

## Chapter 1 : History of ict - WikiEducator

*The use of technology in education has provided students and teachers with an unlimited number of options for classroom learning. When you consider the history of technology in education, there are some very interesting facts that have led us to where we are today.*

The top 30 countries in the rankings include most high-income countries where quality of life is higher than average, which includes countries from Europe and other regions such as "Australia, Bahrain, Canada, Japan, Macao China , New Zealand, Singapore and the United States; almost all countries surveyed improved their IDI ranking this year. It also emphasized a multi-stakeholder approach to achieve these goals, using all stakeholders including civil society and the private sector, in addition to governments. To help anchor and expand ICT to every habitable part of the world, " is the deadline for achievements of the UN Millennium Development Goals MDGs , which global leaders agreed upon in the year Access, inclusion and quality are among the main challenges they can address. Intrinsic barriers such as a belief in more traditional teaching practices and individual attitudes towards computers in education as well as the teachers own comfort with computers and their ability to use them all as result in varying effectiveness in the integration of ICT in the classroom. Beginning with television and radio, it extended the reach of education from the classroom to the living room, and to geographical areas that had been beyond the reach of the traditional classroom. As technology evolved and became more widely used, efforts in Sub-Saharan Africa were also expanded. In the s a massive effort to push computer hardware and software into schools was undertaken, with the goal of familiarizing both students and teachers with computers in the classroom. In particular, the mobile phone has been most important in this effort. Mobile phone use is widespread, and mobile networks cover a wider area than internet networks in the region. The devices are familiar to student, teach, and parent, and allow increased communication and access to educational materials. In addition to benefits for students, M-learning also offers the opportunity for better teacher training, which lends to a more consistent curriculum across the educational service area. Once in school, students also face barriers to quality education, such as teacher competency, training and preparedness, access to educational materials, and lack of information management. The most recent authoritative data, released in , shows "that Internet use continues to grow steadily, at 6. This also includes the availability of telephone lines, particularly the availability of cellular coverage, and other forms of electronic transmission of data. The latest "Measuring the Information Society Report" cautiously stated that the increase in the aforementioned cellular data coverage is ostensible, as "many users have multiple subscriptions, with global growth figures sometimes translating into little real improvement in the level of connectivity of those at the very bottom of the pyramid; an estimated million people worldwide live in places which are still out of reach of mobile cellular service. With desktops soon becoming part of a bygone era, and laptops becoming the preferred method of computing, ICT continues to insinuate and alter itself in the ever-changing globe. Information communication technologies play a role in facilitating accelerated pluralism in new social movements today. The internet according to Bruce Bimber is "accelerating the process of issue group formation and action" [32] and coined the term accelerated pluralism to explain this new phenomena. ICTs are tools for "enabling social movement leaders and empowering dictators" [33] in effect promoting societal change. ICTs can be used to garner grassroots support for a cause due to the internet allowing for political discourse and direct interventions with state policy [34] as well as change the way complaints from the populace are handled by governments. Furthermore, ICTs in a household are associated with women rejecting justifications for intimate partner violence.

## Chapter 2 : History of ICT in Education | ICT Leadership

*ICT for education. Many educators saw in ICT the potential of raising the quality of teaching and learning. Here is what it can offer to education: Universal access to high quality education. Teachers' professional development. Efficient education management in terms of governance and administration. Promotion of equity in education.*

