



Application of Educational technology in Non-Formal Education

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Abstract:

Any organized educational activity outside the established formal system - whether operating separately or as an important feature of some broader activity - that is intended to serve identifiable learning clienteles and learning objectives. Informal education: the truly lifelong process whereby every individual acquires attitudes, values, skills and knowledge from daily experience and the educative influences and resources in his or her environment - from family and neighbours, from work and play, from the market place, the library and the mass media.

Educative system classification proposal, comprising formal, non-formal and informal education, their features and relations at the level of concepts and practical utilization is presented. Considering the problems arising from formal education, alternatives that displace the "center of gravity" from formal, to non-formal education processes are herein advanced, with regard to the advantages offered by the latter. The aspects relating to the creation of non-formal systems and their perspectives are also analyzed in the search for solutions to our current educational problems.

Keywords: Education, Educational technology, Formal education, Non formal education, Technology

1. Introduction

In instructive literature, the study of education systems often mentions "unlock systems", "non-formal education", among other terms. In some cases these are employed as synonyms, whereas in others. A more specific definition of such concepts is basic, as is their possible classification, aimed at better understanding and practical consumption. We shall therefore analyze the concepts of formal, non-formal education, in an attempt to define their features, advantages, limitations and inter-relations. Students have surpassed many teachers in technology use. Because of this, to effectively utilize technology in the classroom, teachers should be properly trained. In addition, it is more academically supported if all teachers use the technology together. It is insufficient for a student to receive an interactive education in only a few classes while in others he or she is receiving outdated instructional strategies. Explicit, interactive instruction is the most useful and engaging way to reach a student and enhance his or her learning potential. Technology can enhance that potential even more.

2. What is Educational Technology?

E-learning, Educational Technology, Information and Communication Technology, Computer Aided Learning, Computer Aided Assessment, Computer Mediated Communication - these terms and others are bandied about in recent years but what do they mean and why should you invest any time in getting to know more about them? 'Technology' in its broadest terms could include overhead projectors and even pen and paper but, in the context of Learning Technology,

it is generally understood that we are talking about technologies that have arrived with the 'Information Revolution' i.e. those associated with computers.

For those of us who have been around for a bit, this seems to be the promise that is never fulfilled. There has been talk about how computers and other technologies would revolutionise the nature of learning for several decades now. We can all point to isolated examples of success but probably also point to numerous examples of wasted effort. So what has changed?

3. Computer Assisted Learning (CAL)

The term Computer Assisted Learning (CAL) covers a range of computer-based packages, which aim to provide interactive instruction usually in a specific subject area, and many predate the Internet. These can range from sophisticated and expensive commercial packages to applications developed by projects in other educational institutions or national initiatives to simple solutions developed by individuals with no funding or support to tackle a very local problem. The amount of time and money invested in development is high and partly because of the very subject specific nature of the education market as well as the very personalized nature of the teaching process - particularly at FE and HE level - means that commercial success is difficult to achieve and work done in one subject area rarely transfers to others subject areas. In general, the use of computers in education through CAL has been sporadic a great deal of effort was expended with little general impact. Many of those academics that took part in that earlier crusade are now cynical about the effectiveness of computers in teaching. There are still good reasons to use CAL rather than Internet based technologies. CAL is run either straight from a CD or floppy disk drive or over a local network so the constraint of the internet - slow download times for multimedia materials may not apply. This, coupled with the fact that CAL technology has been around a bit longer, means that CAL packages have the potential to offer more advanced, interactive, multimedia learning experiences than it is currently reasonable to expect from the Web. This has been changing as Web technologies develop and bandwidths improve but there are currently many things that can only be achieved with CAL rather than the Web and CAL has been an integral part of the curriculum in many departments at Warwick for some time.

4. Introduction to Internet Technologies

The principle difference - 'What has changed?' is that when we talk about interaction in CAL (Computer Aided Learning) packages, we are usually talking about interacting with computer programs. Internet based technologies are more about interaction between people and in our Postmodernist world, we know that learning is largely a social activity and even the most well thought out multimedia interactive materials lack the flexibility of human interaction. The use of the term Information and Communication Technology (ICT) rather than Information Technology (IT) emphasizes this change. Computers now facilitate communication between people as well as between people and programs or people and data.

Those who were involved in developing CAL packages in earlier decades usually point out that there is nothing new under the sun - which the lessons we are learning today about using the Internet for teaching were learnt before. Others would go further and point out that distance education with print has also covered a lot of the ground before and it is only because most lecturers are only accustomed to the face to face setting that they stumble into well mapped pitfalls when beginning to use internet technologies to teach. All of this is true but it is also true that using the Internet for teaching brings new challenges and necessitates the development of additional teaching skills. The arrival of the Internet made communication between machines much easier and a number of open protocols and applications were developed to make use of this. Of these, Email was the forerunner and there can be few academics and students that do not

have access to this now. Email has its limitations and it was the World Wide Web that really brought the world of networked computers to the general public. The open standards of many of the technologies and the ease with which anyone could publish information encouraged participation by all and we need to remember what is about these technologies that makes them attractive when we try to deploy them for education. However, initially, a relatively small number of University lecturers adopted it for a range of teaching purposes but even fewer did more than post information about their courses or actual lecture notes - usually not modified in any way to take advantage of the strengths of the media such as hypertext.

