

## Tendency of ICT Usage among Adolescent in Oredo Local Government Primary Schools, Benin City, Edo State-Nigeria

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### Authors' contributions

This work was carried out in collaboration among all authors. Author MSUO structured the study, directed the statistical analysis, overhaul the study and wrote the manuscript. Author OG managed the analyses of the study. Wrote the manuscript and managed the literature searches. All authors read and approved the final manuscript.

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## Abstract

The viability of a society depends largely on the learning outcome of its teenagers. Raising them can be challenging because modern society is embolden with information communication technology (ICT) that do not only isolate them from peers but create mental disorder in them. ICT is not an isolated entity rather an embodiment of deferent technologies that act as an entity to delivering and channeling information. To ascertain it tendency in primary school and its impact on adolescent, this paper reviewed the concept of ICT and carried out a survey on its usage among adolescent. The survey questionnaire was structured on five points scale and the feedbacks from hundred respondents were analyzed with Statistical package for social sciences (SPSS). From the findings, it was showed that the tendency of ICT by both private and government primary school is indeed poor and its impact on adolescent is on the downward trend. The study offered some recommendations including the need for government to carry out a holistic review of the primary schools curriculum so as to accommodate ICT usage.

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## **1 Introduction**

The drive for information over the years is seen as the fundamental push to the changes being witness around the globe. Notwithstanding, the drives for change as it relates to sharing of information has been positive when compare to the negative impact it poses to the society. Telecommunication landmark in 21<sup>st</sup> century is directly proportional to the three key elements that formed ICT and these are “Information”, “Communication”, and “Technology”. So, understanding into the separate terminologies gives the clarity of what ICT stands for [1]. In a published article defines information as any potentially useful fact, quantity or value that can be expressed uniquely with exactness. Information is a variable tool capable of changing human perception on the current state of things. Information and Communication Technology (ICT) as well as other embedded elements have effects. However, it could be said that the use of ICT has directly change the lifestyle of school age children and youth positively. The positive change could be listed as one of the measures of better communication and self improvement provided to end users by ICT.

The much acknowledged positive use of ICT can have a drawback when misused or overused and this often result to immoral act capable of undermining the positive notion of ICT. Furthermore, social medium which is one of the variable tools of ICT often give false impression because it tries to take the position of family ties. It creates room for irresponsible relationship and other immoral act that undermine the human tendency [2]. Adolescent quest for emerging technology creates platform to ensuring preventive services of the drawbacks associated. The internet and other Information and Communication Technology (ICT), such as mobile phone create the dynamic principle to knowing youth of the 21<sup>st</sup> century. It also creates opportunities for the use of interactive technologies for students’ skills [3].

The principle to the evolution of ICT cannot be underestimated. Though, ICT create fundamental opportunity for variety of things but these are challenges engulfing adolescent. It is obvious from the survey that internet has enhanced the traditional challenges witnessed by parents and guidance. Several authors in their research work [4,5,6,7] condemned the use of internet by adolescent because they lack the technical and moral ability to distinguish between relevant sources of information. Internet is a world on its own and has several negativities. It requires sense of maturity and responsibility to distinguish site that best suit their status. One of the issues with the use of internet by adolescent is the inability to reject sites considered to be immoral and harmful to their wellbeing. These vices are capable of ruining the moral uprightness the family would have wished of them. More often than not, adolescent do not scrutinize the sources of the content when searching for information [4,5,6,7].

The arrangement of the following sections are: Section one is the introduction, section two look at similar work as regard adolescent use of ICT, section three talks on ICT types, section four examined the adolescent and ICT, section five look at the loneliness on adolescent, section six is the internet and adolescent, section seven showed the impact of ICT on adolescent, section eight is the finding discussion while section nine is the concluding remarks.

### **1.1 Statement of the problem**

The role of adolescent in nation building is an interesting one. Every young child is a potential adult or leader and the quest for better education for children on ICT integration should be the concern of everyone. But, rather than this children soaring with the children of the developed nations the drawbacks have been the case in Nigeria adolescent and as a result, they do not have the courage to compete with peers from the developed nations.

### **1.2 Aim and objectives of the study**

The general aim of this study is to investigate the tendency of ICT usage among adolescent in Oredo Local Government Primary Schools, Benin City, Edo State, Nigeria. The specific objectives of the study include the following:

- i. Find adolescent quest for the use of ICT facilities in class rooms
- ii. Investigate ICT impact on the adolescent academic performance
- iii. Carry out a survey to ascertain the level of compliance, etc.

