



EQUIPPING THE PHYSICALLY CHALLENGED YOUTHS WITH INFORMATION TECHNOLOGY (IT) BASED VIRTUAL ENTREPRENEURSHIP COLLABORATION SKILLS DURING THE COVID 19 PANDEMIC FOR SUSTAINABLE DEVELOPMENT IN NIGERIA

***OJUOPE KEHINDE ISAAC; **ODUMOSU OLUWAKEMI OMOLARA; & *SALAWU SULE AJIBOYE**

**Department of Computer Science, Aminu Saleh College of Education, Azare, Bauchi State, Nigeria. **Department of Computer Science, Ogun State College of Health Technology, Ilese-Ijebu, Ogun State, Nigeria.*

ABSTRACT

The inception of COVID 19 Corona virus pandemic disease has brought about the challenge of using Information and Communication Technology (ICT) in teaching and learning systems. The use of ICT in education is no longer a new idea, but the question is where the limit is when the use of ICT does not have the desired effect, most especially on the physically Challenged individuals during the lock down. From the report of World Health Organization (WHO) and World Bank (2011), physically challenged persons consist a significant proportion of the world's population, about 15%, due to the differences in their educational level to the normal individuals, they are not always see as contributor to productive human capital development of the Society. Most of the physically Challenged students have little access to education, this is as a result of difficulties they face in learning and comprehension. During the lock down, most of this category of youth were cut off from society's productivity and this limits the rate of sustainable development. This paper focuses on equipping this physically challenged youth with ICT based virtual entrepreneurship collaboration skills that can promote their productivity ability during the COVID 19 pandemic for sustainable development in Nigeria. ICT based virtual entrepreneurship collaboration skills will promote the virtual learning system of this category of youths during the COVID 19 global

pandemic challenge. It will also make them productive sector of the society. The advent of IT has brought about creation of diverse vocational jobs. Most physically challenged persons engaged with one of this job or the other for living. This paper explains the state of Nigeria economy; it also expressed the danger of unprecedented rate of unemployment in our society. It then enumerates various sections of IT that could be used to project wealth creation; it further analyzed the significant development the Nation's economy would experience if embrace the power of the IT for job creation during the COVID 19 Pandemic. The design and methodology was based on the research work we carried out in one of the government school for handicap children in Nigeria. From the cognitive ability testing of the research, we found out that the students learn faster and easier with the use of ICT developed virtual applications than normal classroom learning. Base on this, Information Technology (IT) based virtual entrepreneurship collaboration skills will encourage the virtual learning ability and collaboration of this individuals during the COVID 19 pandemic outbreak.

Keywords: *Physically Challenged, Virtual Reality, Entrepreneurship, Sustainable Development, COVID 19 Pandemic Disease.*

Introduction

From the report of the research conducted by the World Health Organization (WHO) and World Bank (2011), physically challenged individuals carry a significant proportion of the world's population, about 15%; as a result of differences in educational standard to the normal individuals, they are rarely seen as contributor to productive human capital development of the Society. Most of the Physically Challenged students have little access to education, this is as a result of several challenges they face in learning and understanding. They find it difficult to learn and comprehend fast (Radka and Peter, 2016); as a result of this challenges, the need for ICT based virtual assistive technology to enhance their entrepreneurship learning ability during this COVID 19 pandemic challenge is highly imperative.

From the research we conducted in one of the government schools for handicap children, we discovered that these category of students find it

easier to learn and comprehend with the use of ICT based assistive System than normal classroom learning. As a result of lock down, these individuals were cut off when teaching and learning is becoming ICT based virtual reality and most of the businesses are shifted to virtual collaborations. Equipping this physically challenged youth with ICT based virtual entrepreneurship collaboration skills that can promote their productivity ability during the COVID 19 pandemic for sustainable development in Nigeria is highly imperative. This will be a greater advantage to these youths, it will make entrepreneur skill acquisition easier, efficient and convenient for them. It will also make Digital Inclusive a reality unto these physically challenged users in this COVID 19 pandemic global challenges. The aim of this research work is on equipping this physically challenged youth with ICT based virtual entrepreneurship collaboration skills that can promote their productivity ability during the COVID 19 pandemic for sustainable development in Nigeria. ICT based virtual entrepreneurship collaboration skills will promote the virtual learning system of this category of youths during the COVID 19 global pandemic challenge. It will also make them productive sector of the society.

The COVID 19 pandemic has shut down economy across the world, underdeveloped and developing Nations like Nigeria are mostly affected. Nigeria in recent time have been threatened with alarming scenario as a result of unemployment which resultant effects ranges from extreme poverty, hunger to insecurity. Consequently, the application of Information and Communication Technology have not be vigorously harnessed to its fullest despite its perceived vocational and wealth creation opportunities. Nigeria is the most populous state in Africa, The increase in population without availability of resources to manage this growth has become a worry to Nigerian citizens. Hundreds of Thousands of graduates were produced every year without any hope for the future. This has brought about the alarming rate of criminal activities in the country.

The advent of Information Technology has brought about various opportunities including job creation, business strategy and planning etc. Information Technology is the bedrock for economic survival and development in a rapidly changing global economy. It is highly imperative for every society to embrace this new technology to enjoy its benefits.

Information technology is not the cause of the changes we are living through. But without Information Technology none of what is changing our lives would be possible. Technology per se does not solve human problems. But the availability and the use of information technology are prerequisite for economic and social development in our world.

COVID 19 Pandemic challenge and global economic recession

The novel COVID 19 Coronavirus global pandemic has swept the entire world off its feet leaving many scientist, researchers, health professionals and allied health workers are in outmost disarray in building up best measures to combat the COVID-19 transmission chain (Pius and Angelina, 2020). Scientist and health experts across the globe have therefore advocated for a set of global protocols, social distancing, hands washing with soap under running water, use of facemasks and sanitizers etc. to control the spread of the disease. Partial or total lockdown have also been adopted by countries as preliminary measures to curb the spread of COVID-19.

