

Keynote Address

Learning Theories and eLearning

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Introduction

Since the introduction of computers in educational institutions and the growth of the internet over the past decade, the focus of teaching/learning has shifted away from traditional methodologies to more dynamic strategies with the assistance of new technologies. New theories of learning and concepts of education have also been developed and integrated into fresh approaches to learning by using information technology to enhance convenience, to expand the learners' knowledge and to act as a tool for learner-centered. As one of the new concepts of education is to promote learning as an ongoing, life-long process, with such new integrated technologies, education can happen at any place and at any time and for anyone who is interested in any specific subject. For these reasons, teachers need to be well prepared both in managing classroom activities and in supplying variable sources of knowledge to learners through a wide variety of teaching media. On the other hand, learners will require new skills if they are to increase their ability to deal with technology and to access knowledge from whatever sources are available to them. Thus the integration of technology into the teaching / learning process in the field of education should be developed in an effective manner through the use of software applications, along with presentation and telecommunication via the internet.

Learning Theories

There are three major basic learning theories for instructional design used in the classroom, Behaviorism, Cognitive Psychology, and the latest approach -- Constructivism. Behaviorism concentrates on the study of behavior that can be observed and changed, in the sense that it can be affected by a given stimulus. Cognitive theorists, on the other hand, recognize that learning involves the acquisition and reorganization of knowledge, as well as advanced organizational skills activated through the human recognition process, thereby enabling individuals to store information by themselves. Constructivists believe that learning is an active process and that learners can construct their own knowledge that they select according to their own individual preferences based on the perception of experiences within a matrix established by the instructor or on a search initiated by the learners themselves. Knowledge can also be gained from the sharing of multiple perspectives through collaborative learning, the danger being that such knowledge will lead to intellectual anarchy and to a situation where learners are unable to apply such knowledge to the solving of problems in real life. In the learning process, constructivism emphasizes the setting-up of an appropriate learning environment which will encourage learners to construct knowledge by themselves. This includes all the educational media, sources of knowledge

and experiential activities which the instructor should prepare for or suggest to the learner, individually or in groups, to locate the requisite knowledge. Given such a supportive learning environment, the learner will then be able to make intelligent decisions as to the direction his or her research will take.

One important goal of instruction remains the communication or transfer of knowledge to learners in an effective manner, not only in groups but also individually. With the influence of cognitive science and stimulus-response theories, programmed instruction by B.F. Skinner in 1920 served as the new technological instruments for the teaching/learning process, both for individuals and groups; these, in turn, form the fundamentals of computer-based instruction or instructional technology. Computer-assisted instruction usually emphasizes selected content, drill and practice, with one-way communication controlled by the programmer, with no allowance made for knowledge from external sources. As the concept of Constructivism promoted a more open-ended learning experience for learners, using advanced technology through the internet, instructional design in eLearning became a highly accepted ingredient of the teaching and learning process. Learners will not only receive knowledge and practice exercises from the courseware produced by the instructors, but they will be able to explore and search for information through the internet. Besides, it is also in the form of two-way communication that enables learners to discuss academic problems with their lecturers and friends via the internet, wherever they may happen to be, by using the synchronous or asynchronous classroom facilities available.

Instructional Technology

The advanced technology of the internet affects the role of instructors, learning

management and also the role of the learners themselves. With technology, the roles of both instructors and learners in the teaching and learning process should change, from the more traditional role that involves the use of lectures and textbooks, to the use of different kinds of technologies in the classroom. The instruction should include the use of computers, interactive media, teleconferencing and other technologies, to support effective learning which is not merely limited to the classroom or school building. By using computer-based technology, or internet-based teaching, the role of instructors will change to that of a facilitator or coach who helps learners to find their own potential or abilities and explore their own interests. The learner can access knowledge or information regarding whatever they are interested in, whether it be at home, at work or any place where the capacity exists for linking up to a computer, the internet, a phone line and television network. Furthermore, learners can obtain knowledge, as well as exchange various experiences and ideas, from small group discussions, and they also can communicate with friends and instructors through dedicated web sites.

