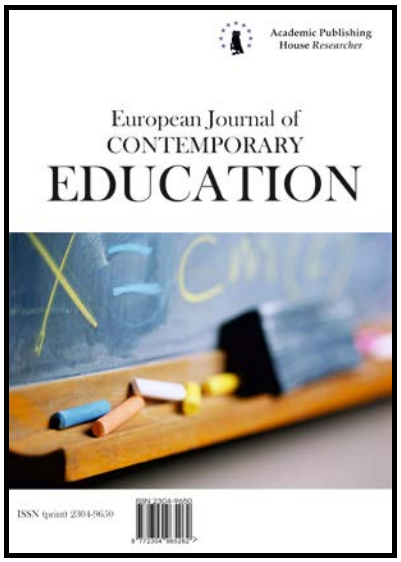
Published in the Russian Federation
European Journal of Contemporary Education
ISSN 2219-8229
E-ISSN 2224-0136
Vol. 6, No. 4, pp. 204-215, 2013
www.ejournal1.com



Considerations for IEL Courseware Design and the Next Generation of E-learning☆

[1] Ömer Faruk Sözcü
[2] İsmail İpek

[1] *Department of Computer & Instructional Technologies, Fatih University, 34500 Buyukcekmece, Turkey*
PhD in Education, Assistant Professor
E-mail: omersozcu75@gmail.com, ofsozcu@fatih.edu.tr
[2] *Department of Computer & Instructional Technologies, Fatih University, 34500 Buyukcekmece, Istanbul, Turkey*
PhD in Education, Associate Professor
E-mail: ismailipek34@gmail.com

Abstract. The purpose of this study is to discuss strategies for developing integrated e-learning (IEL) courseware based on instructional design and technology (IDT) models and approaches as well as new discussions of e-learning. For this purpose, the study begins with the selection of one or more IDT models to conduct an e-courseware design including IEL modules based on instructional strategies and improvements. The authors discuss the strategies and steps that a design team should follow in designing integrated e-courseware, which gives way to effective e-learning with new variables such as job performance and learning. The steps include the development of content, units and modules for an IEL course. To recap, our purpose is to combine the necessary IDT models' strategies for the pedagogical design of an IEL. Powerful IDT models are also discussed so as to meet the very high expectations of IEL with new ideas and new responsibilities in the e-learning process. To develop high quality IEL courseware, we will explain the integrated e-courseware design steps and their practice in order to improve learning tasks, complex cognitive skills, attitudes and competences in the e-learning process, as well as defining job performance and the business environment. At the end of the study, the IEL dimensions, including pedagogical, technological and organizational dimensions, and the main barriers to implementation, including perspectives such as student, teacher-designer, learning materials, job

☆ This paper has been recommended for acceptance by Rushan Ziatdinov.

performance, the next generation of e-learning in business and social learning, and context setting, will be discussed and presented.

Keywords: E-learning; integrated e-learning; e-courseware design; instructional design models; variables in next generation of e-learning for business and learning.

Introduction

Over the last four decades, computers and new technologies have been used extensively to teach students with different learning characteristics (Alessi & Trollip, 1991; Gagne, 1985; Gagne, Wager & Rojas, 1981; Galitz, 1989; Grabinger, 1989; Hannafin, 1989; Hannafin & Hooper, 1989; Heines, 1984; İpek, 2001; Jonassen, 1989; Mechling, Gast & Krupa, 2007; Merrill, 1983, 2002; Price, 1991). Today, new learning projects and learning technologies have emerged for use with educational technologies and learning as well as for developing multimedia-based instructional design. Multimedia-based instructional design includes several stages, namely analysis, design, development, implementation and evaluation levels, as well as a generic ADDIE model for designers and educators (Lee & Owens, 2005). In addition to these activities, new instructional applications have been used in learning and teaching with new instructional technologies and computers. One of them is e-learning (or IEL), which teaches and presents information by integrating other technologies as well as distance education tools, such as computers, boards and projectors, as part of an interactive whiteboard (IWB), a CD-ROM, a DVD, an e-mail, blogs and chatting, all used together in learning environments. Currently, distance education tools such as e-learning and IWBs are used in many schools as replacements for traditional instruction and whiteboards (İpek & Sözcü, 2012; Sözcü & İpek, 2012). They provide ways to show students anything that can be presented on a computer' desktop (instructional software, websites, blogs, visual-audio materials and others). In addition, new technologies such as computers and interactive whiteboards allow teachers to record their instructions and post the material for review by students at a later time. It also offers new opportunities for all types of users to develop new learning and presentation materials, as well as e-learning courseware design. To develop e-learning courseware, we should choose an instructional design (ID) model (or models) to develop effective teaching and learning materials based on aspects of the next generation of e-learning.

