



## THE IPHONE PHENOMENON, MEDIA LITERACY AND UNITED NATION'S 2030 SUSTAINABLE DEVELOPMENTAL GOALS IN NIGERIA

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**ABSTRACT:** *In September 2015, the General Assembly adopted the 2030 Agenda for Sustainable Development which includes 17 interconnected Sustainable Development Goals (SDGs) - quality education, reduced inequality, responsible consumption and production, and partnerships to achieve the goals. Smartphones are becoming increasingly prevalent element of the educational experience in classes, from preschool to graduating school level. The iPhone phenomenon makes students' lives easier. They can access their school information on portable devices. This is referred to as electronic learning (e-learning); smartphone is advanced mobile phone device that has improved considerably in the 21st century with the accommodation of features such as accessing emails, biometrics, online shopping, social media, and many more. The question arises whether the iPhone craze is driven by the passion for securing academic excellence, prestige, or social relevance. This author observes that the use of smartphones is gradually becoming an effective and indispensable learning tool used to enhance youths' social engagement. Hence, this study aims to conceptually synthesize existing literature on the iPhone phenomenon using the Marshal McLuhan Theory.*

**KEYWORDS:** Smartphones; Learning Outcomes; UN 2030 Developmental Goals; Electronic Learning; iPhone Effect.



## INTRODUCTION

The advent of the first smartphone can be traced back to 1994 and it was called the Simon Personal Communicator (SPC). The smartphone was not connected to a real 3G network until the year 2000 when a mobile communication standard was created to allow wireless Internet access to portable electronic devices. 2007 was the year Steve Jobs and the MacWorld team unveiled the first iPhone. This was not only the greatest touchscreen device on the market, but it was also the first to give a full, undiluted version of the internet. Consumers could browse the web on the iPhone just like they could on a desktop computer.

There's been a lot of change since the iPhone first came out twelve years ago. Globally, "people around the world have adopted this new and exciting technology as one of the most important required facilities in their everyday life" (Fawareh & Jusoh, 2017, p.1). Globally, the explosion of smartphones and its related devices has greatly transformed teaching and learning in developed nations where developing nations are not the exception (Tagoe, 2014).

Cell phones have become a part of daily life, and many people feel lost without them. Stephanie AuWerter, deputy editor of SmartMoney.com, observes that "this is going to be the gadget for any technology lover" (Stephanie AuWeter, 2007). More than 2.2 billion iPhones had been sold as of November 1, 2018 (<https://sosphonerepairs.com.au/>). The 21st century has seen technology use becoming an inevitable part of life. Based on a Group Special Mobile Association (GSMA 2015) report. Half of the world's population has a mobile subscription with smartphone adoption already reaching critical mass in developed markets. Smartphones are now responsible for 60% of Internet connections around the world. This form of technology has advanced with simple call and text messaging functions being replaced with functions such as Internet access, email, camera applications and multimedia services (Lefebvre, 2009).

Smartphones are becoming an increasingly prevalent element of the educational experience in classes, from preschool to graduating school level. According to a recent Pew Research Center survey (2012, December), 58 per cent of teachers in the United States own smartphones, which is ten percentage points more than the national average for individuals. By supporting bring-your-own-device regulations and leading the campaign for an iPad for every student, those teachers are incorporating digital savvy into their lesson plans as well. But what value do these smartphones really add? Is there more to this digital trend than just catching students' attention? Is mobile technology improving classroom learning, or is it merely a trendy method to do what analogue instruction already does? According to the same Pew research centre (2012, December), a group of Advanced Placement and National Writing Project teachers were invited to complete a survey about the pedagogical influence of Internet technologies in the classroom. What those professors had to say regarding mobile technology in particular was the following:

- 73 percent of teachers said they utilize mobile technology in their classrooms, either for their own instruction or to allow students to complete work using it.
- English teachers are more likely than math teachers to use mobile technology in the classroom.
- Students need digital literacy courses to be successful academically and beyond, according to 47 percent of instructors who strongly agree and 44 percent who agree somewhat.



Mobile learning can and does have a positive impact on how students learn, and it's not only for the sake of being "cool." Mobile technology, when used correctly, has the ability to help kids learn more and grasp what they've learned (Becton, 2019).

