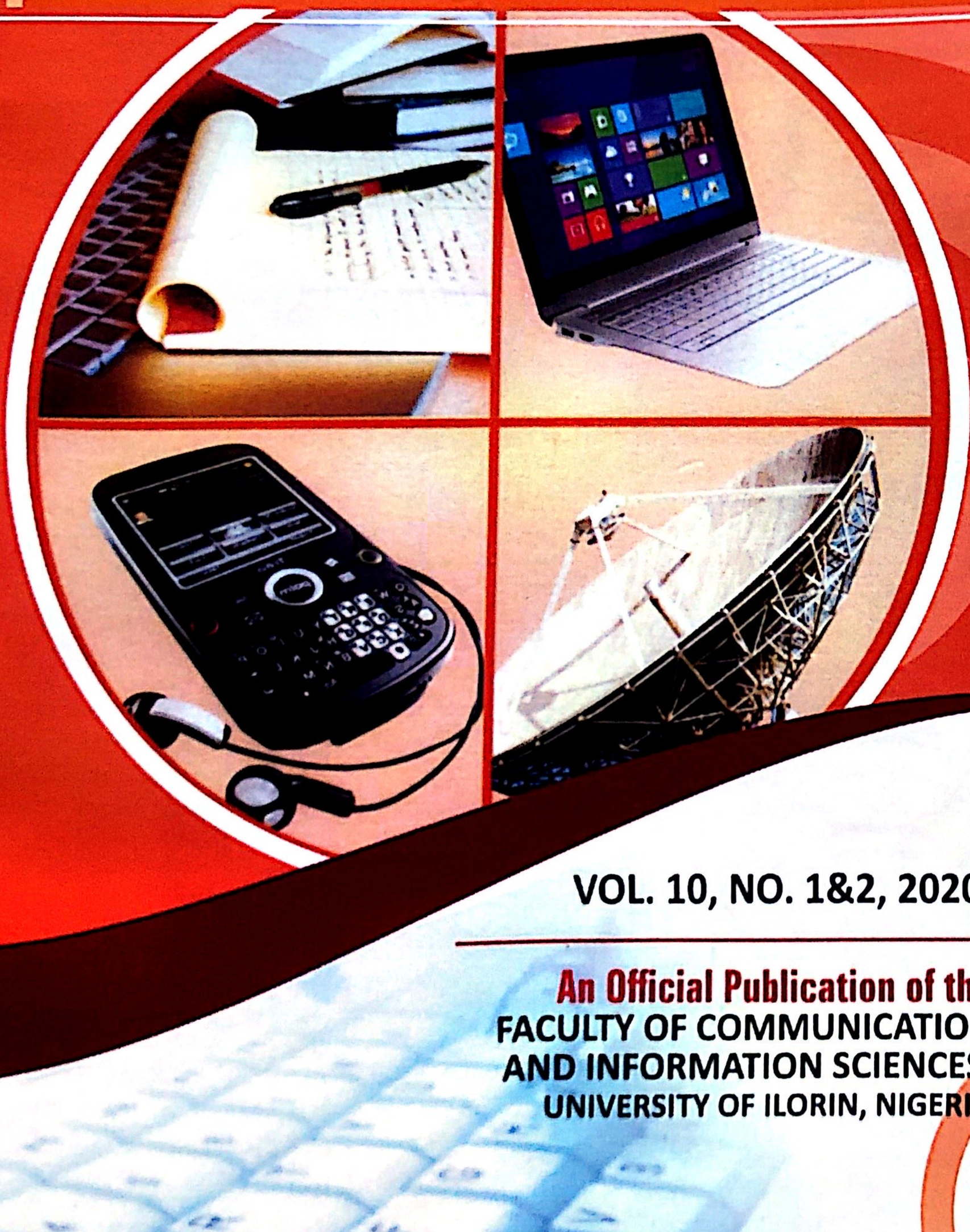
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Rasheed Gbenga JIMOH, Ph.D.
Editor-in-Chief

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EDITORIAL PREFACE

International journal of Information Processing and Communication (IJIPC) is an official publicat the Faculty of Communication and Information Sciences, University of Ilorin. The journal has attai some level of sustainability as this edition is the tenth volume containing issues 1and 2 (Vo (1&2)) and contains 19 articles. The journal provides a platform for reporting findings of q researches conducted in the fields of computing, telecommunications, information technology/sys library and information science, mass communication/media technology and other related area Journal Management Team under the present leadership has taken the journal to the next le providing required visibility for the journal as a global standard and practice. Registration of the j with relevant databases is almost completed and there is consistency in the operations of the j though our electronic journal management system. All activities are fully automated through our portal system.

This volume covers issues related to computer/information security, data communication and n knowledge management, e-learning, expert systems, library management, telecommunication techniques, algorithms, media practices, social media, e-commerce, e-resources, e-government others. On behalf of the Faculty, I appreciate the efforts of members of the editorial team for a j done in putting this volume together.

Rasheed Gbenga JIMOH, Ph.D.