## **2 Related Work on Adolescent Use of ICT**

Information and Communication Technology could best be understood from the telecommunication angle. In telecommunication, several gadgets are integrated to form a single entity for the sole purpose of delivering the needed result. It would be difficult to pin down its evolution in a specific time and date because every component that form ICT has its distinctive evolution but the collectivity has brought about the smooth delivering of the purpose it was invented. As technologies continue to evolve, the Information and Communication Technology will take a new shape [8]. The classification of the term “Information and Communication technology” cut across all the accessories that help to transmit, receive, process, store, and redefine the embedded information with the window of ICT.

ICT is a two-edged sword among adolescents and the understanding should be that its purpose is to raise learning on the young generation. There is no doubt about the positive nature of ICT and adolescents with positive attitudes are likely to enhance learning via ICT. Different studies have shown that students with this mentality likely find ICT helpful in learning. Hence, the positive impact on academic learning and thereby improving academic performance. Communication and networking would not have been possible without the deployment of ICT facilities. Internet remains a major issue among adolescents. In a research by [9] conducted in Turkey, internet abuse among adolescents and its relations to some internet usage patterns and demographic showed that a portion of students become Internet abusers and experiencing severe problems.

Some researchers [10,11] over the past few decades have stressed the need for teachers and guidance to adopt the use of information communication technology (ICT) on children education because it creates special benefits for their future and well-being. It is no doubt that information drives the world and to be part of this global standard it is imperative for schools and guidance to abide by the culture of ICT in all aspects of children education. Further, these quest to push schools, teachers and guidance to embrace ICT in their children education does not rule out the negativities associated with its use rather, to create the global acknowledgment on student wellbeing [12].

The current dispensation of adolescent education in this last decade has seen a turnaround in the traditional approach of teaching in two to three decades ago. The proliferation of handheld devices has also contributed immensely to this development. About 80% of schools now have computer labs where ICT classes and teaching are taken [13]. Students are now taught the basics (introduction) to computers and these cut across booting ON/OFF, creation/saving of files and basic speed on keyboard keys [9]. Some have gone a bit more than others in learning some software packages like word document, excel, power point, etc. this is a great improvement in this last decade among schools children when compared to two to three decades ago.

What ICT has brought to the doorstep of education is endless. Students now submit assignments via ICT and the reviewed assignment is transmitted back to the student via the same medium [14]. The positive nature of this technology is that it offers endless resources for students to navigate through. This same medium that grants access to assignment submission also provides means for accessing the needed materials that can help develop the student's mental state of education. Some teachers also give the link (site) where these materials can be found. The excitement it offers via visual teaching is another aspect of the numerous advantages of ICT [9]. There are countless educational websites offering online teaching and activities specifically designed for primary and secondary students [15].

There is this strong debate on the limitation of children's time with computers and this could be seen from the growing problem among 21<sup>st</sup> century children. Some have attributed this problem to computer addiction. The services offered by the ICT for children are enormous and children want to exploit everything they see

attractive online. Online gaming sites and programme are also major factor influencing children attitude. Children now spend a lot of time playing these games at the detriment to their education [16]. Though, computer creates fun but on health matter it poses a threat to human life. Long usage of usage of computer can lead to short-sightedness. Eyes can become strained after staring for too long at the visual display unit (VDU) of the computer. Martin [17] showed in is work that excessive use of the computer can lead to obesity and this is because it does not create room for regular movement. Children that sit for too long using computer are likely to be at risk of obesity compare to children that goes or walk around.

The number of jihadist and their violent acts against fellow human has increase in recent times. Reports have showed that they use ICT as means of recruiting members. Children, who often use computer or internet, are likely to be prone to some violent site that propagates such tendency. The violent being seen today by the jihadist is now more sophisticated because ICT has provided them the enabling environment to reach out to adolescent. If these children are not properly monitor, they are likely going to believe what they see and watch [18]. Another aspect of concern with student using the ICT facilities is the degrading factor of pornography which over the years has lead to a negative result among adolescent. From the work of Fisher and Barak [19], it could deduce that children who spent time on internet watching pornography are likely going be sexually violent to their opposite sex. Restricting how adolescent use ICT should be the focal point of Schools, teachers and guidance so as to bring the lasting moral tendency in them [16].

