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## Education Policy of Sudan and Utilization of the Mobile Device (iPad) Technology: Opportunities and Challenges

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### ABSTRACTS

The Sudanese education system, in recent years, has seen a significant expansion because of the significant increase in the numbers wishing to learn. There is a necessary need for expanding educational services to cover this vast number of scholars. The existing service is showing a clear deficit through physical, human, and spatial limitations. This illustrates the necessity to employ modern technologies such as mobile devices (iPad) to support education. Therefore, this paper seeks to review the use of mobile device (iPad) technology in education and explore the opportunities and challenges of utilizing iPad technology in the education system of Sudan. This paper reached to the use of mobile device (iPad) technology in the Sudanese education system providing opportunities for networking learning, social learning, interactive learning, and distance learning. There are several challenges facing the utilization of mobile device (iPad) technology in the Sudanese education system in which the delivery of information by traditional methods is better than the use of mobile learning, there is no clear plan for the usage of mobile devices by the competent authorities, lack of training to use and employ the mobile learning. The paper recommended providing facilities to improve opportunities to incorporate technology into the Sudanese education system.

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## 1. INTRODUCTION

Technology has become so much part of our lives in the 21st century that even being fully literate now includes an aspect of computer literacy. The latest explosion in this field is the development of so-called mobile devices (also referred to as hand-held devices) such as smartphones and iPads. These mobile devices have become affordable and hence are within reach of the masses. They have also introduced a variety of new tools that improve user-friendliness to the extent that they can even support education (Mayisela, 2013). Mobile touch-screen technologies also referred to as tablet technologies, have introduced a new generation of educational tools that afford creative use and instant access to a wealth of online resources. They have been touted as ‘revolutionary’ devices that hold great potential for transforming learning. One of the chief benefits of mobile devices is that they enable learning anywhere, anytime. This allows a shift away from the industrial era model where the classroom is the central place of learning driven by the teacher and limited to instruction within the school day.

The introduction of the iPad by Apple in 2010 as one of the modern techniques internationally deployed and considers one of the mobile learning forms, provided a tablet that allowed pupils to make high-quality sound and video recordings, take high-definition photographs, research on the Internet, type up the reports and presentations and much more, all in one device which could be connected both to a network and to a classroom projector. It had always been possible to do these things, but in the past, it required a range of different devices (with associated cables) and methods of downloading data. Now, some researchers found that the iPad (and indeed other tablets) can act as a multimodal mobile “hub” to replace all these devices and could be used with a very large, and ever-increasing, number of educational “apps”. In the era of information technology, iPads have the potential to might become a “transformative technology” that creates flexible, collaborative, and inquiry-oriented learning environments (Churchill *et al.*, 2012). iPads have been integrated into teaching methodologies, and most of the recent research revealed that iPads can enhance student learning. iPad-based learning aims at raising students’ awareness of learning strategies and providing learners with systematic practice, reinforcement, and self-monitoring of their strategy use with language learning activities. iPads allow students to interact interactively with the content of the textbooks, which may not exist in any other educational tools (Alzannan, 2015). Hence, utilizing modern technology in the education system is one of the trends that any education policy should embed.

On the other hand, Sudan's educational system is divided into four stages: pre-school, primary school, intermediate school, and secondary school. In the pre-school stage, the children are between 4 and 5 years old. By the end of this stage, kids can join the primary education stage; this primary school consists of six years. Followed by intermediate education consists of three years. Then, secondary education lasts three years, leading to the Sudan school certificate examination (Tairab & Ronghuai, 2017).

## 2. THEORETICAL FRAMEWORK

### 2.1. The Use of iPad in Education

A review of related literature revealed that there is an impact of using iPad in education on the teaching and learning process. Research shown by (Chou *et al.*, 2014) examined the impact of iPad integration on teaching and learning activities in a large school district in the Midwest United States. The findings showed a positive impact on student learning in the areas of digital literacy, engagement, collaboration, productivity, and creativity. The use of the iPad

has also encouraged teachers to discover certain alternative activities for learning. Most of the students own iPads and teachers use iPads regularly in teaching. The study results indicated that the use of the iPad had a significant positive effect on students' learning English, Maths, and Science. Teachers stated that using the iPad mitigated the workload because it is easy to use and cost-effective. Students' motivation towards learning also increased upon using the iPad and their work quality, educational progress, and cooperative work level improved. Students and staff stated that they work with more efficiency when they use the iPad.

