

1. INTRODUCTION

One of the most exciting changes in the last decades has been the accelerated development in technology; this development influenced education through computers, internet, computer-related technologies and new theories of instruction.

Computers have become more accessible to students in the classroom and at home. Computer capabilities have increased dramatically. It will not be a surprise that schools in Turkey will have more computers than they had 5 years ago and this number will continue to increase in the future as well.

2. INSTRUCTIONAL TECHNOLOGY

Rapid development in technology has brought amazing changes and developments in many fields. These are the financial sector, telecommunication, military field, broadcasting and etc. In that list one thing is missing which is education. Beside the huge amount of investment (upgrading technological backbone) on education the return of the investment is not significant. Since education is different from the other fields, here the main subject is human being. Each human being conceives the world somehow differently. People understood that by itself, latest technology does not bring the significant difference in learning outcome. But this does not mean that we should go back the technologies of past. Here the main issue is understanding the role of the technology. Technology (internet, computers, blackboard etc.) is a just a medium to deliver the instruction. Of course technology makes us to do something that we can not do without it. So the most important thing is how technology will be used in educational settings. Proper use of technology inevitably brings significant difference in learning outcome.

Today, industrial-age has completed its life and now we are in the information age. With the information age like the other concepts educational concepts have changed. The table, created by Charles M. Reigeluth [3], below presents some "key markers" distinguishing the new (information-age) paradigm of the instructional theories from the old (industrial-age) paradigm.

*Corresponding Author, Tel : +90 262 324 99 12, e-mail : ebutun@kou.edu.tr

⁴ Kocaeli University, Faculty of Technical Education, Anıtpark, 41300, Kocaeli, Turkey

⁵ Kocaeli University, Faculty of Science and Literature, Anıtpark, 41300, Kocaeli, Turkey

⁶ Atılım University, Dept. of Computer Engineering .

INDUSTRIAL AGE

Standardization
Centralized control
Adversarial relationship
Autocratic decision making
Compliance
Conformity
One-way communication
Compartmentalization
Parts-oriented
Teacher as "King"

INFORMATION AGE

Customization
Autonomy with accountability
Cooperative relationship
Shared decision making
Initiative
Diversity
Networking
Holism
Process-oriented
Learner (customer) as "King"

Information age has made radical changes in education. Since the context has changed, education system, which makes people ready for the context, has changed. In the information age a new field "instructional technology" has become crucial in field of education. There are several definitions of instructional technology. Instructional technology is the systematic application of scientific and other organized knowledge to practical settings and mainly deals with the question, "how learning is improved and becomes an easy process for people?".

3. INSTRUCTIONAL TECHNOLOGIST

Instructional technology has brought a new profession name, which is called instructional technologist. General tendency is to see instructional technologists as developing support materials for teachers but this is not the exact definition of the role of the technologists:

Heinich sees instructional technologists as serving the needs of management. Instructional technology has the capacity to automate some classroom tasks, to provide a standard mode of instruction to students at a variety of times and a variety of locations, to reduce the costs of education by reducing the requirement for certificated staff, and generally to bring about a restructuring of education.

Robert Heinich's analysis of the role of the instructional technologist clearly shows that there is a natural alliance between technologists and those decision makers who seek to make substantial structural change. In essence, he makes the case that the innovations occasioned by instructional technology are both scientific and inevitable, and by doing so clearly positions instructional technologists as both outside experts and external agents of change (Mitchell, 1992, pp. 1-3). While Heinich's views may not go unchallenged, it should be noted that within the educational technology community even his fiercest critics have accepted his contention that advances in instructional technology will be implemented in the classroom over the objections of the current teaching force (Clarke, 1984, p. 229). If technology is to transform learning, it will only do so by establishing alliances with decision makers who do not have a vested interest in maintaining the current craft status of instruction [2].

To understand who is instructional technologist, curriculum of the program of instructional technology should be investigated. Hence an instructional technologists should be expert on at least one of the fields below. Professional instructional technologist should have the all features below.

3.1 Educator

Instructional technology departments belong to the faculty of education. So graduates of the IT have features of the educators. They take the courses about educational sociology, educational psychology, curriculum, measurement and other courses related with education. Thus they should be good at education. To improve the level of education they should understand what is going on in the class. Instructional technologists know the features of the pupils, instructors and the context where teaching and learning process take place.