Along with their advantages, mobile devices are not without their drawbacks. When mobile technology is allowed in classrooms, for example, teacher authority can be easily undermined. One of the often-mentioned benefits of mobile devices in classrooms is that they allow simultaneous work to take place, this does not leave out the issues that may occur when students bring their phones to the classroom. Personal electronics are also more difficult to implement than school-owned electronics. For instance, a tablet owned by a school district may come pre-loaded with the appropriate programs and apps and may not allow for any outside play. A device that returns home with a student, however, can't have the same rules. Shalini Misra in "The iPhone Effect: The Quality of In-Person Social Interactions in the Presence of Mobile Device" (2014), examines the relationship between the presence of mobile devices and the quality of real-life in-person social interactions in third places through a naturalistic field experiment. Misra opined that "smartphones have promoted a state of split consciousness. Just by its presence, we are drawn to focusing on whatever is happening in the moment. We are constantly oriented to the present. This distracted cognitive state diminishes our ability to experience our social and physical surroundings in a deep and personal way."

Smartphones are used by students for entertainment, social interaction, and education. Smartphones make it simple for teachers to support and stimulate student learning and creativity while also raising motivation as students are less likely to succumb to distractions when they are immersed in their studies – and when given a choice, they are virtually always engaged with their phones. The purpose is to show students how to apply this well-known phenomenon.

Youth, on the other hand, became captivated with this instrument as time passed and immersed themselves in communicating and finding new friends through social media. This could as well be traced to the concurrent reason why the phenomenal invention of iPhone is being glamorized in the digital society - the first thing they see in the morning and the final thing they see before going to sleep (Lee et al., 2014).

### **Establishing the Problem**

The twenty-first century has brought us a multitude of technological advancements such as the iPhone, which has had a significant effect on how we interact with the world. In educational settings, mobile phone learning can have a positive impact on how students learn, and it's not only for the sake of being "cool." Though mobile technology, particularly the iPhone, has become a fad craved by the youth for belongingness and prestige, when used correctly, it can help students grasp more. However, along with their advantages, mobile devices are not without their drawbacks. It is believed that when mobile technology is allowed in classrooms, teacher authority can be undermined as they allow simultaneous work to take place. According to the literature, the resulting lack of focus has potentially negative and positive consequences on learning outcomes. While a tablet owned by a school may come pre-loaded with the appropriate programs and applications and may not allow for any outside play, a device that returns home with a student, cannot have the same rules.



## **Purpose of the Study**

In order to resolve the challenges expressed above, this author seeks in this paper, to resolve these 3 questions below:

- i. How do educational factors motivate students' use of iPhone for learning outcomes?
- ii. What are the relationships between iPhone use and academic outcomes?
- iii. What recommendations are appropriate to improve the use of smartphones on learning activities?

## **Scope and Significance**

This study gives an insight into smartphones as well as the phenomenal invention of the iPhone and its effects on learning activities and outcomes in the 21st century. Also, this author leverages Marshal McLuhan's "the medium is the message" meaning that the important thing about media is not the messages they carry but the way the medium itself affects human consciousness and society at large. This study will be of relevance to students, youths and individuals in the academic environment on the roles these smartphones play in learning activities and socialization.

More significantly, by drawing attention to the penetration, availability and finance shortfalls in the developing world hampering the accessibility of these gadgets, it is hoped that the global finance community will rise to the challenge.

The study is therefore limited to student, learning, funding, development, and partnership environments.

## **Definitions**

The following are the terminologies used in this research:

- **Smartphone:** A smartphone is a phone that simultaneously functions as a computer. They function like a computer but are small enough to fit in the hand of a user.
- **Phenomenon:** Phenomenon is a fact or situation that is observed to exist or happen, especially one whose cause or explanation is in question.
- **IPhones:** According to Steve Jobs, the "i" word in "iPhone" (and therefore "iPod", "iMac" and "iPad") stands for internet, individual, instruct, inform, and inspire. The iPhone gets its name because it can be customized to suit the user. Its screen and applications can be altered to individual tastes, like iPod and google. It highlights the 'i' — individuality of the user.
- **Academic Outcomes:** Academic Outcomes indicate the extent to which students have achieved their learning goals. It also dwells on the level of schooling you have successfully completed and the ability to attain success in your studies.
- **Cognitive Learning:** Cognitive learning is a change in knowledge attributable to experience (Mayer 2011).