## **2.2. The Integration and Adoption of iPads in School Classrooms**

Some researchers studied the integration and adoption of iPads in school classrooms. The paper concluded that there are some unique advantages that iPad and other mobile devices can enable through apps, readiness, etc. Policies and strategies should be adopted to combine training and maintenance along with ensuring access to iPads.

## **2.3. The Changes of Information Technology to Address Arising Educational Problems**

A study concluded that the MLT, because of its properties; can enhance the academic performance of learners, and support the process of thinking they have, and development of the process of getting the content scheduled at any time, anywhere, and enable them to put their questions in collaborative learning framework and the consequent of storage for content even instant immediacy feedback. In light of the above perspectives, and considering that this era is characterized by rapid changes resulting from the progress of information technology, it became necessary for the education system to deal with these changes to address the problems that may arise from the such as a large number of information and exceeding the number of learners and the lack of teachers and distances (Behera, 2013). Therefore, this paper seeks to review the use of mobile device (iPad) technology in education and its subsequent impact on teaching and learning. In addition to, exploring the opportunities and challenges of utilizing iPad technology in the education system of Sudan.

## **3. METHODS**

The study adopted qualitative research, specifically a content analysis of previous studies connected to the utilization of iPad technology in the education system. This method helped the researcher systematically examine a body of material to identify the utilization of iPad technology in the education system. The study identifies peer-reviewed journal articles published on the utilization of iPad technology in the education system from 2010 – 2021 using electronic databases to search including Google Scholar, JSTOR, and Web of Science. The literature search strategy contained the following keywords: educational policy, educational technology, iPad device in education.

## **4. RESULTS AND DISCUSSION**

### **4.1. Definition of iPad**

The iPad was introduced as a touchscreen tablet in Hong Kong in July 2010; Hong Kong is leading the adoption of iPads in the World. Some researchers refer to this technology as 'post-PC' devices. And since then, it has been an outstanding success for the Apple Company (Godwin-Jones, 2011). The introduction of Apple's iPad was regarded as the latest mobile device that had amazed people in the international online world because it was "a new type of mobile platform that will, at least in theory, offer all the functionality and connectivity of a

laptop, with the mobility of a smartphone (Melhuish & Falloon, 2010). It is working by IOS System and running several types of multimedia such as newspapers, magazines, digital books, video, music, games, and all iPhone Programs. Moreover, the iPad is an Apple product similar to iPod Touch and iPhone. The device is small and portable. The iPad has an intuitive touch screen, which rotates automatically as the user turns the device. The iPad users communicate with the device by touching the screen with their fingers. The device has long battery life, which lasts from eight to ten hours of active work. It connects to the internet wirelessly or through a 3G network. It also comes with built-in applications such as email, calendar, contact, iTunes, notes, map, iBook, and many more. Users can also download additional free applications or purchase them from the App Store (Pratt, 2010).

#### **4.2. Utilizing iPad Technology in the Education**

Since the iPad was released in 2010, its use in the classroom has gradually increased throughout the years. The iPad's use for educational purposes has had a greater impact in developed countries around the world. The use of the iPad and educational applications (apps) can be beneficial in classroom instruction as well as it can support and enhance student learning. In addition, the usage of the device and apps can have a positive impact on the motivation, engagement, and achievement of students at different educational settings, including primary, middle, and high school and institutions of higher education. Moreover, students' literacy skills and 21st-century skills can be developed through the incorporation of the device into classroom instruction, most importantly, by utilizing the iPad device and educational apps with consistency (Auquilla & Urgilès, 2017).