Global stocks continue to dip very low with several stock exchange markets face with unprecedented fall in their stock value. The Dow within this COVID 19 pandemic period witnessed the lowest fall in its stock value in the past decade. The African and European stock Markets have also had their own challenge of the impact of COVID 19 pandemic, many European markets have had experienced their stock market face a downward trend in their stock values (Higgins and Feuer, 2020). News across the globe revealed that over 3 million people have signed up for unemployment benefit in USA. It was predicted that there is going to be increase in job losses across the globe as business transactions are halted during the lockdown and movement restriction. Airplanes grounded, business plans cancelled and the world experiencing high rate of uncertain global business environment. Governments in various jurisdiction across the globe has decided to implement stimulus package for private businesses and workers in general in the form of tax relief for businesses, distribution of palliatives, offering of free water and electricity services for households and others. Front health line workers in several countries are also promised of attractive incentive packages like 50% more on their allowances, no tax on their basic salary for the period of the COVID 19 pandemic (the case of Ghana).

It was observed that this stimulus package is not enough in a populous country like Nigeria as several people were not reached most especially the physically challenged (Zaagsma et al, 2020). Equipping this physically challenged youth with ICT based virtual entrepreneurship collaboration skills that can promote their productivity ability during the COVID 19 pandemic for sustainable development in Nigeria is becomes necessary.

Cases of insecurity in Nigeria as a result of economic challenges

The state of insecurity in the country is a serious indictment on the part of federal authorities as they have the exclusive power over security in Nigeria. The alarming rate of armed robbery attacks, the Boko Haram insurgency and bomb blasts across the country is a threat to the institutions of state. With the bombings of police stations across some parts of the country including UN house and police headquarter in Abuja, it is an indication that our security agencies need modern technology (ICT signal Intelligence) to combat crime in a competent manner. We should also realize the fact that the police system as presently operated has proved inadequate (Dayo, 2010).

Insecurity in Nigeria has become more rampant both in frequency and sophistication. Given this scenario, Government requires more effort in terms of strategy, method and instruments of implementation .The security standard of any society determines her level of development. For the past decades Nigeria has suffered several kinds of insecurity, which has brought about lost of lives and properties. This remains a source of worry to several Nigerian stakeholders. The security challenge for the past Ten years in various forms – random and premeditated killing of people, kidnappings, politically motivated bombings, post-election violence, the recent upsurge in the activities of the extremist Boko Haram sect and the threat of violence credited to MEND in the media. These security breaches have claimed hundreds of lives across the country led to the displacement of hundreds of thousands and the destruction of property worth millions of naira conservatively. Also, our people are dissatisfied with the state of affairs where they are not only unprotected and insecure but have become cannon folder for the expression of political & religious ideologies.

The growing rate of insecurity in Nigeria remains a source of worry to stakeholders at the different levels of governance in the country. In fact, to experts, it is as if government is losing the battle against various security breaches in the country. It has become one case too many, which if not checked would negate the country's quest of becoming a major economic power by 2020 (Dayo, 2010). Table 1 shows the summary in percentage

of the Research carried out by the author of this paper on various insecurity situations in Nigeria

Table 1: various insecurity situations in Nigeria from 2002 to 2012

	BOKO HARAM	ARMED ROBBERY	RELIGIOUS CRISIS	KIDNAPPING	NIGER MILITANT	DELTA	OTHERS
2002	0	50	20	20	30		10
2003	0	55	15	22	30		20
2004	5	40	55	20	34		05
2005	0	45	35	25	40		15
2006	0	42	30	50	35		20
2007	0	45	33	55	50		25
2008	0	55	20	40	55		15
2009	70	60	19	30	10		10
2010	75	65	30	25	05		20
2011	90	66	50	20	05		30
2012	50	40	10	10	10		05

Source: Ojuope 2015

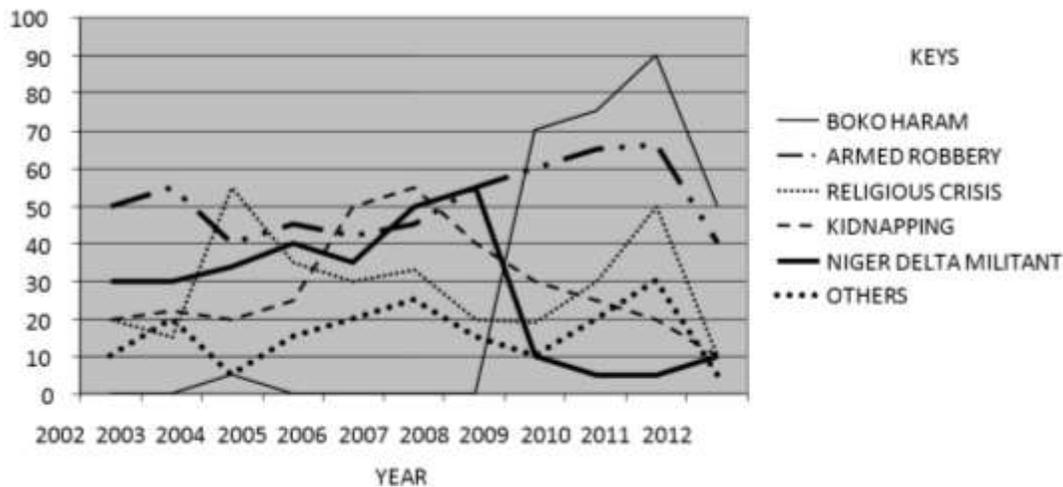


Fig. 1: Various Insecurity situations in Nigeria from 2002 to 2012, Source: Ojuope 2015

It was observed from the table 1 and Fig.1 that the crime and terrorist activities increases as a result of rate of unemployment which led to criminal activities of various degrees in Nigeria. Equipping this physically challenged youths with ICT based virtual entrepreneurship collaboration skills most especially during this pandemic will go a long way to curb this menace.