Has ICT come of age? Recurring debates on the role of ICT in education, What are the historical debates outlined in Wellington that you still observe in your own educational setting? Research tells us otherwise. Wellington also discusses the importance of educating teachers correctly if we are to see real change in the way ICT teaching is addressed within schools. In the 4 years I have been at my current school, I have only been to 1 professional development course that I requested to go to , that looked at Science and Technology, and the Digital Technologies curriculum. This is a common attitude among teachers, who indicate their own technology use for programming and web-browsing as reasons for liking technology. Having students engage with technology through word processing, and online maths games is seen as ticking the technology outcome box. Using technology in this way ignores the authentic application of technology for rich and engaging learning experiences. To what extent do you think current policies such as the Digital Education Revolution or your own local policies address these debates? If only teachers had the time and the drive to read about the benefits ICT can bring to curriculum and pedagogy! Faulty assumptions are ripe when it comes to ICT integration in schools. In my context, teaching staff still believe that a successful technology program has students engaging with technology e. Another assumption is that all or most students have access to technology and devices outside of school, which may not be the case. While most homes are likely to have a computer, parents may have rules in place that prevent students from engaging with technology on a regular basis in their home, or their socio-economic status prevents them from being in a position where they can have access to technology. I believe these assumptions often manifest due to a lack of knowledge and awareness. As stated above, if teachers were provided with the opportunity to read articles on digital natives, and 21st Century Learners, I do not think they would be so quick to make assumptions regarding how these students engage with, and learn from technology use. Assumptions could also be made from considering their own circumstances and applying these generally to others. In order to make change, we need to keep in mind our students and families when creating policy and plan documents, to provide us with the best possible outcomes for all. Taking the sociological imagination to school: Technology, pedagogy and education, 13 2 , High access and low use of technologies in high school classrooms: Explaining an apparent paradox. American Educational Research Journal, 38 4 , €” The primary theme in these articles is the lack of impact of ICTs in education, despite the amount of policy initiatives designed to have more technology in schools. What are the main reasons for the lack of impact given by the authors of these articles? Technology is being used to teach low-level skills, rather than for authentic tasks. Thus teachers are not seeing the full potential of ICTs as students are engaging with simple activities. Students use technology to engage with old practices Cuban, Cuban discusses further the importance of the role of teachers in effective technology integration. Cuban also discusses the importance of infrastructure and support needed for technology to be successfully integrated within school contexts. Teachers will be less likely to use technology if computers are slow, unreliable, and have networking issues. Has education always been resistant to new technologies? The issue lies in the application of these new technologies, and how teachers are expected to drop everything and implement new learning with very little knowledge and understanding. To what extent does this lack of impact resonate with you in your educational setting? I can understand the lack of impact of technology within the school context. While we have purchased two classroom sets of iPads, and new software for our computer lab, teachers are still not confident in using and teaching with technology. It is in this area that we need support if we are to be effective in our Digital Technologies curriculum. It all comes down to education. We need to educate the educators if we are to see significant change in the way technology is taught in our school.

### Chapter 3 : History of ICT in Nigeria – blog.quintoapp.com

*Wellington, J. (). Has ICT come of age? Recurring debates on the role of ICT in education, Research In Science & Technological Education, 23(1), What are the historical debates outlined in Wellington that you still observe in your own educational setting?*

ICT is the driving force of many monumental changes and innovations. A big breakthrough in ICT technologies occurred in the s. Computers, Internet, and Web changed our lives. Nigeria is the most populous country in Africa. The country has huge urban growth rate at present time. This is a good condition for the upsurge of Internet usage, and the usage of ICT technology in such areas as education, health, agriculture, business, government, and transportation. Such development has been observed since the last 15 years. In Nigeria had 1. The rate is extremely low in comparison with In the download speed increased to 5. Nigeria started to use ICT technologies as a catalyst for sustainable development and the competitiveness on the international arena. In the new policy concluded a document of mission statements and vision of ICT policy in the country. So there was two point in the document: To integrate ICT into the socio-economic development of the country. To transform Nigeria into a knowledge-based economy country. The strategic development plan "Vision " contains many important goals for ICT development. Nigerian ICT development is under the rapid transformations especially in the field of mobile communication. ICT has huge potential to transform a society. ICT can reduce the rate of poverty and improve the economic and social status of people. It is difficult to overestimate the importance of ICT. Intellectuals and scholars gave a large number of definitions and important descriptions of ICT. Information and Communication Technology has no universally accepted definition because the methods, concepts and applications of ICT are constantly evolving. The concept is divided into three: Information Communication Technologies A major function of ICT is it being a tool that helps organizations, businesses, and individuals to use information in the most accessible and convenient way. ICT covers all the products or devices that can transmit or receive, manipulate or retrieve information in digital form. ICT involves not only the technology but also the processes of retrieving, storing or transmitting digital data. ICT includes any computing hardware and the hard and software for operating the networks for transmission of information. The application of ICT is very crucial especially in renewable energy, agriculture, environmental conservation, and water. The population is rapidly growing but the resources are depleting so, we need to evolve the judicious utilization of resources. Of course, information can not be the only panacea to poverty, hunger, diseases or illiteracy. But the information, if used the right way and in the right time can help bring solutions. The values of ICT lie in stimulating growth and development through smooth socioeconomic activities.

*The use of computers in education is much more a series of failures than success stories. I agree with Erik Duval that in general, in a large scale the impact of technology on the way people learn have been minimal. In open distant learning and military training (simulations) there are examples of.*