The next generation of e-learning can serve as a very effective instructional strategy for students who benefit from repetition and need to see the material presented again, for students who are absent from school, for highly motivated learners, and for the review of examinations. E-learning is also defined as a part of distance education because all e-learning technologies and methods can be used for presenting information in two ways, such as by synchronous or asynchronous communication or mind tools (Jonassen, 2001). Nowadays, multimedia involves the integration of more than one medium into some form of communication. Multimedia, such as slide/type presentations, interactive video and video productions, has been used in education for many years. Today, modern multimedia workstations include high-resolution monitors, sound, removable storage devices and, naturally, text documents as well. Hypermedia is simply the marriage of multimedia and hypertext. Hypermedia represents a part of technology in multimedia. Hypertext is based on two terms, such as links and nodes, which means information resources with nonlinear text. In brief, instructional activities can be recorded by students and users who want to see, create and change any lessons with high level interaction for improving learning and teaching and presentation materials. As a result, learning management systems provide online and e-learning statements with students and teachers.

History of the E-learning Process

A new area of corporate e-learning is emerging - one in which e-learning is used to support job performance first, and first-time learning second. In today's fast-paced business environment, the flow of information is growing so fast that the relevance of learning programmes is based as much on speed and timeliness as it is on rigor. E-learning can be defined in two ways, such as by proving information about technologies, learning and teaching in schools and by using new technologies. One part indicates technologies, while another part indicates learning or developing knowledge through the educational process. E-learning is 'learning' via computers (including CD-ROMs, the Internet and intranets) and ID tools. In recent years, rapid advances in computing and

other digital technology, including the Internet, have led rapidly to an increasing interest in the use of these media for instructional purposes, particularly for training in business and industry (İpek, İzciler & Baturay, 2008). In the late 1970s and early 1980s, computer-based instruction began to be used and many of the questions raised then have a familiar ring to those raised today, such as learner control, questioning techniques and screen design. 24% of the total amount of training hours during 2003 was presented via technology, as compared to less than 10% in 1999. During the same period, the percentage of education hours delivered by instructors in classrooms decreased from 80% in 1999 to 68% in 2003 (Sugrue & Kim, 2004). E-learning has become to be widely used in a relatively short period of time. According to Kaplan-Leirson (2002), e-learning is: "...a wide set of applications and processes, such as web-based learning, virtual classrooms, and digital collaboration. It includes the delivery of content via [the] Internet, intranet/extranet (LAN/WAN), audio and video type, satellite broadcast, interactive TV, CD-ROM and more" (p. 7).

E-learning seems to cover almost everything but conventional face-to-face lecture style instruction and other teaching styles. E-learning is most commonly associated with computer-based instruction, and especially internet-based instruction. E-learning has been widely used in corporate and government training. However, nowadays it is used effectively in K-12 and in higher education (Irvine, 2002; Simonson, Smaldino, Albright and Zvacek, 2006). E-learning has the potential to improve teaching and learning. Brief descriptions of e-learning's potential follow. E-learning facilitates student-centred learning. Learning is possible at any time and at any place, which provides student interaction with the content. It makes collaboration, communication, and administration easier. E-learning can reduce the delivery cost of instruction because of distance learning strategies and tools. It also adds worldwide dimensions to courses (Waterhouse, 2005). E–learning can also be considered to be an instructional tool or mind tool and a part of distance education. Distance learning technologies include all the new technologies indicated above as well as printed materials and electronic materials. This is because distance learning effectively uses all e-learning technologies and computer tools used for delivering instruction and developing e-courseware with ID models. At this time, several technologies have been integrated to develop courseware, which indicates using an IEL approach.

IEL and its Domains

E-learning initially appealed to corporate training managers primarily for its ability to reduce the costs associated with travel and instructor-led training and improve the scalability of training programmes. Today's interactive, collaborative and social web shifts the practice of delivering or pushing training to learners - often in the form of traditional self-based e-learning. Instead, learners pull the information that they need any time they need it. Over the years, a variety of different terms have been used as the label of the field, and a variety of different definitions of the ID field have been put forth. Many articles or books in the IDT field focus on the skills required by instructional designers and technologists (İpek, İzciler & Baturay, 2008). However, we believe that professionals in the field should be able to do more than just perform the skills associated with it. They should also be able to clearly describe the nature of the field, be familiar with the field's history and its current status, and be able to describe the trends and issues that have affected it and those that are likely to affect it in the future (Reiser & Dempsey, 2007).

Today, there is a need for new approaches for solving individual problems in the field of ICT and a clear definition and organization of IEL systems. In the instructional process, e-learning tasks such as complex cognitive skills, flexible concept learning skills and dual learning skills, have a relationship with IEL. These relations are important in providing changes in workplaces. The links among them provide valuable instructional strategies with future designers and students, such as using learning management systems in instructional environments and organizations.