The use of iPads in education is becoming prevalent. Many schools in America, Australia, and Canada are using this technology to enhance teaching and learning. As well as at the university level teaching staff are eager to find ways of using the iPad to assist their instruction. For instance, Duke University observed that the iPad was going to herald a revolution in mashing up text, video, course materials, [and] students input (Nooriafshar, 2011). Also in the UAE, some universities are integrating these new technologies such as Zayed University, UAE University, and Higher Colleges of Technology (HCT) (Audi & Zarrad, 2013). There are many benefits of the iPad use at different educational levels due to the notion that teachers can greatly take advantage of the device to assist teaching and facilitate learning in the classroom (Nooriafshar, 2011). Educators can use the iPad in a variety of ways, such as scanning an assignment and saving readings as PDFs, posting these things and other materials on their websites, having students open documents in a PDF reader on their iPads, and requesting students to write directly onto a PDF file, save it, and then email it back for feedback and grading (Foote, 2012). Moreover, the iPad in the educational process can stimulate creativity due to the camera, video camera, and apps, which can be used for creative storytelling, video production, collaborative projects, and many more.

Moreover, technology applications that can be used in the educational field through the iPad Device are multiplied. The following are some of them:

- (i) YouTube Program. It reminds us that YouTube is the largest host in the world for the video files produced on a personal level. Features of using YouTube in the Education Field are represented in easy access to knowledge and scientific lectures and the possibility of transforming the world events and cultures through providing visual multimedia.
- (ii) Internet. It is a Global Communication Network that enables the students to access sources of knowledge and information collection they needed in the education process to achieve optimal learning for them.

- (iii) Google Earth Application. It is application uses satellites via Internet Network to provide 3D aerial images to represent the real environment for the Earth from which we can able to investigate the natural phenomena and to determine the locations in the world.
- (iv) Keynote Applications. It is a program to create interesting presentations using colors in addition to the possibility of attachment the educational images and movies and sharing them with others by sending them via the internet easily.
- (v) Classroom Timer Application. It is an application to manage the time of the summer activities by the teacher by displaying the time on the board and alarming at the end of the time of performing the required activity (Alajmi & Al-Hadiah, 2017).

Furthermore, there are several reasons require that using the modern techniques represented in iPad Device in Education which are as follows:

- (i) Knowledge Explosion. Our world today is full of several discoveries in various walks of life and expansion of the knowledge size as well as the introduction of new classifications of knowledge requiring its followings and use in the Education Field.
- (ii) Human Overpopulation. It requires the usage of technological means to secure education opportunities and provide the greatest opportunity for the largest number of students.
- (iii) Low Efficiency in the Education Process. The traditional viewpoint for education doesn't encourage the student on creativity due to its reliance on memorization and indoctrination. To increase the output efficiency of Education, technology must be employed and form the sound skills and reliance on Higher Order Thinking.
- (iv) Motivating of the Learner. The technological means as well as provide the scientific material with new styles, making the student get rid of the Negativity, as it encourages the students on participation and activity with making the opportunity available for them to express their opinions and walking into the levels of the Education.

Some researchers agree with the features of the iPad device which are the following: iPad device increases the motivation of the students for education. Facilitates the process of information sharing among students within the classroom. Improves reading and writing skills through modern devices. Increases the communication and cooperation process among students themselves and between them and the teacher. Facilitates the learning process for ordinary students and students with learning disabilities within the classroom and develops their various skills. Improves the student's technical efficiency and reduces the efforts of the teachers exerted during the school class.

### **4.3. Opportunities of Utilizing iPad Technology in the Education**

Some researchers found the iPad 's combination of size, lightweight, lack of attachments, and connectivity makes it a very portable device for [learners] to hold, operate and use at their desk, collectively around a table, on their lap, or possibly out of class. The weight of a standard iPad makes it a lot less heavy than a traditional laptop. In addition, the device does not have any cables attached to it, and its control of it consists mainly of one button. The key advantage of the iPad is that it is not only a consumption tool but is also beneficial for the creation of ideas and content. He also adds specifically for teachers, suggests that iPads can be used as a "book in their pedagogical library" and a tool that allows easy experimentation with technology. Also, teachers can easily collect assignments. Some researchers suggest that iPads are an effective technology for the presentation of class materials via multimedia systems. The other advantages of iPads suggested in the literature include size, battery life, instant-on, the transition between applications, multi-touch screen, cost, e-reader, multimedia support and playback, and connection to multimedia systems. Other advantages include ease of interaction via the touch screen, screen size, controllable multimedia

playback, sound volume, and data collection capabilities. The increasing interest in iPad usage in the school setting has created opportunities to incorporate technology into early literacy skill development (Northrop & Killeen, 2013). By having access to the iPad device and other technological devices, teachers can take advantage of such opportunities to connect school and home learning activities. By the same token, incorporating technology into the classroom is a critical way to promote understanding of 21st-century literacies; such initiative is largely supported by the International Reading Association.

