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ON COMPUTING, ENERGY, NETWORKING, ROBOTICS AND  
TELECOMMUNICATIONS**

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## **GOOGLE+: A BOOST TO E-LEARNING EDUCATION & TRAINING @ COVENANT UNIVERSITY**

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### **ABSTRACT**

Just as the advancement in Information Technology (IT) continues to evolve and change rapidly over the past few decades, the art of learning, acquiring and dispersing knowledge and information have also continued to evolve rapidly. These rapid innovations and improvements in IT were designed with the aim of boosting knowledge and education at just the click of the button. Some of the most outstanding innovations and inventions in the (IT) world, which have influenced education and learning in this decade are found in social networks such as Yahoo, Google, Face book, twitter, You Tube, to mention but a few. However, recent studies conducted in this regard revealed that these current innovations and advancements in IT have constituted grave challenges to the knowledge and learning process.

The teachers / lecturers of this century, during the process of seeking to transfer knowledge to their student, are often faced with the dilemma of finding how best to gainfully occupy the minds of their students within and outside the class room environment. The students who more often than not, distracted by incoming messages, videos, picture of friends, or simply text messages from friends via i-phones, laptops, i-pods, or even i-pads etc. The respondent instantly cannot resist the urge to quickly read and send back a reply via either of the means mentioned here. Other students who log on to either of the networks for a specific task are easily distracted or carried away by say, a fresh advertisement or alternate information which

dramatically catches the attention of the students. Consequently, they are drawn and carried away by the new piece of information that drastically - in most cases - changes their trend of thought before they are fully aware of the harm done by the distraction.

While applying the simple survey methods of research, this paper shall examine the findings of an ongoing study with two groups of students who offer University Wide Courses (UWC) here at Covenant University. Results from the pilot study conducted gives us reasons to argue that a resent product by Google simply known as “Google+” may be that much desired formula that teachers and lectures all over the world, need to boost the teaching and learning experiences of both teachers, students and researchers within and outside the classroom environment.

### **1. INTRODUCTION**

The quest for Knowledge in recent times has continued to increase all over the world. It has been realized among the developed and developing countries that nothing ensures development as much as education does. To this end, countries and governments continue to invest more and more in education and learning by building and funding various knowledge based projects in Universities and other institutions of higher learning. Studies recently carried out in this respect reveal those countries, governments and some None Profit Organizations (NGO's) who embarks on such projects do so because they believe that education is the soul of

development. Consequently, countries like America and Great Britain, two of the leading nations of the world, have been known to have more Universities sited and established in their countries. Universities

from these two countries are listed among the top 100 Universities in the world. The 2010 / 2011 top 100 Universities of the world presents the under listed top ten universities in their order of ranking: <sup>[1]</sup>

1	<b>University of Cambridge</b>	United Kingdom	L	VH	FC
2	<b>Harvard University</b>	United States	L	VH	FC
3	<b>Yale University</b>	United States	M	VH	FC
4	<b>UCL (University College London)</b>	United Kingdom	L	VH	FC
5	<b>Massachusetts Institute of Technology (MIT)</b>	United States	M	VH	CO
6	<b>University of Oxford</b>	United Kingdom	L	VH	FC
7	<b>Imperial College London</b>	United Kingdom	L	VH	FC
8	<b>University of Chicago</b>	United States	M	VH	FC
9	<b>California Institute of Technology (Caltech)</b>	United States	S	VH	CO
10	<b>Princeton University</b>	United States	M	VH	CO

Notice that the Universities that made the first top ten listing, come from these two great nations of the world. (USA = 6), (Great Britain 4) with University of Cambridge toping the chart, followed closely by Harvard University. It can be rightly inferred that these two great nations of the world were able to achieve this great fits because of the emphasis they have continued to place on education and learning. Their increasing quest to acquire more knowledge and fresh avenues through which knowledge acquisition and knowledge transfer can be made easier by the minute, has clearly played out in these countries as represented in the above chart.

The need to diversify and multiply the modes of communication and knowledge all over the world has lead to the development and generation of various search engines and social networks which have been hosted on the internet, haven accepted the internet as

one of the 21<sup>st</sup> century system which have come to make knowledge acquisition and dissemination more easier than the world would have thought possible some 20 years ago. No doubt, the internet has brought knowledge closer to every individual seeking to acquire one form of knowledge or the other. Today every kind of knowledge you require or think of is readily made available at just a click of the button. However, one of the major problems with this new wave and medium of acquiring and disseminating knowledge is that the students seeking this knowledge are often exposed to all manner of information on the web, one that does more harm to the individual than the anticipated good it was initially designed to achieve.