## **2.1 The ICT types**

It is quite difficult to quantify ICT types. However, the categorization of information communication technology for the purpose of this study will be view from three perspectives so as to give the needed in-depth to what ICT represent in our modern society. ICT types include the followings: (a) Sensing Technologies, (b) Communication technologies (c) Analyzer technologies

### **2.1.1 Sensing technologies**

The computer is designed for a special code and anything short of this might not be understood by the computer. The sensing technology plays a major role in gathering information from the surroundings (environment). The gathering data is thereafter processed to the computer understanding. There are several sensors that reads the surroundings and one of them is the Thermometer which is use to read temperature. Other types are the computer input devices that communicate directly to computer. Some handheld devices possess the sensing technology [16].

### **2.1.2 Communication technologies**

The fastest growing aspect of the ICT is the communication. The past few decades saw a drawback in the activities of communication. It was quite difficult for different technologies to communicate freely thereby leading to system engender. Another difficulty with system communication few decades ago was the capital intensive nature of acquiring the facilities. Communication technologies bridge all technologies for communicating and this includes handheld devices, Facsimile Machines (FAX), cellular telephone, computer network and telecommunication network [20].

### **2.1.3 Analyzer technologies**

The computing system is basically divided into hardware and software. The hardware refers to the physical structure while the software is the program instruction that coordinates the hardware and the internal mechanism of the computer falls into this type. The principle of the computer life cycle best explain the synergy with this type of ICT. Information received from the sensing technology are manipulated by the coordinating software and after a successful manipulation(process) the information is send out of the computer via the output devices (display). Usually, these processed data are meant for onward review and the part of the computer system that does this is called the memory. The memory could be temporary

(Register) or permanent (Hard disc). Data storage is an important part of system life cycle. So, the technology involved is directly proportional to the functionality of other technologies.

## **2.2 The adolescent and ICT**

Parents, guardians, and teachers sees this period of a children as the most critical time in their life and effort is usually over stressed to ensuring they get it right in every decision they take. The adolescent is a shift period of childhood into personal decision, independence and social collaboration among peer group. At this point in their life, several things are usually exploited because it is seems as freedom to take personal decision and at this stage many adolescent disregard the advices of parents and considered themselves to be adult that can decide their future. At this point, many of them believe their group or close friend advice to the one from their parents. They often listen to what next that is to be exploited by their group. The quest for information exploitation is seems to be high at this period and this leads to Information and Communication Technology (ICT) usage as answers to the information. 21<sup>st</sup> century has further helped individual to increase fan base. Personal relationship at this stage is very important and ICT is often used by adolescent in creating personal relationship. Knowing fully that ICT as a medium provides wide range of platforms for relationship with different people; it is often considered by adolescent as the best approach to seeking answers to emotional issues, spiritual, academic, etc [9].

Information and Communication Technology (ICT) is not just a single tool but a combination of several devices and applications that act as an entity to delivering the needed information to end users as at when needed. Internet, handheld devices, such as phones, laptops, radios, television, palmtop, desktop and recent social application on these devices, such as gaming, and all social media networking falls within ICT and adolescents are seen to be more excited with these social network and gadgets compare to other stages in human. Adolescent is the largest consumer of modern technologies. Due to lack of responsibility they spend more time online [8].

## **2.3 The ICT and adolescent's loneliness**

Internet is regarded as one of the ICT revolution that has change the world in a better form but this is not to say that there are no side effects. Over the years, this technology has exponentially changed the method of living and thinking. Furthermore, it has made the world a global village where information can be access without barriers. However, its use in the past one or two decades has further compounded human way of life. The loneliness it has brought on the adolescent has grown exponentially in recent times, so has serious concern on it impact their mental well being. Of over 1,000 U.S. parents on a surveyed in two decades ago, more than half of the respondents expressed worry that constant online visit or internet surfing may lead children to become isolated from other people, whereas 40% endorsed the belief that "children who spend too much time on the Internet develop antisocial behavior" [21].

In another report by [21] a longitudinal investigation of first-time Internet users (HomeNet) study showed that using the Internet for 3 hours weekly contributed higher percentage to the levels of depression and reductions in social support over the course of 2 years [22].

## **2.4 Internet and adolescent**

Some critical part of this study shows clear understanding of the internet usage progress in an on-line relationships and social exchanges. The development of ICT technologies and the ICT innovation still to be made available to market facilitate synchronous communication and example of this is Instant Messages (IMs) which notifies users of possible friends on-line chat or messages from friends. A study by the Pew Internet and American Life Project in 2001 indicates that for American teenage Internet users, instant messaging is the primary means of contacting friends online and offline [23].

