



# ANKARA UNIVERSITY DISTANCE EDUCATION CENTER e-Tutor Certificate Program



## Online Instructional Design

---

## 1. Instructional Design Models

---

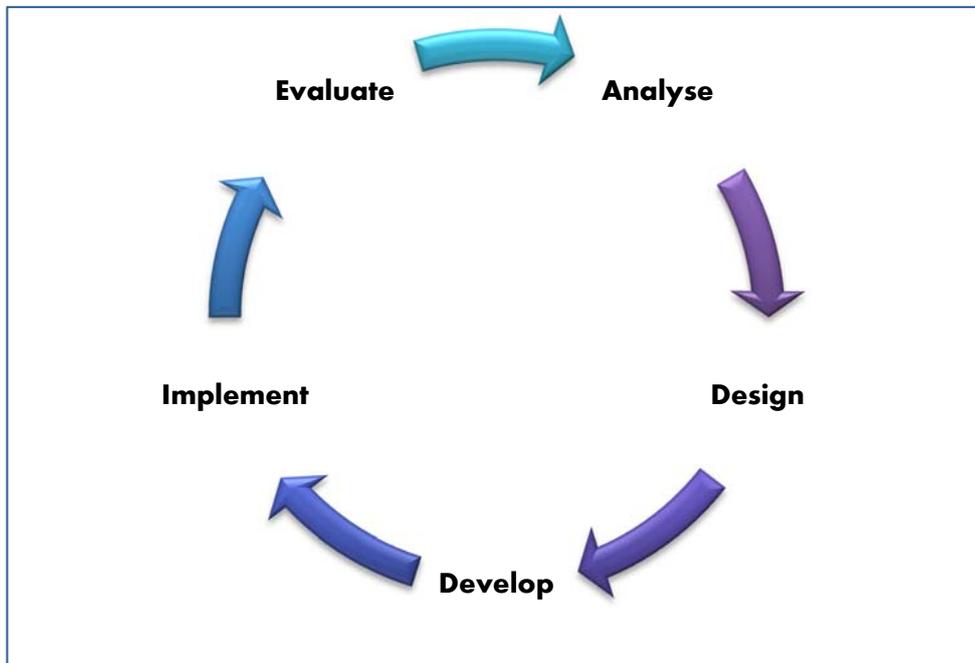
Instruction design has a vital role for a high-quality e-learning process. According to Hannafin and Hill (2002), instructional design is based on two main approaches: behaviourism and cognitivism, and constructivism. Behaviourism and cognitivism are more teacher- or expert-centred instruction where each step of the instruction is defined (Akkoyunlu, Altun & Yılmaz-Soylu, 2008). Constructivism, on the other hand, is a student-centred approach where students are active and responsible for their own learning process. The learning environment is set according to specific tasks and problem solving processes. This approach is more flexible in terms of constructivist principles (Akkoyunlu, Altun & Yılmaz-Soylu, 2008).

There are many instructional design models, among which ADDIE, ARCS, Dick and Carey, and ASSURE are the commonly accepted ones.

## 2. Instructional Design Models for e-Learning: ADDIE

---

The most common used instructional design model for e-learning environment is the ADDIE model. This model consists of five (5) main steps, the first letters of which form the abbreviation, ADDIE:



**Figure 5.1.** 5 Steps of ADDIE Model

Since ADDIE contains other models' components in it, it is one of the most commonly used instructional designs in e-learning environments due to its popularity.

### 3. Course Design for e-Learning: How Do We Do It?

Instructional design's role becomes more crucial when teaching and learning environments, as well as teaching and learning experiences, are imported to the web environment. E-learning instructors or organisations should pay due attention to the identification of course content as well as methods and techniques to be used in the e-learning process.