The term 'complex learning' indicates a view that another type of skill, sometimes referred to as 'new skills for the new age', is needed for the future (Van Merriénboer, Clark & De Crook, 2002). The main concepts behind complex skills are based on the coordination of constituent skills, the integration of skills, knowledge and attitudes of professional competences, and different types of learning competencies. Coordination focuses on the ability to solve problems for new situations. Integration indicates that teaching should not be directed at discrete skills, knowledge elements or attitudes. There are certain goals and competencies involved in integrated learning. Some

competencies are insufficient, according to the differences in learning situations; therefore, problem-solving, critical thinking and metacognitive skills such as learning to learn, self-regulation and the evaluation of the procedures in instruction, are becoming more important for teaching higher education. New instructional approaches and materials are developed and discussed to support complex learning processes. There are several ID models and strategies. These strategies use problem-based learning, case-based learning, project-based learning, and so forth. These methods present the use of rich, meaningful, realistic learning tasks for learning (Merrill, 2002). 'Flexible learning' is a term that points out the need for flexibility of time and place for students. There is no fixed time or place for the learner or the learning environment. This approach is also defined as 'just-in time learning'. Both complex learning and flexible learning meet in the field of dual learning.

Complex learning and flexible learning meet in the field of dual learning. On the other hand, dual learning stresses the importance of realistic learning tasks. Learning provides the coordination of skills, knowledge and attitudes, as well as the development of social and career skills. At present, the gap between instruction and practice can be closed by high level flexibility. IEL is another important process for higher education. The term 'e-learning' is relatively new. It indicates technology-enhanced learning via the web and Internet-based learning through the Intranet, CDs, DVDs and so forth.

The basic e-learning design concepts are pedagogy, technology and organization. Three terms, namely pedagogy, andragogy and e-learning pedagogy, are often used in the discussion of learning. Their definitions are the art of or professional teaching, helping adult learning and pedagogical strategies for an e-learning environment, respectively (Waterhouse, 2005). IEL indicates pedagogical, organizational and technical levels for the meaningful implementation of e-learning in combination with traditional methods. IEL tries to combine elements in the instructional process from face-to-face teaching, distance learning, web-based learning and Internet-based learning. From this perspective, IEL is understood as a media mix. This is because, at the same time, different e-learning tools can be used in the instructional process. The situation requires a systematic design procedure and an ID model approach to provide the sustainability, security and quality of the user interfaces, as well as to bridge the gap between disciplines (İpek, İzciler & Baturay, 2008). For the IEL setting, a single media is not enough to reach the aspired to goals, and new technologies are necessary to give flexibility and richness to the instruction. Every instructional designer and developer should use different types of technologies in their design processes, including both old and new technologies, materials and tools. The components of e-learning's implementation from competency models as an input to benefit or profit as an output may be followed. The procedures are shown in figure 1 (Lee & Owens, 2005).

