CONTEMPORARY TECHNOLOGIES USED IN SCHOOLS FOR TEACHING AND LEARNING

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ABSTRACT

Whatever learning theory a teacher may hold, several technologies exist in schools to ameliorate and reinforce teaching and student learning. Even though teachers differ significantly in the utilization of technologies, they select the most promising technology that will uphold their teaching goals such as establishing student research in making student inquiry rational, facilitating students to present information in an interesting form and offering student's access to educational resources in and outside the school environment. Therefore, this chapter deals with the contemporary technologies used in schools for teaching and learning.

Keywords: Contemporary technologies Importance, Learning and Teaching

INTRODUCTION

Technology in an extensive way means "to fulfill a human purpose". In this usage, technology refers to tools and machines that may be used to solve real-world problems in teaching and learning. A variety of technologies (such as the Interactive television (ITV), Internet video conferencing) give students with the chance to take part in a class that is located in a different school and location. Technologies can also function as the instructional needs of students that are incapable to go to classes in the school building. Students who are confined at home, homeschooled, or compelled to drop out of school can take plus of coursework offered over the Internet. Similarly, through an online program, students can acquire their high school certificates without attending a particular school through the virtual high schools, online college credit courses and for-profit companies and organizations all make courses accessible to students through the Internet.

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Technologies ply students' access to classroom instruction. For example, students with limitations (physical or cognitive disabilities) can use varieties of helpful technologies so as to be an active member of the class. Also, various switches allow students with limited mobility to use a computer to speak for them and complete assignments. These switches (similar to a computer mouse), manipulate the computer through a touchpad, by the movement of the head or eye, or even by a breath. Handheld computing devices (such as the braile) and specialized software allow students with learning disabilities to function in traditional classrooms by helping them organize thoughts, structured writing, and manage time. Instructional technology is also used to provide alternative forms of assessment for disabled students, including digital portfolios that electronically capture the accomplishments of students who are not able to complete traditional assessments. Thus, this chapter focused on the student research, student inquiry and Constructing New Knowledge (CNK) as the contemporary technologies used in schools for teaching and learning.

STUDENT RESEARCH

Students once relied upon their printed reference materials in the local and school libraries to investigate issues. Currently, on the other hand, technologies give accession to the digital type of printed reference materials to libraries worldwide in the form of digital audio, images, videos and also make available the Global Positioning Satellites (GPS) and live web cameras.

STUDENT INQUIRY

The student inquiry expands beyond data collection to the prospect, explore and widen the student scope of learning about a contemporary phenomenon. In this manner, technologies allow students to get in touch with experts such as political leaders, researchers and scientists and increase the probability of prompt responses. The present technologies, consider education wants to be factual and reliable for students. For instance, in the field of sciences, electronic investigations allow students to bring together clear-cut data and digitally mark out trends and answer theory. In the field of mathematics, graphing software, calculators and spreadsheets provide

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the students with the skill to see in the mind's eye complex mathematical model. In the field of social sciences, e-communication tools such as the e-mail, internet conferencing allow students to be in touch with one another worldwide. In the languages and the arts, students make use of the wireless networks and iPads to form a cooperative script writing exercises to walk around related issues. In the arts, students can search musical composition or images of novel artwork via the internet. In the field of human kinetics and health education, the students use digital surveys to gain knowledge concerning the connection between the impact of physiological and physical changes.

CONSTRUCTING NEW KNOWLEDGE (CNK)

The domino effects of student inquiry typically take the form of oral presentations or written reports. In the company of highly developed technologies, students can present their reported data by incorporating digital text, audio and video into web-based, word-processed documents, multimedia presentations and videos. The following are the contemporary CNK technologies used in schools for teaching and learning:

Radio: Radio is an example of the earliest technologies used for distance education (Stevens, 2001). Programmes in radio can either be interactive or broadcast. The former also known as the (Interactive radio instruction (IRI)) is an interactive lesson where an external teaching component is required in classroom exercises by radio. This permits the students to associate with the class lesson advances. For a classroom lesson to be interactive, it can have intervals to enable the students to imagine, receive responses, consult other students preferentially have the chance to let the knowledge absorb while the latter reflects the regular classroom-based representation where the teacher teaches by the radio programme and learn

ers are typically serve with printed materials. This method of instruction can be considered as "stern" teacher centred (Stevens, 2001).

Radio instruction comprises the creation, communication, and acceptance of the radio programmes. Lucky and Achebe (2013) identified electric radios (transistor radios), battery-powered radios, and solar-powered crank radios as the types of radios accessible to students. Hence, educational organizations and students can select a

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radio that adequately accommodates their state based on the supply of batteries and availability of power. In few circumstances, it is durable and cost-effective to use a solar-powered crank radio. Radio is beneficial considering it is relatively cheap and accessible for individuals in developing countries and has the potential to extend to a large number of students (Stevens, 2001).