## 2. THE MAIN ISSUE AT STAKE (PROBLEM)

Some of the social net-works and search engines more frequently used today for the purpose of

learning and education include: *Yahoo, Google, Face book, Twitter, You-tube, Moodle*, just to mention but a few. These social networks and search engines were designed to aid communication and the dissemination of knowledge and information all over the world. However, recent studies reveal that most of these search engines and social networks constitute grave hindrances to the process of acquiring the right kind of knowledge, the one that makes for easy dissemination of knowledge among students and other individuals and the kind that ultimately fosters the development on the individual and the society at large.

Preliminary studies conducted in this area identifies most of these social networks as some of the factors that constitute a major distraction to students who are often carried away by some of the services, applications and utilities provided by these networks, whose initial intentions are to provide sure ways of acquiring or disseminating knowledge. Consequently, the use of the internet via some of these social networks and search engines, have become detrimental to positive knowledge acquisitions and dissemination.

A study recently conducted over a few years period revealed that teachers and lecturers have had to contend with the problems of distractions and lose of focus by the students during class sessions. This is because students easily fall prey to the temptation of chatting with friends, surfing the net on face-book or on twitter, etc. usually either gossiping or communicating via text messages, about matters that most often than not, do not concern the subject in focus or the topic of the class in session. On other occasions, they students have been known to simply wish quickly react, respond or exchange pleasantries, pictures and posts, on very current matters or issues happening around their surroundings etc with the

person on the other side of the network. Other studies show that these distractions often come as a result of the students' resolve to engage themselves with other things other than their studies when they begin to find their two hours lecture either "too long", "not fun enough", or "just boring" as the case may be. The lecturer is therefore caught in the dilemma of looking for ways of make his class room sessions - no matters how short or long the class might be - very captivating, educative and engaging for his students in the face of all these multiple distractions and situations that contends with the time he has to spend with his students for qualitative learning and education.

Results of pilot studies carried out on these problems as it affects the 21<sup>st</sup> century teacher / lecturer and his classroom, tends to affirm the increasing reality of the class teachers' dilemma, a dilemma that is seriously reducing the quality of education and learning that is intended for this new (*Jet Age and IT*) generation. The quality of learning and education that is intended to ensure the student gets a place in the highly competitive global village, a world of high Information and communication technology (ITC) which has very limited spaces for only the best in every sector of life.

### 3. METHOD OF STUDY

The methodology applied in the first phase of this research is simply that of the *survey* method since what we have done in this study can be largely regarded as a "descriptive research." A descriptive research describes, analyses and interprets conditions that are in existence. It describes systematically the facts, qualities or characteristics of a given populations, event or area of interest as factually and accurately as possible with the view to proffering answers and solutions to questions asked about the problem of study.



#### 4. AIMS AND OBJECTIVES OF THE STUDY

1. To clearly capture and identify the degree of dilemma which the 21<sup>st</sup> century class teacher / lecturer is forced to grapple with in the process of disseminating knowledge and information, a business that is often hampered by the rising number of social networks on the internet and new IT gadgets which are readily available to students.
2. To generally introduced a method (**Google+ apps** package) as a process or method that makes the art of teaching - acquiring knowledge & information or the general art of learning and education among faculty and students - easier and more fun than ever before.
3. To clearly show how the use of the new **"Google+ apps"** package during lectures and class room sessions can enhance the quality of knowledge, learning and time spent with the student during the process of acquiring and disseminating information.
4. To affirm that the use of the **"Google+ apps"** package for the purpose of acquiring knowledge and disseminating quality knowledge and information is without prejudice, perhaps, the most outstanding social apps compared to all other social networks and applications available on the internet for the purpose of learning, knowledge and education.

#### 5. WHAT IS E-LEARNING?

E-learning refers to the use of information and communications technology (ICT) to enhance and/or support learning in tertiary education. <sup>[2]</sup> But this covers a wide range of systems, from students using e-mail and accessing course work on line while following a course on campus, to programs offered entirely online. E-learning can be divided into several

different types. In all cases, the e-learn is a campus-based institution method which is often used to offering certain courses online so they can be assessed by anyone or a group of persons at anytime. The use of e-learning however is usually tied to the Internet or other online network to a large extent.