Share Tweet Subscribe Sign up now for free and get notified about new blog posts, services and special offers. When you consider the history of technology in education, there are some very interesting facts that have led us to where we are today. The introduction of the modern library and the pencil in the mids marked the beginning of the use of technology in education? In the latter part of the s, the very first computer was integrated into schools. By , many schools were including tablet PCs for students and teachers in their technology budget. However, when you look at how technology has evolved in education and a chronicle of the key stages of development, it paints an interesting picture of how far education has come. In this article, we will focus on key points in the timeline that are a significant part of the development of technology in education, beginning with the s. In addition to the introduction of the modern library and the pencil during the s, the Slide Rule was first introduced in by Robert Bissaker. The instrument was designed for use by scientists and engineers up to the early s. The Slide Rule was eventually used in the classroom for mathematics as indicated later in this article and was a precursor to what we know today as electronic and graphing calculators. During the s, the hornbook was used in the classroom as a technology device that taught basics such as vowels and consonants as well as the alphabet. The lesson material was laminated to protect the information from the everyday wear and tear of student use. The protective cover was made from sheep and oxen horns used as a base for the laminating substance. The photographic slides were inserted one at a time for viewing of specific images or subject matter. Those who were proficient at using a magic lantern could rapidly change the slides to make it appear as if the image was moving. Computer programming skills are widely taught throughout various grade levels in the UK education system. The Jacquard Loom marked the beginning of modern day computer programming. First introduced in France in by Joseph-Marie Jacquard, the loom was designed to weave silk using punch cards that controlled the actions of the device. It was during the s that students used slates which were small blackboards that were written on using a piece of chalk. Students used slates in place of pen and paper, even though slates were not very convenient for longer assignments and could only be used to solve short equations. Then they were erased so they could be used to solve a new equation. Blackboards were made of slate that was surrounded by a wood border to prevent the slate from breaking. Slate was the material of choice due to its broad availability throughout the world during the 19th century when mining provided abundant access. In recent years, it was determined that chalk dust posed potential health risks which is one of the reasons they were gradually replaced by the whiteboard as we know it today. In , Charles Babbage introduced a calculating engine which led to modern day digital computing. The engine was created with the realization that a computing device must have input, memory, a central processing unit, and an output device printer. In Christopher L. Sholes first introduced the typewriter which also debuted the QWERTY keyboard which is still used on modern day devices and computers used to enhance classroom learning. The typewriter was limited to capital letters however, other competitors began to use both uppercase and lowercase letters in the latter part of the s. At the beginning of the s, stereoscopes were being released on the market and provided a way to view images in 3D. The device was popular for home entertainment and was eventually marketed to schools for educational purposes. Classrooms which were equipped with stereoscopes were used to view three dimensional images that emphasized points being made by the teacher during a particular lesson. By , the film projector was making its way into classroom environments. The projector displayed still images from a film strip accompanied by an audio recording. The images had to be manually changed as you advanced through the film strip. This type of technology remained in the classroom until the early s and was used to study a particular topic or timeline of events. It was also during that the radio started to be used in education. Some schools used the radio to broadcast lessons to other schools using a specific radio station. During the s, the first overhead projector was introduced to the classroom prior to being widely used

by the military during World War II. After its introduction, the overhead projector became widely used in the classroom which provided teachers with a more convenient alternative to the blackboard. An overhead projector used transparent sheets which could be written on with an erasable marker. The teacher could write on the reusable transparency while facing the class. The notes were reflected on a screen during the classroom presentation. In the s, the mimeograph began to be used by teachers to print classroom materials. Additionally, school office staff used them to print out various documents used for daily operations within the school. The copies were created by manually cranking the ink filled drum which forced the ink through a stencil and onto the paper. The stencil on a mimeograph machine was made of waxed mulberry paper which later became paper immersed in a coating of long fibres. The stencil was then wrapped around the drum and when turned, forced the ink onto sheets of paper that were drawn between the drum and a pressure roller. The mimeograph was commonly referred to as a ditto machine. In the early s, headphones were introduced to the classroom and were installed in listening stations. By listening to audio tapes through the headphones, students could easily review lessons and reinforce concepts to be learned. The listening stations were commonly called language labs which have since been replaced with computers and headphones in the present day. It was also during the s that the slide ruler was starting to be used more widely in the classroom. The slide ruler was the precursor to the calculator and was commonly used to make scientific calculations. The device was still being used into the s when calculators were just beginning to appear in classrooms. The use of the videotape in the classroom also emerged during the s when the first videotape demonstration occurred in California. The videotape was shown using an Ampex tape recorder that kept the narrow tape redeploying at inches per second. It was not until a few years later that the wider magnetic videotapes were put into use. In the latter part of the s, the Skinner Teaching Machine by B. Skinner a behavioural therapist, was integrated into classroom learning. The machine was designed to allow the student to learn at their own pace using a specific instruction program. The device was designed to issue a set of standardised questions. Each time the student answered the question correctly, the machine would dispense a piece of candy as a reward. By the last year of the s, Xerox introduced the first photocopier machine. This helped teachers to create copies of classroom materials easier and faster than the mimeograph machine. During the s, the individual filmstrip microfilm viewer was introduced to libraries and educational institutions. The device provided a way for students to view individual filmstrips at their own pace. The device was also used in libraries to search through newspaper archives and other publications for research. It was also during the s that Liquid Paper was introduced and widely used with the typewriter. Students who took typing class or used the typewriter to complete assignments and research papers could dip the brush into the liquid and then apply it to the paper to correct a typing error. The s marked the transition to the handheld calculator in the classroom environment. Despite the fact there was concern over the loss of basic learning skills such as long division, manual multiplication, and other skills, the handheld calculator became a widely used device and was the precursor to the calculators used in the present-day classroom. In the early s, the Scantron was introduced for grading multiple choice exams. The device used imaging technology to read the answer sheets which had dots that were coloured in with a No. The purpose of the device was to save teachers time when grading multiple exams. This allowed educational programming covering a wide variety of topics to be viewed on a television in the classroom or in the home environment. In , Apple released the Apple II desktop computer which allowed students to learn geography and math problems using computer games. The Apple II utilised floppy disks for viewing various types of content and did not have access to the Internet. Additionally, the Plato computer was an early computer that was introduced to the education market as well. Although schools did not yet have access to the Internet, the computer began to be used for a variety of learning purposes and as an eventual replacement for the typewriter when creating and completing reports and assignments. For the first time, students could store video and audio, as well as an entire encyclopedia on a single compact disk. The CD-ROM is still used with current computers, replaced the floppy disk and paved the way to the use of the flash drive for storage. In the early to mids, the Internet was made available to the general public. Prior to this time, it was solely used by the military, academic institutions, and NASA. It was first introduced as a dial-up connection which occupied your telephone line. It was also a very slow connection unlike the broadband connections of today and incapable of efficiently handling video. As more