- The 21ST Century: It is distinct from the century known as the 2000s, which began on January 1, 2000, and will end on December 31, 2099. The 21st century is the current century and the first century of the third millennium.
- Motivate: To provide (someone) with a reason for doing something.

## LITERATURE/THEORETICAL UNDERPINNING

### The Concept of a Smartphone

A mobile phone is a portable, handheld wireless device that allows users to make and receive calls. While the earliest generation of mobile phones could only make and receive calls, today's mobile phones do a lot more, accommodating web browsers, games, cameras, video players and navigational systems (Techopedia, 2020). Also, while mobile phones used to be mainly known as cellular phones, today's mobile phones are more commonly called "smartphones" because of all of the extra voice and data services that they offer (Techopedia, 2020). Besides calling, texting, and emailing, more than two billion people around the world now use these devices to navigate, to book cab rides, to compare product reviews and prices, to follow the news, to watch movies, to listen to music, to play video games, to memorialize vacations, and, not least of all, to participate in social media.

These benefits of smart phones seem to have come at a high cost to our mental and social lives. The constant connectivity and access to information that smartphones offer have made the devices something of a drug for hundreds of millions of users. Scientists are just beginning to research this phenomenon, but their studies suggest that we are becomingly increasingly distracted, spending less time in the real world and being drawn more deeply into the virtual world. The power they hold over us is glaringly evident in our everyday habits and behaviours.

Pew Research Center (2021) estimated that more than five billion people have mobile devices, representing approximately 94% of the population of advanced economies and 83% of emerging economies. The study added that "the growth in mobile technology to date has not been equal, either across nations or within them. People in advanced economies are more likely to have mobile phones – smartphones in particular – and are more likely to use the internet and social media than people in emerging economies". In every country surveyed, better-educated and higher-income people are more likely to use the internet than people with lower levels of education or income. And in nearly every country, the same is true of social media use. The education gaps in emerging economies are especially wide. For example, a majority of Nigerians with a secondary education or more use social media (58%) compared with just 10% of Nigerians with less education, for a gap of 48 percentage points. The education gap in internet use is an even wider 53 points: 65% of more-educated Nigerians use the internet compared with just 12% of those with lower levels of education (Pew Research Center, 2018).



## **Smartphone Effect on the Society**

Today Smartphones enable consumers, advertisers and publishers to better engage and socialize. Due to their ubiquitous nature and social acceptance, we can find smartphones in educational institutes, hospitals, public places and shopping malls. The impacts are both positive and negative. On one end smartphones are enabling people to create their own micro-cultures and engage in activities considered dangerous to society and on the other end, smartphones are enabling people to remain connected all the time.

### **Positive Effects**

Every student's use of the Internet has become a way of life and a way to find knowledge as and when it is needed. The usage of mobile phones for internet purposes has become common, and the number of mobile Internet users has exceeded that of fixed line internet users. The growing popularity of smartphones, as well as the availability of the Internet and high-speed mobile surfing, has created a new channel for delivering educational services. Users will be able to use their Smartphones to obtain educational benefits in their spare time, regardless of their location. Distance education is a type of learning that aims to free students from the constraints of time and location while still providing them with a variety of educational options. Distance learning allows students to make better use of their time so that they can complete their education while still working and raising a family.

Smartphone technology has yielded many benefits for society, such as allowing millions of people who lack access to banks to conduct financial transactions, for instance, or enabling rescue workers in a disaster zone to pinpoint precisely where their help is needed most urgently. There are apps available for smartphone users to monitor how much they're walking during the day and how well they are sleeping at night (Yudhijit & Bhattachajee, 2019).

### **Negative Effects**

Our use of smartphones has effectively changed the geography of our minds, creating a distractive off-ramp for every thought we might have on our own (Yudhijit & Bhattachajee, 2019). For instance, while it would be difficult for students to make phone calls during examinations in order to cheat, it may be possible for students in a crowded classroom or examination hall to use their Smartphones to obtain information online in order to cheat in exams. In reality, there are some startling data about the use of smartphones in the classroom for cheating. Text messaging with other students, searching for solutions on the Internet, utilizing advanced calculators and phone applications, and reviewing notes saved on their phones are all examples of the smartphone.