Professor of Computer Science

Editor-in-Chief

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Use of Smartphones and Reading Habits of Public Secondary School Students in Ibadan

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Abstract

Technology has transformed the teaching and learning process beyond the classroom walls. Reading unlocks the doors of the riches of knowledge and acts as a tool for learning. The smartphone is a mobile phone that performs many of the functions of a computer, typically having a touchscreen interface, Internet access and an operating system capable of running downloaded apps. Thus, leveraging on technological advantages through the use of smartphones to acquire knowledge and reading skills is relevant to all categories of students but its diverse functionalities can make it a source of distraction in learning exchange. The study investigated the use of smartphones and the reading habits of public secondary school students in Ibadan. The simple random sampling technique was adopted in the selection of the public secondary schools and the sample from the population. Results showed that the majority of the respondents owned a smartphone and possess a positive attitude towards reading books. The result further revealed that the effects of smartphones' use on the reading habits of the respondents are that smartphones provide the opportunity to find books to read online and prepare for the examination. Considering the ubiquitous nature of smartphones and their role in the 21st-century learning space, it is recommended that stakeholders in the education industry should integrate digital mobile technologies into public secondary education learning space as this would encourage positive use of smartphones for academic-related activities across all classes for better academic attainments.

Keywords: Public secondary school, reading habits, smartphone use, students.

1 Introduction

Technological advancement has brought a paradigm shift in the educational sector and has undergone remarkable progress which benefits a wide range of stakeholders. Also, the evolution of 5G technology; access to high-speed Internet services at a relatively low cost coupled with the emergence of portable Internet-enabled smart devices like iPhones, Tablets, and smartphones makes it easier to get connected with the world around us; act as a portal to the large quantum of information which is accessible to a wide range of people, thus, heralding several new avenues for learning (Smith, 2015; and Organisation for Economic Co-operation and Development & European Union (OECD & EU), 2019). Although these technological advancements are commonly viewed as leading to increased productivity, contrary to expectations, there are probable drawbacks to these new technologies, as they may provide distractions and reduce productivity (Beland & Murphy, 2015).

Smartphones are transforming human lives at a very fast pace and are now the dominant computing platform. They are widely used for steering many important life activities, from investigating health-related condition to accessing educational resources (Smith, 2015). Smartphones refer to full-fledged computers that can fit into the pocket, run programs and games, access the Internet, browse the web, send e-mails, make voice and video calls, take photos and upload them to the web, navigate with a global positioning system, playback music and video stored on the phone, connect to a personal computer to copy media to it, manage contacts and appointments, run new applications downloaded from the Internet and much more (Telstra Corporation Limited, 2017; and Penwarden, 2017). Arguably, smartphone technology as a communication tool has become a thrilling phenomenon of the modern age (Ajaegbu et al., 2019). Consequently, it has developed to a much more advanced level, gained popularity, and the number of users has increased drastically (Shimray et al., 2015).

Reading is a social phenomenon that integrates every aspect of human behaviour; a complex process that adds new sight to the eyes and new wisdom to mind (Loans, 2009; and Skenderi & Ejupi, 2017). Reading is an important tool for learning exchange and the overall development of personalities (Chetti & Roti, 2013; and Rosli

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et al., 2017). Reading habit is a vital academic activity, and a fundamental skill required for all-round development; it is the ability to perceive reading as a necessity, build in methodologies and continue the reading activity regularly in every stage of life (Oriogu, 2015; Rosli et al., 2017; and Arslanoğlu & Mor, 2018). No doubt, reading plays a pivotal role in the life of every human being, and the habit of reading is crucial for the development of the intellectual capabilities of students at all the tiers of education (Akande & Oyedapo, 2018). Nonetheless, the use of smartphones for accessing information, knowledge acquisition, and a means of entertainment have impinged greatly on the time available for students to read and this has indirectly impacted negatively on their reading habits.

Preliminary investigations revealed that teachers often complain about students who engage in phone chats while teaching is going on. Parents too, do complain about their children's inability to develop good reading habits. Equally, it was observed that the reading culture, quality, and habits in the younger generation of secondary school age is undergoing radical transformation at an unprecedented pace as a result of the advent of modern-day digital devices like smartphones whose diverse functionalities can make it a source of distraction in the educational learning space. Thus, it can be assumed that students will tend to read less as they get more engaged in chatting, gaming, or browsing the Internet for diverse activities such as social media networking, watching videos, listening to music, and much more in their spare time. However, if properly monitored, the use of smartphones may have a positive influence on the reading ability and reading quality of secondary school students.

