



## **VIRTUAL CLASSROOM DELIVERY: AN INNOVATION FOR BUSINESS EDUCATION GROWTH AND SUSTAINABLE DEVELOPMENT IN HIGHER INSTITUTIONS**

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### **Abstract**

*This study focused on virtual classroom delivery as an innovation for Business Education growth and sustainable development in Higher Institution in Abia State. The study area is department of business education of Abia State. The study adopted survey research design. The population of the study was 2500 Business Education students. A sample of 350 respondents was directly used in the study. Four research questions guided the study. The instrument for data collection was a structured questionnaire. The instrument was validated by three experts. Mean statistics was used in analyzing the data collected. The study discovered the extent to which text chat, interactive whiteboard, presentation tools can enhance the implementation of virtual classroom delivery and how video play list affect the implementation of virtual classroom delivery. Based on the findings, it was recommended among others that Government should expedite action on the legislative frame work for the proposed national commission, for quality assurance at different levels of education sector in Nigeria, that the department of Business Education across the tertiary institutions should be fully equipped with functional internet – enabled ICT facilities to enable business educators and students to utilize the virtual classroom delivery system, as a matter of urgency, business educators should go for self-sponsored ICT – training to upgrade their computer skills and take advantage of the e-learning community.*

### **Introduction**

The Nigerian government has made a commitment to improve the information and communication technology (ICT) skills of her citizens and to bridge the digital gap by targeting Nigerian higher institution (Federal Ministry of Education, 2007). The Federal Republic of Nigeria (2013) stated that, the government shall provide facilities and necessary infrastructure for the promotion of ICT and virtual classroom. These commitments are in line with that of the New Partnership for Africa's Development (NEPAD) to achieve a sustainable development in the 21<sup>st</sup> century.

According to Otamiri, Wagbara & Seth (2017) information and communication technologies are defined, for the purposes of this primer, as a diverse set of technological tools and resources used to communicate, and to create, disseminate, store, and manage information.

These technologies include computers, the Internet, broadcasting technologies and telephony that have been boosted as potentially powerful enabling tools for educational change and reform. When used appropriately, different ICTs are said to help expand access to education, strengthen the relevance of education to the increasingly digital workplace, and raise educational quality by, helping in bringing teaching and learning into an engaging, active process connected to real life and much more (Gupta & Gupta 2014).

Change and innovation are integral elements of human life and one of the major changes witnessed in the 21<sup>st</sup> century is the information society characterized



by proliferation and use of information and communication technologies in every aspect of human activities including education (Otamiri, Wagbara & Seth, 2017). Otamiri et al further stressed that the ubiquitous nature of internet-enabled mobile devices such as Ipad, Ipods, android phones, window phones and products which with the help of social media platforms make it possible for lecturers and students to search, explore, discover, construct and share knowledge in a virtual world. (Ogindele, Byaing & Anpe, 2015).

Educational system is dynamic and changes with time. It responds to the demands of the society, by assimilating the advances in technology. The various kinds of ICT products available and having relevance to education, such as teleconferencing, email, audio conferencing, television lessons, radio broadcasts, interactive radio counseling, interactive voice response system, audiocassettes and CD ROMs have been used in education for different purposes. (Gapta & Gupta 2014). There is no single definition of virtual classroom delivery since the systems for such learning are continuously evolving and learners are adopting new tools such as blogs and wikis as these emerge on the internet. Virtual classroom delivery is learning that is not confined within the walls of a classroom, but that, which expands the possibility of using internet facilities, platforms, satellites links and related system to access, analyze, create, exchange, and use data, information and knowledge in ways which will recently, were almost unimaginable (Clarke & Hermens, 2001).