### **iPhone Phenomenon**

Apple products and services are high quality and very unique (Halliday, 2011). The first-generation iPhone was announced by then-Apple CEO Steve Jobs on January 9, 2007. Since then, Apple has annually released new iPhone models and iOS updates. As of November 1, 2018, more than 2.2 billion iPhones had been sold. Amongst mobile device providers, Apple is the leader; Apple overtook Microsoft Corp. to become the most valuable technology company on optimism (BusinessWeek, 2010). Apple provides three major mobile devices: iPhone, iPod Touch, and iPad. These devices are well known with the advanced touch screen technology and movement detection. It was reported that Apple had sold 37 million iPhones



and 15.4 million iPads in the first quarter of 2012 (Apple Reports First Quarter Results, 2012). Apple application store is the largest application store for mobile devices in the market.

In January 2012, Apple announced that its application store has more than 550,000 applications available with more than 25 billion downloads (Apple, 2012). Users can run these applications on their iPod Touch, iPhone, and iPad. These numbers show the significant impact of Apple mobile devices to our society. The need of communicating, sharing knowledge, and creating relationships make college students one of the biggest market segments for mobile devices. Attachment to one's smartphone may result from the phone's capacity to provide information access, social interaction, and personal safety (Aoki & Downes, 2003). One alternative explanation as to why people may become attached to their iPhone is the component of fear of missing out (FoMO), which is operationally defined as "the fears, worries, and anxieties people may have in relation to being out of touch with the events, experiences, and conversations happening across their extended social circles" (Przybylski, Murayama, DeHaan, & Gladwell, 2013). Up to 2017, iPhones used a layout with a single button on the front panel that returns the user to the home screen. The iPhone is one of the two largest smartphone platforms in the world alongside android, forming a large part of the luxury market. The first-generation iPhone was described as "revolutionary" and a "game-changer" for the mobile phone industry and subsequent models have also garnered praise. The phenomenal invention of iPhone has brought about a major fad in our today's world (Jess & Bolluyt, 2017).

### **Why is the iPhone So Popular?**

The iPhone has been a major success for Apple since its release in 2007, with the company claiming to have sold more than 100 million handsets in the first four years. The iPhone is popular among a wide range of users because it combines the functions of a phone, a portable media player, a game console, and a handheld computer into a single device (Jason & Artman 2021).

### **Learning Outcome in the 21st Century**

Learning outcomes are skills and abilities students should possess and can demonstrate upon completion of a learning experience or sequence of learning experiences (Standford, 2017). Learning outcomes also describe what learners should know, be able to do, and value as a result of integrating knowledge, skills, and attitudes learned throughout the course. These 21st-century skills are more important to students now than ever before. They not only provide a framework for successful learning in the classroom but ensure students can thrive in a world where change is constant and learning never stops. And they are also tremendously important for our nation's well-being (David & Ross, 2017).

According to Edward M. Kennedy in his article, Learning Outcomes In the 21st century, he opined that "21st Century Skills incorporate the "hard" skills of literacy, numeracy, and information technology literacy, as well as the "soft" skills of teamwork, communication, problem-solving, and the ability to work with diverse groups, and that success in the workforce or in further education depends on the acquisition of these skills". He further added that the following skills are important for every adult and students in order to function successfully in society today:

- Communication skills (reading, writing, speaking, listening).



- Computation skills (understanding and applying mathematical concepts and reasoning, analyzing and using numerical data).
- Community skills (citizenship; diversity/pluralism; local, community, global, environmental awareness).
- Critical thinking and problem-solving skills (analysis, synthesis, evaluation, decision making, creative thinking).
- Information management skills (collecting, analyzing, and organizing information from a variety of sources).
- Interpersonal skills (teamwork, relationship management, conflict resolution, workplace skills).
- Personal skills (ability to understand and manage self, management of change, learning to learn, personal responsibility, aesthetic responsiveness, wellness).
- Technology skills (computer literacy, Internet skills, retrieving and managing information via technology).

The advent of the twenty first century has brought in its wake changes in the role of the teacher worldwide. Accustomed to being the knowledge provider, leader and educator, the teacher now has to adjust his or her role to meet the demands of twenty first century learning (Adebayo & Ogundipe, 2021).