Assuredly, the act of reading improves individual development, knowledge acquisition, exposure, self-esteem, morals, intelligence and helps in the all-round development of an individual from cradle to the grave (Rosli et al., 2017). Thus, students are expected to have a good reading habit, as it will equip them with skills that would enable them to function well in every facet of life. Though, the digital transformation of processes in the education sector globally through the adoption and use of digital devices such as smartphones in the learning space would go a long way to help facilitate and promote learning and by extension reading habits of students. Nonetheless, with the prevalent use of smartphones among adolescents of secondary school age, much remains uncertain about its effect on their reading habits, the educational implications and considerations on how to benefit from these devices for learning purposes as smartphones' use have the potential to reduce the attention span of students in classes and can, therefore, be detrimental to learning and reading. It is against this background that this present study investigated the use of smartphones and its influence on the reading habits of public secondary school students in Akinyele Local Government, Ibadan, Nigeria.

The objectives of the study were to ascertain the accessibility of smartphones to public secondary school students; find out the frequency of use; ascertain the purpose of use of smartphones by public secondary school students; identify the types of materials read; and highlight the perceived influence of use of smartphones on the reading habits of public secondary school students in Akinyele Local Government Area, Ibadan, Nigeria.

1.1 Research questions

The following research questions guided the conduct of the study:

1) What is the level of ownership of smartphones by students in public secondary schools?
2) What is the frequency of use of smartphones by the students in public secondary schools?
3) What are the purposes for which smartphones are used by the students in public secondary schools?
4) How accessible are smartphones to students in public secondary schools?
5) What are the types of materials read mostly by students in public secondary schools?
6) What are the functions used on smartphones by students in public secondary schools?
7) What is the perceived usefulness of smartphones to students in public secondary schools?
8) What are the habits that affect the reading of students in public secondary schools?
9) What are the effects of smartphones use on the reading of students in public secondary schools?

2 Related Works

Technology pervades every aspect of human lives and has transformed the learning space significantly. The smartphone technology is the buzz word everywhere, piloting the digital transformation of operational activities in every facet of human endeavours. According to Ajaegbu et al (2019), smartphones are phone devices with advanced features and capabilities for surfing the web, sending and receiving emails, taking photos and

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editing them with embellishments, playing videos, gaming, and social interactions through chat groups. Ng et al (2017), defined smartphones as Internet-enabled devices that are incorporated with computer applications and software. Similarly, Shimray et al (2015) stated that smartphones are Internet-enabled mobile phone with a touchscreen interface, performs many of the functions of a computer operating system and are capable of running downloaded apps. Thus, the smartphone is a versatile device that is aiding the digital transformation of every human activity.

Smartphones are ubiquitous and a multi-faceted device. For instance, Ehnle (2020) observed that smartphones provide engaged learning, enhance ease of access to limitless information and resources; create short videos, scan quick response (QR) codes; access an online dictionary, and thesaurus, and much more. Machmud (2018) affirmed that since the beginning of smartphones' existence; its use has penetrated all aspects of life. Ajaegbu et al (2019) averred that smartphones can be used as platforms for the creation of projects that are integral to the attainment of the learning objectives of a given course such as sketching a graphic design on an iPad or recording interviews with a smartphone recorder. Kumar (2011) noted that smartphones are adaptable and equipped with the capability of live streaming of programmes, download of videos for educational purposes, news, sport, content, and video messaging all in addition to the usual voice calling facility. Undoubtedly, smartphones are creating innovative and modern avenues for students to learn, thus, many more individuals and students are embracing the device and spending more time using mobile Apps (Norries et al., 2011; Mtega et al., 2012; and Ng et al., 2017).

Predictably, smartphones brought many advantages to human life. According to Ataş and Çelik (2019), smartphones offer more advantages to users because their versatilities can be extended beyond the use of mobile applications. Mahnke (2018) stated that smartphones have established themselves as regular tools in the day-to-day lives of many such that the impact of its activities is difficult to quantify. Lieberman (2019) observed that smartphones and other portable digital devices are transforming the learning space drastically, mostly how teachers teach and students' learn. Ehnle (2020) remarked further that smartphones provide an easy way for teachers to facilitate students' learning and creativity while increasing motivation. Kahari (2013) pointed out that smartphones are important resources that make teaching more relevant and meaningful thereby improving students' literary and numeracy skills. Equally, Kolb (2006) affirmed that smartphones can be used as a learning tool for knowledge creation if students are taught the appropriate ways to use them. And Kumar (2011) explained that smartphones serve as the easiest and most economical way to connect to the Internet.

Furthermore, Kolb (2006) averred that providing a child with a smartphone gives parents and caregivers' reassurance that they can communicate quickly with their child before and after school; thereby, protect them from everyday risk, personal safety, and security. Alsun and Misagal (2016) averred that the use of smartphone technology provides immense benefits for users as they access and disseminate information rapidly. Also, Lepp et al (2015) noted that smartphone users can access a variety of electronic media at almost any time and any place. In addition, Ehnle (2020) stated that smartphones offer unlimited potentials for the learning space, enhancement of students' understanding, and extension of learning beyond the classroom walls. However, despite the seemingly accruable advantages of smartphones adoption and uses for the teaching-learning process, Lieberman (2019) warned that the process is not always a simple transition and if appropriate care is not taken in its deployment and use, such an act can impact negatively on the reading habits and academic performance of students in the long run.