The virtual classroom is a brand new technology that's quickly spreading to teacher education programs across the nation. The concept is a bit like a flight simulator that a pilot might use before getting into a real plane. Teachers are placed in a virtual classroom full of virtual students and must teach as if they were really in the classroom (Lynch 2017). Virtual classrooms are new technologies that are sure to continue to grow as they develop. As the technology improves, teacher education programs will be able to use virtual classrooms to teach all kinds of skills. If developers can create a virtual classroom that simulates all the challenges of a real classroom, they could truly revolutionize the way teacher education programs work. In the virtual classroom, the students are avatars programmed to act like real kids. Each one is programmed with their own personality and comes with their own challenges, just like students in the real world. Some may call out of turn, get distracted, or try to get the teacher off task. Others may have special needs that the teacher must attend to during the lesson. The teacher's job is to successfully teach their lesson without students getting too far off-task or exhibiting behavior problems..

Virtual classroom involves learning acquired, via interaction with digitally delivered content, network-based services and tutoring support often with any type of on-line tool and media including the internet, intranets, extranets, simulations and games, virtual worlds, clouds, satellite broadcasts, and web platforms (Jarmin, 2010, Schutt and Linegar, 2013, Pelet & Lecarte, 2012). It is carried out through the use and integration of reporting (camera phones), searching (Google), and on-line learning (web surfing). Virtual classroom as learning facilitated online through network technologies involves the utilization of virtual technologies in the practice of teaching, learning, and assessment (Leimeister, Weighle, and Krcmar, 2001).



An accelerating demand for mass higher education is drawing universities to change from their traditional classroom setting to long distance delivery models (West and Horg 2009). However, long distance has obvious limitations particularly with regard to on-going student engagement and has led universities to embrace more interactive instruction models through online delivery (Bates, 2013). This has led to wide spread adoption and diffusion of information and Communication Technologies (ICT) within the education sector and a new globalized vision for education delivery.

### **Devices that Facilitates Virtual Classroom Delivery**

**1. Interactive whiteboard enhance the implementation of virtual classroom delivery:** Today, many different forms of technology have entered the classroom starting from the mid-1990s. Electronic interactive whiteboards are good examples of new technologies used in today's classroom (Burn, Marshall & Barnett, 2002). The whiteboards based on computer technologies seem to be replacing traditional black or white boards, which were once considered indispensable. Interactive whiteboards operate on the connection between a computer, a projector and a touch screen electronic white board (Klammer, 2001) which students can use the touch screen whiteboard to experiment, solve, write and erase applications such as visual experiments, visuals, animations and graphics. Electronic microscopes, multimedia materials, videos, data tables, CD Rom or the internet may be used depending on the software programs used by these whiteboards (Miller, Glower & Averis, 2005).

Whiteboard Tools: Speaking of the mark-up tools, technology-loving teachers and learners want to be actively involved in their online classes, and the WIZIQ Virtual Classroom provides so many options. Teachers can hand out drawing, writing, and other tools that allow individuals and groups of learners to interact with the whiteboard. Documents can be pulled up on the whiteboard and annotated. The whiteboard tools are very practical and enhance active learning in live classes, but they also have the potential to build community and connection just by providing the opportunity for creativity and play.

**2. Video Play list affect the Implementation of Virtual Classroom Delivery.**

The video feed and the chat, virtual classroom can display up to six video feeds from the teachers' and students webcams. Create online education really thrives when there's a visible way to get to know the teacher/facilitator and the other learners in the course you are taking. The WIZIQ video feed provides a great way to get the know each other, see each other's offices and homes, and feel so much as if you were right there with all your colleagues in the class.

**3. Presentation tools facilitate the implementation of Virtual Classroom.**

It involves learning acquired, via interaction with digitally delivered content, network-based services and tutoring support often with any type of on-line tool and media including the internet, intranets, extranets, simulations and games, virtual worlds, clouds, satellite, broadcasts and web platform (Jarminy 2010); Schutt&Lilneagar, 2013; Pelet&Lecarte, 2012). It is carried out through the use and integration of electronic discourses, such as email, portal; downloadable - executable-tele, face-book, social networking, web plat forms, electronic dissertation and e-



portfolios, among others (Bouchard, 2011; Weller, 2010; Wells, de Lange & Fieyer, 2008).