*Web-supplemented* courses focus on classroom-based teaching but include elements such as putting a course outline and lecture notes on line, use of e-mail and links to online resources.

*Web-dependent* courses require students to use the Internet for key elements of the program such as online discussions, assessment, or online project/collaborative work, but without significant reduction in classroom time. In *mixed mode* courses situation however, the e-learning element begins to replace classroom time. Online discussions, assessment, or project/collaborative work replace some face-to-face teaching and learning. But significant campus attendance remains part of the mix. And when courses are offered *fully online*, students can follow courses offered by a university in one city from another town, country or time zone.

#### 6. E-LEARNING AND EDUCATION

Studies conducted not too long ago in America by the Sloan Foundation <sup>[3]</sup> reports that by year 2006, 3.5 million students were participating in on-line learning at institutions of higher education all over the United States. According to the same report, "there has been an increase of around 12–14 percent per year on average in enrollments for fully online learning over the five years period (2004–2009) in the US post-secondary system,"<sup>[4]</sup> compared with an average of approximately 2 per cent increase per year in enrollments overall. Allen and Seaman (2009) <sup>[5]</sup> claim that almost a quarter of all students in post-secondary education were taking fully online courses



in 2008. Another report by Ambient Insight Research [6] suggests that in 2009, 44 percent of post-secondary students in the USA were taking some or all of their courses online, and it has been projected that this figure would rise to 81 percent by 2014. Thus it can be seen that e-learning is moving rapidly from the margins to being a predominant form of post-secondary education, at least in the USA and now most parts of the developed and developing countries of the world.

Many higher education (private) 'for-profit' institutions, now offer on-line classes. By contrast, only about half of government 'non-profit' schools offer them. The Sloan report, based on a poll of academic leaders, indicated that students generally appear to be at least as satisfied with their on-line classes as they are with traditional ones. Private institutions may become more involved with on-line presentations as the cost of instituting such a system decreases. In all, online education is rapidly increasing, and online 'doctoral programs' have even developed at leading research universities all around the world. [7] This notwithstanding, some higher institution in developing countries like some found in Nigerian Universities, tend to shy away from embracing the use of e-learning based systems as one of the method of studying in these institutions.

## 7. COVENANT UNIVERSITY'S MANDATE ON EDUCATION

**Covenant University's** (CU) vision is "To be a World Class University, committed to raising a new generation of leaders in all fields of human endeavor". [8] Its mission statement is "To train students who will be mentally resourceful, intellectually equipped, entrepreneurially self dependent, futuristically visionary, responsibility sensitive and emotionally stable through a human development based curriculum with emphasis on

developing the Total Man". [9] With the above vision and mission clearly stated, the University is set out to run with the 'mandate' outlined below:

Raising a new generation of leaders through a qualitative and life applicable, and life training system that focuses on value and skill development. It also has the mandate to "Raising a new generation of leaders through a broad base qualitative education built on sound biblical principles culminating in the birth of pathfinders, pace-setters and trail blazers". It also is poised to "Raising a 'new generations' of leaders who will redeem the battered image of the black race and restore her lost glory as this trained army of reformers begin to build the old wastes, repair the wasted cities and raise the desolations of many generations. [10]

A study of the above mandate reveals the drive behind the founding philosophy on which Covenant University is founded upon. Her founding philosophy is "*a departure philosophy*" [11], one that earnestly seeks a departure from *form to skill*, a departure from *Knowledge to empowerment*, a departure from *legalism to realism*, a departure from *points to facts*, a departure from *mathe-matics to life-matics*, to mention but a few.

Consequently, the above mentioned standards are the basis for existence and study here at CU. Faculty and members of management are therefore committed to ensuring that all programs and taught courses are designed and administered with the view to achieving all these setout goals. To this effect, emphasis are placed on some very important courses – both University and College Wide Courses - that have been designed to equip students with all the necessary tools needed to achieving the above mentioned mandates etc. Some of these courses include those which The National University's Commission (NUC),

have made mandatory prerequisite for all students seeking degrees from Universities all over Nigeria.

Two of these courses include:

1, Introduction to Philosophy, Logic & Human Existence, (GST211) 2, Introduction to The History & Philosophy of Science (GST311).

Other course designed by the University to help achieve the above aims and objectives include The Total Man Concept (TMC), some Human Development course (HMD) taken at the college level in the University to mention but a few. These courses in a lot of ways, have aided the achievement of the goals mention in the above context.