In this process, it is important to determine the learning goals and outcomes at the onset. There are different approaches in the literature about determination of the learning goals (e.g. Bloom's taxonomy). As an instructor, you can select one of those approaches, and create or organise your goals based upon this approach. The content should be prepared appropriately in terms of e-learning approach, and it is also important to decide that what kind of technology should be used for delivery. Additionally, when and how to make assessment is another issue that should be considered at the outset. All these steps should be followed systematically according to which instructional design model you will choose to use. For the purposes of this course, the table below has been prepared on the basis of the ADDIE model:

**Table 5.1.** Illustrated Table Based on ADDIE Model

Analyse	Design	Develop	Implementation	Evaluate
Preplanning, analysis and identification of current situation & opportunities	Designing the course on paper and detailing	Developing course materials, integrating them in the course	Starting the teaching and learning	Evaluating the course (product & process)
<ul style="list-style-type: none"> <li>Analysing the content</li> <li>Analysing the students</li> <li>Analysing the learning environment</li> <li>Identifying the learning</li> <li>Analysing the students</li> <li>Analysing the learning environment</li> <li>Identifying the frame for learning outcomes</li> <li>Technological infrastructure</li> <li>Technological opportunities</li> </ul>	<ul style="list-style-type: none"> <li>Identifying the learning outcomes</li> <li>Detailing the content in terms of topics and activities</li> <li>Determining instructional methods and techniques that are going to be used</li> <li>Determining the way of evaluation</li> </ul>	<ul style="list-style-type: none"> <li>Preparing all instructional materials</li> <li>Preparing all activities and project topics</li> <li>Preparing the evaluation materials</li> <li>Developing the course organisation</li> <li>Uploading the course to LMS (Learning Management System)</li> </ul>	<ul style="list-style-type: none"> <li>Starting the course</li> <li>Meeting session</li> <li>Interacting</li> </ul>	<ul style="list-style-type: none"> <li>Did students reach the determined goals?</li> <li>What did you learn as an instructor?</li> <li>How can you make the course better for the future?</li> </ul>



- Software and Hardware opportunities
- Identifying evaluation strategies

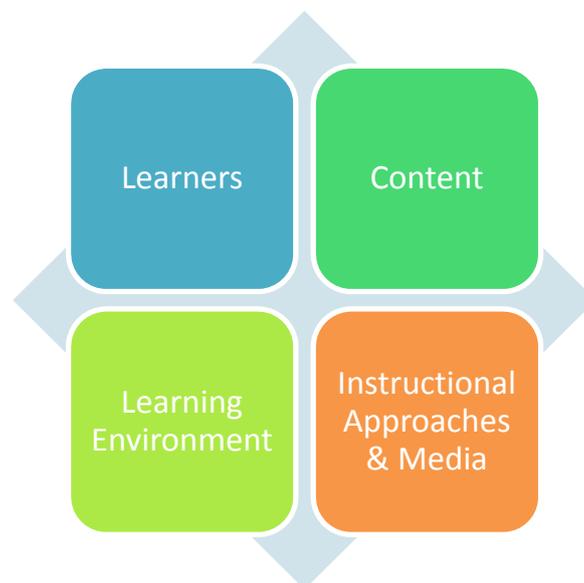
### ***Basic Rules for Instructional Design Systems***

The components of a good instructional system are student, content, method, material, environment and technology. These components should be in harmony and interaction in order to provide a high-quality learning experience. Plus, the system should also be regularly assessed, and unsuccessful parts, if there are any, should be improved upon to achieve an effective instructional process.

It is important to remember that different strategies need to be used for planning distance learning. One example is the context. The context used for face-to-face learning should not be used as it is, but should be reconstructed in terms of content, interaction, instructional methods and techniques, students' expectations and assessment processes. To give an example, the content should be enhanced by visuals, the priority should be on interaction, group work should be promoted, and both instructors and system providers should be well prepared for potential technical problems. The system should consider the obvious differences between the 'classroom' environment and use of the 'internet' environment in terms of learning.

### ***The Components of Planning Process***

The planning process for e-learning should particularly contemplate such important issues as learners, content, instructional approaches and media as well as learning environments (Simonson, Smaldino, Albright and Zvacek, 2003).



**Figure 5.2.** Components of Planning Process

Let us look at these components individually.