Videotapes: Videotapes attract both the visual and audio senses. Realistic conditions can properly be displayed and represented via video as objected to audio and text (Nunes and Gailbe, 2002). This can be used while starting a new topic to contextualize and motivate learning when a topic has been discussed to students in utilizing the knowledge acquired, or after an intact module is achieved to prove links to other disciplines and subjects (Nunes and Gailbe, 2002). The student has the versatility to replay, halt, and rewind recordings and can return lessons as frequently as they crave. Videotape can promote the teaching of practical abilities through open and distance learning (ODL). Additional advantages incorporate simplicity of use for the student, economical duplication costs, comparatively full access to the playback technology, and educational strength for giving practical knowledge (Stevens, 2001). It also captions visual cues to assist the hearing-impaired.

CD-ROM and DVD: CD-ROMs (Compact Disc-Read Only Memory) save information digitally and can work on any computer equipped with a CD-ROM drive. DVDs (Digital Video Disk or Digital Versatile Disk) are similar to CD-ROMs and can be used the same way as CD-ROMs but hold more information. The DVD and CD-ROMs have an extended capacity and can store information in different formats including animation, audio, video, graphics and text. Therefore, learning resources can be shown in diverse forms. Regarding the storage of learning resources digitally, it is long-lasting and the property does not deteriorate after recurred use. Nonetheless, damaging the surface may obstruct it from being read by the CD-ROM drive (Abutu, Saba, Raymond & Adamu, 2016).

Internet/Web-Based Training: Internet/Web-Based training yields an atmosphere where students' access learning materials online. It may include the use of vital e-learning media such as online whiteboards, Internet telephony, discussion boards, chat and messaging programmes and application sharing, which enable real-time synergy between teachers and students. It can also be used to transfer animation, text, images, video or graphics. The requisite tools for Internet/Web-Based learning include a computer and an Internet connection.

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There are numerous ways a user can join to the Internet network such as the cable modem, standard analogue modem (56 Kbps), wireless broadband (fixed wireless and satellite) Integrated Services Digital Network (ISDN), Digital Subscriber Line (DSL), Local Area Network (LAN) and cellular. All connections besides standard analogue modem connection are regarded broadband connections. All of these methods permit connection to an Internet Service Provider (ISP) that gives a gateway to the rest of the Internet. The merit of this system is that students can learn anytime at their own pace and everywhere as long as there is a computer connected to the Internet (Abutu, Saba, Raymond & Adamu, 2016).

Web-Based Training (WBT) Programmes: Many subject development tools are forthwith available and allow teachers with no computer programming skills to develop noble web-based training programmes. The most regularly used platforms are Desire2Learn, Blackboard and WebCT. All these platforms are server-based and support access via a web browser to give e-learning explanations via the Web (Abutu, Saba, Raymond & Adamu, 2016). .

These platforms have the following merits: manage enrolment and registration; provide course materials, develop evaluation material such as assignments, quizzes and test; communicate with teacher(s) and students online via an advisory section, an interactive whiteboard, conference boards, e-mail, e-class rooms, real-time chat sessions; take and save notes; ;provide links to related websites; present critical dates by means of a calendar tool; as well as manage grades and present the grades to the students.

Audio Conferencing: This allows two-way, real-time interaction between teachers and students by means of audio (Stevens, 2001). The main benefit of audio conferencing is that it supports for direct, two-way communication between students. Discourse transpires in a real-time situation where students can ask questions and teachers can answer instantly. It also has low set-up and running cost.

Audio Graphics: Audio graphics are really audio conferencing conducted by graphical and visual aids. "Graphics can be conveyed by still video system, electronic drawing systems (such as electronic whiteboard), fax machine or computers (text or graphics display) which enable a student to sketch or write on a computerized screen which is broadcasted to a distant site where other students may view it. This also presents similar advantages of audio conferencing while possessing an appended advantage of a visual aid for students.

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Interactive Television: The interactive television (ITV) refers to instruction happening over performance television. It enables students to acquire real television instruction remotely, off from the real teacher. The teacher(s) are found in a telecast studio and the students observe the teacher(s) on a television. The students can ask questions and/or give feedback to the teacher (Stevens, 2001). The merit of the ITV is that instruction can be given to many situations, therefore likely reach a considerable number of students applying existing broadcasting infrastructure.

Videoconferencing: This enables participating student in separate locations to discuss and understand each other in real-time (Stevens, 2001). The benefit of video conferencing is that it permits real-time, two-way interaction between students in separate locations. All men in the educational system from the curriculum developers, teachers, policymakers and students can participate in a video conference. It can be employed in teaching sessions, course delivery, presentations and discussion (Perraton et al., 2002). Meanwhile, during a subject presentation, teachers can measure a student's growth and responsiveness instantly and as well answer questions and give feedback promptly.

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