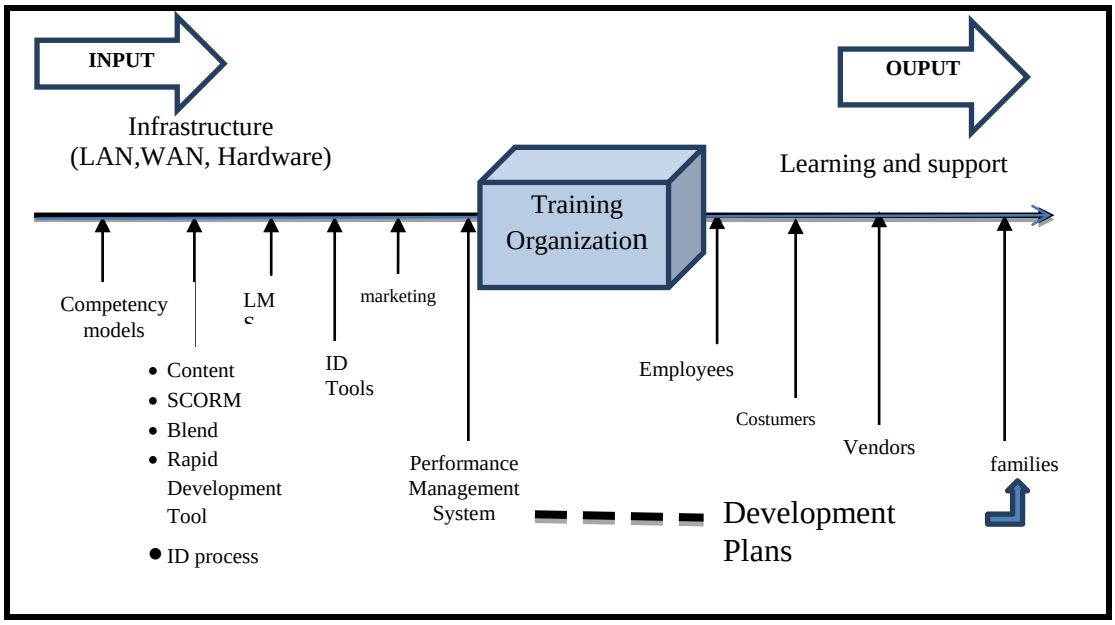


Figure 1. The Components of E-learning's Implementation

IEL and E-courseware Design

IEL tries to combine elements such as face-to-face teaching, distance education and training on the job. Thus, it is media mix - that is to say, a mix of methods - each has its own characteristics in terms of costs, availability, effectiveness and efficiency (İpek, İzciler & Baturay, 2008). The specific combination of methods is a result of a systematic design procedure. IEL requires new pedagogical aspects and organizational and technical levels for the successful implementation of e-learning in combination with more conventional systems. IEL is becoming more and more important for lifelong learning as well as e-learning. The field of ID is discussed in consideration of ID as an engineering discipline (Seel, 2004). Information technology is getting richer, with new statements and situations in technological development. New technologies are being developed and these are increasing its popularity in work settings, in daily life and in education. Depending upon the type of multimedia project, it may be necessary to add to the design specifications that are suggested, such as with schedules, project teams, media, lesson structures and configuration control and review cycles (Lee & Owens, 2005). For example, a distance learning project might require a more detailed scheduling component.

There are new considerations, such as the Searchable Content Object Reference Model (SCORM) and learning management systems (LMSs) that need to be taken into account. Both activities are shown as components of e-learning in figure 1. The history of SCORM began in 1997, when the Department of Defence (DoD) and the White House Office of Science and Technology established Advanced Distributed Learning initiative (ADL). The DoD uses multiple courseware vendors in all branches of the military. In addition, LMSs are increasingly appearing on the e-learning scene. There is an interaction between LMSs and Learning Content Management Systems (LCMSs) (Lee & Owens, 2005). Internet and Internet applications, such as the web, e-mail, teleconferencing and other distance learning tools, computer-supported collaborative learning, and class management and learning management systems, are rapidly gaining ground in the field of higher education. A redesign of educational systems is needed in order to provide added learning value to the instructional process (Jochems, van Merrienboer & Koper, 2005). The relationships between educational systems and IEL are given in Figure 2 (İpek, İzciler & Baturay, 2008).