Besides, smartphones are society's latest addiction. According to Baron (2020), with ready Internet access on smartphones, the reading habits of people are undergoing drastic transformation. Ataş and Çelik (2019) observed that smartphone use is rampant in and out of instructional settings. Shirmay et al (2015) affirmed that the availability of digital information has led readers to spend more time on reading devices and this has greatly impacted their reading behaviour. Also, Oyewusi and Ayanlola (2014) averred that the use of online and mobile technologies such as cell phones, social media networking sites, and gaming affected how secondary school students read, write, speak and listen. Consequently, the capabilities provided by the smartphone technology are significantly impacting students' everyday life. However, if appropriate measures are not put in place to regulate its adoption and use in the education sector, it portend incalculable damages and probable drawbacks and distractions to the reading habits, quality and culture of individuals.

Advertently, the habit of reading is essential for everyone to handle new information in the changing world of technology. Thus, reading is very vital as it opens the doors of the treasures of knowledge and allows for the overall development of man (Ajayi et al., 2014). Similarly, Skenderi and Ejupi (2017) pointed out that reading is

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the gateway to success, and an essential tool for life-long learning. According to Fatiloro et al (2017), it is a mechanical process involving the brain and other organs of the body. Similarly, Akanda et al (2013) explained that reading is a powerful and an indispensable tool for learning, skill acquisition, and gaining insights required in developing an acceptable private lifestyle by an individual. Huang et al (2014) stated that reading is a crucial skill that can impact on an individual's social life and economic prosperity. To Oyewusi and Ayanlola (2014), the reading experience can be obtained in the library as a way of acquiring new information and knowledge as it does not only give learners a prominent place, it also places them in the centre of teaching and learning. Therefore, reading is very important, a basic tool of education, a key determinant of success, an interactive process, and a necessity for intellectual development (Chettri & Rout, 2013; and Nagaraja & Manalan 2016).

Reading habits have been cultivated by human being since the time of old (Adu-Sarkodee et al., 2015). According to Abeyrathna and Zainab (2004), reading habit plays a very vital role in enabling a person to attain practical efficiency in all life endeavours. Similarly, Davidotech et al (2016) averred that reading habit affects individual achievement and academic life as they progress in age. To Palani (2012), reading habit shapes the disposition of an individual. Also, it helps to create a new idea, develop appropriate thinking methods and essential for creating a sustainable literate society (Chauhan & Lal, 2012; and Rabiu et al., 2016). Without doubt, the advent of smartphones brought unprecedented changes to human lives as it impacted drastically on their reading behaviours, but, a good reading habit is necessary for healthy intellectual growth. What is more, there is an urgent need for secondary school students to develop effective reading habits that will help them cope with the challenges of the modern world.

Undoubtedly, there is a nexus between the use of smartphones and the reading habits of students. Many researchers have documented the roles played by smartphones in the education sector, learning space and reading habits of students. For example, Ataş and Çelik (2019) in a study on smartphone use of university students: patterns, purposes, and situations in Turkey, discovered that majority of the respondents have been using smartphones for an average of 3.25 years and checked lecture notes through their smartphones. Oyewusi and Ayanlola (2014) studied the effect of mobile phone use on reading habits of private secondary school students in Oyo State, Nigeria. They reported that almost all the respondents owned a mobile phone; it use aid their performance in reading and assignment completion and assisted them to develop reading habits. Similarly, Machmud (2018) in a study on smartphone use in Indonesian schools: The high school students' perspectives found that more than 90% of the high school students owned a smartphone and spend 1-5 hours per day using a smartphone not only to make a call or send a text message but also for other things such as browsing information, sending emails, chatting, watching movies and gaming. Also, Sundari (2015), in a study on the effects of mobile phone use on academic performance of college-going young adults in India discovered that majority indicated that mobile phone has helped to increase the level of quality of education and that teachers are easily contacted for study purposes through their mobile phones. Hence, smartphones are ubiquitous tools whose impacts on peoples' life are difficult to quantify.

Studies on the use of technology and how they impacted the reading habits of students abound everywhere. For example, Kumara and Kumar (2018) in a study on the impact of ICT on the reading habits of students at Tumkur University, India reported that most of the students have a high positive attitude toward reading books. Similarly, Olszak (2015) in a study on the effect of online tools on reading habits among teenage students in Poland discovered that most of the respondents generally showed a positive attitude toward reading. Mlay et al (2015) studied uncovering the reading habits of university students in Uganda. They reported that majority of the respondents agreed that ICT improves reading as there seems to be a crucial relationship between the use of ICT and their reading habit. Besides, Davidovitch et al (2016) studied the reading habits of students in Israel; they found that the Internet affects many areas of students' life including reading habits. Also, Saaid and Abd Wahab (2014) in a study on the impact of digital-based materials on undergraduates' reading habit in Malaysia, reported that majority of the respondents agreed that their reading habits had changed and their interest in reading had developed due to the emergence of digital publications such as online newspapers, magazines, books, and journals. Similarly, Chauhan and Lal (2012) studied the impact of information technology on the reading habits of college students in Mysore, India. They discovered that majority of the respondents mostly preferred devices such as laptops, smartphones, Tablets/I-phones, and desktop with Internet connection in that order for reading materials in digital/electronic format. This implied that technology adoption in education portends endless possibilities for higher engagement, enhancement of students' understanding, and extension of learning beyond the classroom.