The challenge of physically challenged in the sustainable society

The 2011 World Report on disability presents that approximately one in seven that is about 15% of the world's population, over one billion people are persons with disabilities. Some estimates suggest that 80% of persons with disabilities live in developing countries; it also expressed the compelling evidence of the barriers that women, men, girls and boys with disabilities face, such as inaccessible infrastructure, negative and discriminatory attitudes and outdated laws and policies which infringe on their individual rights. These barriers result in persons with disabilities having poorer health, fewer educational achievements, less economic participation and higher rates of poverty and inequality than persons without disabilities (WHO 2011).

RELATED WORKS

Zaagsma et al (2020) worked on the use of online support by people with intellectual disabilities living independently during COVID-19. The global outbreak of the COVID-19 virus and the control measures imposed by governments focused on containing its spread have a dynamic impact on the provision of social care and support services made available for people with disabilities around the world (Armitage and Nellums 2020). It seems likely that also people living with intellectual challenges are at risk of experiencing a discontinuation of support to some extent. For example, in the Netherlands, while residential care services for people with Intellectual Disabilities (IDs) continued, visits from friends, family and relations were mostly prohibited. Services such as day activity centres and meeting centres, as well as other gatherings, were put on hold for several months (Woittiez et al. 2020). In the period of COVID-19 pandemic outbreak, service providers in the Netherlands had to move towards providing local support for people with intellectual challenges living independently. The study focused on providing insight into the use of online support during the outbreak of COVID-19 pandemic disease. The work analysed quantitative data on planned and unplanned contacts between the online support service Digital Contact and its service users. The results generated indicate that the COVID-19 outbreak and the containment measures put in

place had a strong impact on online support use, specifically on the unplanned use of online support.

Neece et al. (2020) worked on the COVID-19 pandemic introduced challenges to families with young children with developmental delays. Above the sphere of the widespread concerns surrounding physical challenges, sickness or loss of employment and social isolation, caregivers are responsible for looking after their children's educational and therapeutic programmes at home at times without the much needed support of professionals. The study sought to examine the impact of COVID-19 in 77 socioeconomically, linguistically and ethnically. Different families with young children living with intellectual and developmental disabilities (IDDs) in California and Oregon, who were partaking in bigger intervention studies. The response of parents were taken on five interview questions on the impact of the COVID 19 pandemic, services delivered for their child, positive aspects, coping with the situation and their concerns about the long-term impact of the pandemic. From the study, it was discovered that Parents reported that their biggest challenge was staying home caring for their children without the presence of many essential services. Parents also reported the positive aspects of the pandemic, most especially being together as a family. Despite positive aspects of the situation, many parents expressed concern about long-term effect of the pandemic on their children's development, with the loss of services, education and social engagement opportunities. The Results suggest that parents of young children with IDD expressed significant challenges they face at home during the pandemic. The study establish the place of professional support, especially during the reopening phases, will be of great advantage to support family well-being and child developmental processes.

Ojuope, Adetunmbi and Oyinloye (2019) conducted a study on the use of assistive system for empowering persons with Intellectual Challenges for meaningful lives in the Digital Economy. The described Digital inclusion as the concept where Information and communication technology (ICT) provide easy, reliable, and effective accessibility to all categories of users. It was observed that most interfaces were developed without considering the fact that, there are different categories of users including people living

with disabilities. This paper focuses on the developing service-security based usability interface that will empower and provide security for this category of users and also promote their user experience; and as well compare the degree of efficiency of a secured assistive Interface with the existing interfaces. Theoretical framework on Human computer interaction (HCI) and the new Security Human Computer Interaction (HCI-S), were also carried out and several related articles were reviewed. The user model was tested based on the concept of User Satisfaction Performance/Essential Usability Metrics. Effectiveness/Efficiency/Analysis of reading Errors, The Mean Percentage, and Task Completion (in seconds) were used as the performance measure technique for evaluation. The result showed that the model developed had a mean percentage performance of 98% and the mean time taken to perform a task in 32secs. The model was successful for people with intellectual disability.

Ojuope, Adetunmbi and Oyinloye (2019) conducted research on the effectiveness of Cooperative (Small Group) learning in promoting the user experience of the Educable of the Intellectually Challenged. From the research, it was discovered that intellectually challenged persons find it difficult to learn and comprehend fast in isolation (Radka and Petr, 2016); the learner to learner relationships in a classroom is an essential element of education. Learning and participation with others help to get along with them. Good knowledge of the interaction is necessary for the intellectually challenged Students, most especially in the case of teenagers' class. Intellectually Challenged can be isolated for very different reasons: their disability may turn other students off. They may lack an understanding of basic social skills so that they may not know what to say or do around their classmates. Rather than run the risk of trying to connect with a classmate and failing, they may withdraw from their peers and choose to spend time alone. Staying on their own is often the less painful option. Not surprisingly, these students have trouble making and keeping friends. More than its effect on a child's self-esteem, isolation from peers can have a marked impact on his school adjustment. Isolates may have difficulty focusing on schoolwork as their attention moves to social concerns. Having limited relationships with peers also denies them a valuable learning experience.