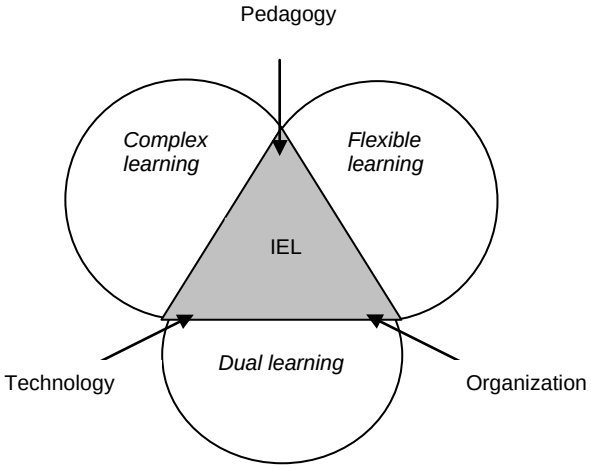


Figure 2. An Educational Systems Approach to IEL

The IDT Approach and the Next Generation of E-learning

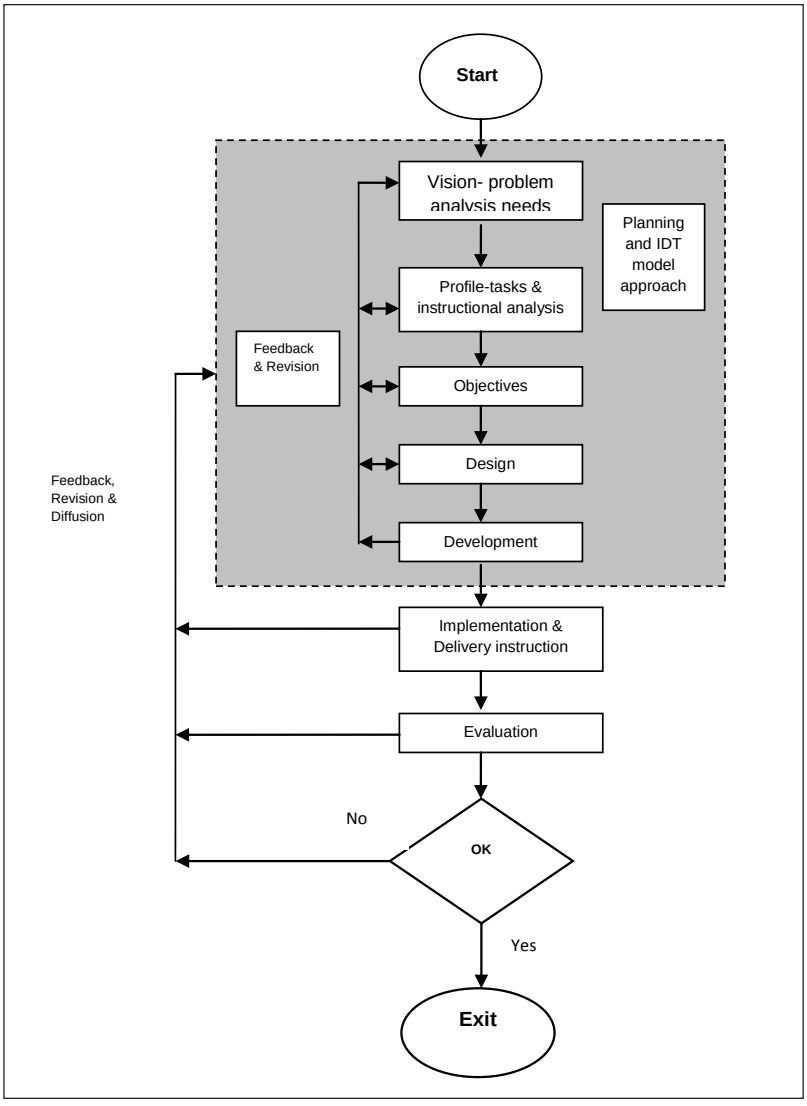
The web and other interactive technologies have necessitated a rethinking of how solutions are designed. Much discussion has been generated as to whether objectivism or constructivism is the best approach to designing e-learning. The constructivist approach is a discovery learning method that John Dewey first wrote about. He described how all learning must be approached from the standpoint of trial and error. In other words, learning by doing – and, yes - making mistakes. It was probably the result of you doing something and making mistake. There is no best approach - it depends upon the situation, the content and the learner. We also learn from our mistakes while using CBI and e-learning technologies in education.

ID is a systematic process that is employed to develop education and training programmes in a consistent and reliable fashion. It is a complex process that is creative, active and iterative (Gustafson & Branch, 2007). In addition, it is a process for solving instructional problems by the systematic analysis of the conditions of learning. To do this, one makes decisions relating to each step in the Instructional Systems Design (ISD) process (Seels & Glasgow, 1998). However, there are many definitions of the field - recently, instructional design and instructional technology have been labelled IDT (Reiser, 2007). This categorization contains instructional technology as instructional media and human performance with instructional design practices. ISD is based on the premise that learning should not occur in a haphazard manner and should instead be developed in accordance with orderly processes and have outcomes that can be measured. Basically, ISD determines what is to be learned, plans an intervention that will allow learning to occur, measures learning to determine if the objectives are met, and repeats the intervention until the objectives are met. ISD procedures and their application have evolved through practice as well as the research into and expansion of the theory.

Many models of ISD processes have been developed. Although there are many ISD models, a generic model can be extracted from their common features. The choice of model for an instruction changes according to the learning environment, the subject matter and the strategies to be applied, etc. ISD models can be used with different learning and teaching approaches and theories if there is no strict rejection of them. For example, a 4C/ID model can be used while supported by a constructivist theory for teaching complex technical skills. Whatever model a designer chooses, most of them will follow the processes of analysis, design, development, implementation and evaluation. These steps are also used for designing e-learning courses. The e-courseware covers more than one course lesson in its capacity. A design model for an e-learning course is characterized as the "**VPODDDA**" e-learning planning cycle, which initiates vision, profile, objective, design, development, delivery and assessment phases for the e-learning planning process (İpek, İzciler & Baturay, 2008; Waterhouse, 2005). The process can be integrated with the IDT models' strategies for designing e-courseware or its modules (see in figure 3).

The core of this next generation of e-learning is centred on the interest of the learner and is often generated by the learner. In short, e-learning is no longer a traditional self-paced alternative

to classroom learning. It resembles employees' experiences in accessing the web, as well as their online and offline social networks. Today's workers need availability in a learning environment, in which they can find information, collaborate and build their own learning plans. E-learning and IEL design procedures should focus on IDT models' strategies or ISD approaches. To get high-level value for teaching with e-learning, IDT strategies present very important ways to make the design clear and the steps easier for learners and developers in the e-learning process. Generally, the IDT process begins with a needs assessment and a definition of the problem or its objectives. These processes for designing e-learning have been discussed and redefined to explain the next generation of e-learning lessons (İpek, İzciler & Baturay, 2008). These steps are as follows.