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Inadvertently, the use of smartphones has the potential to reduce the attention span of students in classes and can, therefore, be detrimental to reading and learning. Consequently, Ng et al (2017), in a study on the relationship between smartphone use and academic performance: a case of students in a Malaysian tertiary institution reported that smartphones have negative effects on students' academic performance even though they were used for school-related learning activities. Also, Jenks (2016) in a study on the advantages and disadvantages of smartphones on students in Yuanpei University, Taiwan found that though, the majority of the respondents agreed that smartphones help them to study in class but they are a distraction to them. Huang et al (2014) investigated American students' reading habits and practices. Findings showed that students spend more time online or on other technology applications, thus, potentially reducing academic and extra-curricular reading activities. Similarly, Kahari (2013) studied the effects of cell phone use on study habits of the University of Zimbabwe's first-year faculty of Arts students. He found that cell phones are undeniably convenient and helpful tools for study but, can be a hurtful source of distraction depending on the attitude and use pattern of a student(s). In addition, the use of technology in the learning space can be detrimental to reading as it has the potential to reduce the attention span of students while in the classroom. Therefore, Ikpaahindi (2008); Igbokwe, Obidike, and Ezeji (2012) as cited in Oyewusi and Ayanlola (2014) warned that ICTs, especially, the Internet technology is hurting the reading culture of Nigerian students, as most of them prefer to spend time in cyber cafes, playing games, chatting, and playing with smartphones amongst others. Also, Loan (2009) averred that every new media of ICT has been a threat to man's interest in reading and that the latest digital devices have captured a big slice of time, thus, reading has taken a back seat. This implied that the reading habits of secondary school students/adolescents are greatly endangered.

Incontrovertibly, smartphone technology is transforming human lives at a fast pace. Its use has led to appreciable changes in peoples' lifestyles and reading habits. Moreso, its adoption and use as an instructional aid among secondary school students could stimulate improvement in their academic achievements, logical and analytical thinking, understanding relationships, concept formation, and reinforcement of learning objectives. Nonetheless, there are potential drawbacks to these new technologies, as they may provide distractions and reduce productivity. This study, therefore investigated how the use of smartphones influenced the reading habits of public secondary school students in Ibadan, Nigeria.

3. Methodology

The study adopted a descriptive survey. The population included all the Nine thousand, eight hundred and eleven (9,811) students in all the thirty-six (36) public senior secondary schools in Akinyele Local Government Area (Oyo State Ministry of Education, 2019). Akinyele Local Government is made up of six educational zones and each educational zone is made up of six public secondary schools. Multi-stage random sampling technique was adopted for sample selection. Firstly, the simple random sampling technique was adopted in selecting the six public secondary schools (one public secondary school each from the six educational zones) used for the study; then, the stratified random sampling technique was used for the selection of the senior secondary II and III students from the six (6) public schools that participated in the study. Furthermore, a simple random sampling technique was adopted in selecting the sample from the study population to give every member of the population an equal chance of representation. The six selected public secondary schools have a total of One thousand, three hundred and forty-seven (1,347) senior secondary students in SS II and SS III. Thus, a sampling fraction of 20% was used to select the respondents from each school giving a total sample size of two hundred and seventy-one (271) students consistent with SMART Methodology as cited in Ogunwuyi (2017).

The instrument used for data collection was a questionnaire titled smartphone use and reading habit Questionnaire (SPURHQ). It was designed for the public secondary school students in all the six schools that participated in the study. The items in the questionnaire were specifically designed to accomplish the objectives of the study. The questionnaire was divided into four sections A-D. Section A contains the demographic information of the respondents such as age, gender, class, ownership of smartphones, types of reading materials. Section B contains items on the reading habits of the respondents. It is a thirteen (13) item statements adapted from Oyewusi and Ayanlola (2014). The typical examples of the items were: I like reading always; I read only when I have examination(s). The response format range from strongly agreed = 4; agree = 3; disagree = 2 and strongly disagree = 1. It has reliability co-efficient of 0.73 Cronbach's α.

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Section C contains items on the habits that affect the reading of the respondents. It is made up of five (5) item statements adapted from Oyewusi and Ayanlola (2014). The typical examples of the items were: using a smartphone would enable me to find the online book(s) to read; I find the smartphone useful while reading. The response format range from strongly agreed = 4; agree = 3; disagree = 2 and strongly disagree = 1. It has reliability co-efficient of 0.65 Cronbach's α. Section D featured items on the perceived usefulness of the smartphone to the respondents. It is made up of nine (9) item statements adapted from Oyewusi and Ayanlola (2014). The typical examples of the items were: knowledge acquisition; information search. The response format range from strongly agreed = 4; agree = 3; disagree = 2 and strongly disagree = 1. It has reliability co-efficient of 0.82 Cronbach's α. The overall reliability coefficient of the whole 27 items instrument reported an $r = 0.73$ Cronbach's α. This is high enough thereby confirming the instrument as adequate for this study.