Ojuope, Adetunmbi and Oyinloye (2019) conducted a study on the Improving Usability of the Educable of Intellectual Disability with Assistive System. The study focuses on the development of assistive system that will promote the user experience of the Educable category of persons living with intellectual challenges and also to compare the degree of efficiency of the assistive model with the existing ones. The system was designed and implemented using Text / Image enlargement and text-to-speech architecture in C# programming. Concepts of World Wide Web Consortium (W3C), a global centre for web usability design standard and Web Content Accessibility Guide (WACG) for Users with Intellectual Disabilities was employed. The model was tested based on the concept of User Satisfaction / Performance. The test was carried out on Effectiveness/Efficiency/Analysis of reading Errors, The Mean Percentage, Task Completion (in seconds) were used as the performance measure technique for evaluation. The result showed that the assistive model had a mean percentage performance of 98% and the mean time taken to perform a task in 32secs. The model was successful for the Educable category of people living with intellectual challenges.

Zhong et al. (2019) carried out findings on a dynamic user interface Based BCI Environmental control System. In this research work, a dynamic user interface (UI) was proposed in visual p300 Brain Computer Interface (BCI) build on environmental control system. A head mounted Augmented Reality (AR) glass was used as the interactive medium, this was used to assist the BCI system to develop the dynamic UI which the scene is the subject's field of view. With the dynamic UI, based on the objects discover by the AR glass, choices were dynamically produced. The subject is capable of assign tasks by choosing divers options in the dynamic UI. Five subjects successfully finished the task of managing household appliances. Compared to static UI, the result shows that the proposed dynamic UI has 17.4% improvement in time delay. Just 1.9% of the processes produced incorrect operations. The dynamic UI improved in abridge time delay and incorrect operations. The proposed system produced a new interactive procedure in BCI based application.

Phillips et al. (2019) carried out study which aimed to describe the social perceptions of American college students' toward individuals with

Intellectual Disability (ID), identity factor that affects social perception, and determine if level of functioning changes one's perception. From the study, 186 American college student were sampled; the participants completed the attitudes towards Intellectual Disability questionnaire (ATTID). The attitudes towards Intellectual Disability questionnaire measured five factors – discomfort towards ID, knowledge of capacity and rights, interaction with individuals with ID, sensitivity / tenderness and knowledge of causes. The students' general social perception toward ID was chiefly positive for all factors except for sensitivity / tenderness. More positive social perception was discovered among students with much knowledge of ID and more frequent and high positive interaction with individuals with ID. Consequently, social perception was significantly much negative for lower functioning than higher functioning individuals with ID. This study assists to establish factors that requires more attention in awareness campaigns and educational programs.

Hetzroni et al. (2019), from this study, investigating structure mapping process that happens during possession of new relational categories and to identify the learning patterns and systematicity of children with autism spectrum disorder (ASD) compared with Intellectual and developmental disabilities (IDD) and Typical Development (TD). The study examined the effect of Comparism and level of familiarity which were used to examine structural mapping process. The result generated shows that children with IDD and TD advanced their tennency for choosing abstract relational categories, while children with ASD did not change their preference and continued selecting perceptual choices. Level of familiarity increased the choice of relational options among children with TD and IDD but not among children with ASD.

DeCarlo et al. (2019), from this study, it was discovered that self-directed is an approach to develop human service delivery within long-term services and supports which works towards providing greater control for individuals with disabilities and their nearest supporters. The purpose of this study was to study and implement self-directed supports for individual with intellectual and developmental disabilities. Researchers interviewed was carried out on the state of developmental disabilities administrators in 34 of 42 states that currently carried out self-directed service options,

and make use of qualitative analysis that brought about thematic map of the strengths and challenges presently experienced by state administrators; and the increase opportunities for participant self-determination and improved relationships with support staff. Discovered challenges included restructuring case management relationships; and also rulemaking and enforcement.

Wilson et al. (2019) reports on a mentoring intervention to assist counter barriers to employment for young adult with Intellectual disability. From the study, pre- and post-measures were used to check quality of life, loneliness, personal wellbeing and workplace adjustment. Techniques from behaviour change taxonomy were developed to give assistance to both mentee and mentor. The result showed that there was a measurably good improvement in the community domain of quality of life; also there were no significant differences in loneliness, personal wellbeing and workplace adjustment. Mentees attended several social events independently, and promotes skills and community participation; by providing targeted and graded support to the mentee-mentor. Community based interventions can make available a sense of community and develop workplace skills for young people with ID.

Ojuope and Adetunmbi (2018) worked on Empowerment of Persons with Intellectual Challenges for sustainable Development. The aim of this paper is empowering individuals living with Intellectual disability and build the skills necessary to ensure that human empowerment is an advantage to achieve a sustainable development goals. Nigeria in recent time have been threatened with alarming scenario as a result of unemployment which resultant effects ranges from extreme poverty, hunger to insecurity. Consequently, the application of Information and Communication Technology have not be vigorously harnessed to its fullest despite its perceived vocational and wealth creation opportunities. Nigeria is the most populous state in Africa, The increase in population without availability of resources to manage this growth has become a worry to Nigerian citizens. Hundreds of Thousands of people living with disability are without 1ny hope for the future. The advent of Information Technology has brought about various opportunities including job creation, business strategy and planning etc. Information Technology is the bedrock for economic survival

and development in a rapidly changing global economy. The availability and the use of information technology are prerequisite for economic and social development in our world. This paper aims to provide concrete suggestions on how to advance the empowerment of persons with intellectual disabilities and their representative organizations to enhance poverty reduction and promote sustainable development.

METHODOLOGY

This section analyzed the difficulties faced by the physically challenged persons most especially learning challenged individuals in accessing job and Information Technology device. From the research carried out by the author of this paper in Home School for Handicapped Children, Ibadan, Oyo State in 2018. It was discovered that, these people have little or no access to computer and IT facilities due to the clustering of the Application tools. So they find it difficult to learn and comprehend as a result of their challenges. ICT based virtual collaboration on entrepreneurship skills will be of advantage most especially with the use of assistive technology. Users with learning challenges have problem with navigating around applications, either due to the fact that:

the tools are cluster and difficult to access

the images / pictures of the tools are too small to understand

the Text are not easy to memorise; and

the Text are too small to learn and comprehend.