people caught on to the potential of the Internet and the value it could add to learning, it began to be used in education. In most cases, the connection was limited to a specific area of the building via an Ethernet cable unlike the widespread Wi-Fi availability we know today. By the late s, the blackboard was gradually getting replaced with an interactive whiteboard. When first introduced, the whiteboard consisted of a white screen, computer, and projector. It was not yet being widely used since many were unfamiliar with how to use it for classroom learning. But nevertheless, it was gradually starting to make its way into classrooms around the world. At the start of the 21st century, more classroom and educational institutions were becoming connected. In , YouTube was discovered as being an effective tool for classroom learning. This allowed teachers to easily share free instructional videos and share videos associated with classroom projects. It was at this same time that the iClicker became a popular classroom tool for teachers. The device allowed teachers to easily poll students during a lesson and receive the results in real-time. At this point, schools were also beginning to include student laptops in their technology budget. Between and , smartphones were beginning to increase in popularity and were widely used by students.

## Chapter 5 : "History of ict in education" Keyword Found Websites Listing | Keyword Suggestions

*You will see when computing and gaming first appeared in the home and how the technologies behind this progressed. Use the hyperlinks on the ICT and Technology Timeline below to move through history by selecting the decade of your choice.*

Jan 1, Mechanical calculators are manufactured for sale Records exist of earlier machines, but Blaise Pascal invents the first commercial calculator, a hand powered adding machine. Jan 1, Punch cards used for programming a machine Frenchman, Joseph-Marie Jacquard builds a loom that weaves by reading punched holes stored on small sheets of hardwood. These plates are then inserted into the loom which reads retrieves the pattern and creates process the weave. Powered by water, this "machine" came years before the development of the modern computer. Jan 1, Charles Babbage starts his reseach Shortly after the first mass-produced calculator, Charles Babbage begins his lifelong quest for a programmable machine. Jan 2, Difference Machine was an automatic, mechanical calculator designed to tabulate polynomial functions. Jan 1, Ada Lovelace Although Babbage was a poor communicator and record-keeper, his difference engine is sufficiently developed by that Ada Lovelace uses it to mechanically translate a short written work. She is generally regarded as the first programmer. Jan 1, George Boole - father of computer science George Boole , while professor of Mathematics at Cork University, writes An Investigation of the Laws of Thought , and is generally recognized as the father of computer science. Apr 1, Punch cards used in Census The census is tabulated on punch cards similar to the ones used 90 years earlier to create weaves. Jan 1, Printing Claculator William Burroughs introduces a commercially successful printing calculator. It is hand-powered but Burroughs quickly introduces an electronic model. Feb 23, Enigma Machine Invented An Enigma machine is any of a family of related electro-mechanical rotor machines used for the encryption and decryption of secret messages. Jul 1, Vannevar Bush of MIT builds his differential analyzer The differential analyser was a mechanical analog computer designed to solve differential equations by integration, using wheel-and-disc mechanisms to perform the integration. It was one of the first advanced computing devices to be used operationally. Using a set of gears and shafts, much like Babbage, the machine can handle simple calculus problems, but accuracy is a problem. Jan 1, Konrad Zuse builds a mechanical calculator to handle the math involved in his profession Konrad Zuse was a German engineer and computer pioneer. It is considered by some to be the first universal calculator. It uses a paper tape to store instructions. Jan 1, Computer De-Bugging Invented Early in , with the Mark I stopped for repairs, Hopper notices a moth in one of the relays, possibly causing the problem. From this day on, Hopper refers to fixing the system as " debugging ". Jun 21, Working towards store programmes Teams around the world work on a "stored program" machine. The first, nicknamed " Baby ", is a prototype of a much larger machine under construction in Britain and is shown in June IBM guarantees the "upward compatibility" of the system, reducing the risk that a business would invest in outdated technology. Oct 29, Internet Invented Arpanet was the first real network to run on packet switching technology new at the time. In effect, they were the first hosts on what would one day become the Internet. May 23, Texas Instruments introduces the first "pocket calculator It weighs 2. It was called the TI Jul 1, Email Invented Email was developed by Ray Tomlinson, who also made the decision to use the " " symbol to separate the user name from the computer name which later on became the domain name. The biggest technological advance this program was the addition of "Reply" and "Forward" functionality. Sep 1, The first personal computer is marketed in kit form The Altair features bytes of memory. It includes a monitor and keyboard. Time selects the computer as its Man of the Year in Tron , a computer-generated special effects extravaganza is released the same year. Aug 2, SPAM Emailed - Internet is also the year that brought the first unsolicited commercial email message later known as spam , sent out to California Arpanet users by Gary Thuerk. Designed with an emphasis on education it was notable for its ruggedness, expandability and the quality of its operating system. We had these computer at Denby Free in the Reception Classroom in The domain name system was important in that it made addresses on the Internet more human-friendly compared to its numerical IP address counterparts. DNS servers allowed Internet users to type in an easy-to-remember