## **8. E-LEARNING @ COVENANT UNIVERSITY (CU)**

The seeming complexity and misconceptions that goes with the study of some of the courses mentioned in the above context, ( The University and College Wide Courses) which have been known to have very large number of students registered per semester, has been a challenge in time past. This may be because lecturers are forced to grapple with the scenarios that transpire in these individual classes, classes which have students numbering up to 2000 during a single class or test periods. These challenge (very large number of students sited for a class session) have cause professors, lectures and teachers responsible for these classes to continue to seek out ways and methods through which the wealth and value of the knowledge embedded in their courses can be passed successfully to all students in their class room as requested by their course compact and curriculum for the semester. May I also note that these large classes simply makes room for easy distractions and lose of concentration amongst the students who often will hide under the guise of these large numbers to engage in other activities which are often not part of the subject being taught in class.

That the introduction of e-learning (Moodle) as one of the methods of teaching and handling these courses at CU, by some of the lectures in charge of the above mentioned courses, have drastically changes the seeming complexity and difficulty often associated with teaching these courses. Since the introduction of the use of e-learning among faculty and students offering the courses in question, a general improvement in class participation between students and members of faculty, both during class and off class hours have been noted. This is because of some of the facilities and functions which the e-learning system offers both lecturers and students. Time and the want for space will fail me to outline all these facilities and functions here. However, a few of them include, constant access to lecture notes and materials for the lecture, access to other online recourses and materials on the subject of lectures, online submission of assignments, projects etc, automatic grading systems and immediate access of grade by students, reduced or no cost of printing to assignments projects etc, to mention just a few.

There has also been a general improvement in the quality of class participation which have influenced the grades recorded by students since the introduction of e-learning system, when compared to the kind of class participation and quality of grades that were recorded in the past.

E-learn at CU, even though is still very much at the test stage, has proven to be very resourceful and user friendly. The privilege it provides for both students and members of faculty is more than can be captured here on paper. Some e-Learning environments take place in a traditional class room; others allow students to attend classes from the confines of their halls of residences, student's centers or from their homes or other locations as the prevailing circumstance or situations may demand. E-learning now allows

lecturers to record and either present their lectures to groups of students via video conferencing in advance or live during a class session. They can now also read assignments, grade scripts, or post assignments, projects, etc to students from anywhere and at anytime of the day, while in a car, in traffic, or while away on official assignment from the campus or on a field trip in a faraway land. He can therefore monitor the progress of his students and assist anyone who needs his attention on any urgent matters that might not wait till the next class session.

### 9. THE GOOGLE+ EXPERIENCE @ CU

E-learning is becoming increasingly prominent in tertiary education, with Universities increasing provision and more students signing up. However, some universities are yet to embrace this method. However, the big question is, Is the e-learning system actually changing the way Universities teach and students learn, or is it simply a case of students typing up their essays on computers and professors sending them course reading lists or work assignments by e-mail? Well the truth is; for persons' who have nursed such thoughts in their minds, may have not gone too far from the truth. If we must be fair in our judgment, it will not be out of place to acknowledge that, where things are left to continue the way they are going right now, the whole e-learning business will soon fully assume the position conceived above in the not too distant future. Where this becomes the case, the initial aim of enhancing the modes of transferring learning and knowledge will be defeated. Some members of faculty and students I have had to work with in the past were beginning to think in this line before we had the encounter with the "Google+ apps", an application that made a whole lot of difference to the e-learning business. It really changed everything.

With over eight years of experience in the teaching of these University wide courses and with a burning

desires to finding better ways of correcting the misconceptions and the supposed complexities associated with the courses, my recent experience with Nmachi, "A Special facilitator" from Google Nigeria, here at Covenant University and subsequently, my three days experiences and training sessions at the just concluded "Google Training Sessions for selected members of faculties in a few Nigerian Universities in the month of June 2012, seem to have provided the answers to the questions I and some of my students were beginning to raise about the use of e-learning as a methods of enhanced learning and teaching. I therefore make bold to say that by this recent experiences, my days of searching for a way out may be over for good.