Mobile learning which is the ability to obtain or provide educational content on personal pocket devices such as PDAs, smartphones, and mobile phones, is also a form of virtual learning (Toa, 2001 in Kharbach, 2013). Virtual learning is made possible by developments in Information and Communication Technology (ICT) which have been rapid in recent years and have promised improved education and training to an increasingly diverse cohort of students. With the exponential growth of ICT, the higher education environment is expected to have a greater focus on meeting business education student's expectations with more emphasis upon widen their participation in ICT. The use of ICT in higher education has also necessitated the concern with the development of lifelong learning skills, the emergence of new subject disciplines and increased use of technology in learning. The potential for ICT to provide innovation learning approaches such as virtual learning is already being widely explored in both traditional and non-traditional settings. It is generally believed that with the advent of Information and Communication Technology (ICT), virtual learning is among the catalysts that will drive learning. Hence, virtual learning should become an integral part of learning in tertiary institutions. Another rationale for virtual learning could be seen in the fact that the world of the twenty-first century can aptly be called an e-driven world (Oye, A. Lahad, Mador, & Ab Rahim, 2012). E- or virtual technologies have brought profound changes to all facets of life. In order to equip business education students with the necessary skills and knowledge to foster the growth of independent, creative and lifelong learners, business should use virtual learning to provide relevant experiences to support and facilitate their students' development.

#### **Types of Virtual Classroom Devices**

- (a) **Presentation Tools:** It is not only super easy to upload a Power Point presentation or Pezi into the WIZIQ classroom, but one can load up as many as possible. Create on-line education gives learners a chance to build artifacts and share them with the entire class, giving presentations is just running through series of photographs or other work to illustrate how they have dealt with the course materials. For the teachers, the handy tabs at the top allow one to find the appropriate presentation quickly whether they are uploaded prior to the live class launch, or uploading as the class proceeds.
- (b) **Polls:** The WIZIQ Virtual Classroom has a polling feature that can be used to take the pulse of the learners. Are they all on the same page? Is there something else they need or want? Did everybody get the point of the lesson? Creative teachers routinely use the polling feature for informational purposes, to test knowledge, or just sort everybody into breakout rooms.
- (c) **Break-out – Rooms:** These “rooms” allow smaller segments of your a to get together and talk about a particular part of a lecture, or complete a discussion assignment and nominate one of their number to describe their conclusions when the class is returned to the common virtual classroom. This is also a very useful feature for further customizing your class and helping students to have a more useful, more personalized experience. This type of personalization is so



important for effective online education: groups can be divided by skill sets, needs, or just to make sure that everybody has a say in some topic or other.

- (d) **Video Players:** These days the internet is full of great videos on every topic one can imagine. In the Moodle MOOC that has been running on WIZIQ all this month, one has a number of great videos in every live class. Effective online education is varied and interesting, presentations and discussions punctuated by relevant video and audio material adds to the excitement of a live class, not to mention to the value of the content being presented. WIZIQ teachers can upload videos on the fly as a live class proceeds, but they can also build a video playlist for the live classes before the session begins. This allows the teacher to test the video before the class, and then play them at the appropriate moment with ease. Videos that are embedded in the live class are also captured by the recording process so that learners who can't attend the live class get the full experiences.
- (e) **Screen Sharing:** Effective online education, especially if there are skills involved, often require step-by-step modeling of a particular process. The WIZIQ Virtual Classroom's screen-sharing tool can provide the environment for teachers to show learners how to do something.
- (f) **The Course Feed:** Feeling a sense of connection to the teacher and the other learners in the class helps build that sense of community that is so important for effective online education. The course feed is where discussions happen, where learners are notified of the upload of new tutorials, which links to other videos for the learners to expand their knowledge of the subject matter at hand can be uploaded and so on. The course-feed is the beating heart of a WIZIQ online course, and using it to its best advantage is a great tool that connects everyone to each other and to the flow of the course.