domain name and then converted it to the IP address automatically. Referred to as "The Morris Worm", it was written by Robert Tappan Morris and caused major interruptions across large parts of the Internet. It was originally published in the March issue of MacWorld, and then redistributed in May. Apr 3, First Web Page - Internet The first web page was created and, much like the first email explained what email was, its purpose was to explain what the World Wide Web was. May 23, First Webcam - Internet One of the more interesting developments of this era, though, was the first webcam. It was deployed at a Cambridge University computer lab, and its sole purpose was to monitor a particular coffee maker so that lab users could avoid wasted trips to an empty coffee pot. Jul 1, Internet Shopping - Yeah! First, SSL Secure Sockets Layer encryption was developed by Netscape, making it safer to conduct financial transactions like credit card payments online. In addition, two major online businesses got their start the same year. The first sale on "Echo Bay" was made that year. Echo Bay later became eBay. Jul 23, Hotmail became the first web-based email service.

### Chapter 6 : (Critical) history of ICT in education “ and where we are heading? ” Teemu Leinonen

*ICT has been employed as an educational enhancement in Sub-Saharan Africa since the s. Beginning with television and radio, it extended the reach of education from the classroom to the living room, and to geographical areas that had been beyond the reach of the traditional classroom.*

Scholars will soon be instructed through the eye. Scroll down to find out how that worked hint: Do you have a piece of technology that you think should be included? Videotapes, Pens, Copiers, and more! Perhaps this is where fraternities got the idea? On the paper there was usually the alphabet and a religious verse which children would copy to help them learn how to write. In the late 19th century, mass-produced paper and pencils became more readily available and pencils eventually replaced the school slate. Keystone View Company marketed these stereoscopes to schools and created hundreds of images that were meant to be used to illustrate points made during lectures. This pen was widely known as the rocket in the U. Makes you appreciate your current copier at least a little bit now, huh? Before the advent of the pocket calculator, it was the most commonly used calculation tool in science and engineering. The use of slide rules continued to grow through the s and s even as digital computing devices were being gradually introduced; but around the electronic scientific calculator made it largely obsolete and most suppliers left the business. Thanks to Jaume in the comments for reminding me about this one! Developed by John T. Mullin and Wayne R. A year later, an improved version, using one-inch 2. Personally, this looks like a torture device and is probably the least portable thing to bring along with a book. Is turning the page of a book or holding a book really that difficult? Skinner, a behavioral scientist, developed a series of devices that allowed a student to proceed at his or her own pace through a regimented program of instruction. The prevalence of its use is one of the factors that prevented the development of the paperless office heralded early in the digital revolution[citation needed]. Photocopying is widely used in business, education, and government. There have been many predictions that photocopiers will eventually become obsolete as information workers continue to increase their digital document creation and distribution, and rely less on distributing actual pieces of paper. The rest is redacted history! There were initial concerns however as teachers were slow to adopt them for fear they would undermine the learning of basic skills. The Scantron machines were free to use but the company made money by charging for their proprietary grading forms. The Plato was one of the most-used early computers to gain a foothold in the education market. Currently, there is about one computer for every 4 students. That got turned into a more interactive system that uses a touch-sensitive white screen, a projector, and a computer.

