

Module 4: Design (P1: Instructional Objectives)



This document contains the content from the interactive instructional unit for the module.

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Introduction

The second phase of ISD process is **design**. In the design phase, you determine how the learners' will learn. Based on the information from the analysis phase, you

- identify measurable objectives,
- plan instructional materials, activities, and assessments, and
- select media.

Garrison and Anderson (2003), in their discussion of the design, expand these three design tasks and provide us with a more detailed list of what is included in the design phase:

- Establish curriculum
- Identify resources
- Define clear goals and objectives
- Address technology concerns
- Structure individual and collaborative activities
- Set time frames
- Design assessment procedures
- Select media

Garrison and Anderson (2003) also remind us that the design process is not rigid but adaptable to learners' needs. Thus, design and redesign continues throughout the entire course. The instructor designs the course and adjusts it as students are given the appropriate degree of control over learning activities and objectives.

Objectives

In this unit, we will focus on identifying measurable objectives. By the end of this unit, you should be able to:

Unit Objectives:

- Define an instructional objective
- List 3 components of an effective objective
- Write instructional objectives based on data collected in the analysis phase of the ISD process

By the end of this unit, what would you like to learn? Write your personal objectives.

Personal Objectives:

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Instructional Objectives

Based upon the information gathered from the needs assessment, task analysis, the learner and context analyses, and the goal, you can write effective instructional objectives. Writing a set of clear objectives provides a firm foundation upon which you can select instructional material, activities, and assessments.

Objective Defined

Performance objective - a detailed description of what students will be able to do upon completion of a unit of instruction (Dick, Carey, & Cary, 2005)

Objective - "a collection of words and/or pictures and diagrams intended to let others know what you intend for your students to achieve" (Mager, 1997, p. 3, *Preparing Instructional Objectives*). Mager emphasizes the need for clear, precise statements of what students should be able to do when they complete their instruction and believes that objectives should be identified prior to design and development.



Think About It Activity 4.1

Fill in the blank: What is the difference between a goal statement and an objective? The _____ is a broad statement of what students will be able to do after completing a set of instructional tasks; the _____ is specific and describes the specific behavior and a context of learning situation. The ____ is the basis for planning instructional activities.

Choose the correct answer:

- a. goal statement, objective, objective
- b. goal statement, goal statement, objective
- c. objective, objective, goal statement
- d. goal statement, objective, goal statement

Answer: a

Dick, Carey and Carey: Steps to Writing Instructional Objectives

Experts in the field of instructional design have provided numerous formulas for writing objectives. Dick, Carey, and Carey (2005) suggest the following steps in developing instructional objectives:

1. Review your goal statement and remember to write objectives based on the goal statement.
2. Write objectives for each step in your task analysis. Objectives are derived from the skills you identified in the analysis. Generally, you should write one or more objectives for each skill listed.
3. Write an objective for each group of substeps or for each individual substep.

Mager: Writing Effective Instructional Objectives

Mager (1997) provides us with guidelines for writing effective objectives by identifying 3 components of an effective objective and 3 issues that should be considered when writing objectives.

Think About It Activity 4.2

Answer True or False. The stated objective is effective.

Objective 1: Students will develop an appreciation of Web 2.0 technology for course design is a good objective.

Answer: False. This objective is abstract and is not directly observable. According to Mager (1997) an objective should answer the question, "What will the learner be DOING when demonstrating achievement of the objective?" If you apply this question, what would the learner be doing if they were "appreciating" Web 2.0 technology? A measurable or observable objective may be: The learner will implement Web 2.0 technology in the creation of his or her web-based ISD instructional unit.

Objective 2: Students will develop a 10-minute video presentation and post it on the class bulletin board is a poorly written objective.

True and false. This objective may not be poor, but it could be improved. Although this objective is directly observable, it could be improved by specifying conditions, that is, a description of the circumstances in which the task will be performed and a description of the available resources and tool. An example of objectives with conditions is given a web-camera, video capturing software, and a computer operating system, the learner will produce a 10-minute video presentation to post on the web. The performance is to occur with the use of specified items - these are the conditions that may influence the nature of the performance.) One author once described it like this. The stated objective is travel from New York to Washington DC in two hours. You could probably do that - if you were on a plane. However, what if the objective were stated like this: Given an automobile, travel from New York to Washington DC in two hours. Or this: Using your own two feet, travel from New York to Washington DC in two hours. Identifying tools can be important to ensure that the objective is feasible.

3 Components of an Effective Objective

Mager (1997) identifies three components of an effective objective:

1. Performance

Performance is defined as a description of the expected behavior from the learner. It should be both measurable and observable and answers the question, "What will the learner be DOING when demonstrating achievement of the objective?"



Example of a performance may be:

- The student will be able to write a literature review

- The student will be able to create a multimedia tutorial

2. Conditions

A condition is a description of the circumstances in which the task will be performed. It may also include a description of the available resources and tool for learners to complete the desired behavior.

Example of a condition may be:

- Given a fully-functioning video camera
- In the presence of an irate supervisor.

An example of an objective with a performance and conditions is:

- Given a bicycle and a flat street, the student will be able to ride the bike to the end and back. (The conditions that will influence the performance are the bike and the flat street.).
- Given screen capturing software, the student will be able to create a 10 minute multimedia tutorial. (The condition that will influence the performance is the software.).

3. Criterion

Criterion refers to a description of the criteria that indicates *mastery* of the objective. It is the part of the objective that describes the desired or appropriate level of performance.

