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New Trends and Approaches in Instructional Design and Technology

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Abstract

The purpose of this study is to discuss new trends in Instructional Design and Technology (IDT). The progress started at World War II and since then various definitions have been used such as Instructional Design (ID) or Educational Technology (ET). We aim to find out why there are many definitions for a single word, and investigate different scientists' view points in this regard. Therefore, many definitions, concepts and strategies will be discussed for the future educators, trainers and students at schools, business centers and industries.

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1. Introduction

All educators involved in instructional design process have taught in this field for ages. This paper examines and discusses how the definition of the instructional design (ID) has been changed over the years, and presents accepted definitions in the instructional process.

There are two points for examining changes. First, it is important to point out the definitions. Second, it is necessary to pay attention to this point that the actual name of the field has often been changed by different specialists. Instructional Design (ID) has been used interchangeably with the following terms: *audiovisual instruction*, *audiovisual communications* and *educational technology*. During the past decades some definitions have been accepted by many professionals and technologists. Although the origin of the field was based on Aristotle, it has gone through the crises in the educational environments, industry, business and health education (İsmail et al., 2008).

2. Instructional System Design and Its Foundation

Instructional design has a long history. The "Instructional System Design" (ISD) was developed to solve instructional problems mainly for training at schools and industries. Instructional Design Institute (IDI)

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consortium developed this approach for the first time. Later on, it was called ISD approach and model. Then, several ISD models were developed in educational systems. According to Seels and Glasgow (1998), instructional design and instructional development were interchangeably used in various organizations; therefore, ID was defined as a process of solving instructional or educational problems through systematic analysis based on the conditions of learning.

2.1. Basic definitions

There are different approaches for defining instructional design and instructional technology which has been accepted as a new field. In 1963, the definition of instructional technology was presented by the Department of Audiovisual Instruction (now known as Association for Educational Communications and Technology- AECT). This definition was a traditional view and included designing messages for the process of learning, which included *planning, producing, selecting, utilizing* and *managing*. AECT accepted new definition of IT at 1977. Apart from the definitions above, people generally think of educational technology as the study of ethical practice of facilitating teaching and learning processes. According to Reizer (2007), "the latest definition includes instructional design and technology which encompasses the analysis of learning, performance problems, design, development, implementation, evaluation, and management of both instructional and non-instructional processes and resources..." (p. 7).

2.2. A view of historical developments of instructional design and technology

Based on the history, major specialists such as John Dewey, Aristotle, Thorndike, Tyler and Sidney Pressey have paid special attention to cognitive system approaches. About half a century education was conducted based on the above mentioned ideas (İsmail et al., 2008).

IDT movement (1940-1960): From 1940s up to 1950s and from 1954 to 1957, several events happened. The major point was the launch of the Sputnik to the sky. This progress resulted in various events in the world of education mainly in instructional design process. Later on programmed instruction was introduced by B. F. Skinner in order to solve educational problems. After a decade, Robert Glaser (1962) introduced Individually Prescribed Instruction (IPI). Afterwards, Gagne and Bloom provided their contributions to the educational system by their ID models.

IDT movement (1970-1990): Ausubel, Bruner, Merrill, Gagne have shared *more technologies* in the development of instructional strategies in different ways. According to Fazelian (1984), PLATO and TICCIT were developed and used. Furthermore, new ID models were developed in various instructional environments. Later on, a new version (needs assessment), was introduced for learners. In 1980s, the concepts of Computer-Based Instruction (CBI) and Computer-Based Training (CBT) were used interchangeably to indicate the strong relationship and cooperation between instructional and technological innovations for instruction. Microcomputers was a new technology to help learning 3Rs. This new term introduced new performance technology and defined its model for Gilbert Model users in 1982. In 1990s, World Wide Web (WEB) was created and constructivism approach was started to be used in the instructional system design process. In this period, cost effectiveness of the instruction, Electronic Performance Support Systems (EPSS) and distance learning technologies started to involve in the instructional process. Siemens has introduced connectivism which needs to be considered (İsmail et al., 2008).