### **IPhone and Learning Outcomes**

The prevalence of smart devices introduces a wide array of concurrent activities into daily life, creating possibilities for personal efficiency and increased connection but also potentially leading to a culture of distraction. Multitasking has been shown to impact numerous cognitive abilities and tasks, including driving ability, memory and academic outcome (Pooja & Gupta, 2014).

According to Eugenia A. Ives in his research work *iGeneration* (2012), “The statistics change so quickly it is hard to have a current pulse or understanding of how much digital content we interact with daily, how it affects us, and how much should we consume.” The iPhone can act as an infinite tool in the educational setting. The last decade has seen the introduction of new technology which has transformed many aspects of our culture, commerce, communication and education. Mobile computing devices such as iPhone and iPad have been rapidly adopted in many countries providing access to information in ways that were not possible before (Sean Wallace 2012). Aside from other smartphones, the iPhone can play vital roles during learning activities. Some of these are: fast access to information on the internet, efficient use of time, flexible communications, powerful applications and access to multimedia resources, voice activation and reference: As a reference tool, nothing is faster than Siri. This is an installed voice activator that answers questions when orally asked without the use of typing.





## **The Cost and Benefit of Smartphones in the Educational Setting**

Researchers worry that addiction to smartphones could dull the ability of young users to read and comprehend texts, which in turn could have adverse impacts on their critical thinking. These concerns are based on the results of studies such as one conducted by psychologist Anne Mangen and her colleagues at the University of Stavanger in Norway. They divided 72 students in the 10th grade into two groups, asking one group to read two texts on paper and the other to read the same texts as PDFs on a screen. The print readers did much better on a reading comprehension test than the digital readers. The computer in our hands can do astonishing things, but new studies show just how dramatically they're distracting us (Yudhijit & Bhattacharjee, 2019).

Lisa Nielsen, an educator who started her career as a librarian and eventually went on to be an education blogger and speaker, broke down the history of smartphones in the class. From the day they were introduced, cell phones were considered a nuisance to educators, which is why schools banned all electronic devices in the 1990s. This was also partly because school administrators feared that these devices would be used by students who were attempting to do things that were illegal (Becton, 2019). Policies changed to allow cell phones on campus so long as they were turned off during the day. However, educators couldn't stop the use of these devices. As the 2000s rolled along, even elementary school students commonly used cell phones on a daily basis.

Over the past decade, smartphones have revolutionized our lives in ways that go well beyond how we communicate. Globally, the explosion of smartphones and its related devices has greatly transformed teaching and learning in developed nations where developing nations are not the exception (Tague, 2014). Due to the obvious expansion of these facilities, students and learners no longer rely primarily on paper-based materials to learn. The introduction of the internet resulted in the emergence of cellphones, allowing for learning to take place regardless of the location or a period. Currently, the use of smartphones performs phenomenal roles as far as teaching and learning are concerned. For instance, students can access their lecture materials on their smartphones, quickly access information online to meet their information needs via learning management systems, access academic databases, and a website to mention but a few.

This was evident in the works of Masiu & Chukwuere (2018) where it was stated that "the smartphone has also made students' lives easier, as they can access their school information on the gadget through electronic learning (e-learning), and mobile learning (m-learning)." The use of smartphones in learning has become the latest trend in higher education where an individual may not necessarily need a computer set to access electronic learning materials. The phenomenal roles of the smartphone in learning have been revealed by numerous authors such as in the works of Valk, Rashid, & Elder (2010), that, smartphones have made learning more flexible, and easy and have helped to reduce the ultimate inherent conventional classroom learning. Kumar (2011) also brought to bear that smartphone users are able to download recorded online lectures, and electronic books to enhance learning.

Norries et al. (2011) concur that smartphones not only enable students to access and read materials but also, they can take pictures of abstract concepts that are taught in class with the camera on their smartphones so that they can relate them with concrete ideas at a later date, mostly in distance education. Smartphones support learning either offline or online. Offline access enables users of smartphones to store any form of learning materials such as pdf,