One of the strengths and principle attractions of the Web is that it can provide authoring access to anybody and this is quite different from the one-way nature of education through CAL or any other media that predated it. The fact that the technology facilitates this does not of course mean that it will take place but then this is true of any educational forum. While far from needing programming skills, it still takes a certain amount of technophilia to publish a Web page. Creating them is trivial but actually publishing them can be tedious if the institution has not provided a simple means to do so. This is all about information rather than teaching and learning and it soon becomes obvious to any treading this path that you cannot take the people out of the learning equation entirely. Learning is about interaction and interaction with information alone is not enough. We can group the **Web technologies** available for education roughly into 3 areas, outlined below:

1. Digital Learning Resources (DLR)
2. Computer Mediated Communication (CMC)
3. Computer Aided Assessment (CAA)

They tend to be adopted in that order with novice online tutors first placing their lecture notes online 'as is' then restructuring the materials to take better advantage of the media and perhaps augmenting it with resources not possible in print such as video or creating interactive materials.

4.1 Digital Learning Resources (DLR)

This could range from simply placing Word documents on the Web for your students to download and print or making your PowerPoint presentations available after a lecture to creating Web pages that make better use of the media to streamed digital video and simple interactive CAL-like programs.

4.2 Computer Mediated Communication (CMC)

CMC can include any means by which individuals and groups use the Internet to 'talk' to each other. CMC can either be synchronous (exchanges take place in 'real time') or asynchronous (messages are posted up at any time, and read and responded to by other users also at times which suit them; in other words, users do not have to be online at the same time, as they do with synchronous exchanges). Email, mailing lists, Usenet and computer conferencing are all asynchronous, while IRC, Internet telephony and videoconferencing all take place synchronously. All of these types of CMC are now available through the Web i.e. through a standard Web browser. Which type of CMC you use will depend on what kind of discussion you want to take place? Each has their strengths and weaknesses both in terms of technical constraints and the type of interaction that they encourage.

4.2.1 The Main Technologies Include

Email - the most popular Internet tool, used to exchange messages between individuals
Mailing lists - which use email to enable communication among groups of people. Individuals send emails to the list email address and receive a copy of all emails sent to that address

Usenet newsgroup - a separate Internet system which allows users to read and contribute to global special-interest 'newsgroups'; the number of newsgroup topics is vast, and subjects range from the very dry to the totally bizarre.

Computer conferencing - (sometimes also known as 'discussion boards' or more accurately 'threaded discussion lists') which enables groups of people to hold discussions by reading and posting text messages on a computer system. The advantages over mailing lists are that the messages are archived and the structure of the discussion is also recorded. Computer conferencing is widely used to support learning, and within the educational context is generally what people mean when they talk about 'CMC'.

Internet Relay Chat (IRC) - an Internet system which allows users to chat 'live' (in real time) using text or audio Internet telephony, a way of using the Internet as an alternative to the main telephone network; currently in its teething phase, though exciting in that it has the potential to reduce the cost of calling long-distance to that of a local call.

Videoconferencing - a means by which small groups of geographically distant people can hold discussions in real time, during which they are able to hear and see each other and share various other types of data. Working with remote experts via distance technologies word pdf html.

Hybrid systems - systems such as Web Board combine threaded discussion lists, IRC and email lists allowing users to switch easily between the two depending on the nature of the discussion. See also Yahoo Groups which is a free online service allowing you to set up a Web based email discussion list with optional forwarding to and replies from your normal email account. It also offers a facility to share documents and images.

4.3 Computer Aided Assessment (CAA)

The next step is to provide a way for students to assess their own progress and understanding of the material. Without human feedback or very sophisticated artificial intelligence, this usually means some form of objective test delivered as an online quiz. Because it is objective and the possible responses are known, the feedback can also be automated. Students can therefore receive immediate feedback. This use of CAA for self-diagnosis / formative assessment can be quick to set up and if used wisely can provide valuable feedback on the effectiveness of the course to the course tutor.

5. Integrating Educational Technologies

While each of these technologies has its strengths and weaknesses, it is when they are combined that we start to see their true potential. This was one of the driving forces behind the arrival of Virtual Learning Environments (VLEs) although it has to be said that few of the commercial products make serious efforts to enable this, focusing more on the administration of learning rather than on the learning itself. VLEs attempt to 'wrap up' the three technologies discussed above into online course objects that are password protected. Usually, the sophistication of the tools within a VLE is less than that of an equivalent stand-alone tool; the trade off is in the ease of use, integration of technologies and single point of authentication. Whether you use a VLE or a combination of stand-alone tools really depends on what you are trying to achieve.

6. Classroom eLearning Technologies

The changes have not all been happening on the Internet or with students sitting in computer labs using CAL packages. Out in the classrooms and lecture theatres, data projectors have been introduced and packages like PowerPoint are being used to present directly through a computer rather than to create and print overhead projector transparencies. The setups have often been unreliable and under supported and there has been a lack of technical confidence among lecturers and it is only within the last few years that this has started to change. Other presentation technologies such as electronic whiteboards, audience feedback systems and videoconferencing

facilities are beginning to appear in teaching spaces and these will all require careful thought in integrating them into teaching practice.

7. Conclusion

For a generation being reared on e-readers and gizmo toys, learning in a traditional classroom atmosphere can be frustrating. Harnessing information technology to teaching can grab and hold the attention of such children. Using technology in the classroom is no longer only about including pictures and sounds in the presentations a teacher prepares. For the best learning experience, you have to provide children with hands-on experience in the use of tools that enable them to learn effectively from educational software and the Internet.

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