iPad integration provides opportunities for teacher collaboration: Teachers appreciated having time to explore and collaborate during professional development workshops. Having the opportunities to explore new apps, try new activities, bounce ideas back and forth, and learn from others' mistakes could all provide valuable lessons in the integration process. Exemplary projects and peer modeling: Teachers felt strongly about seeing more exemplary works and effective teachers in action. They want to see or hear how other teachers implement a lesson plan that results in quality student work. Learning circles and mentors: Learning in small groups or with a mentor are also efficient ways for continued professional development. Team members can keep each other updated on their project ideas and share the results of their projects. They could also implement the same project and compare notes on student performance (Chou *et al.*, 2014). Hashim *et al.* (2016), pointed out these opportunities in the Sudanese education sector as providing opportunities for networking learning, social learning, real learning, interactive learning, and distance learning. The clarity of the sound, the image, scientific designs, tables, and graphs. Also, the possibility of connecting readable information, audio, and video in real-time from distance.

#### 4.4 Challenges of Utilizing iPad Technology in the Education

Research on the educational use of the iPad identified several challenges such as app selection, technical support, the teachers' professional development. Education asserts that app selection is a process of trial and error. New educational apps are released each year; hence, teachers found it a daunting task to keep pace with the rapidly ever-changing landscape of educational apps. They find it extremely difficult to select apps that have educational potential to unlock learning given the availability of so many app options. The ability to adjust the content to meet the needs of individual learners while promoting the vertical construction of the curriculum knowledge is also a serious challenge as many educational apps come with content and activities that have a fixed sequence. Some researchers pointed to that the challenges of using iPad in education return to the users themselves which are: sometimes students should learn how to use iPad Device as they do not share the same prior knowledge.

The minority of teachers have experience in the E-learning field or use modern techniques widely. Using modern techniques in the school may affect the decline of the social communication between teachers and students making the exchange of experiences are harder and leaving some of the questions unclear. Teachers often receive one form of professional training and this does not prepare them enough to integrate iPads into their curriculum. Hatten (2012) suggests that teachers receive multiple forms of professional development programs including workshops, mentoring, coaching, online and face-to-face communities, and just-in-time videos. Such programs should be given enough time so that teachers benefit from them. Some researchers pointed out that there are several challenges which may face the process of entering the iPad Device in the classroom learning for teachers and students, which are as follows: The biggest challenge for teachers represents in that iPad Device leads to distracting the students from listening to the explanation of the teacher as a

result of their integration in the device which negatively affects their Academic Performance. The Difficulty of writing long texts on iPad Device, in addition to inappropriate of some of the school books for loading them on the device. One of the challenges of the iPad is the technological professional knowledge of teachers and students (Alzannan, 2015). However, despite the e-learning advantages in learning and teaching processes, its applications are still developing which encounters some challenges and obstacles. Furthermore, Chou *et al.* (2012) summarized the challenges of using iPad faced by the teachers and students are below: (i) technology anxiety. The iPad cart was a completely new technology for the majority of teachers. There was a high degree of anxiety among teachers in adapting to the new technology and revised curriculum in addition to their regular teaching responsibilities, (ii) IT Support. Many teachers have reflected that some requests for technical support were not always resolved promptly, which led to a high degree of frustration and stoppage in utilizing iPad carts, (iii) pedagogical applications. Teachers have indicated that one key challenge was to locate more pedagogical sound examples for adaptation into their teaching. It took time for teachers to integrate best practices into the daily classroom activities, and (iv) distraction.

Students have indicated that it was easy to get off task with so many different apps and easy access to websites on iPad. It was also difficult for teachers to manage the iPad when students went off tangent onto other tasks that were not central to their assignments. These challenges in Sudanese education as some believe that the delivery of information by traditional methods is better than the use of mobile learning, there is no clear plan for the usage of ML by the competent authorities (Ministry), Lack of training for supervisors to use and employ the mobile learning, Limited for storage capacity of ML devices, and the small size of the screen, which reduces the amount of information displayed (Al Hassan, 2015). Recent Trends in Education in Sudan referred to technical challenges for M-learning include connectivity and battery life, screen size, and key size (Saeed & Matarneh, 2017).