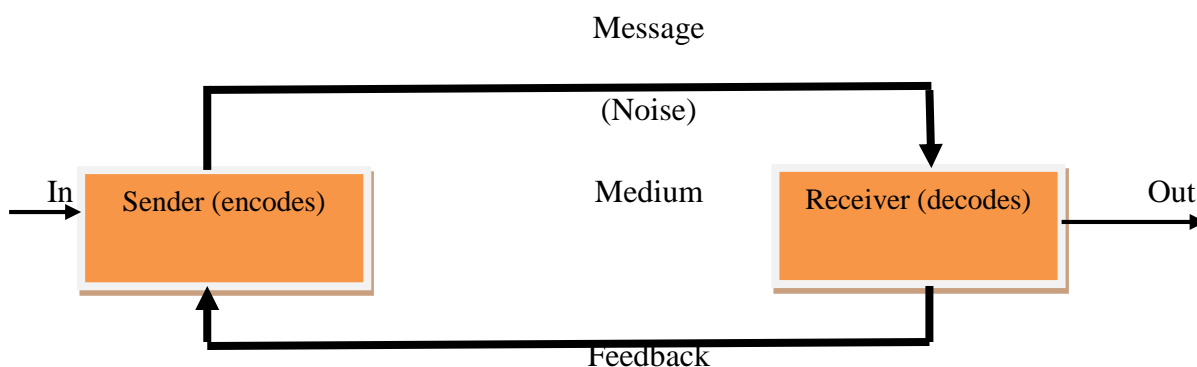


PowerPoint, word, excel, pictures, animations, and symbols, irrespective of the geographical location. Internet access is needed for learners like students and teachers to visit websites to meet their information needs. The exploration of the smartphone has changed the dynamic of students learning activities. Learning to live with the technology without surrendering to it may be one of the biggest challenges we face in the digital era. “We are playing catch-up” (Kross, 2019). He describes the experiential universe opened up by smartphones as a new ecosystem that we’re still adapting to. “There are helpful or harmful ways of navigating the offline world, and the same is true of the digital world.”

## The Medium is the ‘Message’

### *Medium Theory*

The concept of the Medium Theory is that the type of Medium used to communicate with the user is just as important as the content presented by the medium itself. The theory was first propounded by Marshal McLuhan with his famous phrase “Medium is the message” also known as the medium theory. Marshal McLuhan was a media and communication theorist, also considered “the first leading prophet of the electronic age. His theory further explains that “indeed, it is only too typical that the 'content' of any medium blinds us to the character of the medium”.



For McLuhan, it was the medium itself that shaped and controlled "the scale and form of human association and action". In his book “Understanding Media” (1964), McLuhan describes the "content" of a medium as a juicy piece of meat carried by the burglar to distract the watchdog of the mind. This means that people tend to focus on the obvious, which is the content, to provide us valuable information. Meanwhile, in the process, we largely miss the structural changes in our affairs that are introduced subtly, or over long periods of time. The smartphone which is a well-known medium is extremely important in the academic world, particularly in the lives of students. In this case, the smartphone can serve as a "medium" between both parties (the lecturer and the student).

Here, the lecturer could be the encoder while the student is the decoder or vice versa. Learning activities have been simplified with the emergence of the smartphone. For instance, students can now access e-books rather than going to the library all the time. Lectures could be virtual without the need for physical interaction. Schoolwork or information can be accessed on the internet through the phone. Coupled with the reason why access to and usage of the internet has become so crucial, it may also be argued based on McLuhan’s views of media as extensions of our body. This depicts that the internet (and thus also the smartphone) can be considered as



an extension of our memory. The Google effect, according to the findings of a study published by Bohannon (2011), suggests that people utilize the internet as a "personal memory bank" (Bohannon, 2011). This is because nearly any question can be answered on the internet.

In an article, what will McLuhan say about the smartphone? By Isabelle Adams, she opines that the smartphone as a new technology and medium is analyzed with regards to its effects on individuals and society. She further explained that the smartphone enhances the accessibility and convenience of the internet, which also accelerates the speed of real-time communication. 'The medium is the message is merely to say that the personal and social consequences of any medium – that is, of any extension of ourselves – result from the new scale that is introduced into our affairs by each extension of ourselves, or by any new technology.' – Marshall McLuhan (*The medium is the message*, 1964). This conveys that the introduction of new technologies into a society, according to McLuhan, has a decisive influence on the organization of that society, its members' perceptions, and the way knowledge and information are stored and transmitted.