Developing ICT base virtual assistive systems for these people becomes imperative, this will enhance digital inclusion and further promote job creation which will further enhance sustainable development.

Economic and social impact of Digital Inclusion of physically challenged persons.

Individuals living with intellectual disabilities have little or no access to to the resources that drives economy base on:

- poor societal perception of persons living with disability
- poor funding
- policy instability
- lack of commitment

- curriculum development and
- focusing on resources base economy rather than knowledge base economy.

National Council on Disability (NCD) (2011) submitted that the power of Digital inclusion pave way for high job opportunities in the society and digital barrier has brought about low employment among people with disabilities. Manipulation of information has pave way for job creation for people with disability, it gives opportunity for these category of users to work alongside non-disabled people. Consequently, the job opportunity rate of persons with disability still remains extremely low (fig.2). Development and improvements in assistive technology can go a long way to bridge this gap. Information society is being built on technology, knowledge and intelligence; appropriate use of the knowledge by people with intellectual disability contributes to economic and social development. Information technology facilitates fast, cheap, equitable, and resource efficient; access to information, adequate research for learning opportunities become a support tools for job creation and sustainable development.

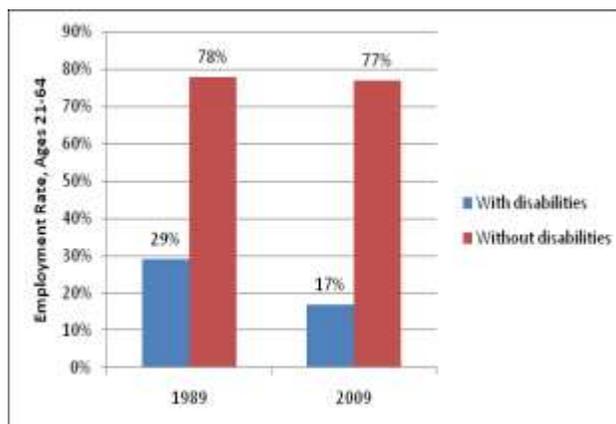


Figure 2: Comparing Employment Rates, 1989 and 2009. Source NCD 2011

Physically Challenges and the value of Sustainable development

The term “sustainable development” has been popularized by the world Commission Environment and Development (WCED), in its 1987 report titled “our common future”. The commission defined sustainable

development as “the development that meets the need of the present without compromising the availability of future generation to meet their own needs” (Nasrda, 2002). The development of novel and affordable information and communications technologies, and the emergency of information society with new economic models, has the potential for making major contributions toward sustainability of the earth’s ecosystems. Innovative use of information technology offer substitutes for travel and for the transportation of goods, and a major shift towards less resource intensive production, consumption, trade, and services. Such changes can significantly reduce the environmental impact, of industrial and commercial activities and thus contribute to sustainable development through productivity and development (Amazon, 1999).

Sustainable development stands on three pillars in terms of its definitions for the 2002 world summit on sustainable development (WSSD): and cited by National Space Research and Development Agency (NASRDA), social development, economic development and environmental protection (Nasrda, 2002). According to Nigeria National Information Technology policy 2001, its mission statement spelled out that the Information Technology should be used for: Education, Creation of wealth, Poverty eradication, Job creation and Global competitiveness. All these are ingredients of societal sustainable development. If People living with intellectual disabilities can be exposed to the power and possibilities of Information Technology, achieving the goals of sustainable development will be enhanced.

The Challenge of Physically Challenged during the COVID 19 Pandemic

This study aims to contribute to the knowledge on the usefulness of offering remote, online support to independently living people with ID during a time of crisis, when regular onsite services are not or less available. With this aim, we explored the use of DigiContact support during the first weeks of the COVID-19 pandemic. In this paper, we focus on the following question: how does the (planned and unplanned) use of online support by people with ID living independently evolve during the first weeks of the COVID-19 pandemic in the Netherlands?

Before the COVID-19 outbreak, the number of independently living persons with ID connected to DigiContact fluctuated around 700. During the pandemic, 282 additional persons were connected at the initiative of the service provider, to create a safety net for them in the event that many onsite support workers would fall ill and/or regular support (from a distance) could not be continued. Being connected to DigiContact means that several technical and administrative actions have been completed that enable a person to contact the service. A total of 648 service users had at least one contact during the first 20 weeks of 2019 and/or the first 20 weeks of 2020. Of these service users, 32 had been newly connected to DigiContact during (and due to) COVID-19 and therefore only had contacts during the pandemic. Table 2 presents the median scores and interquartile range of the number of contacts per day between DigiContact and its users: it indicates that the service dealt with a higher number of contacts per day during COVID-19 than during the two reference periods. Figure 2 presents the patterns in the number of contacts per day during the first 20 weeks of 2020 and 2019 and therefore gives a detailed view on how the amount of contacts evolved over the weeks. The 2020 patterns were more or less comparable with those of 2019 up to week 10/11. In weeks 11/12 (2020), the number of unplanned contacts per day considerably increased

Table 2 Median scores and interquartile ranges of the amount of support contacts per day, during COVID-19 and two reference periods

Period	Service users	Unplanned contacts/day	Planned contacts/day	All contacts/day n
		Mdn (IQR)	Mdn (IQR)	Mdn (IQR)
Old service users	616			
COVID-19*	466	32.00 (24.00-40.00)	74.00 (70.00-79.00)	106.00 (96.00-116.00)
† Ref. 2020	445	23.00 (19.00-28.00)	63.00 (57.00-70.00)	88.00 (78.00-97.00)
‡ Ref. 2019	435	22.00 (18.00-26.00)	64.00 (57.00-72.00)	86.00 (77.00-97.00)
New service users				
COVID-19*	32	0.00 (0.00-1.00)	1.00 (0.00-2.00)	2.00 (1.00-3.00)