## Chapter 7 : The Evolution of Classroom Technology | Edudemic

*ICT are stands for Information Communication Technology where it is widely used in education today. In some counties, there are some small percentage of education institute demand high levels of ICT to change and support many subject areas in the way of teaching and learning process.*

ICT is the integration of information processing, computing and communication technologies. ICT is changing the way we learn, work and live in society and are often spoken of in a particular context, such as in education, health care, or libraries. A good way to think about ICT is to consider all the uses of digital technology that already exist to help individuals, businesses and organizations use information. ICT covers any product that will store, retrieve, manipulate, transmit or receive information electronically in a digital form and is concerned with these products. Importantly, it is also concerned with the way these different uses can work with each other. For example, personal computers, digital television, email, robots. A look at what we use at home, in the office, in school, or at any business or social function finds many devices equipped with computer chips. They include access cards, mobile phones, point of sales scanner, medical instruments, TV remote controls, microwaves ovens, DVD players, digital cameras, PDAs, etc. Information technology works with the use of electronic computers and computer software to renovate, defend, development, and broadcast and other information. Information technology has overstuffed to cover many features of computing and technology, and this word is more familiar than ever before. Information technology subject can be quite large, encompassing many fields. IT professionals perform different types of responsibilities that range from installing applications to designing complex computer networks. Information Technology illustrates any technology which helps to manufacture, manipulate, accumulate, communicate or broadcast information. Recently it has become popular to broaden the term to explicitly include the field of electronic communication so that people tend to use the abbreviation ICT Information and Communications Technology. The term "information technology" evolved in the s. Its basic concept, however, can be traced to the World War II alliance of the military and industry in the development of electronics, computers, and information theory. After the s, the military remained the major source of research and development funding for the expansion of automation to replace manpower with machine power. Since the s, four generations of computers have evolved. Each generation reflected a change to hardware of decreased size but increased capabilities to control computer operations. The first generation used vacuum tubes, the second used transistors, the third used integrated circuits, and the fourth used integrated circuits on a single computer chip. Advances in artificial intelligence that will minimize the need for complex programming characterize the fifth generation of computers, still in the experimental stage. It was used by the Census Bureau to predict the outcome of the presidential election. For the next twenty-five years, mainframe computers were used in large corporations to do calculations and manipulate large amounts of information stored in databases. Supercomputers were used in science and engineering, for designing aircraft and nuclear reactors, and for predicting worldwide weather patterns. Minicomputers came on to the scene in the early s in small businesses, manufacturing plants, and factories. In , the Massachusetts Institute of Technology developed microcomputers. The market for microcomputers increased dramatically when IBM introduced the first personal computer in the fall of . Because of dramatic improvements in computer components and manufacturing, personal computers today do more than the largest computers of the mids at about a thousandth of the cost. Computers today are divided into four categories by size, cost, and processing ability. They are supercomputer, mainframe, minicomputer, and microcomputer, more commonly known as a personal computer. Personal computer categories include desktop, network, laptop, and handheld. Computers are increasingly affordable; they continue to be more powerful as information-processing tools as well as easier to use. One of the first and largest applications of computers is keeping and managing business and financial records. Most large companies keep the employment records of all their workers in large databases that are managed by computer programs. Similar programs and databases are used in such business functions as billing customers; tracking payments received and payments to be made; and tracking supplies needed and items produced, stored, shipped, and sold. In fact,

practically all the information companies need to do business involves the use of computers and information technology. On a smaller scale, many businesses have replaced cash registers with point-of-sale POS terminals. These POS terminals not only print a sales receipt for the customer but also send information to a computer database when each item is sold to maintain an inventory of items on hand and items to be ordered. Computers have also become very important in modern factories. Computer-controlled robots now do tasks that are hot, heavy, or hazardous. Robots are also used to do routine, repetitive tasks in which boredom or fatigue can lead to poor quality work. Information technology plays an important role in medicine. For example, a scanner takes a series of pictures of the body by means of computerized axial tomography CAT or magnetic resonance imaging MRI. In addition, the MRI produces images that show changes in body chemistry and blood flow. Computers in Science and Engineering: Using supercomputers, meteorologists predict future weather by using a combination of observations of weather conditions from many sources, a mathematical representation of the behavior of the atmosphere, and geographic data. Computer programs make it possible for engineers to analyze designs of complex structures such as power plants and space stations. Organizations increasingly are consolidating their information needs into a single, integrated information system. One example is SAP, a German software package that runs on mainframe computers and provides an enterprise-wide solution for information technologies. It is a powerful database that enables companies to organize all their data into a single database, then choose only the program modules or tables they want.