## 5. CONCLUSION

Mobile devices and iPads have been securing their place in educational institutions and is clear that these devices have not only become part of our daily lives partly in the 21st century but are likely to stay with us and in our schools for a long time. These iPads consider one of the modern techniques internationally deployed as one of the mobile learning forms. This paper highlighted the use of mobile device (iPad) technology in education and explored the opportunities and challenges of utilizing iPad technology in the Sudan education system. The iPad's use for educational purposes has had a greater impact in developed countries around the world. The iPad's combination of size, lightweight, lack of attachments, and connectivity makes it "a very portable device for (learners) to hold, operate and use it ... at their desk, collectively around a table, on their lap or possibly out of class" set as advantages of using iPad in education. The paper recommended providing facilities to improve opportunities to incorporate technology into the Sudanese education system. The authorities should exert great efforts to overcome the challenges of using iPad in the Sudan education system.

## 6. AUTHORS' NOTE

The authors declare that there is no conflict of interest regarding the publication of this article. The authors confirmed that the paper was free of plagiarism.

## 7. REFERENCES

Al Hassan, E. I. K. (2015). Mobile learning new technique to contribute the development of distance learning courses, as views from specialist of information and instructional

- technology in Sudanese universities. *Journal of Education and Human Development*, 4(1), 269-276.
- Alajmi, M. M., and Al-Hadih, H. A. (2017). Effectiveness of using the iPad in learning to acquire the mental and performance skills in teaching social studies curriculum. *Journal of Curriculum and Teaching*, 6(1), 1-13.
- Audi, D., and Gouia-Zarrad, R. (2013). A new dimension to teaching mathematics using iPads. *Procedia-Social and Behavioral Sciences*, 103, 51-54.
- Auquilla, D. P. O., and Urgilès, G. E. H. (2017). The use of iPad and applications for English language education. *Theory and Practice in Language Studies*, 7(9), 709-715.
- Behera, S. K. (2013). E-and m-Learning: A comparative study. *International Journal on New Trends in Education and Their Implications*, 4(3), 65-78.
- Chou, C. C., Block, L., and Jesness, R. (2012). A case study of mobile learning pilot project in K-12 schools. *Journal of Educational Technology Development and Exchange*, 5(2), 11-26.
- Churchill, D., Fox, R. M. K., and King, M. (2012). Study of affordances of iPads and teacher's private theories. *International Journal of Information and Education Technology*, 2(3), 251-254.
- Foote, C. (2012). The evolution of a 1: 1 iPad program. *Internet Schools*, 1(15-18), 201-210.
- Godwin-Jones, R. (2011). Emerging technologies mobile apps for language learning. *Language Learning and Technology*, 15(2), 2-11.
- Hashim, Y. E., Osman, A., and El-Gelany, A. (2014). Mobile technology and education: theoretical study. *International Research Journal of Computer Science*, 3(2), 16-27.
- Hatten, S. H. (2012). iPod implementation in the elementary grades. *Learning and Leading with Technology*, 39(7), 30-31.
- Mayisela, T. (2013). The potential use of mobile technology: enhancing accessibility and communication in a blended learning course. *South African Journal of Education*, 33(1), 1-18.
- Melhuish, K., and Falloon, G. (2010). Looking to the future: M-learning with the iPad. computers in New Zealand schools. *Learning, Leading, Technology*, 22(3), 1-15.
- Northrop, L., and Killeen, E. (2013). A framework for using iPads to build early literacy skills. *The Reading Teacher*, 66(7), 531-537.
- Pratt, K. (2010). Netbook, eReader, or iPad?—that is the question. *Computers in New Zealand Schools*, 22(2), 1-14.
- Saeed, M. M., and Matarneh, R. (2018). Recent trends in education in Sudan: Mobile-learning model. *International Journal of Emerging Research in Management and Technology*, 6(11), 5-12.
- Tairab, A., and Ronghuai, H. (2017). Analyzing ICT policy in K-12 education in Sudan (1990-2016). *World Journal of Education*, 7(1), 71-82.