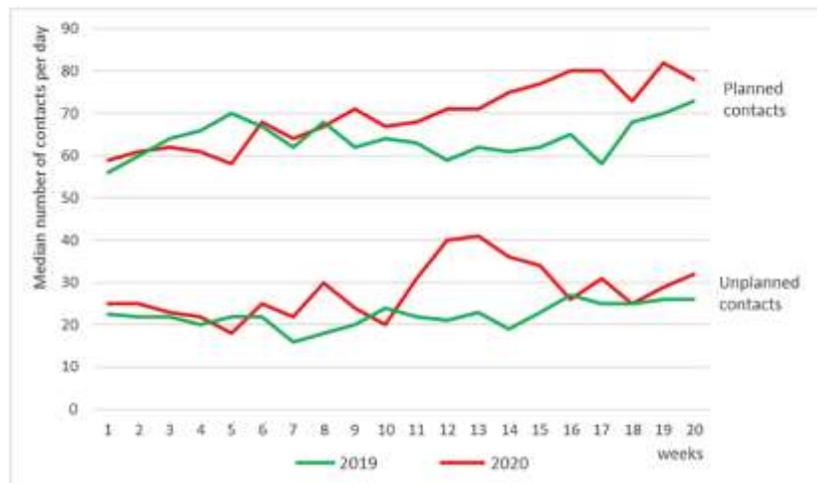


Figure 3. The number of planned and unplanned support contacts per day, over the first 20 weeks of 2020 and 2019. Source: Zaagsma et al (2020)

Group of service users who had already been using the service before the pandemic (N = 616). The amount of unplanned contacts per day per service user was significantly higher during COVID-19 than during the first 11 weeks of 2020 ($z = 4.602$, $P < .000$), as well as than during the first 20 weeks of 2019 ($z = 5.328$, $P < .000$).

These findings indicate that the COVID-19 outbreak and related restrictive measures had quite an impact on the use of online support. A possible explanation for the sudden, substantial and temporary increase in unplanned online support use is that people were considerably worried and experienced a high level of anxiety especially during the first weeks of the crisis, causing more people to contact the service (more often). Several authors have pointed out that people with ID (like people without ID) are likely to experience high levels of stress and frustrations during the COVID-19 pandemic and that measures posing restrictions on their usual activities and contacts with other people further contribute to this

Economic impact of empowering the physically challenged persons through ICT base Entrepreneurship skills.

Individuals living with disabilities have little or no access to the resources that drives economy base on:

- poor societal perception of persons living with disability

- poor funding
- policy instability
- lack of commitment
- curriculum development and
- focusing on resources base economy rather than knowledge base economy.

National Council on Disability (NCD) (2011) submitted that the power of Digital inclusion pave way for high job opportunities in the society and digital barrier has brought about low employment among people with disabilities. Manipulation of information has pave way for job creation for people with disability, it gives opportunity for these category of users to work alongside non-disabled people. Consequently, the job opportunity rate of persons with disability still remains extremely low. Development and improvements in ICT base entrepreneurship education can go a long way to bridge this gap most especially during this COVID 19 global pandemic. Information society is being built on technology, knowledge and intelligence; appropriate use of the knowledge by people with disability contributes to economic and social development. Information technology facilitates fast, cheap, equitable, and resource efficient; access to information, adequate research for learning opportunities become a support tools for job creation and sustainable development.

Careers in Information Technology

From a research carried out by the author of this paper in January, 2014 in Gwagwalada, Abuja; it was discovered that, there are various categories of careers that could be derived from ICT. Some of these careers are stated in Table 3.

Table 3 : Various Categories of Careers that could be derived from ICT.

S/N	IT Carriers	Number of available centers
1	Internet Café	22
2	Computer business centers	33
3	Computer games designer and developer business centers	2
4	Software development centers	3

5	Website development centers	3
6	Computer training centers	18
7	Electronics accessories maintenance and repair workshops	32
8	System analyst	5
9	Software engineers	5
10	Mobile phone maintenance and repair centers	49
11	Phone call / credit card business centers	256
12	Mobile phone / mobile phone accessories sellers	123
13	Computer / ICT accessories sellers	15
14	Computer maintenance and repair centers	20
15	Network engineering	4
16	Multimedia development (e.g. DVD, CD-ROM, Film, TV)	4
17	Consultancy services	15
18	System assembly, Trouble shooting and development	12
19	Data modeler and design specialist	1
20	System solutions architect	1
TOTAL CENTERS		622

Source: Ojuope, 2015.