- **Learners:** It is important to analyse learner's characteristics, their skills, as well as potential learner interaction in the group. Instructors should try to know and understand learners and their characteristics as much as possible.
- **Content:** It is important to identify the learning objectives and to plan the course on the basis of these objectives. Sharing this planning with students in advance will contribute to the improvement of their learning to a higher level (Akkoyunlu, Altun & Yılmaz-Soylu, 2008). One important note to take into consideration, is the amount of information, since learners should be provided with sufficient information that they can comfortably process.
- **Instructional Approaches and Media:** It is important to carefully select the instructional methods and techniques beforehand that are to be used in the process. Selection of the media most appropriate to the type of content, and selection of the most appropriate approach to deliver the content will ensure a more efficient learning process. Visuals rather than big blocks of text, animations and videos should be used sufficiently for delivering the content.
- **Learning Environment:** Learning environment is **the** place where content will be delivered and interaction held; therefore it should be planned with all due diligence. Planning of the learning environment should be made on the basis of a careful review of the existing technological infrastructure and other technical issues such as any existing communication tools, learning management systems, and the available access speed. Planning should be based on the effective use of existing resources, and necessary measures should be taken to address any potential or known problems.

## *Syllabus*

Detailed information should be provided while planning an e-course in the form a syllabus. This information can be categorised under five main titles: (1) course information, (2) rules and regulations, (3) instructional activities, (4) evaluation, and (5) other information (Simonson, Smaldino, Albright and Zvacek, 2003).

Additional topics may be added to the syllabus based on the purpose of the course as well as the instructor's expectations. Yet, it is recommended that an e-course syllabus should include information under the five main titles mentioned above as a minimum requirement. A significant number of e-learners make their learning plan on the basis of this information. Hence, it is both crucial for the quality of the learning process and also useful for learners to prepare and provide in advance such detailed course information in the form of a syllabus.

For a sample syllabus, please see our course syllabus placed on the course page of our LMS.

## *Learning Activities for Online Learning Environments*

There are numerous activities for online learning environments. It is important to become familiar with them in order to select the right one. Moodle LMS provides instructors with such activities so as to enable learner-learner, learner-teacher or learner-content interaction. Please refer to *Lesson 3 Learning and Content Management Systems* to review how to add an activity to your course.



**Table 5.2.** Sample Activities Provided by Moodle

Assignments	Enables teachers to grade and give comments on uploaded files and assignments created on and off line.
Chat	Allows participants to have real-time synchronous discussion.
Choice	Enables the teacher to pose a question and specify a choice of multiple responses.
Feedback	Used to create and conduct surveys to collect feedback.
Forum	Allows participants to have asynchronous discussions.
Glossary	Enables participants to create and maintain a list of definitions, like a dictionary.
Lesson	Used to deliver content in flexible ways.
Quiz	Allows teacher to design and set quiz tests, which may be automatically marked and feedback and/or correct answers shown.
Wiki	A collection of web pages that anyone can add to or edit, useful for collaborative project work/tasks.
Workshop	Enables peer assessment.

#### 4. Roles and Responsibilities During e-Learning Process

A teamwork approach is required to plan, design, develop, and put into action an online course. There may be few or many members in the team, depending on the expectations or the content. Since preparation of each material, activity, and application requires expertise, any approach other than teamwork can be effective to ensure quality (Gülbahar, 2012).

##### *Content Development Process*

There are various materials in this process, the preparation of which may require individual or group use of different expertise. Members of the content development team may include a research and design coordinator, content/subject matter expert, instructional designer, interface designer, copyright coordinator, evaluation specialist, production coordinator, programmer, editor, graphic designer, multimedia developer, video/photographer, learning objects specialist, quality control expert, and support staff. Table 5.3 gives some brief information about the roles and responsibilities of content development experts (Khan, 2004; Lee & Owens, 2000).

**Table 5.3.** E-Learning Team for Content Development

Individual Roles	Content Development Process
<b>Research and Design Coordinator</b>	Arranges and organises research and design processes for e-learning. Provides latest up-to-date information about online learning activities and practices to team members and to management.
<b>Content/Subject Matter Expert</b>	Writes course contents. Reviews course materials in terms of accuracy and validity.



