential for helping pre-service teachers understand and develop new literacies and engage in rich language learning [2], [3]. These tools can fundamentally change the way classrooms are organized within teacher education programs by increasing mobility [4]. Another advantage reported was features that connect pre-service teachers to their colleagues, enhance professional learning through collaboration, and facilitate mentoring processes [5], [6]. Mobile tools could help build closer relationships as well as build more personalized learning experiences [7]–[9].

Social network media such as Facebook, Twitter, Instagram, BBM and so on have literally transformed the world's social terrain. The internet platforms appear to be giving room for cultural diffusion. It is now easier, than ever before, to strike friendship across national and continental borders. For instance, recently, it was possible for me, as a Nigerian, to establish friendship with over 500 new friends predominantly from China, Japan, Korea, United States and United Kingdom via Facebook. In the process, through their postings and mine, and occasional video and audio calls, deep social interactions were enacted that tend to elicit behavioural changes by the day. Some of the changes run contrary to prevailing culture of the locus of residence of the recipients. The strength of appeal often determines the overriding effect of the social interaction. The effect tends to cut across all areas of life.

Kulik [10], conducted a meta-analysis of studies to identify the impact of e-learning on student outcomes. He observed that students who used computer tutorials in mathematics, natural science, and social science score significantly higher on tests in these subjects compared to students who did not use computers. Similarly, students who used simulation software in science also scored higher. The outcomes tend to have significant impact on overall community and national development.

The research questions for this study were: '*Which social network website is most visited by Nigerian undergraduates?'; What is the frequency of using mobile tablets for social networking?; What is the frequency of social impact categories?; What is the frequency of using mobile tablets for non-academic purposes?; 'What is the social impact of mobile learning device (tablet) amongst Nigerian undergraduates?*'.

The hypotheses were: '*Gender factor does not have a significant effect on the social learning impact of MLDs'; "The use of mobile learning device does not have a significant social impact on Nigerian undergraduate students in a private university'; and 'The hours of usage of the mobile learning devices by undergraduate students in a Nigerian private university does not have a significant social impact*'.

2   METHOD

The research design for this study was survey. The population of study are Nigerian adolescents who were students of a Nigerian private university in Ota, Ogun State, Nigeria. The population is estimated at about 8000. The sample drawn from this population for this study were two hundred and fourteen (214) students. The instrument used for this study is the Mobile Learning Instrument Impact Scale. The Cronbach's alpha was used to ascertain the internal consistency reliability of the social network component of the instrument [r=0.876], while experts' judgment ascertained the content validity. The instrument was administered during lecture hours for university-wide courses. Some were administered to smaller groups of students. Interviews were also conducted to verify some observations

made. Data analysis was conducted with descriptive statistics (frequency count and percentages). Qualitative analysis was also made.

3 RESULTS AND DISCUSSION

3.1 Which of the websites are most visited by students?

Out of the five most preferred websites indicated by respondents, the fairly academically inclined website visited by the respondents was Google (87.9%). The other four most visited websites were social network websites. The fact that 87.9% of the respondents visited Google is quite promising for academic development. However, interview session with some of the respondents revealed that the Google search engine was often used for quick checks of word/concept meaning rather than for concerted studies.

The implication of the preference of students for social networking websites over academic-oriented searches is worthy of attention. For instance, a female student once reported she spent 10 hours chatting with a male friend, almost non-stop. The outcome was that the student could not complete her assignment nor engage in concerted study. Close observation of how students expend the 10 Gigabytes the school authority them on a monthly basis showed that, apart from chatting, many of them spend hours downloading and watching videos, most of which were counterproductive to academic development. The results in Table 2 and Table 3 tend to support these observations.

Vishranti and Prafulla [11], noted that the prime bad effect of social media is addiction, the addiction of constantly checking Facebook, Twitter, LinkedIn and other social media updates. According to them, this addiction could negatively affect other valued activities like concentrating on studies.

Further reiterating the submission above is the result in Table 2. 81.4% of the respondents were either always or sometimes using the mobile learning tablets for social networking. This is apparently a distraction to serious academic work.

3.2 What is the frequency of using mobile tablets for social networking?

See Table 2.