It is also observed that considering the ubiquitous of internet and with more youth navigating the internet nowadays, adolescent are likely to find friends on-line. Thus, this does not necessarily mean that old friends or formal relationships be forgotten. The internet should be seen as a medium for closing gaps not necessary for making new friends only.

### 3 Materials and Methods

This describes the design of the study, population of study, sample and sampling techniques, research instrument for the study, validity of the study, reliability of the study, and instrument for data collection.

#### 3.1 Research design and population

The research describes the survey of the impact of Information and Communication Technology (ICT) on adolescents. This work employed descriptive survey design in which questionnaire was used to elicit responses from the respondents. The population of this study comprises of some selected primary schools in Oredo Local Government Area of Edo State.

#### 3.2 Sample size and sampling technique

A non-probability sampling also known as a non-random sampling were use to select a sample of one hundred (100) pupils were drawn from two public schools and two private schools. In each of the schools selected, twenty-five (25) pupils were randomly selected. The target population of the study therefore is some selected primary schools in Oredo Local Government Area of Edo State. One hundred (100) pupils were selected using the simple random technique. The questionnaires were used as the research instrument for the study; the questionnaires were structured into two sections. Section A consists of items requesting the respondents to supply their background data. Section B consists of fifteen (15) items designed to elicit data on the impact of Information and Communication Technology (ICT) on adolescents.

#### 3.3 Validity and reliability of instrument

The questionnaire (Likert five point scales) which is the instrument for use was structured by the researcher on and was vetted by two other lecturers, who made necessary corrections and suggestions before onward distribution to the respondents.

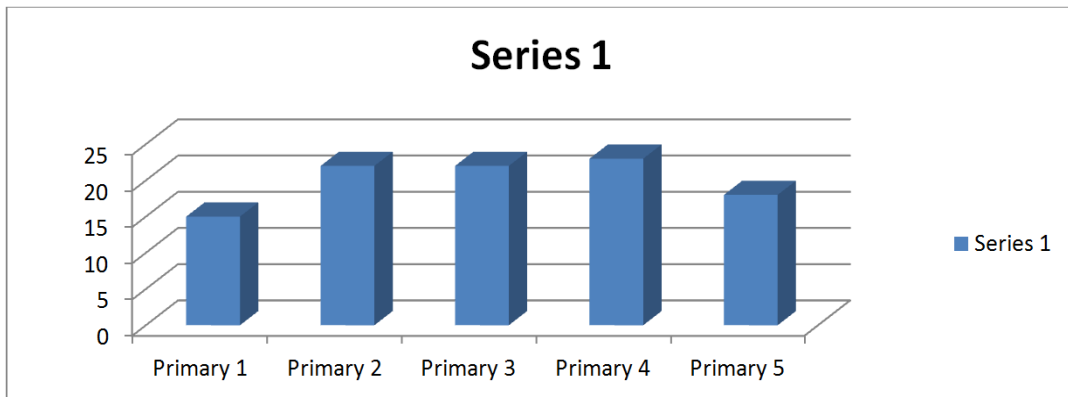
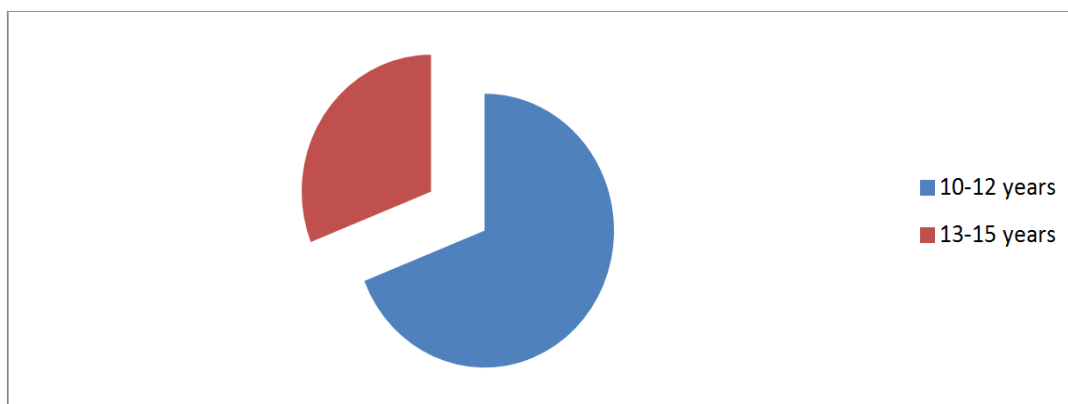


Fig. 1. Graphical representation of respondents



**Fig. 2. Pictorial view of respondents' age group**

## 4 Results and Discussion

This section deals with the presentation of results based on the data collected. The presentation of results is followed by the discussion of findings.