3. Future of Instructional Design and Technology (IDT) Field

Based on Branch (2004), the latest definition of instructional technology is the study and ethical practice of facilitating learning and improving performance by creating, using and managing appropriate technological processes and resources.

According to the above definitions, we may consider learning theories and principles of each learning theory and try to prepare a learning program, regardless of the kinds of new hardwires (Fazelian, 2011).

3.1. *Trends in instructional technology*

According to Hannifin (2002), in the past, comparative studies were mainly done by learning through different media usage. The comparative studies were only helpful for decision makers. Moreover, Gallini and Barron (2001-2002) believe that educators tried to find out the potential of instructional technology and learning, however, most researchers emphasize on the effects of media. In the future, it will be better to ask why teachers need and use technology based methods. According to them, technology is not just a delivery system; therefore, researchers in theoretical questions need to be paid attention to. Researchers will need to pay attention to the above mentioned points in responding to various kinds of educational problems. We need to be able to include technology in research in order to affect student achievement, retention and his/her satisfaction. Educational technologists have to meet the goals for technology and direct resources towards better researches in this field (Fazelian, 2011). Also Dyer and Reeves (1995) talked about social responsibilities of research questions, and have mentioned that research should address related learning problems in the society. Therefore, we need to develop research methods to solve teaching and learning problems and be able to offer design principles for the future progress at the same time. They pointed the following three research-based essentials:

1. Research should be done in real situations with practitioners.
2. Hypothesis needs cover complex problems.
3. Research should try to conduct reflective inquiry in order to examine innovative learning.

Research design should be able to study both the instructional strategies and tools. Therefore, new teaching environments require new approaches to increase the innovation in educational situations. Apart from that, learning design is defined as a root for research in human learning (Hannifin & Land, 1997, p. 102). In order to put technology in school and present it to teachers, we need to have a sustainable plan for obtaining various views of how people learn, along with the communication studies (Oswald, 2001).

3.2. *Looking towards the future of instructional design*

Most educators such as Gustafson (2002) believe that human performance would be improved by using better instructional design tools, considering social, cultural and economic accountability issues in evaluation. Therefore, instructional designers need the availability of new technologies such as virtual tools and interactive media, which are not going to be present for either students or teachers soon. We can talk about "iPods, which are generally used to store and play music, Duke".

According to our researchers, regardless of the kinds of technology for the future, we should be aware of how and for what kinds of educational purposes they are used (Hannafin, Hill, & McCarthy, 2002).

In the future, we need to prepare standards for the learning technology. We may confront with learning objectives regardless of the kinds of new learning technologies. Therefore, in the future, there would be a need to decrease the cost of distant education and increase the ability of technology to search new markets.

3.3. *Future Developments of Instructional Design and Technology (IDT)*

Recently, object-oriented distributed learning environments and programming languages such as C++ and Java have been used. Instructional Design and Technology (IDT) model should have a relation with linked objects by Technology-Based Training (TBT) program. Other new technologies can be defined as electronic training jackets, metadata tags, and artificial intelligence applications. Recent cognitive and neuroscience contributions will continue using both researches and theories for instructional designs. Technologists will provide technology-based tools and contribute to instructional development for evaluating IDT processes. IDT process and knowledge will have foundations in philosophy of learning and comparative studies of media usage,

system thinking, curriculum development, appropriate for users from school to industry, tech-mediated instruction, learning theories, technological change and reform (İsmail et al., 2008)

4. Conclusions

In this study, first of all, the history of instructional system design was introduced, then instructional design and technology along with educational technology were discussed. The future development of new technologies have been paid attention to, mainly with emphasize on the path from school to industry. Instructional Design (ID) models and integrated ID models were shortly explained. Moreover, the definition of Instructional Design and Technology (IDT), new approaches for the information age and future developments were discussed. The future challenges were shortly clarified. We hope that researchers continue this study mainly for developing countries in order to come up with new ideas in this area.

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