Table 1: Five most visited websites.

S/N		N [214]	%
1	Google	188	87.9%
2	Instagram	143	66.8%
3	BBM	133	62.1%
4	Facebook	127	59.3%
5	YouTube	125	58.4%

Table 2: Frequency of respondents using a mobile tablet for social networking.

		Frequency	Percent
Valid	NEVER	13	5.9
	RARELY	18	8.2
	SOMETIMES	73	33.2
	ALWAYS	106	48.2
	Total	210	95.4
Missing	System	10	4.6
Total		220	100.0

Table 3: Frequency of respondents using mobile tablets for chatting.

		Frequency	Percent
Valid	NEVER	22	10.0
	RARELY	81	36.8
	SOMETIMES	80	36.4
	ALWAYS	26	11.8
	Total	209	95.0
Missing	System	11	5.0
Total		220	100.0

3.3 What is the frequency of using mobile tablets for chatting?

In Table 3, 48.2% (out of 95% that responded, representing 50.7%) of the respondents used the mobile tablets for chatting sometimes or always. This result tends to corroborate the submission made earlier on the subject of the mobile learning devices becoming more of a liability in academic learning quest.

University of Washington instructors reiterated these feelings. One instructor remarked that "*technology is not a panacea and comes with its own problems*." The instructor went on to explain that while they "*allow computers in class for note-taking*," students often check "*Facebook and Reddit rather than paying attention to lecture, thus distracting other students with their behavior*." Another instructor stated, "*I hate dealing with students' techno-distraction when they're in class, it's completely demoralizing*." [12].

3.4 What is the frequency of social impact categories?

In Table 4, 47.3% of the respondents reported that the use of the mobile tablet had more negative social impact on them. When interviewed further on what they understood by being

negatively impacted, they reported that some of them got into wrong relationships, self-destructive habits and immoral sexual acts via this platform, often at the detriment of their academics.

3.5 What is the frequency of using mobile tablets for non-academic purposes?

Results in Table 5 show that a higher proportion of the respondents (27.3% out of the 46.8% that responded, representing 58.3%) concurred they were predominantly using the mobile learning tablet for non-academic purposes.

3.6 Gender factor does not have a significant effect on the social learning impact of mobile learning tablet

From Table 6, gender factor tends not to have a significant effect on the social impact of mobile learning devices [t=-.825; p=.411]. Male and female alike tend to use the mobile learning tablets almost the same way with virtually the same level of impact.

3.7 The use of mobile learning tablet does not have a significant social impact on Nigerian undergraduate students in the selected private university

In Table 7, a greater proportion/percentage (47.3%) of the sample experienced negative social impact whilst using the mobile learning device that those who experienced positive social impact.

Table 4: Frequency of social impact categories.

		Frequency	Percent
Valid	Positive Social Impact	58	26.4
	Negative Social Impact	104	47.3
	Total	162	73.6
Missing	System	58	26.4
Total		220	100.0

Table 5: Frequency of use of mobile tablet for non-academic purposes.

		Frequency	Percent
	Low use of mobile tab for non-academic purpose	43	19.5
Valid	High use of mobile tab for non-academic purpose	60	27.3
	Total	103	46.8
Missing	System	117	53.2
Total		220	100.0

Table 6: Effect of gender on the social impact of use of mobile learning devices.

	GENDER	Mean	N	df	t	p
Social Impact of Mobile Tab	male	8.4071	113	157	-.825	.411
	female	8.7609	46			

Table 7: Social impact categories.

Social Impact Categories		Frequency	Percent
Valid	Positive Social Impact	58	26.4
	Negative Social Impact	104	47.3
	Total	162	73.6
Missing	System	58	26.4
Total		220	100.0

Table 8: Social impact of mobile learning device.

	Category	Mean	N	df	t	p
Social Impact of Mobile Tab	Positive Impact	5.8276	58	160	-16.9	.000
	Negative Impact	9.9615	104			

3.8 There is no significant difference between the group that had positive social impact and those who had negative social impact

The t-test result in Table 8 shows that there is a significant difference between the group that had positive social impact and those who had negative social impact [t= -16.9; p=.000]. The mobile learning device recorded significantly more negative impact than positive impact. Results from Table 7 and Table 8, when considered against the respondents' understanding of the concept of negative impact discussed earlier, further reiterate the speculation that mobile tablets and related learning devices tend more to distract students at the expense of concerted learning that leads to sustainable development.