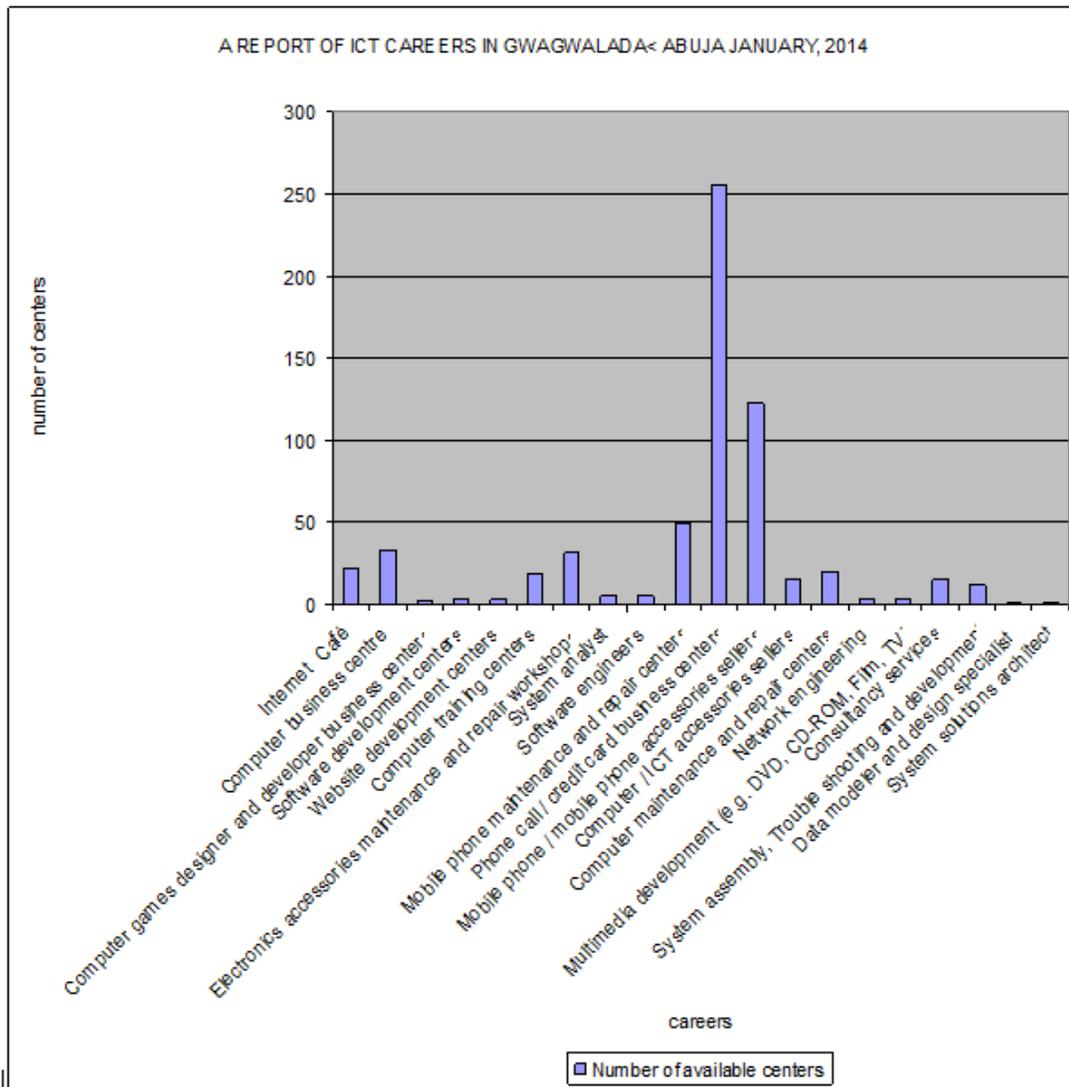


Figure 4: Chart representing various categories of careers that could be derived from ICT. Source: Ojuope, 2015.

From the above table, there are over six hundred (600) available centers with at least one or two employees; creating room for over one thousand (1,000) job opportunities. It was discovered that over 50% of these careers are not in proper operative; as have less than Twenty (20) available centers. If government could create enabling environment for ICT development, If each career from the table above could have at least one hundred (100) centers then it will create over ten thousand (10,000) job opportunities; just in one area council of the Federal Capital Territory. So

if the physically challenged youths can be equipped with ICT based virtual entrepreneurship collaboration skills during this COVID 19 corona global pandemic, it will promote their productivity ability which will promote the sustainable economy in Nigeria. Definitely millions of job opportunities would be generated. This among other things would boost Nigeria economy, reduced the high rate of poverty and unemployment and reduce the rate of criminal activities.

Government enabled ICT environment

With the foreseen danger as a result of unprecedented rate of unemployment in Nigeria, government should see ICT as proficient weapon to combat this menace. With the current introduction of data processing into Primary and Senior Secondary Schools, this would groom the physically challenged on ICT skill right from the primary and secondary school level. Government should also make effort to introduce it to the physically challenged educational system (School for Disability / Handicap). This among other things will prepare this category of people on vocational skills that would enable them to be self dependent in the nearest future. Countries like China and India did it and today, their economy is very buoyant. If they could do it, Nigeria can do it.

CONCLUSION

Though COVID 19 pandemic has put the world on its knees, there are still uncharted business opportunities that countries are can benefit from in one way or the other. It is certain that the future looks uncertain for the global business environment with the insurgence of COVID 19 pandemic diseases, ICT based virtual collaboration skills can be of a benefit. Information Technology and National security are inseparable part of economic growth in any nation; this is the reason for using available technology to combat crimes and insecurity in Nigeria to ensure compliance with global standards. IT generally acts as provider of information and knowledge. Information and knowledge are critical components of poverty alleviation strategies. From the study carried out, it was discovered that Nigerians have not fully embraced the power of Information Technology. The most effective route to achieving substantial

benefit with ICT in development programs is to concentrate on re-thinking development activities by analyzing current unemployment problems and associated contextual conditions, and considering ICT as just one ingredient of the solution.

The application of Information Technology should be vigorously harnessed to its fullest with its perceived vocational and wealth creation opportunities. Today, Information Technology generating changes in markets, private and public sectors and economies in the more and less developed world. This Technology is confirmed to be the greatest base-line between the developed and the developing nations of the world. Indian's economy became buoyant through the power of IT and through this means has attained the position of the fourth biggest economy in the world as at 2007 Judith (2008) They were able to achieve this by empowering their citizens most especially youth, through diverse ICT seminars, workshops and training.

RECOMMENDATIONS

There should be public enlightenment campaigns programs on the importance of Information Technology to community development Information Technology resource centers should be built in Nigeria communities to enable them gain from the technology.