Step 1. As vision phase-problem analysis as a needs assessment

The needs assessment (problem analysis) process, according to Seels and Glasgow (1998) and the ID model, consists of a needs analysis, a performance analysis, a written problem statement, a context analysis, design notes and a problem analysis for e-learning. Data gathering continues during the problem analysis process and the project itself. Each planning point has a clear beginning and end, with an output that feeds into the next stage. An IEL course should have these strategies for learners and their learning environments for lifelong learning.

Step 2. Problem analysis and tasks with instructional analysis-profile

After the problem analysis, there follows a task analysis, an instructional analysis and an identification of the goals/objectives explaining how to design the IEL modules for the course. Instructional analysis is a process by which task areas are classified according to the types of

learning required to acquire a given task or knowledge. At this stage, the various types of learning, tasks and content analysis will be completed. An IDT model – basically, the taxonomy developed by Gagne and Briggs - or else an integrated IDT model will be used to reach this objective. Instructional analysis provides the entry requirements for different learning conditions, the type of learning - such as verbal, cognitive, case- or project-based and audio-visual - sequencing instruction, and the construction of hierarchies for IEL modules in technology training with different social-economic groups (Gagne, 1985).

Step 3. Instructional strategies - e-course content design and development materials

In the next stage, instructional strategies for IEL environments are planned (Wileman, 1983). A designer must respond to the following questions: (a) What must happen for learning to occur? (b) How will the course content be presented? (c) What instructional strategies are preferred for the type(s) of e-learning involved? (d) How much practice and feedback are needed? (e) How should the content be presented for IEL?

Step 4. Developing and selecting delivery systems

Delivery systems for instructional materials are a means for carrying information from source to a receiver, or vice versa, for the purpose of instruction. The term can be used to describe older technologies, such as traditional media, or newer technologies. Selection should be based on the ISD model developed for delivery system selection. The learners' characteristics, objectives, resources and constraints must be identified before the delivery system is selected.

Step 5. Assessment and Evaluation

Assessment is a process for gathering information and data and returning results rather than a process providing opportunities for learning. Cognitive tests and performance tests can be used to clarify learners' performances during the courses. In order to develop assessment plans that include testing instruments, we need to understand the concepts of criterion-referenced testing, reliability and validity. Tests that measure what a person has learned to do are called 'achievement tests'. There are two types of achievement tests: criterion-referenced tests and norm-referenced tests. Furthermore, there are four approaches to measuring users' performances (Ipek, İzciler & Baturay, 2008). They are:

- Testing
- Portfolio assessment
- Student participation
- Self- and peer-evaluation

There is also performance assessment, which is considered to be weak in e-learning systems. E-learning designers have relied on tools that are directed towards and which address the construction of test items. Authors use these newly available resources to produce fast and cheap e-learning products. When these products are facilitated into courses, facilitators can insert themselves to fill the content voids, correct inaccurate information or address functionality issues (Sales, 2010). Successful evaluation turns out to be difficult to develop. During the design process for any e-course, the developer should create a guide and do the following:

- Define the purpose of the assessment
- Define the performance of the assessment tasks
- Define the performance criteria
- Create performance rubrics

Is it possible to blend the best of modern and traditional approaches to create more powerful e-learning products? For this reason, the e-learning design process could be created based on IDT models. The process would be one that requires more discipline than is often involved in modern course development. According to Sales (2010), to encourage quality in e-learning in the modern environment, five critical concepts must be recognized and accepted. These concepts are: 1) instructional design principles can positively affect the quality of e-learning products; 2) not all subject matter experts are instructional designers, and so they should be partnered with someone who has expertise in designing e-learning; 3) saving money on development through the use of free

content elements may ultimately cost even more money if the learners become disengaged or if the desired learning outcomes are not achieved; 4) a systematic approach to design and development is needed to ensure that an accurate and thorough learning environment is created, such that a balance of quality, efficiency and economy is achievable through the implementation of a cost analysis (Sales, 2010, p. 94). At the end of the design process, IEL courseware will be developed that is effectively based on integrated IDT systems approaches. The evaluation and implementation are the final stages of the project management of instructional problem-solving based on ID models. The project management ends with a diffusion process to explain all the procedures.

Conclusions

In general, evaluation is a basic component of IEL design and implementation. IEL design begins with a profile that indicates a problem analysis and needs assessment, including the analysis, design, development, implementation and evaluation of the educational systems. Its design includes pedagogical, technological and organizational levels. In addition, the main concepts defined by Sales (2010) are important steps for creating the next generation of e-learning lessons. These may be used for developing future e-learning courseware.