Going by the discoveries and information I now have about this all new application from Google, I wish to infer that where this applications are successfully launched and introduced to the teachers and students offering these University wide courses, it will go a long way in dealing with the dilemma that both teachers and students face as a result of the possible distractions which exist in the 21<sup>st</sup> century classroom. Results observed in the pilot study conducted in the month of March through the month of June revealed that the use of **Google+** has in many ways ameliorated the fears of many students who develop phobias for these university and college wide courses. Instead, a high level of interest and class participation has been observed. This we also believe may have been responsible for the high success rates achieved in terms of the grades which were recorded in the pilot study conducted with a college wide course HMD 321 and HMD 121. Both courses had a combined capacity of over 300 students. The success experienced here are indicative of the kind of success that could be achieved when we apply the use of Google+ to the much larger University Wide courses



(GST211 & GST311) which has an estimated combined strength of about 4,000 students.

#### 10. THE STUDY WITH THE GOOGLE+ APPS @ CU

Just Recently, between the months of March and June, a pilot study was carried out with two different groups of students at Covenant University: **HMD 121 students** (148) and **HMD 321 students** (155) total (**303 students**) with a team of Google Ambassadors in Covenant University and a resource trainee personnel from Google (Miss. Nmachi) who helped introduce the group of students to a special package that was designed by Google to help bridge the possible gaps in the area of learning and education. The package by Google is a social network solely designed to boost education and make the art of learning and teaching more fun and easy for every class of student, researcher and members of faculty all over the world. Unlike other social net-works or packages which are designed just for the purpose of play, fun and entertainment only.

For two sessions, within the period of three weeks, the faculty member responsible for the courses and students from both groups were taken through training sessions on Google apps and most of all the applications that the "New **Google+**" had to offer to students and members of faculties who choose to use the application for teaching and lecturing or carrying out assignments and projects, etc.

#### 11. SPECIAL GOOGLE+ APPS FEATURES

The training sessions with the New **Google+ apps** revealed that lecturers could, via the applications made available to them on the **Google+** platform, really come up with ways of occupying their students during and after lectures and classroom session without the students getting bored or really tired of wanting to acquire more knowledge and information.

The package "**Google+**" further presented a platform where they (the students and the lecturers) could still play or share knowledge based information easily. Other things they could share or do include: their class projects, class assignments, term papers, questionnaires multiple choice questions etc. The **Google+** platform also provides free SMS to mobile phones of any network, multiple video phone calls between one faculty and another faculty, from faculty to students, or between students etc. Lecturers could also hold conference lectures from their offices online and in real time with a group or groups of students in their halls of residence, student centers, etc.

Other special features worthy of note here are the "**Hangout**" application. This application simply allows students and their friends or their lecturers to hold limited or unlimited but real time video conferencing, on any subject of their own with fellow colleagues, students, friends or from people of all races, all over the world. Such lectures or discussion can be placed on U-tube for further use or reference where the need arises. The "**#**" tag application also allows students to see, follow and also make direct contributions to specific comments, assignments, debates, arguments, projects, discursions, etc. which their lecturer may have raised during class session. Here, individuals making contributions are able to see the comments that have been made by other persons on the subject. This way, they are better informed to make meaningful contributions and arguments on the subject being discussed. The "**You-Tube**" applications, also by Google, is another application that have been tested and known to be used by lecturers and professors around the world to capture, via online video, a live coverage of classroom events and activities for students in class and those who for some reasons or the other, are unable to make the class or lecture in question. Such lectures can be recorded and stored online to be played back on a

later date by the student via a link which is made available to them by the lecturer.

Outside these mentioned applications, the Google+ apps also allows each participator to own a profile on Google+ that offers a whole lot of other applications that make studying, researching more fun than ever before. By this, I am talking about facilities such as a private e-mail service that synchronizes all your records, documents etc on a **Special Drive** from your computer. This way you can have access to them from any part of the world. You no longer really need to carry you laptops around anymore. Questions, objective test, and all manner of test and data can easily be administered, collected and recorded online via this platform, to mention but a few. Teachers therefore need no longer go through the stress of printing out questioners or question for examinations as this can be done online with results and data graded and analyzed easily.

## 12. TESTS, RESULTS AND ANALYSIS FROM THE PILOT STUDY.

Two groups of students were understudied during the period in question: March – June 2012. (Four Months). HMD 121 Students were **161** in number while & HMD 321 Students where **158** in number.