### Chapter 8 : Information and communications technology - Wikipedia

*The first adult education radio broadcast from the BBC in was a talk on Insects in Relation to Man, and in the same year, J.C. Stobart, the new Director of Education at the BBC, mused about 'a broadcasting university' in the journal Radio Times (Robinson, ). Television was first used in education in the s, for schools and for.*

In lieu of an abstract, here is a brief excerpt of the content: Dakwa Akpan-Obong, Patience Idaresit. Information and Communication Technology in Nigeria: Prospects and Challenges for Development. Since the early s, information and communication technology ICT has permitted people to participate in a world in which school, work, and other activities have been increasingly enhanced by access to varied and developing technologies. ICT tools have helped people find, explore, analyze, exchange, and present informationâ€”most importantly, without discrimination. When efficiently used, ICT can provide quick access to ideas and experiences from a wide range of people, communities, and cultures. Readers might wonder how ICT has been integrated into Nigerian life and how it could be used to alleviate poverty. She mentions how a fringe sector of the Nigerian community has used ICT in criminal activitiesâ€”what has globally been referred to as " Though the book was published in , she does not mention how "Vision ," a plan proposed by the Abacha regime in , has been realized; its impact on ICT is not heavily discussed. We are made aware that the colonial government improved communication to "facilitate the administration of the colony," and governments of independent Nigeria improved ICT "to be in line with the modernization zeitgeist. It brings to the fore issues pertinent to the question of how ICT is being used in national development. This is broken down into the number of telephones, fax machines, computers, printers, photocopiers, and internet usage dial up or VSAT. This pattern of usage helps readers grasp how the government and private sectors have applied ICT. With 66 percent of Nigerians reported to be living in poverty, coupled with a literacy rate of Several books addressing the global phenomenon of outsourcing only mention in passing the capabilities of African countries. In addition, ICT is present in interesting ways; for example, a small number of Nigerians and other Africans use it for fraudulent purposes. It is hoped that a future edition of the book will emphasize more strongly critical business opportunities in the ICT industry and the educational options for rural education via ICT. In fact, as Bonk has argued, "It is the opening up of education that ultimately makes a fatter or more robust economic world possible. In the twenty-first century, education trumps economy as key card to participation in the world" Of course, there is a limit to what a book can do, especially this book, a foundational publication for anyone interested in the history of ICT in Nigeria. You are not currently authenticated. View freely available titles:

### Chapter 9 : History Of Information Technology – Introduction to Information and Communication Technology

*Information technology has been around for a long, long time. Basically as long as people have been around, information technology has been around because there were always ways of communicating through technology available at that point in time. There are 4 main ages that divide up the history of.*

**Behaviorism**[ edit ] This theoretical framework was developed in the early 20th century based on animal learning experiments by Ivan Pavlov , Edward Thorndike , Edward C. Tolman , Clark L. Hull , and B. F. Skinner. Many psychologists used these results to develop theories of human learning, but modern educators generally see behaviorism as one aspect of a holistic synthesis. Teaching in behaviorism has been linked to training, emphasizing the animal learning experiments. Since behaviorism consists of the view of teaching people how to do something with rewards and punishments, it is related to training people. Skinner wrote extensively on improvements of teaching based on his functional analysis of verbal behavior [45] [46] and wrote "The Technology of Teaching", [47] [48] an attempt to dispel the myths underlying contemporary education as well as promote his system he called programmed instruction.

**Cognitivism**[ edit ] Cognitive science underwent significant change in the 1950s and 1960s. While retaining the empirical framework of behaviorism , cognitive psychology theories look beyond behavior to explain brain-based learning by considering how human memory works to promote learning. The Cognitive concepts of working memory formerly known as short term memory and long term memory have been facilitated by research and technology from the field of Computer Science. Another major influence on the field of Cognitive Science is Noam Chomsky. Today researchers are concentrating on topics like cognitive load , information processing and media psychology. These theoretical perspectives influence instructional design. This form of constructivism has a primary focus on how learners construct their own meaning from new information, as they interact with reality and with other learners who bring different perspectives. Under this framework the role of the teacher becomes that of a facilitator, providing guidance so that learners can construct their own knowledge. Constructivist educators must make sure that the prior learning experiences are appropriate and related to the concepts being taught. Jonassen suggests "well-structured" learning environments are useful for novice learners and that "ill-structured" environments are only useful for more advanced learners. Educators utilizing a constructivist perspective may emphasize an active learning environment that may incorporate learner centered problem-based learning , project-based learning , and inquiry-based learning , ideally involving real-world scenarios, in which students are actively engaged in critical thinking activities. An illustrative discussion and example can be found in the deployment of constructivist cognitive learning in computer literacy, which involved programming as an instrument of learning.