As a result, teaching e-learning remains a novel activity for most teachers, although thousands have mastered the art over the past decade. E-learning course design should involve IDT strategies as integrated ID models for designing IEL courseware. IEL should be more accessible, more flexible, more productive and more attractive for lifelong learners. The second point is that IEL environments have to be considered from a wider, organizational, systemic perspective. Finally, it is necessary to adopt a more balanced IDT approach towards IEL on several dimensions at the same time. IEL design strategies provide certain sustainable contributions with lifelong learners and teachers. Eventually, the next generation of e-learning and the teaching employing it will require extra performance and practice in terms of training, support and assessment, as well as integrated e-learning in schools. Today, learning and development organizations are increasingly integrating the use of mobile, video and virtual classrooms.

References:

1. Alessi, S. M. & Trollip, S. R. (1991). *Computer-based Instruction: Methods and Development*. (2nd Ed.). Englewood Cliffs, New Jersey: Prentice Hall, Inc.

2. Gagne, R. M. (1985). *The Conditions of Learning and Theory of Instruction*. (4th Ed.) New York: Holt, Rinehart and Winston.

3. Gagne, R. M., Wager, W. & Rojas, A. (1981). Planning and authoring computer-assisted instruction lessons, *Educational Technology*. 21(9), 17-21.

4. Galitz, W. O. (1989). *Handbook of screen format design*. (3rd Ed.) Wellesley, MA: QED Information Sciences, Inc.

5. Grabinger, R. S. (1989). Screen layout design: research in the overall appearance of the screen. *Computers in Human Behavior*. 5, 175-183.

6. Gustafson, K. L. & Branch, R. (2007). What is instructional design? In R.A. Reiser and J. V. Dempsey (Eds.), *Trends and Issues in instructional design and technology* (2nd Ed.), Columbus Ohio: Pearson Education, Inc.

7. Hannafin, M. J. (1989). Interaction strategies and emerging technologies: psychological perspectives. *Canadian Journal Educational Communications*. l8(3), 167-179.

8. Hannafin, M. J. & Hooper, S. (l989). An integrated framework for CBI screen design and layout. *Computers in Human Behavior*. 5, 155-165.

9. Heines, J. M. (1984). *Screen Design Strategies for Computer-assisted Instruction*. Bedford, MA: Digital Press.

10. İpek, İ. (2001). *Bilgisayarla Öğretim: Tasarım, Geliştirme ve Yöntemler*, Ankara: Tıp Teknik (Pelikan) Yayınevi, Ltd. Şti.

11. Ipek, I., Izciler, M. & Baturay, M. H, (2008). Considerations for an integrated e-learning courseware design and instructional design & technology (IDT) approach. In A. Kuzu, F. Odabasi, A. A. Kurt, I. Kabakci & S. D. Eristi (Eds.). *VIII. International Educational Technology Conference, Proceedings*, (pp. 508-512). Anadolu University, Eskisehir-TURKEY.

12. İpek, İ. & Sözcü, Ö. (2012). Preferences and Awareness of Teachers and Students for Using Interactive Whiteboards in Different Courses and Grades, Paper will be presented at the

WCETR - 2nd World Conference on Educational Technology Researches, 27-30 June 2012, Near East University, Kyrenia- North Cyprus.

13. Irvine, M. (2002). The emerging e-education landscape [Online]. Available: http://www.blacboard.com/ docs/wp/CIOSeriesWhihePaper.pdf.

14. Jochems, W., Van Merrienboer, J. & Koper, R. (2005). *Integrated e-learning: Implications for Pedagogy, Technology and Organization*, London: RoutledgeFalmer.

15. Jonassen, D. H. (2001). *Computers as Mind Tools*: *Engaging Critical Thinking*. New Jersey: Upper Saddle River, Prentice Hall, Inc.

16. Jonassen, D. H. (1989). Functions, applications, and design guidelines for multiple window environments. *Computers in Human Behavior*. 5, 185-194.

17. Kaplan-Leiserson, E. (2002). Glossary [online]. Available at: http://www.learningcircuits.org/glossary.html.

18. Lee, W. W. & Owens, D. L. (2005). *Multimedia-based Instructional Design* (2nd Ed.) San Francisco, CA: John Wiley & Sons, Inc.

19. Mechling, L. C., Gast, D. L. & Krupa, K. (2007). Impact of smart board technology: an investigation of sight word reading and observational learning. *Journal of Autism & Developmental Disorders*. 37(10), 1869-1882.

20. Merrill, D. (2002). First principles of instruction, *Educational Technology, Research and Development*. 50(3), 43-59.

21. Merrill, D. (1983). Component display theory. In C. M. Reigeluth. (Ed.), *Instructional-Design Theories and Models: An Overview of their Current Status*. Hillsdale, NJ: Lawrence Erlbaum Associates, Inc.