### **The Problem**

Everything in the digital age including education has witnessed radical innovations and the use of information and communication technologies. Higher institution students in Nigeria have been finding education processes and research difficult because of the traditional education delivery system that is still in practice. Here distance is identified as a problem to both the undergraduate, postgraduates; even lecturers of the higher institution of learning were found not advancing technologically. This has affected the teaching and learning pace of both business education and other disciplines. Therefore, this call for new innovation in education that will enhance the growth of teaching and learning process.

Even with the development of Information and Communication Technologies, some technology systems are not well utilized.

Thus, it is against this backdrop that this study sought to determine how the virtual classroom delivery can be implemented for the growth and sustainability of Business Education and Sustainability of the country using tertiary institutions in Abia State as a case study.

### **Purpose of the Study**



The main purpose of this study was to determine how virtual classroom delivery can be implemented in higher institutions in Abia State. Specifically the study determined :

1. the extent to which text chart enhance the implementation of virtual classroom in Abila State higher institutions.
2. The extent interactive whiteboard enhance the implementation of virtual classroom delivery in Abia State higher institutions.
3. The extent presentation tool facilitates the implementation of virtual classroom delivery in Abia State higher institutions.
4. To what extent video play list enhance the implementation of virtual classroom delivery in Abia State higher institutions.

**Research Questions**

1. To what extent does text chart enhance the implementation of virtual classroom delivery in Abia State higher institution?
2. To what extent does interactive whiteboard enhance the implementation of virtual classroom delivery in Abia State higher institution?
3. To what extent does presentation tool facilitate the implementation of virtual classroom delivery in Abia State higher institution?
4. To what extent video playlist enhance the implementation of virtual classroom delivery in Abia State higher institutions?

**Method**

In order to achieve the objective of the study a survey design was adopted. Questionnaire and interviews was utilized as tools for data collection. The population of the study consists of 2,500 students of business education students from different schools under study.

A random Sample technique was used to pick 350 students for the study.

The instrument for data collection was structured on a four points rating scale. Mean scores of 2.50 and above were deemed acceptable, while mean scores below 2.5 were rejected.

**Results**

**Research Question One:** To what extent does text chart enhance the implementation of virtual classroom delivery in higher institution?

**Table I:** Mean responses on Test Chart enhance the implementation of virtual classroom delivery.

S/N	ITEMS	FX	X	DECISION
1.	Text chart improves students understanding on the graph reading	909	209	Great Extent
2.	The use of text chart in virtual classroom improves students' abilities in studying spread sheet	887	233	Great Extent
3.	The use of text chart makes students interested in the courses	922	2.63	Great Extent
4.	The use of text chart in virtual classroom delivery improves student attendance to class	950	2.71	Great Extent
5.	Text chart improves students communication	917	2.62	Great Extent



in classroom	
<b>Grand mean</b>	<b>2.63</b>

**Findings:** It was found that the respondents were positively included forwards all the assertions made to research question I. items 1-5 on the table attracted the mean score 2.50 and above, therefore agreed.

**Research Question Two:** To what extent does interactive whiteboard enhance the implementation of virtual classroom delivery in Abia State higher institutions?

**Table 2:** Mean responses on the interactive whiteboard enhance the implementation of virtual classroom delivery.

S/N	ITEMS	FX	X	DECISION
6.	Interactive whiteboard makes virtual classroom delivery interesting.	950	2.71	Great Extent
7.	Interactive whiteboard makes virtual classroom delivery study interesting to students	919	2.62	Great Extent
8.	Interactive whiteboard makes virtual classroom delivery study easy for teachers	887	2.59	Great Extent
9.	Interactive whiteboard makes classroom delivery improves teachers' performance.	887	2.53	Great Extent
10.	Interactive whiteboard makes classroom delivery understandable to students	922	2.63	Great Extent
<b>Grand mean</b>			<b>2.63</b>	

**Findings:**

It was found that the respondents were positively inclined towards all the assertions made to research question 2 items 6-10 on the table attracted mean score 2.50 and above, therefore agreed.