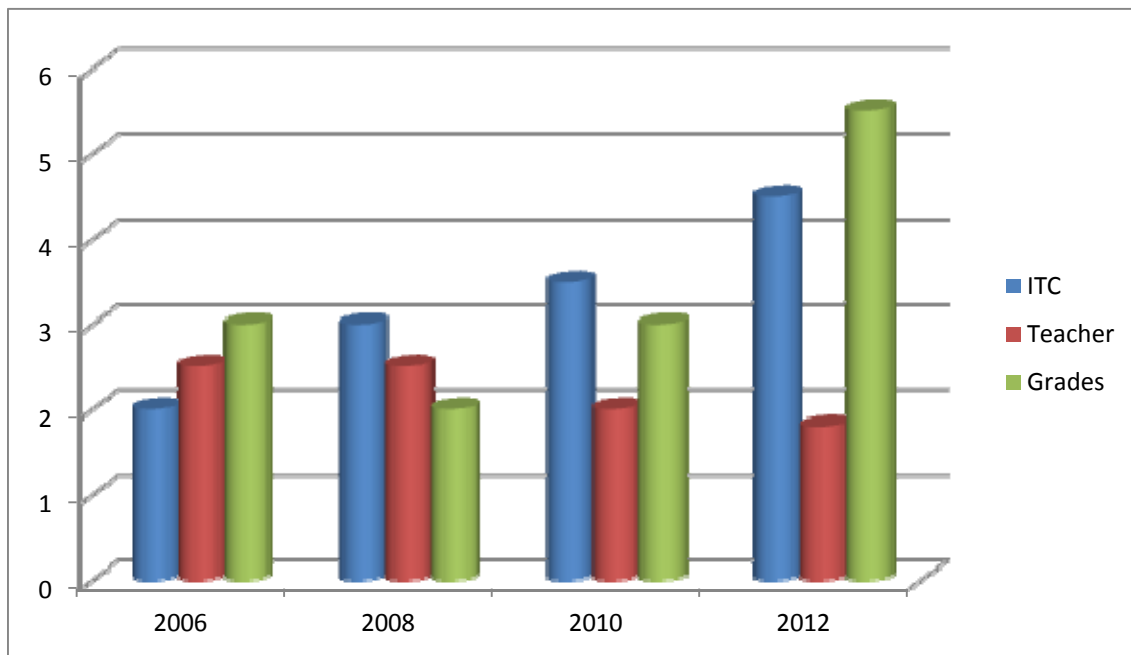
The combined strength of both classes when summed up together is **319 Students**.

The questionnaires distributed among both classes were designed to capture:

1. The degree of simplicity and effectiveness of the use of Google+ apps as a tool of study and learning among faculty and students in CU.
2. The influence on class participation in assignments, projects etc, both in and outside the class room period.
3. The influence and general effectiveness of the use of Google+ app to the field of e-learning education in general.
4. The influence of the use of the Google+ apps and e-learning on student's general test, examination and class performance.

Below are graphical representations of the pilot study conducted on the use of Google+ and the impact on students' performance and general education over a specific period.

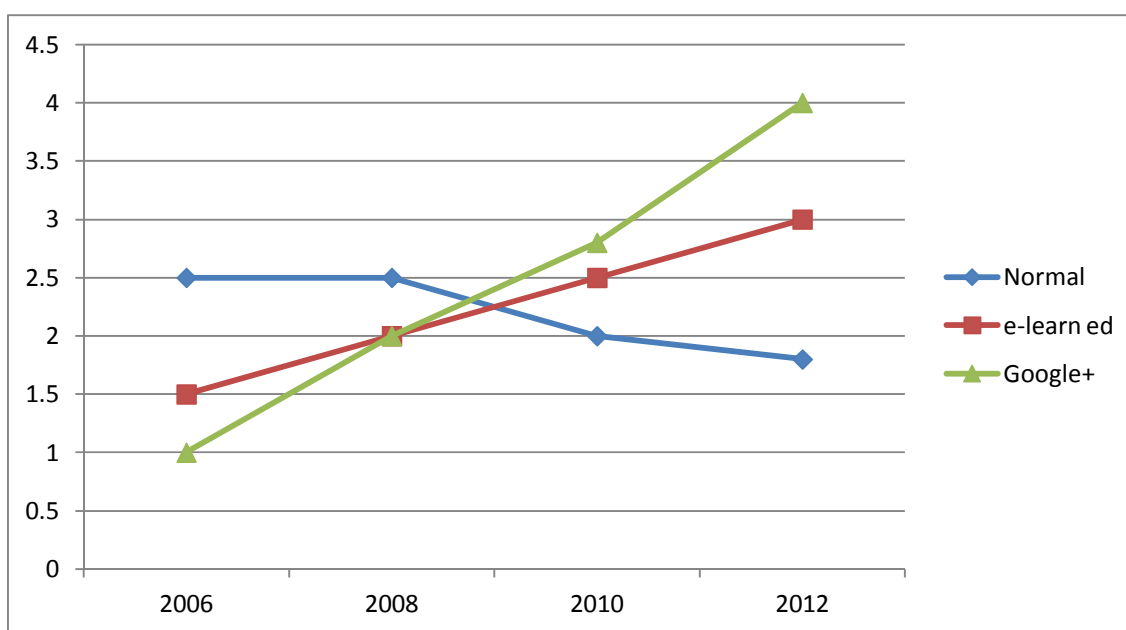
**1. Graphical Representation of The Dilemma of The Teacher in The Phase of Distraction in the 21<sup>st</sup> Century And The Impact of E-learn & Google+ on Education on Student's General Performance <sup>[11]</sup>**