22. Reiser, R. A. (2007). What field did you say you were in? In R. A. Reiser and J. V. Dempsey (Eds.), *Trends and Issues in Instructional Design and Technology* (2nd Ed.), Columbus Ohio: Pearson Education, Inc.

23. Price, R. V. (1991). *Computer-aided Instruction: A Guide for Authors.* Belmont, CA: Wasworth, Inc.

24. Reiser, R. A. & Dempsey, J. V. (2007). *Trends and Issues in Instructional Design and Technology*. Upper Saddle River, New Jersey: Pearson Education Inc.

25. Sales, G. C. (2010). Can modern e-learning development follow a process that ensures quality? *Contemporary Educational Technology*. 1(1), 93-94.

26. Seel, N. M. (2004). Introduction: Instructional design and curriculum development. In N. M. Seel and S. Dijkstra. (Eds), *Curriculum, Plans, and Processes in Instructional Design*, New York: Lawrence Erlbaum Associates.

27. Seels, B. & Glasgow, Z. (1998). *Making instructional design decisions* (2nd Ed.). Upper Saddle River, NJ: Merrill/Prentice Hall.

28. Simonson, M., Smaldino, S., Albright, M. & Zvacek, S. (2006). *Teaching and Learning at a Distance: Foundations of Distance Education*, Upper Saddle River, Columbus, Ohio.

29. Sözcü, Ö. & İpek, İ. (2012). Instructional, technological and psychological approaches of using IWBs: A framework, Paper will be presented at the INTE 2012, 3rd International Conference on New Horizons in Education, June 5-7, 2012, Prague, Czech Republic.

30. Sugrue, B. & Kim, K. H. (2004). *ASTD 2004 State of the Industry Report.* Alexandria, VA: American Society for Training and Development

31. Van Merriénboer, J. J. G., Clark, R. E. & De Crook, M. B. M. (2002). Blueprints for complex learning: the 4C/ID-model, *Educational Technology, Research and Development*. 50(2), 39-64.

32. Waterhouse, S. (2005). *The Power of E-learning: The Essential Guide for Teaching in the Digital Age.* New York: Pearson Education Inc.

33. Wileman, R. E. (1993). *Visual Communicating.* Englewood Cliffs, NJ: Educational Technology Publication.

Рассмотрение интегрированного дистанционного обучения (ИДО) и следующего поколения дистанционного обучения

[1] Омер Фарук Созджу
[2] Исмаил Ипек

[1] Кафедра компьютерных и образовательных технологий, Университет Фатих, Турция
34500 Бююкчекмедже, Стамбул
Доктор педагогических наук, ассистент-профессор
E-mail: omersozcu75@gmail.com, ofsozcu@fatih.edu.tr
[2] Кафедра компьютерных и образовательных технологий, Университет Фатих, Турция
34500 Бююкчекмедже, Стамбул
Доктор педагогических наук, доцент
E-mail: ismailipek34@gmail.com

Аннотация. Целью данного исследования является рассмотрение стратегий развития программного обеспечения интегрированного дистанционного обучения (ИДО), основанное на моделях и подходах образовательных технологий (ОТ), а также новых направлениях дистанционного обучения. Для достижения данной цели обучение начинается с выбора одного или нескольких моделей ИДО для осуществления дистанционного программного обеспечения, включая модели ИДО, основанные на образовательных стратегиях и разработках. Авторы обсуждают стратегии и шаги, которые должна предпринять команда дизайнеров при проектировании интегрированного дистанционного программного обеспечения, которое обеспечивает эффективное дистанционное обучение с новыми показателями, такими как результаты деятельности и обучение. Шаги включают развитие содержания, элементов и модулей для курса ИДО. Подводя итоги, нашей целью является объединение необходимых модельных стратегий ИДО для педагогической разработки ИДО. Эффективные модели ИДО рассматриваются с позиции соответствия ИДО новым идеям и новым обязательствам в процессе обучения ИДО. Мы рассмотрим интегрированные шаги разработки дистанционного программного обеспечения и их практическое применение с целью разработки высококачественного дистанционного программного обеспечения, чтобы улучшить образовательные задачи, комплексные когнитивные навыки, подходы и компетенции в процессе дистанционного обучения, а также для определения результатов деятельности и экономической ситуации. В завершении обучения, показатели ИДО, включая педагогические, технологические и организационные показатели и основные преграды для внедрения, включая перспективы, такие как студент, учитель-дизайнер, учебные материалы, результаты деятельности, новое поколение дистанционного обучения в бизнес и социальном обучении и определение сопутствующих факторов, будут рассмотрены и представлены.

Ключевые слова: дистанционное обучение; интегрированное дистанционное обучение; дистанционное программное обеспечение; образовательные дизайн модели; показатели в новом поколении дистанционного обучения для бизнеса и обучения.