**Research Question Three:** To what extent does presentation tool facilitate the implementation of virtual classroom delivery in Abia State higher institution?

**Table 3:** Mean responses on presentation of tool facilitate the implementation of virtual classroom delivery.

S/N	ITEMS	FX	X	DECISION
11.	Adequate use of power point presentation facilitates learning	900	2.51	Great Extent
12.	The use of email remainder improve classroom delivery	885	2.52	Great Extent
13.	Appropriate use of projector during teaching improve students' interest	894	2.55	Great Extent
14.	The use of class website improves virtual classroom delivery	894	2.55	Great Extent
15.	Jing video improve virtual classroom delivery	917	2.62	Great Extent
<b>Grand mean</b>			<b>2.56</b>	

**Findings:**

It was found that the respondents were positively inclined towards all the assertions made to research question 3 items 11 – 15 on the table attracted the mean score 2.50 and above, therefore agreed.



**Research Question Four:** How does video playlists affect the implementation of virtual classroom delivery in Abia State higher institution?

**Table 4:** Mean responses on the video playlist affect the implementation of virtual classroom delivery.

S/N	ITEMS	FX	X	DECISION
16.	Video playlist helps students to study at home on their own	894	2.55	Great Extent
17.	Video playlist helps in improving the understanding of class work	917	2.62	Great Extent
18.	Video playlist helps student understand the lecturers practically	900	2.57	Great Extent
19.	It increases the students interest	885	2.52	Great Extent
20.	It improves teachers' performance	894	2.55	Great Extent
<b>Grand mean</b>			<b>2.56</b>	

**Findings**

It was found that the respondents were positively inclined towards all the assertions made to research question 4. Items 16 – 20 on the table attracted the mean score 2.50 and above, therefore agreed.

**Discussion**

The paper observed that test chart enhances the implementation of virtual classroom delivery, it was indicated in (item 1-5) that text chart improve student understanding of graph reading, improves students ability of studying spread sheet, arouse students' interest, improve attendance of students in classroom and improve students communication in classroom.

The interactive whiteboard enhances the implementation of virtual classroom delivery (indicated in item 6-10). Interactive whiteboard makes the classroom interesting to students, makes the classroom delivery easy for lecturers, it improves teachers' performance and also make classroom delivery understanding. Presentation of tool facilitate the implementation of virtual classroom (as indicated item 10 – 15), it facilitate learning process, enhance a balanced visual environment, appropriate use of projector increases students' learning interest with devices like VCD machine and other internet facilities improve virtual classroom delivery for the attainment of educational goals.

The video playlist affect the implementation of virtual classroom delivery which indicated form (item 16 – 20) video playlist help students to study at home on their own, it is improves understanding of classwork, understanding the teacher/lecturer practically increases students interest in learning and also improves teachers performance.

**Conclusion**

The potential for ICT to provide innovative learning approaches such as virtual classroom delivery is already being widely explored in both traditional and non-traditional educational settings. Hence as Crawford and Kirby (2008) noted, the utilization of relevant virtual classroom delivery has never been more important and



should therefore be a significant element of this generation's approach to education, socializing and normalizing.

In order to equip students with the necessary skills and knowledge to foster the growth of independent, creative and lifelong learners, most higher education institutions are striving to provide virtual classroom delivery environment or virtual classroom delivery space in which learners and teachers communicate online and learning takes place through electronic means.