For example:

- Students will write an APA style literature re view. It should have no spelling, grammar, or punctuation errors.

Criterion may also be defined in terms of speed or accuracy. For example:

- Students will complete a math times table quiz within 10 minutes or with 75% accuracy.



3 Issues

In addition to 3 components, Mager (1997) describes three important issues to consider when writing effective objectives:

1. Ensure objectives are related to intended outcomes, rather than the process for achieving those outcomes. Facilitating learning and lecture may be part of the process of instruction but it is not the purpose. When writing an

Think About It Activity 4.3

After reading about Mager's 3 components and 3 issues, what makes the following objectives ineffective?

- This course provides practice...
- Provide a lecture about...
- Think clearly about...
- Teach the importance of...
- Students will be taught about...

- objective describe the intended result.
2. Ensure objectives are specific and measurable, rather than broad and intangible. If the objective is specific and measurable, then you should be able to determine if the objective has been achieved.
 3. Ensure objectives are concerned with learner and not the educator. The objective should be stated in terms of the student's performance.

Word Choice: Writing Effective Instructional Objectives

An additional consideration is good word choice. Poor word choice often leads to poorly written objectives; many words do not communicate specific instructional intent. They are often vague.

- A vague objective is: The student will learn about instructional objectives.
A better objective would be: The student will construct 5 well-written instructional objectives for an instructional unit.

Think About It Activity 4.4

Look at each list of words. Which list is poor and which list is better or good?

<ul style="list-style-type: none"> • Know • Appreciate • Enjoy • Be familiar with • Believe • Learn • Have faith in • Internalize • Be happy • Value 	<ul style="list-style-type: none"> • Choose (or select) • Solve • Write • Identify • List • Apply • Build • Align • Compare • Smile • Classify
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Answer: The left column is poor and the right column is better or good. The right column is an example of performance words that an instructor would be better able to both measure and observe. That is, an educator could observe the learner doing the behavior. Note that some authors, like Horton (2006) describe the left column as secondary objectives.

The chart below provides examples of words, both measurable and observable, that you can use to write effective objectives.

Skill, Knowledge, Attitude	Objective word
<i>Verbal Information</i> <i>Intellectual Skills</i>	State, Recite, Tell, Declare, Name, List, Define Classify, Sort, Categorize, Solve, Show, Demonstrate, Generate, Develop, Create, Determine, Calculate, Predict, Defend, Support
<i>Motor Skills</i>	Execute, Perform, Swim, Walk, Run, Climb, Drill, Saw, Assemble, Build
<i>Attitudes</i>	Choose, Decide, Participate

Aside: In addition to writing performance objectives, adult learning theorists suggest that in addition to performance objectives, you should write relevancy objectives also. That is, the instructor of adult learners may include a set of objectives that demonstrate how what is learned is applicable to the real world. One way to accomplish this is to have adult learners write personal objectives that reflect their own goals and interests based on course objectives.

ISD Project: Write Instructional Objectives



Taking into consideration Mager's (1997) 3 components and issues; Dick, Carey, and Carey's steps to writing an effective objective, as well as additional reading and research you have done for this course, write effective instructional objectives for each goal and aligning step(s) identified in the task analysis (completed in Module 3). At minimum, the objectives have 3 components in which Mager (1997) identified. The following questions may be helpful to consider when writing your objectives:

1. Performance: What behavior is expected of the learner? What should the learner be able to do?
2. Conditions: What are the conditions or tools necessary for the learner to accomplish the goal?
3. Criterion: What are the measures that will be used to determine if the learner achieved the goal?

The objectives should be written in list form with the identified goal and step from the task analysis. They should also be included as part of the task analysis flowchart and put into Word document or PDF formats.

Here's an example of how you might write an instructional objectives for a skill identified as necessary for a goal:

Goal: Students will create an online learning module or course using a systematic design process to assist teachers and administrators in the developing knowledge, skills, and understanding of technology for educational use.

Skill/Step 5: Evaluate and select the media that supports instructional tasks and assist learners to meet instructional objectives in an online learning module.

Questions to assist in developing an objective:

1. **Performance:** What behavior is expected of the learner? What should the learner be able to do? *I want learners to be able to select a media that is appropriate for the delivery of an instructional activity in an online learning module.*
2. **Conditions:** What are the conditions or tools necessary for the learner to accomplish the goal? *Learners will be given a list of media useful for online instruction and a media evaluation rubric. Learners will have previously identified the instructional activity to meet the instructional objective in the online learning module.*
3. **Criterion:** What are the measures that will be used to determine if the learner achieved the goal? *The selection of a media based on the media evaluation rubric*

Objective 5.1: Having identified the instructional activity and having been given a list of online media choices and a media evaluation rubric, students will select the most appropriate media for the instructional material in the online learning module.

Note more than one objective under each goal and step may be appropriate.

After you have written your objective, you can evaluate it by asking the following (Horton, 2006, pp. 13-20):

- Is my objective clear? Can learners answer the question, “What’s in it for me?”?
- Is my objective precise? Can it be measured?
- Does the objective lead to accomplishing the underlying goal? The organizational goals?

After objectives are written assessment and instructional material and assessments should be planned.

Summary

In this unit, we focused on identifying measurable objectives. Now you should be able to:

Unit Objectives:

- Define an instructional objective
- List 3 components of an effective objective
- Write instructional objectives based on data collected in the analysis phase of the IDS process

Finally, have you met your personal objectives?

Personal Objectives:

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