**Instructional design** The extent to which e-learning assists or replaces other learning and teaching approaches is variable, ranging on a continuum from none to fully online distance learning. Synchronous learning refers to the exchange of ideas and information with one or more participants during the same period. Examples are face-to-face discussion, online real-time live teacher instruction and feedback, Skype conversations, and chat rooms or virtual classrooms where everyone is online and working collaboratively at the same time. Since students are working collaboratively, synchronized learning helps students become more open minded because they have to actively listen and learn from their peers. At the professional educational level, training may include virtual operating rooms. Asynchronous learning is beneficial for students who have health problems or who have child care responsibilities. They have the opportunity to complete their work in a low stress environment and within a more flexible time frame. If they need to listen to a lecture a second time, or think about a question for a while, they may do so without fearing that they will hold back the rest of the class. Through online courses, students can earn their diplomas more quickly, or repeat failed courses without the embarrassment of being in a class with younger students. Students have access to an incredible variety of enrichment courses in online learning, and can participate in college courses, internships, sports, or work and still graduate with their class.

**Linear learning**[ edit ] Computer-based training CBT refers to self-paced learning activities delivered on a computer or handheld device such as a tablet or smartphone. For this reason, CBT is often used to teach static processes, such as using software or

completing mathematical equations. Computer-based training is conceptually similar to web-based training WBT which are delivered via Internet using a web browser. Assessing learning in a CBT is often by assessments that can be easily scored by a computer such as multiple choice questions, drag-and-drop, radio button, simulation or other interactive means. Assessments are easily scored and recorded via online software, providing immediate end-user feedback and completion status. Users are often able to print completion records in the form of certificates. CBTs provide learning stimulus beyond traditional learning methodology from textbook, manual, or classroom-based instruction. CBTs can be a good alternative to printed learning materials since rich media, including videos or animations, can be embedded to enhance the learning. Help, CBTs pose some learning challenges. Typically, the creation of effective CBTs requires enormous resources. The software for developing CBTs is often more complex than a subject matter expert or teacher is able to use. The lack of human interaction can limit both the type of content that can be presented and the type of assessment that can be performed, and may need supplementation with online discussion or other interactive elements. Computer-supported collaborative learning Computer-supported collaborative learning CSCL uses instructional methods designed to encourage or require students to work together on learning tasks, allowing social learning. CSCL is similar in concept to the terminology, "e-learning 2. This collaborative learning differs from instruction in which the instructor is the principal source of knowledge and skills. The neologism "e-learning 1. Collaborative apps allow students and teachers to interact while studying. Apps are designed after games, which provide a fun way to revise. When the experience is enjoyable the students become more engaged. Games also usually come with a sense of progression, which can help keep students motivated and consistent while trying to improve. Known as "eTwinning", computer-supported collaborative learning CSCL allows learners in one school to communicate with learners in another that they would not get to know otherwise, [72] [73] enhancing educational outcomes [74] and cultural integration. Further, many researchers distinguish between collaborative and cooperative approaches to group learning. For example, Roschelle and Teasley argue that "cooperation is accomplished by the division of labour among participants, as an activity where each person is responsible for a portion of the problem solving", in contrast with collaboration that involves the "mutual engagement of participants in a coordinated effort to solve the problem together. Flipped classroom This is an instructional strategy in which computer-assisted teaching is integrated with classroom instruction. Students are given basic essential instruction, such as lectures, before class instead of during class. Instructional content is delivered outside of the classroom, often online. This frees up classroom time for teachers to more actively engage with learners. Combinations of these techniques include blogs , collaborative software , ePortfolios , and virtual classrooms. The current design of this type of applications includes the evaluation through tools of cognitive analysis that allow to identify which elements optimize the use of these platforms. Classroom microphones, often wireless, can enable learners and educators to interact more clearly. Video technology [80] has included VHS tapes and DVDs , as well as on-demand and synchronous methods with digital video via server or web-based options such as streamed video and webcams. Telecommuting can connect with speakers and other experts. Interactive digital video games are being used at K and higher education institutions. With recent developments in smartphone technology, the processing powers and storage capabilities of modern mobiles allow for advanced development and use of apps. Many app developers and education experts have been exploring smartphone and tablet apps as a medium for collaborative learning. Computers and tablets enable learners and educators to access websites as well as applications. Many mobile devices support m-learning. Mobile devices such as clickers and smartphones can be used for interactive audience response feedback. Social media in education Group webpages, blogs , wikis , and Twitter allow learners and educators to post thoughts, ideas, and comments on a website in an interactive learning environment. Social networking encourages collaboration and engagement [89] and can be a motivational tool for self-efficacy amongst students.