A total of 271 copies of the questionnaire were administered to the respondents. Out of which 256 copies were duly filled and returned, giving a response rate of 95%. Copies of the questionnaire were distributed and responses were collected immediately after completion. The cooperation of the respondents and efforts of the six research assistants who were teachers in the sampled schools made the exercise a hitch-free one and equally accounted for the high response rate recorded. All the 256 copies were found usable for analysis. The Statistical Package for Social Sciences (SPSS) version 25 Software was used for data analysis. The descriptive statistics used were frequency counts, percentages, mean and standard deviation.

4 Findings

4.1 Demographic Characteristics of the Respondents

The gender distribution of the respondents showed that 135 (53%) were males, whilst 121 (47%) were females. This implies there were more males in public secondary school enrolment. The age distribution of the respondents ranged between 15 and 19 years. Of the 256 respondents, 158(62%) were in senior secondary SS II, whilst 98(38%) were in senior secondary SS III. The distribution of the respondents by subject discipline revealed that 103 (40%) were in the Arts class; 83(32%) were in the Science class; 56(22%) were in the Commercial class; while 14(6%) were in the Social Sciences class. Furthermore, the distribution of the respondents by ownership of smartphones showed that majority 219 (86%) owned a smartphone, while 37(14%) did not. This indicates that the majority of the public secondary school students have personal smartphones which are a common practice among young adults/adolescents.

The study equally sought to know how the respondents got owned smartphones. Results revealed that majority 184(72%) got smartphones from their parents; 55(22%) indicated self; 14(5%) from siblings; while 3(1%) indicated friends. The respondents were also asked to indicate how they got money for airtime into their smartphones. Out of 256 respondents, 107(42%) got money for airtime from parents; 123(48%) from pocket money/allowance; 9(3%) from friends; while 17(7%) respondents got airtime through other means.

4.2 Duration of Time spent in Reading and Operating Smartphones

Table 1 presents the distribution of the respondents by time spent reading in the school library and at home.

Item	Reading in the library	Frequency	Percent (%)
1.	Less than1 hour.	173	68
2.	1- 4 hours.	75	29
3.	Above 4 hours.	8	3
	Total	**256**	**100**
Item	**Reading at home**	**Frequency**	**Percent (%)**
1.	Less than 1 hour.	83	32
2.	1 – 4 hours.	142	56
3.	Above 4 hours.	31	12
	Total	**256**	**100**

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The results has shown in Table 1 revealed that majority 173(68%) spent less than an hour reading in the school library. 75(29%) spent 1 - 4 hours; and 8(3%) spent above 4 hours reading in the school library. Similarly, the sampled respondents were asked to indicate the average time spent reading their books at home. The results further indicate that majority 142(56%) spent 1 - 4 hours reading at home; 83(32%) spent less than an hour; while 31(12%) spent above 4 hours reading at home respectively.

Table 2 presents the distribution of the respondents by time spent in operating smartphones.

Item	Statement	Frequency	Percent (%)
1.	Less than 1 hour.	6	2
2.	1-4 hours.	164	64
3.	5-8 hours.	52	20
4.	Above 8 hours.	34	14
Item	**Statement**	**Frequency**	**Percent (%)**
1.	Daily.	162	63
2.	Weekly.	29	11
3.	Fortnightly.	11	5
4.	Monthly.	5	2
5.	Sometimes.	29	11
6.	Others	20	8
	Total	**256**	**100**

It is shown in Table 2, that majority of the respondents, 164(64%) spent between 1 - 4 hours; 52(20%) spent 5 - 8 hours; 34(13%) spent above 8 hours, and 6(1%) spent less than one-hour operating smartphones daily respectively.

4.3 Types of Reading Materials

Table 3 presents the distribution of the respondents by types of preferred reading materials.

Item	Statement	Frequency	Percent (%)
1.	Subject/School textbooks.	90	35
2.	Novel/storybooks.	88	34
3.	Class notes.	40	16
4.	Online news (newspapers/magazines).	14	6
5.	E-books.	5	2
6.	Others.	19	7
	Total	**256**	**100**

It is shown in Table 3 that the types of reading materials preferred were 90(35%) read subject/school textbooks; 88 (34%) novel/story books and 40 (16%) class notes amongst other materials. This implies that public secondary school students in Akinyele Local Government, Oyo State preferred reading subject/school textbooks mostly.

4.4 The Function performed on Smartphones

It is shown in Table 4 above that the functions performed mostly on smartphones by the respondents were 230(90%) completion of school assignments; 229(89%) communications - calls, SMS, e-mails; and 206(81%) listening to music/news/play games amongst other functions. This implies that the sampled respondents mostly use Smartphones for school assignments. The results of the survey equally revealed that available services on the smartphones of the sampled respondents included SMS, video and audio recording, radio, YouTube, and chat-enabled platforms.