The central assumption of this theory is that the media, as we understand it is not just a channel through which communication takes place, but also a diverse set of settings or environments that enable communication to take place, and that the meaning and sense of the information being transferred can vary. It has been observed that the smartphone, which allows people to access and share information from all over the world, has narrowed the communication gap. According to Jumoke, Abiodun & Blessing (2015), the usage of Internet-enabled mobile phones is a 21st-century experience which covers various operations. The research work examines phone usage and identified the effects internet-enabled mobile phones have on the academic performance of students at tertiary institutions in Nigeria. The research work was performed to understand and also find the correlation between the academic performance of students and the usage of mobile phones during class hours which is generally believed to be an avenue of distraction to students.

Inmaculade, Jose & David (2019) opine that teaching in higher education is changing due to the influence of technology. More and more technological tools are replacing old teaching methods and strategies. Thus, mobile devices are being positioned as a key tool for new ways of understanding educational practices. The present paper responds to a systematic review about the benefits that mobile devices have for university students' learning. Using inclusion and exclusion criteria in the Web of Science and Scopus databases, 16 articles were selected to argue why Mobile learning has become a modern innovative approach. Bret (2018) says online classrooms and online learning have proliferated as smartphones have become ubiquitous. The combination of developments relating to the efficacy of online learning and the use of smartphone as tools to gather and process information have raised questions about the impact of smartphones on higher education.

Smartphones have become more and more a part of our daily lives. The smartphone has been an especially critical component of the lives of teenagers and young adults. Adhikari, et al (2017) sought answers to questions on how the equity of information literacy and learning outcomes have evolved with the ongoing technological advances in teaching and learning across schools. We report on a five-year-long BYOD (Bring Your Own Device) journey of one school, which was one of the earliest adopters of one-to-one learning devices in New Zealand. Erin (2007) claims that cell phones have become a part of daily life, and many people feel lost



without them. But there's a new cell phone in the market that has had consumers buzzing for months.

Stephanie AuWerter, Deputy Editor of SmartMoney.com, weighs in on the iPhone phenomenon. What makes the iPhone, so enticing is that it's a mobile phone that has touchscreen keyboard, but it's also an iPod (that's Apple's digital music player) that has a powerful internet browser -- all in this very, very cool package. "This is going to be the gadget for any technology lover," says AuWerter. Many expect this product to change the cell phone business overnight. Jonas & Gregory (2010) assert that the introduction of new consumer technology is often greeted with declarations that the way people conduct their lives will be changed instantly. In some cases, this might create hype surrounding a specific technology. This article investigates the adoption of hyped technology, a special case that is absent in the adopted literature.

The study employs a consumer research perspective, specifically the theory of consumption values (TCV), to understand the underlying motives for adopting the technology. Thouqan (2021) opines that smartphones are attractive tools for the majority of young people particularly university undergraduates and integrating them into learning is something valuable. Nevertheless, they might do harm to their achievement if the use barriers and bad effects are not identified. Motivated by this idea, the present study was undertaken. Findings showed that students were agreeable to smartphone perceived usefulness, ease of use, and barriers.

## **FINDINGS**

The study raised three questions in order to evaluate the impact iPhone can have on learning outcomes in the 21st century.

### **To identify factors that motivate students' use of iPhone for learning outcomes**

The findings highlighted that Smart phone such as the iPhone integrates online learning with learning in the offline world. Mobile learning as a concept is broader than learning using a mobile phone; any device that can connect to the Internet and communicate with others can be used for it (Gikas & Grant, 2019). The functions of mobile devices also enable them to be used in special needs education, for example with learners who have autism or visual impairment (McQuiggan et al., 2015). Although much has been said about the inherent motivating qualities of mobile technology; generally, there is a paucity of research that directly reflects the connection between mobile technology use and the role of motivation in learning with mobile technology. What are the motivational affordances of using these mobile devices for learning? This is the pivotal question we sought to address in this paper.

The results of this study indicate that Malone and Lepper's (1987) taxonomy of intrinsic motivations for learning can be applied to mobile learning. The taxonomy described in this paper provides a model of how to design intrinsically motivating mobile (and non-mobile) learning environments. Especially for struggling learners, there is a need for a 360-degree approach to learning, in which the experiences that underlie in-school learning are aligned with those in afterschool and home settings (Arpaci, 2015). Anchoring instructional lessons for the 21st century classroom can be viewed as an intimidating task, especially considering that many students are more technologically engaged outside of school than inside their classrooms



(Ciampa, 2019). One way to harness student motivation is by allowing and encouraging students to utilize their technical knowledge and experiences and allow them to engage in self-directed learning activities.