Thus, the paper concluded that text chat enhance the implementation of virtual classroom delivery, interactive whiteboard enhance the implementation of virtual classroom delivery, presentation tool facilitates the implementation of virtual classroom delivery and video play list affects the implementation of virtual classroom delivery. The paper concludes that business students and business educators should endeavour to utilize this medium or system for effective growth of business education and sustainable development.

### **Recommendations:**

Considering the relevance of virtual classroom delivery in learning, research and teaching to the growth of business education the following recommendations were made:

1. The department of Business Education across the tertiary institutions should be fully equipped with functional internet – enabled ICT facilities to enable business educators and students to utilize the virtual classroom delivery system.
2. Government should expedite action on the legislative framework for the proposed national commission for quality assurance at the different levels of education sector in Nigeria.
3. As a matter of urgency, business educators should go for self-sponsored ICT – training to upgrade their computer skills and take advantage of the e-learning community.
4. Business Education teachers should also be recruited and encouraged to go on regular training in order to be relevant in the use of virtual classroom delivery.
5. Tertiary institutions should provide sensitization programme and training for all lecturers on how to use social media platform such as Facebook, Whatsapp, Twitter and YouTube for academic purpose from there gain the exposure to virtual classroom delivery.

### **References**

- Bates, A. W. (1993). Educational aspects of the telecommunications revolution in Tele-teaching. Paper presented at the IFIP, North Holland.
- Bodain, Y., & Robert, J. M. (2001). Investigating distance learning on the internet. Retrieved May 3, 2001, from the World Wide Web: [www.isoc.org/inet2000/cdproceedings/6a/6a\\_4.htm](http://www.isoc.org/inet2000/cdproceedings/6a/6a_4.htm)
- Burn, J. M., Marshall, P. and Barnett, M. (2002), E-business strategies for virtual organizations. Butterworth and Heinemann.
- Clarke, T. and Hermens, A. (2001), Corporate developments and strategic alliance in e-learning. *Education and Training*, 43 (4).256-267.



- FRN (2013) Federal Republic of Nigeria National Policy on Education technology innovation retrieved from <https://searchworks.stanford.edu/view/756582>
- Grainier, R. and Metes, G. (1995). *Going virtual: Moving your organization into the 21<sup>st</sup> century*. Prentice Hall, New Jersey, USA.
- Hallinger, P. and Kantamara, P. (2001), Learning to lead global changes in local cultures. *Journal of Education Administration*, 10 (3) 197 – 220.
- Iynch, M. (2017). Virtual Classroom are the future of Teacher Education - - The Edu. Retrieved from <http://www.theedadvocate.org/virtual-classrooms-future-teacher-education/> Accessed 28/09/2017
- Leimeister, J. M., Weigle, J. R. and Krcmar, H. (2001), Efficiency of Virtual Organizations – The Case of AGI. *Electronic Journal of Organizational Virtualness*. 3.12-42
- Ogandele, M. O., Gyang, T. S. & Anpe, M. S. (2015) Lecturers’ digital literacy and academic goals achievement of lecturers in Plateau State tertiary institutions. Nigeria, Asia Pacific Journal of Education, Arts and Sciences, 2(2) 106-108
- Otamiri, S., Wagbara, S. O. & Seth, O. (2017) Digital citizenship and Business Educators Performance in the Post Oil Boom; A study of Selected Tertiary Institution in River State: International Conference of Association of Vocational and Technical Educators of Nigeria. Book of Reading.
- National Policy on Education (2007) Improvement of Information and Communication Technology (ICT) for its citizens retrieved from <http://thenationonlineng.net/national-policy-on-education/>
- Tao, E. Y. (2001), Impact of Internet Technology on Education – A comparison between Education Institutes’ Internet usage in Developed and Developing Countries. Retrieved November 28, 2001, from the World Wide Web:
- West, L., & Hore, T. (1989), “The impact of higher education on adult students in Australia”. *Higher Education*, vol. 18, pp. 341-352.