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Table 4 presents the distribution of the respondents by the functions performed on smartphones.

Item	Statement	Frequency	Percent (%)
1.	Complete school assignments.	230	90
2.	Communications- calls, SMS, e-mails.	229	89
3.	Listening to music /play games.	206	81
4.	Read news/check events.	206	81
5.	For reference purposes (check for information).	196	77
6.	Reading books and novels.	190	74

4.5 Perceived Usefulness of Smartphones

Table 5 presents the mean and standard deviation scores of the respondents' perceived usefulness of smartphones.

Item	Statement	M	SD
1.	For knowledge acquisition.	3.58	0.62
2.	Information search.	3.51	0.67
3.	Find current and specific information.	3.41	0.68
4.	Contact parents.	3.39	0.87
5.	Social media networking.	3.37	0.79
6.	Communicate with classmates.	3.36	0.77
7.	Taking pictures.	3.18	0.81
8.	Watch videos.	3.05	0.83
9.	Communicate with teachers.	2.61	0.09

The result in Table 5 revealed that the mean and standard deviation scores of perceived usefulness of smartphones of the respondents are: knowledge acquisition ($M = 3.58$, $SD = 0.62$); information search ($M = 3.51$; $SD = 0.67$); find current and specific information ($M = 3.41$; $SD = 0.68$); contact parents ($M = 3.39$; $SD = 0.87$); social media networking - Facebook, Twitter, Instagram, You Tube ($M = 3.37$; $SD = 0.79$); and communicate with classmates ($M = 3.36$; $SD = 0.77$) amongst others. This implies that the respondents find smartphones very useful for knowledge acquisition and information search.

4.6 Habits that affect the reading of students

Table 6 presents habits that mostly affect the reading of public secondary school students.

Item	Statement	M	SD
1.	I like reading always.	3.40	0.60
2.	I only read when I have examinations.	2.02	0.87
3.	I read educational materials only.	2.40	0.88
4.	I prefer reading printed books to e-books.	2.60	0.84
5.	I like reading on my smartphone.	2.95	0.91
6.	I read mostly in school.	2.83	0.87
7.	I read to acquire knowledge.	3.57	0.59
8.	I like reading both at home and in school.	3.41	0.69
9.	I read for pleasure.	2.75	0.91
10.	I love reading during the holidays.	3.14	0.84
11.	I prefer reading books with colours and illustrations.	2.93	0.86
12.	I read only when my friends are with me.	2.10	0.98
13.	I read only when am forced to do so.	1.79	0.92

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The result in Table 6 revealed that the mean and standard deviation scores of habits that mostly affected the reading of the respondents are: I read to acquire knowledge (M = 3.57; SD = 0.59); I like reading both at home and in the school (M = 3.41, SD = 0.69); I like reading always (M = 3.40; SD = 0.60); I love reading during holidays (M = 3.14; SD = 0.84); and I like reading on my smartphones (M = 2.95; SD = 0.91) amongst others. Thus, based on the weighted M score of 2.76 which was greater than the criterion M a score of 2.50, this implies that most of the respondents possess a high, positive, and a good habit for reading books.

4.7 Effect of Smartphones use on Reading Habits

Table 7 presents the mean and standard deviation scores of the effects of smartphone use on the reading habits of the respondents.

Item	Statement	M	SD
1.	Enable me to find online books to read.	3.16	0.83
2.	Makes it easier to do reading assignments.	2.93	0.91
3.	Enable me to prepare for examinations.	2.93	0.91
4.	Find it useful while reading.	2.87	0.92
5.	Improve my academic performance.	2.83	0.91

From Table 7, the result revealed that the mean and standard deviation scores of the effects of smartphone use on the reading habits of the respondents are: smartphone use enable me to find online books to read (M = 3.16; SD = 0.83); makes it easier to do reading assignments (M = 2.93, SD = 0.91); and prepare for examinations (M = 2.93, SD = 0.91) amongst others. This implies that the majority of the sampled respondents perceived that smartphone is useful and a relevant tool that supports their educational attainments.

6 Discussions of the Findings

The first set of results in this study showed that almost all of the respondents owned a smartphone; the majority spent between 1 - 4 hours operating smartphones and 1 - 2 hours reading daily. These findings align with Machmud (2018) who reported that the majority of the studied high school students in Indonesian schools owned a smartphone and spent 1-5 hours per day using a smartphone. Oyewusi and Ayanlola (2014) discovered that majority of the studied private secondary school students in Ibadan North Local Government have personal mobile phones; like reading but spent less than an hour reading in the school library. Also, Ekwealor (2019) reported that out of over 200 million Nigerians, there were around 25 million smartphone users. Furthermore, this result is in line with the position by Nagaraja and Manalan (2016); Haliru et al (2015); and Saaid and Abd Wahab (2014) all of whom summarised that the average time spent by students for reading is 1 - 2 hours. However, this is considered low as most of the students spent less than an hour per day to read in the school library.