When compared to the wide range of technologies at our disposal, the highly personalized nature of iPhones provides an excellent platform for the development of personalized, learner-centric educational experiences marked by flexibility, customization, collaboration, active participation and co-creation (Pimmer, Mateescu & Gröhbiel, 2016). Most importantly, mobile learning gels with constructivist principles where multiple learning pathways and scaffolding activities can be constructed, and knowledge can be explored in multiple ways and in multiple contexts that best resonates with the needs of the users (Pimmer et al., 2016). When learning with mobile devices is carefully designed, it is possible to create more collaborative and participatory learning experiences while increasing learners' engagement and mastery of important concepts.

### **To examine the relationship between students' use of iPhone and learning outcomes**

Mobile learning may be defined as learning that blends learning online with situated learning. Mobile devices can also be used as tools for submitting homework, reflecting on immediate learning experiences, and for sharing ideas (Domingo & Gargante, 2016). For these reasons, mobile learning is a kind of personalized learning that is affected by individual differences, topics of interest, and performance. Therefore, learners will determine their learning goals, choose learning content, and their own pace of learning when using mobile devices (McQuiggan et al., 2015). Furthermore, learners can apply their networks on social media as their own learning community for sharing learning experiences. This kind of learning enhances learning by expanding the boundaries of where and when it can take place.

In addition to the advantages of using iPhones and other mobile devices, various creative learning strategies that instructors apply in their courses can enhance learners' self-directed learning by providing resources and productive strategies (Gu et al., 2014). Collaborative learning is the most popular learning strategy that instructors choose for mobile learning in their courses (Christensen and Knezek, 2018; Lackovic et al., 2017; Ooi et al., 2018; Seta et al., 2014) through online tools utilizing mobile devices, such as mobile applications, video conferences (Molinillo et al., 2018), and web applications (Parsazadeh et al., 2018). Nevertheless, learners need some skills and knowledge for preparing learning through mobile devices (Briz-Ponce et al., 2017; Ekanayake and Wishart, 2015), especially in using applications in mobile devices and to maintain their cyber security (Jarrahi et al., 2017).

Instructors also need computer skills for teaching (Cho et al., 2017) and techniques to apply mobile devices in traditional classrooms (Christensen and Knezek, 2018). However, skills and knowledge in using mobile devices are not the main challenge with mobile devices; the biggest one may be infrastructure, such as the Internet connection and limitations of the devices (Mu and Paparas, 2015; Nayak, 2018; Parsazadeh et al., 2018; Seta et al., 2014). Although the cost of Internet connection and hardware has been reported to hamper mobile learning in higher education, this has not been the case for mobile knowledge workers (Jarrahi et al., 2017). Another challenge is that applications that instructors use as their learning platform for sharing experiences, homework, or other purposes are viewed as an entertainment tool rather than a learning tool (Lackovic et al., 2017). Mobile learning is still challenged by barriers such as the low quality of devices, learners' acceptance, or Internet access (Gikas & Grant, 2019).



## CONCLUSION

This study can conclude with the fact that using iPhones made an impact on learners both positively and negatively. Then, it will be highly beneficial if there could be more research carried out in developing countries on how individuals use iPhones and mobile devices to increase their learning outcomes, how low-income families or communities have impacts on students' usage of iPhones and the impact of iPhones on learners attending classes and other academic related activities. Findings indicate that mobile learning enables learner-centered education, particularly in comparison to traditional distance education models. Mobile Learning provides increased interaction and higher motivation levels.

## RECOMMENDATIONS

- Instructors can improve learning outside the classroom by encouraging online discussions on mobile devices (iPhones) using applications such as Facebook Messenger, Twitter, or others for increasing knowledge sharing and learning communication between learners.
- Also, instructors should consider the possible impact of the available Internet connection and the appropriateness of learning applications for activities. Moreover, instructors should consider, and follow-up assigned activities in their chosen learning management system.
- Although mobile learning has many advantages in improving learning experiences, instructors should also take into account and manage the barriers of mobile learning described in the literature.
- One way to harness student motivation is by allowing and encouraging students to utilize their technical knowledge and experiences and allow them to engage in self-directed learning activities.

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