### 4.1 Presentation of results

From Table 1, 35% of the respondents were males, while 65% of the respondents were females. As regard to class of respondents, 15% of the respondents were primary 1 pupil, 22% of the respondents were primary 2 pupils, 22% of the respondents were primary 3 pupils, 23% of the respondents were primary 4 pupils, while 18% of the respondents were primary 5 pupils. Also in age, 69% of the respondents were of the age bracket of 10 – 12 years, while 31% of the respondents were of the age bracket of 13 – 15 years.

**Table 1. Personal data of respondents**

Variable	Frequency	Percentage
Gender		
Male	35	35
Female	65	65
Total	100	100
Class		
Primary 1	15	15
Primary 2	22	22
Primary 3	22	22
Primary 4	23	23
Primary 5	18	18
Total	100	100
Age		
10 – 12 years	69	69
13 – 15 years	31	31
Total	100	100

**Table 2. Availability and use of ICT by adolescents**

S/N	Items	Mean	SD
1.	Availability of computers in the laboratory	1.73	<b>0.44</b>
2.	Sufficiency of the computers	1.35	<b>0.48</b>
3.	Connected computers to the Internet	1.39	<b>0.51</b>
4.	Existence of school union treating Internet	1.19	<b>0.40</b>
5.	Use of computers	1.54	<b>0.50</b>
6.	Use of Internet in school	1.22	<b>0.42</b>
<b>Average Mean</b>		<b>1.40</b>	

Table 2 above shows a grand mean of 1.40 which means that respondents ticked ‘Yes’ to majority of the item descriptions. The implication is that majority of the respondents agreed that there is availability of ICT and it is used by them. The weighted average of 1.40 out of 4.00 showed that the availability and use of computers and internet was very poor. While many schools may boast of computer laboratory but only a few can pride themselves on the internet access. In conclusion, the method of acquisition of internet skills by students is more of learning through friends and families/relatives against the teachers, who majorly impact knowledge on the students

## 5 Summery of Findings

In relation to the objective of the study, the analyzed data fully showed that the availability and use of computers and internet is seen to be very poor. While many schools may boast of computer laboratory but only a few can be seen with internet facilities/access. This is indeed not far from the view of [21], who claimed that most schools have computer laboratories/classrooms, but there are factors still impedes internet access within the school environment. However, from observation most of the schools computers systems are outdated. It is imperative that primary schools across the city using Oredo Local Government Area as case study should endeavour to acquire computers for practical and also internet access and this will help empower the students educationally.

From empirical survey, some schools with computer systems connected to the internet prevent students from access it. This is against the assertion that students increasingly utilize the internet to do research on their own initiative, and satisfy their other forms of information needs [22]. The study reveals that many of the pupils have the capacity to use the internet, and these internet skills are majorly learnt from friends against the teachers who only encourage them on its use through assignments and other school works that requires the use of Internet. It is a well know fact that formal skills are acquired through classrooms while informal skills outside classrooms. However, the research has revealed that students learn these skills more from friends which to this research is considered as informal. The view of this study is in line with [24] assessment that 67.9% of the students acquired skills through teaching by friends, 39.3% through self-teaching while 20.7% acquired their skills by reading of books.

## 6 Conclusion

The survey on the tendency of ICT in Primary school as well as its impact on adolescent showed that many primary schools have computers in their laboratories but few are connected to the internet. Furthermore, the survey revealed that pupils have the technical ability of internet usage but it was observed that the skill was learnt from friends against the teachers. The level of internet access in schools is indeed poor and this is because the majority of the schools surveyed do not have access to the internet and while few who does, do not frequently allow pupils to have access to the technology. From the result of the findings, the following recommendations are made:



1. Government should as a matter of policy make computer laboratories, internet facilities and latest specification of these technologies criteria for awarding license to Primary schools administrators.
2. Government should carry a holistic review of the primary schools curriculum to accommodate ICT usage.
3. Employment of qualified computer oriented users (Teachers) should be sacrosanct rather than various application oriented user (Teachers) teaching in primary school today.
4. While schools are teaching the students on how the Internet can improve them in all phases of life, the standard and ethics governing internet usage by adolescent should be strictly adhered to so as to prevent unwarranted access to sites strictly for adult.

## Competing Interests

Authors have declared that no competing interests exist.

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