<b>Individual Roles</b>	<b>Content Development Process</b>
<b>Instructional Designer</b>	Ensures use of correct instructional methods and techniques during the content development process. Helps in considering evaluation strategies and means for distribution.
<b>Interface Designer</b>	Is responsible for website and interface design, as well as access and usability issues. Periodically reviews and updates where necessary.
<b>Copyright Coordinator</b>	Communicates with authorised people for copyright and consent issues about book chapters, articles, videos, music, animation, graphics, and web pages used in course content.
<b>Evaluation Specialist</b>	Is responsible for the planning and management of the evaluation process. Manages the overall evaluation process of e-learning components.
<b>Production Coordinator</b>	Organises the overall production process.
<b>Programmer</b>	Programs the course according to storyboards created in the design process.
<b>Editor</b>	Reviews materials in terms of grammar, dictation, referencing, and copyright issues by using creativeness.
<b>Graphic Designer</b>	Designs visuals and characters for content.
<b>Multimedia Developer</b>	Develops multimedia objects (e.g. audio, video, 2D/3D animations and simulations).
<b>Video/Photographer</b>	Records videos. Takes photos.
<b>Learning Objects Expert</b>	Provides guidance according to international standards (e.g. SCORM, AICC, IEEE) for design and production.
<b>Quality Control</b>	Is responsible for the quality of e-learning.
<b>Support Staff</b>	Participates in pilot applications.
<b>Distribution Coordinator</b>	Organises and arranges course and resource applications.

### ***Content Delivery and Control Process***

The content development process is followed by the implementation process. There are different experts in this process responsible for delivery of the content, sustainability of the delivery, and coordination of the whole process. Delivery of the content, in fact, constitutes the most important part of the e-learning process. On the basis of systems approach, even a slight problem in one of the components could affect the whole systems' performance. As always, it is very important to work in collaboration as a team. Khan (2004) recommends the following roles and responsibilities for individuals engaged in the content delivery and control process.

**Table 5.4.** E-Learning Team for Content Delivery and Control Process



<b>Individual Roles</b>	<b>Content Delivery and Control Process</b>
<b>System Administrator</b>	Is responsible for administration of the Learning Management System (LMS) server, user codes and network security.
<b>Database Programmer</b>	Records learning activities, and is responsible for the server and database.
<b>Online Courses Coordinator</b>	Assigns and manages instructors and support staff for online courses.
<b>Instructor</b>	Holds online courses.
<b>Assistant</b>	Assists the instructor in online courses.
<b>Customer Services</b>	Helps and provides support to stakeholders.
<b>Technical Support</b>	Provides technical support and help about the use of software and hardware.
<b>Library Services</b>	Interactive library services for learners who wish to ask questions to library officials in the synchronous and asynchronous process.
<b>Guidance Services</b>	Provides guidance and counselling about study skills, self-discipline, self-learning responsibilities, time and stress management etc.
<b>Administrative Services</b>	Administrative support and coordination about admissions, students affairs etc.
<b>Enrolment Services</b>	Is responsible for fast, efficient and secure enrolment process.
<b>Marketing Expert</b>	Is responsible for e-learning marketing proposals.

## 5. Conclusion

---

Instructional design plays a crucial role in providing more effective, more efficient and higher quality learning experiences. This is particularly important in online learning environments where interaction among learners, instructors and content is ensured through information and communication technologies instead of face-to-face means. E-learning organisations should allocate sufficient time as well as financial and human resources for a detailed, well-planned, and effectively conducted content development stage to be followed by a systematic content delivery and control process based on collaboration, cooperation, and teamwork.



## 6. References

---

- Akkoyunlu, B., Altun, A. & Yılmaz-Soylu, M. (2008). Öğretim tasarımı. Ankara: Maya Yayıncılık.
- Gülbahar, Y. (2012). E-Öğrenme (e-Learning) (2nd ed). Ankara, Turkey: Pegem Akademi Yayıncılık.
- Hannafin, M. J., & Hill, J. R. (2002). Epistemology and the design of learning environments. In R. A. Reiser & J. V. Dempsey (Eds.), Trends and issues in instructional design and technology (pp. 70-82). Upper Saddle River, NJ: Prentice-Hall.
- Khan, B. H. (2004). People, process and product continuum in e-learning: The e-learning P3 model. Educational Technology..44(5), 33-40.
- Lee, W. W. & Owens, D. L. (2000). Multimedia-Based Instructional Design. CA: Jossey-Bas/Pfeiffer.
- Simonson, M., Smaldino, S., Albright, M. & Zvacek, S. (2003). Teaching and learning at a distance: foundations of distance education, (2nd Ed.). Upper Saddle River, NJ: Merrill Prentice Hall.