S/N	YEARS	ITC IMPACT	TEACHER'S INPUT	STUDENTS GRADES
1	2006	2	2.5	3
2	2008	3	2.5	2
3	2010	3.5	2	3
4	2012	4.5	1.8	5



## 2. The Influence of e-learning & Google+ in the 21 century Education & The Learning Process <sup>[12]</sup>



S/N	YEAR	NORMAL TEACHING	E-LEARN METHODS	GOOGLE+ METHODS
1	2006	2.5	1.5	1
2	2008	2.5	2	2
3	2010	2.0	2.5	2.8
4	2012	1.8	3	4

### 13. GOOGLE+, A BOOST TO E-LEARNING EDUCATION

We have planned a much big test on the thesis we are proposing here about the impact of Google+ latter in the new academic session were we hope to gather more empiric data and come to more scientific resolutions about the aims and objectives proposed for the study so far. However, going by the tentative results we have been able to achieve with the pilot study conducted with the groups of students mentioned above, we are optimistic that the Google+ app could really be that boost that teachers, lectures

and professors have been seeking for in the field of e-learning education and education generally. I are therefore optimistic about the boost that the Google+ apps package can be to the entire learning process for students in higher institution of learning. We are therefore hoping that one of the communiqués that will proceed from this conference to the NUC and to all Nigeria universities is that the use of e-learn and perhaps Google+ be adopted as one of the modes of education in all the tertiary institutions of learning in Nigeria.

## NOTES AND REFERENCES

1. <http://www.topuniversities.com/top-100-universities-in-the-world-2011>
2. The definition for E-learning as presented in (**E-learning in Tertiary Education**) was taken from OECD Organization for Economic Co-Operation and Development. [www.oecdbookshop.org](http://www.oecdbookshop.org), [www.SourceOECD.org](http://www.SourceOECD.org)
3. Sloan Consortium
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5. Allen, I. E. and Seaman, J. (2008) Staying the Course: Online Education in the United States, 2008 Needham MA: Sloan Consortium.
6. Ambient Insight Research (2009) US Self-paced e-Learning Market Monroe WA: Ambient Insight Research.
7. Hebert, D. G. (2007). "*Five Challenges and Solutions in Online Music Teacher Education*". *Research and Issues in Music Education* **5** (1).
8. See The Vision Statement of Covenant University as recorded in the Order of Proceedings of the 7<sup>th</sup> Convocation Ceremony of Covenant University, Ota, tagged *The Release of Eagles 2012*, which held on 29<sup>th</sup> June 2012. P. 2.
9. See *The Mission Statement* of Covenant University as recorded in the Order of Proceedings of the 7<sup>th</sup> Convocation Ceremony of Covenant University, Ota, tagged *The Release of Eagles 2012*, which held on 29<sup>th</sup> June 2012. P. 2
10. See *The Mandate Statement* of Covenant University as recorded in the Order of Proceedings of the 7<sup>th</sup> Convocation Ceremony of Covenant University, Ota, tagged *The Release of Eagles 2012*, which held on 29<sup>th</sup> June 2012. P. 2
11. The graphical representation made here on the dilemma of teachers and the influence of ITC and e-learning on students performance at CU was gotten from the pilot study done with the HMD 321 and HMD 121 students of Covenant University between the months of March and June 2012.
12. The graphical representation made here on the Influence of e-learning & Google+ in the 21 century Education and learning process is a result generated from a pilot study conducted between the months of March and June 2012.