The result revealed that subject/school textbooks, novel/storybooks, and class notes amongst other materials are the types of reading materials preferred by students in public secondary schools in Akinyele Local Government, Ibadan. This result corresponds with Ameyaw and Anto (2018) who reported that the types of reading materials preferred by senior high school students in Ghana were teaching notes, novel/fiction, and textbooks. The result also agrees with Rosli et al (2017), who revealed that the majority of the students studied in Malaysia prefer reading academic materials/notes especially when they are in the library. And Haliru et al (2015) who found that reading materials preferred by the majority of the secondary students in Kaduna, Nigeria were textbooks, novel, and fiction.

Also, this study revealed that the perceived usefulness of smartphones to the respondents are for knowledge acquisition, information search, find current and specific information, contact parents, social media networking via Facebook, Twitter, Instagram, YouTube, and communicate with teachers and classmates amongst others. The result is in line with the position by Sundari (2015) who carried out a research to determine the positive effects of mobile phone use on learning achievements of college-going young adults in India. The result indicated that mobile phones are used for contacting the teachers for study purposes; classmates for help in studies; information search, and social networking/connectivity. Ng et al (2017) study in Malaysia discovered that

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respondents most frequently use smartphones for communicating with others by texting, accessing reference materials, and reading news.

Furthermore, the most significant finding of this study showed that the habits that mostly affected the respondents' reading are reading to acquire knowledge, reading always, and reading during holidays. Equally, the respondents perceived that the smartphone is useful and a relevant tool that supports their educational attainments - reading habits. The results agree with Ameyaw and Anto (2018) who averred that reading is important and it helps to broaden knowledge. Similarly, Kumara and Kumar (2018) reported that most of the students studied in India have a high positive attitude toward reading books. And Oyewusi and Ayanlola (2014) discovered that students in private secondary schools in Ibadan like reading instead of playing and preferred reading both at home and in the library.

Specifically, the study investigated the use of smartphones and the reading habits of public secondary school students. Findings showed that the majority of the respondents indicated their preference for reading and agreed to owe books. However, the result revealed that the respondents felt comfortable with the use of smartphones while reading; are familiar with different types of reading materials on their smartphones, smartphones assist them to develop reading habits, aid their performance in reading and academic achievement. The study equally found that the students were convinced that smartphones increase their exposure to knowledge through e-books and enable them to browse different fiction books and improves student/teacher relationships. These results are in line with the position by Skenderi and Ejupi (2017); and Saaid and Abd Wahab (2014), all of whom summarised that reading is a very important element in the aspect of vocabulary enrichment, personality building, better academic performance and reading habits; interest in reading had changed and developed due to the emergence of digital publications such online newspapers, magazines, books, and journals. Therefore, in the light of this, secondary school students in particular and stakeholders in the education sector, in general, are encouraged to leverage on the endless possibilities that the use of smartphone technology confers on the learning space.

7 Conclusions

The study examined the use of smartphones and the reading habits of public secondary school students. Based on the findings in this study, conclusions are drawn that almost all the respondents owned and spent hours operating smartphones; the perceived usefulness of smartphones to the respondents are for knowledge acquisition, information search, contact parents, social media networking; perceived effects of the use of smartphones on reading habits are that they are comfortable with the use of smartphones while reading; familiar with reading of materials on their smartphones, it assisted them to develop reading habits and aid their performance in reading and academic attainment generally. The study equally found that the students were convinced that smartphones increase their exposure to knowledge. The survey results showed that the students possess a positive/good habit for reading. Arguably, reading remains the bedrock of education, and reading habits is a fundamental skill necessary in the life of every student. It is an important tool for life-long learning that leads to the overall development of an individual.

8 Recommendations

Based on the findings of this study, the following recommendations are made:

- Government and relevant stakeholders in the education sector must ensure that appropriate and implementable policies regarding the integration of digital mobile technologies into public secondary education are enacted. This would go a long way to encourage the positive use of smartphones for academic-related activities across all levels of and in the long run help promote and enhance the teaching and learning process.
- Reading habits enhance individual self-confidence, moral and intellectual development, hence, all concerned stakeholders: parents, school teachers, school librarians, Government, and school counsellors, should pay attention to the development of good reading habits of public secondary school students.

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- The smartphone technology integration policy in schools should be designed to accommodate both the students' needs, as well as to avoid the problems that might occur during the instructional process.
- Parents should monitor the use of smartphones by their children to prevent the distractions caused by phone addictions which can prevent the students from reading and doing other meaningful activities.
- Also, for meaningful learning, school authorities should formulate rules and policies guiding the use of smartphones among students while in school. This would prevent indiscriminate and uncontrolled use of the device in classrooms and, consequently, foster concentration among the students. If smartphones were to be used in school-related learning activities, it would be more successful if it involved conversations between teachers and students.

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