There should be workshops and seminars on Information Technology awareness.

Western (formal) education should be embraced especially ability to read and write in English language

Information Technology education should be made compulsory in primary and secondary schools.

There should be Information Technology accessibility initiative regardless of disability, geographical location and economic situation as it obtained in European Union.

Computer / IT experts should be employed into primary and secondary schools to handle computer / IT education.

REFERENCES

Adetokunbo Onikosi (July 20, 2011): nation al security: legal imperatives for the use of information and Communication technologies in Nigeria for economic development.

- Akinyede, R. O., Boyinbode, O. K., & Alese, B. K. (2009). Poverty Reduction in Nigeria Using Information Technology International Conference paper Presentation 20(1) pp 3-10
- Dayo O. (2010): Tackle national insecurity with ICT, experts tell FG Vanguard News Paper Report on 21st of September, 2010 .
- DeCarlo M.P., Bogenschutz M.D., Hall-Lande J.A. and Hewitt A.S. (2019): Implementation of Self-Directed Supports for People with Intellectual and Developmental Disabilities in the United States. Journal of Disability Policy Studies. Vol. 30 (1) pp. 11-21. Published June 2019.
- Hetzroni O. E., Hessler M. and Shalahench K (2019): Learning new relational categories by children with autism spectrum disorders, children with typical development and children with intellectual disabilities; effects of comparison and familiarity on systematicity. Journal of Intellectual Disability Research / Volume 63, Issue 6. pp. 564-575
- [Higgins-Dunn, N. & Feuer, W](#) (2020). Coronavirus reaches all 50 states, stock futures fall, Pentagon sending respirators and ventilators.
- Intellectual Disability Rights Service Inc (IDRS) (2009) P.O. Box 3347, Redfern, NSW 2016, Australia www.idrs.org.au, pp. 1 - 16.
- Nasrda (2002), GIS small/micro satellites, Spatial Infrastructures standard Metadata, www.nasrda.gov.ng 2002
- National council on disabilities (2011), 13331 F Street, NW, Suite 850 Washington, DC.
- Neece C., L. L. McIntyre & R. Fenning (2020): Examining the impact of COVID-19 in ethnically diverse families with young children with intellectual and developmental disabilities. Journal of Intellectual Disability Research doi: 10.1111 /jir. 12769 VOLUME64PART10 pp 739-749 OCTOBER2020.
- Ojuope K. I., Adetunmbi A.O. and Oyinloye O.E. (2019): Improving Usability of the educable of Intellectual Disability with Assistive System, University of Ibadan Journal of Science and Logics in ICT Research (UIJSLICTR), Vol. 3, No. 1, pp. 34 - 42 ©U IJSLICTR Vol. 3, No. 1 June 2019
- Ojuope K. I., Adetunmbi A.O. and Oyinloye O.E. (2019): An Assistive System for empowering persons with Intellectual Challenges for meaningful lives in the Digital Economy. A paper published in Conference proceeding of the 14th International Conference of Nigeria Computer Society on Smart Nations, Digital Economies and Meaningful Lives. July 16 to 18 2019.vo. 30(1), pp. 127 - 139.
- Ojuope K. I., Adetunmbi A.O. and Oyinloye O.E. (2019): Cooperative (small group) learning and its effectiveness in promoting the user experience of the educable of the intellectually challenged. A paper published in Conference proceeding of the 8th Internatiional conference organized by Ladoke Akintola University of Technology, Ogbomoso on Mobile e-Services and Workshop on Bioinformatics.16 to 18 October, 2019. pp. 98 - 104.
- Ojuope K. I. and Adetunmbi A.O. (2018): Empowerment of Persons with Intellectual Challenges for sustainable Development. Conference Proceeding, 12th International multi-Conference on ICT applications (AICTTRA 2018). Organized by Obafemi Awolowo University, Ile Ife, Department of Computer science and Technology in collaboration with Africa Centre of Excellence: OAUICT Driven Knowledge Park. ISSN 2141 - 0240,Vol. 12, pp. 108 - 113.
- Ojuope, K. I. (2015). Information Technology: A Tool for Youth empowetrment and poverty alleviation in Nigeria. Azare Journal of Education (AJE) Vol 9(1). PP. 88-93

- Phillips B.A., Stoni F. and Lindsey S. (2019): College Students' Social Perceptions Toward Individuals with Intellectual Disability. *Journal of Disability Policy Studies*. Vol. 30 (1) pp. 3-10. Published June 2019.
- Radka B. and Petr E. (2016). Small Group Learning Methods and their Effect on Learners' Relationship. *Problems of Education in the 21st Century*, Palacky University Olomouc, Czech Republic Volume 70, 2016, pp. 1-14
- WHO AND World Bank (2011). The committee on the Right of Persons with disabilities addressed the multiple forms of discrimination face by women with disability. Page 236.
- Wilson J. N., Cordier R., Milbour B., Mahoney N. and Buchanan A. (2019): Intergenerational mentoring for young adult males with intellectual disability: intervention description and outcomes. *Journal of Intellectual and Developmental Disability (JIDD)* published 25 April 2019. Vol. 44 (2)
- Zhong S.Y. L., Yang Y., Jingsheng T., Zonigtan Z. and Dwen H. (2019): A dynamic user interface Based BCI Environmental control System, *International Journal of Human Computer Interaction*, DOI : 10.1080/10447318.2019.1604473. published 7 May 2019.
- Zaagsma M., K.M. Volkers, E.A.K. Swart, A.P. Schippers & G. Van Hove (2020): The use of online support by people with intellectual disabilities living independently during COVID-19. *Journal of Intellectual Disability Research* doi: 10.1111 /jir. 12770. VOLUME64 PART10 pp 750–756 OCTOBER2020