3.9 The hours of usage of the mobile learning devices by undergraduate students in a Nigerian private university does not have a significant social impact

The result in Table 9 shows that hours of usage had a significant social impact amongst the undergraduate students [t=-11.9; p=.000]. Those who used the mobile learning tablet more frequently tend to experience significantly more social impact. This implies that the greater the usage of mobile tablets, the more likely the user is socially impacted, and from the

Table 9: Effect of duration of usage of tablet on social impact.

	Category	Mean (hr)	N	df	t	p
Social Impact of Mobile Tab	Low Use of Tab	6.6283	41	98	-11.9	.000
	High Use of Tab	10.339	59			

submissions above, such impact is more likely to be negative, perhaps for this setting and category of respondents. This should be expected.

4 RECOMMENDATION AND CONCLUSION

As reported by Kulik [10], it appears mobile learning devices, especially tablets, have a lot of potential benefits to undergraduate students worldwide. The social benefits, as revealed by this study, is also remarkable. However, findings from this study suggest that for this potential to be fully realized, the concerned students need to exercise more self-restraints and discipline to prevent wiling away precious time in using the mobile tablet for social networking and chatting at the expense of concerted studies that lead to sustainable development [11]. ICT experts, school management and parents need to evolve more automated control devices to prevent the youngsters from the abuse of the mobile tablet. It is imperative this vital step be taken to attain sustainable all-round-development.

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REFERENCES

[1]   Shuler, C., & Winters, N., *The Future of Mobile Learning: Implications for Policy Makers and Planners*. UNESCO: Paris, 2013.
[2]   Husbye, N.E. & Elsener, A.A., To move forward, we must be mobile: Practical uses of mobile technology in literacy education courses. *Journal of Digital Learning in Teacher Education*, **30**(2), pp. 46–51, 2013.
[3]   Mahruf, C., Shohel, C. & Power, T., Introducing mobile technology for enhancing teaching and learning in Bangladesh: Teacher perspectives. *Open Learning: The Journal of Open, Distance and e-Learning*, **25**(3)**,** pp. 201–215, 2010.
[4]   Price, S., Davies, P., Farr, W., Jewitt, C., Roussos, G. & Sin, G., Fostering geospatial thinking in science education through a customisable smartphone application. *British Journal of Educational Technology*, **45**(1), pp. 160–170, 2014.
[5]   Cushing, A., A case study of mobile learning in teacher training–Mentor ME (Mobile enhanced mentoring). *MedienPädagogik*, **19**, pp. 1–4, 2011.
[6]   Kearney, M. & Maher, D., Mobile learning in math teacher education: Using iPads to support pre-service teachers' professional development. *Australian Educational Computing*, **27**(3), pp. 76–84, 2013.
[7]   Crippen, K.J. & Brooks, D.W., Using personal digital assistants in clinical supervision of student teachers. *Journal of Science Education & Technology*, **9**(3), pp. 207–211, 2000.

[8] Herro, D., Kiger, D. & Owens, C., Mobile technology: Case-based suggestions for classroom integration and teacher educators. *Journal of Digital Learning in Teacher Education*, **30**(1), pp. 30–40, 2013.

[9] Kommers, P., Mobile phones for real-time teacher coaching. *Journal of Research in Innovative Teaching*, **2**(1), pp. 80–90, 2009.

[10] Kulik, J., *Effects of Using Instructional Technology in Elementary and Secondary Schools: What Controlled Evaluation Studies*. Say: SRI International, 2003.

[11] Vishranti, R. & Prafulla, P., Use of Social Media in Education: Positive and Negative impact on the students. *International Journal on Recent and Innovation Trends in Computing and Communication*, **4** (1), pp. 281–285, 2016.

[12] Coffin, T. & Fournier, J., *Social Media in the Learning Setting: Opportunities and Challenges*. UW: Information Technology - Academic and Collaborative Applications, 2015.