3.2 Technology

In general, instructional technologists are experts on tools of technology and in specific instructional technologists are experts on computers. Most of the graduates of the IT are working in the field of information technology. Because of the huge demand on information technology graduates of the instructional technologists choose the information technology to work, of course there are several reasons for that but i will not go further here. The computer courses given by IT are mainly on computer programming, visual programming, authoring languages, internet applications, how to integrate technology in to the curriculum, introduction to the networks and operating systems. Here it can be said there is no reason to say that instructional technologist are also information technologists. As Reiber says :

Perhaps the power way to become an instructional technologist is first to become a computer wizard, that is, to master the tools first and assume that the knowledge of how to apply the tool in education will come merely as a consequence [4].

Instructional technologists are also experts on the other tools of technology (any medium to deliver instruction); from blackboard to overhead projector. They are able to use lots of technological tools.

3.3 Chemist, mathematician, physicist, engineer etc.

One of the most important issues in instructional technology is becoming a field expert. If you are familiar with the topic you want to integrate the technology to you can be successful. Otherwise it is really a hard procedure to integrate the technology to a subject that instructional technologist knows nothing on. This situation can be seen from the curriculum of IT. IT Students are taking almost all the basic science courses including; physics, mathematics, chemistry, biology etc. Reiber says :

The proper way to become an instructional technologist is to first become a physicist or mathematician. Many of the leading scholars in the field began this way. Seymour Papert is a mathematician by training, Alfred Bork is a physicist. Sometimes I wonder if our field suffers from "physic envy" – we want desperately, it seems, to be considered a science. Well, I actually enjoy reading about theoretical physics (at least as far i can without knowing the mathematics) [4].

3.4 Philosopher:

As Reiber says :

The proper way to become an instructional technologist is to become a philosopher and first unravel the mysteries of what it means to "be" and what it means to "know." The field seems quite preoccupied with uncovering if there is a "real" world or whether reality exists solely in the mind of the individual. I have come to the conclusion that Instructional Technologists are not well equipped to handle philosophical problems such as these and question if it is a good use of our time [4].

The list below based on the list of the Lyod Reiber ; “ what an instructional technologist does” and it can also be extended more.

I am an instructional technologist.....

- i. I teach how teach with technology rather than how teach technology.
- ii. I integrate technology in to the curriculum.
- iii. I help people learn new things.
- iv. I solve problems in education and training, or find people who can.
- v. I use lots of different tools in my job; some are "things" like computers and video, other tools are ideas, like knowing something about how people learn and principles of design.
- vi. I know a lot about these tools, but I know I have to use them competently and creatively for the task at hand before they will work.
- vii. I consider using all of the resources available to me, though sometimes I have to go and find additional resources.
- viii. I resist doing things only because "we've always done it that way," but I'm also careful not to fall for fads or gimmicks.
- ix. I always try to take the point of view of the person who is going to be using the stuff I make while I'm making it; that's really hard, so I get people to try out my stuff as soon as I can to see what I am doing wrong.

- x. I'm not afraid to say, "Yes, that's a better way to do it."
- xi. I know how people learn individually and collectively, and media's role in learning.
- xii. I strive to understand the interdependency of theory, research, and practice.
- xiii. I try to Learn the "how's and what's" of media.

4. RESULT

If we come to the latest situation in Turkey. Recently there is a tendency towards the educational technology. Particularly, Ministry of Education of Turkey has lots of projects on educational technology. Firstly Ministry of Education started to increase the number of computers in the schools. More than 2000 schools will have computer labs in the close future. This project is going on. In order to involve in this project private sector start to give a special importance to instructional technology. Lots of software companies start to develop new educational software programs. Meanwhile lots of universities start to open instructional technology departments under name of Computer Education and Instructional Technology or Computer Education and Educational Technology. Those departments are becoming popular day by day.

In summing up, in the information age, instructional technology has a crucial role in our education system. So Turkey should invest to that field. Some courses related with educational technology should be integrated to the curriculum of the education faculties. All the teachers should be familiar with the up to date technologies. Education is vital for a country and also it is a human right for the people. In terms of educational technology, Turkey is behind the developed countries. Firstly we should make our people literate and then computer literate after that we can talk on teaching with technology and not teaching technology.

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