The important thing about using instructional technology in the classroom is that both instructors and learners should accept this new concept and have some fundamental knowledge of using the requisite technology, especially the internet. Instructors should have some knowledge of instructional design as it relates to the use of multi-media, so their lessons should be interesting and capable of motivating learners to study. Learners should be able to study and understand the lesson by themselves step by step, with pictures and animation designed to enhance their understanding. They should know how to use the requisite technology and the network, with high-quality hardware to facilitate connectivity, in order to exchange ideas and

accumulate more knowledge from group discussions by using the network. Most of all, a proper Learning Management System (LMS) used in educational institutions should be established for both instructors and learners, with facilities for tracking management and video-conferencing via the internet.

eLearning

Distance learning involves the integration of new concepts of education, learning theories and the use of information technology, the purpose being to give people the opportunity to access knowledge. In fact, it can be said that eLearning was developed by means of internet technology based on the need for distance learning and computer-based assisted learning through computer networks. It is available at any time, especially for those working adults who do not have time to attend class to acquire knowledge of the particular field in which they are interested. Mostly, distance learning seems to be in the form of one-way communication with textbooks and pictures that become all too easily outdated; in contrast, eLearning via the internet can create a two-way channel of communication between learners and lecturers and institutions through appropriately designed courseware, and organize group discussions with friends or classmates for any given assignment involving group projects.

To gain knowledge and experience through eLearning, the major issue is how well the instructional design was planned in terms of the content of the courseware and the experience elicited by the assignments and whether the expected outcomes are fulfilled or not. So the instructional design should be based on 1) the concepts underlying the objectives or strategies of the course, 2) various designs in using technology or multimedia that are conducive

to ease of understanding of the content and 3) a Learning Management System (LMS) or program used via the internet to ensure the effectiveness of the teaching and learning activities undertaken by the learners.

Objectives or Strategies

As regards the objectives or strategies of the course, instructors should be aware of the overall purpose, namely that learners should gain knowledge and experience, and engage in activities in line with the curriculum and course description. The instructional design should also take into account the age and ability of the target group of learners, activities that are suited to the type of learning and the content of the course. Instructors should analyze the characteristics of the content of the course, as to whether they consist of real facts, concepts, theories, or processes /experiences that the learner should be exploring or practicing.

Digital Content

In designing the learning content for eLearning or web-based instruction, which should be totally different from textbook-based materials, the instructor should be aware of the presentation of the content that is created using technology or various kinds of multimedia. This kind of eLearning content may be termed “digital content”. It is composed of text enhanced by means of technology or multimedia for the purpose of creating greater understanding, interest, motivation, precision and conciseness for the target group of learners. In designing digital content, the instructors and the technological personnel or teams should work together in close cooperation to design and utilize suitable media for each lesson or module of the course. These should include activities, tasks or experiences, and exercises designed to support the learners and enable them to practice their ideas in

order to construct their own body of knowledge or project.

The Learning Management System

A Learning Management System (LMS), or program used via the internet, which can work in conjunction with web-based instruction, is divided into three main parts: the management system, the section involving the instructor and the section involving the learner. In terms of the management system, an LMS can register students, record learner enrollment, track each learner, deliver content and other details to learners, link to other web-sites for external resources as required, report on learners' progress and assess the results. On the instructor's part, the instructors can use collaborative tools in LMS for live interaction in the form of chat rooms, mail boxes and discussion groups that enable students to share knowledge, experiences and perspectives through a virtual classroom via the internet. They can also check, monitor, and evaluate the learners' progress and make information accessible to them. Also, by using LMS in eLearning, the learner can study the digital content with a greater degree of understanding, in addition to doing the exercises, making reports and presenting tasks or projects as required by the instructors. Through eLearning, the learner can gain greater knowledge from the learning activities assigned by the instructors and through live discussion with instructors and friends via the internet. They can study and construct new knowledge on their own from studying, discussing and enhancing the learning experience in groups or individually any place and any time.

Conclusion

The concept of education is to promote the learning experience in such a way that

learners can construct their own knowledge. According to learning theories, knowledge is constructed from activities not transmitted through rote memorization. By using technology for the purposes of eLearning, learners can be provided with access to knowledge and creative activities assigned by the instructors. Furthermore, they can engage in live interaction and communication with instructors and friends via the internet. It can be argued that using technology in the service of eLearning provides invaluable opportunities for learners who don't have the time to attend conventional classes to gain more constructive knowledge according to the learning theories detailed above. However, effective processes and skilled personnel, such as instructors, learners and teams of technological experts, are also essential to the success of education. Thus learning theories in education, especially constructivism, can be supported by technology for providing learners with effective access to advanced knowledge in the pursuit of education as an ongoing, lifelong process. .

References

- Jonassen, H., Peck, L., & Wilson, G. (1990). *Learning With Technology: A Constructivist Perspective*, Upper Saddle River, NJ :Prentice Hall.
- Charmonman S. (2005). *Proceedings of the Second International Conference on eLearning for Knowledge-Based Society*, Bangkok Thailand, Assumption University Press.
- Aggarwal, Anil (2000). *Web-Based Learning and Teaching Technologies: Opportunities and Challenges*, U.S.A., Idea Group Publishing.