

# Instructional System Design (ISD): Using the ADDIE Model

Instructional design is the *systematic* approach to the **A**nalysis, **D**esign, **D**evelopment, **I**mplementation, and **E**valuation of learning materials and activities.

Instructional design aims for a learner-centered rather than the traditional teacher-centered approach to instruction, so that effective learning can take place. This means that every component of the instruction is governed by the learning outcomes, which have been determined after a thorough analysis of the learners' needs.

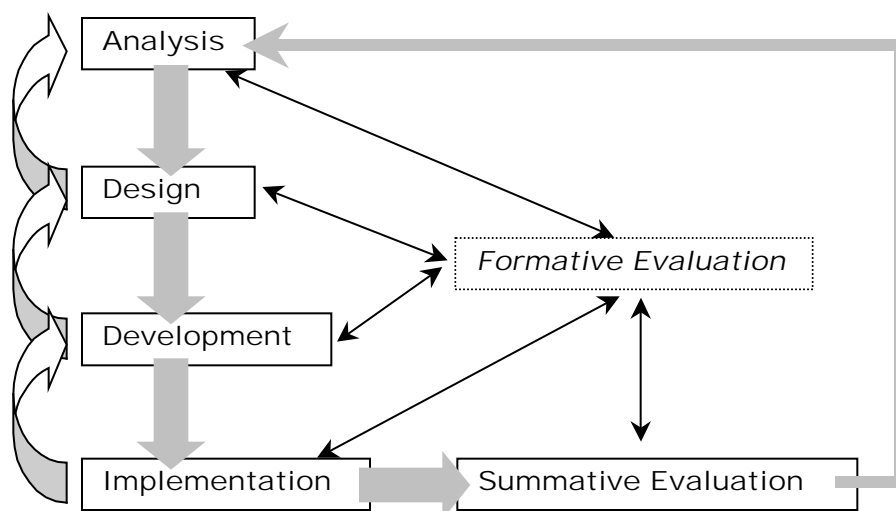
These phases sometimes overlap and can be interrelated; however, they provide a dynamic, *flexible* guideline for developing effective and efficient instruction.

	Sample Tasks	Sample Output
Analysis the process of defining what is to be learned	<ul style="list-style-type: none"> <li>Needs assessment</li> <li>Problem identification</li> <li>Task analysis</li> </ul>	<ul style="list-style-type: none"> <li>Learner profile</li> <li>Description of constraints</li> <li>Needs, Problem Statement</li> <li>Task analysis</li> </ul>
Design the process of specifying how it is to be learned	<ul style="list-style-type: none"> <li>Write objectives</li> <li>Develop test items</li> <li>Plan instruction</li> <li>Identify resources</li> </ul>	<ul style="list-style-type: none"> <li>Measurable objectives</li> <li>Instructional strategy</li> <li>Prototype specifications</li> </ul>
Development the process of authoring and producing the materials	<ul style="list-style-type: none"> <li>Work with producers</li> <li>Develop workbook, flowchart, program</li> </ul>	<ul style="list-style-type: none"> <li>Storyboard</li> <li>Script</li> <li>Exercises</li> <li>Computer assisted instruction</li> </ul>
Implementation the process of installing the project in the real world context	<ul style="list-style-type: none"> <li>Teacher training</li> <li>Tryout</li> </ul>	<ul style="list-style-type: none"> <li>Student comments, data</li> </ul>
Evaluation the process of determining the adequacy of the instruction	<ul style="list-style-type: none"> <li>Record time data</li> <li>Interpret test results</li> <li>Survey graduates</li> <li>Revise activities</li> </ul>	<ul style="list-style-type: none"> <li>Recommendations</li> <li>Project report</li> <li>Revised prototype</li> </ul>

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The ADDIE Model is an iterative instructional design process, where the results of the formative evaluation of each phase may lead the instructional designer back to any previous phase.

The end product of one phase is the starting product of the next phase.



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## Analysis

The **Analyze** phase is the foundation for all other phases of instructional design. During this phase, you must define the problem, identify the source of the problem and determine possible solutions.

The phase may include specific research techniques such as needs analysis, job analysis and task analysis. The outputs of this phase often include the instructional goals, and a list of tasks to be instructed. These outputs will be the inputs for the Design phase.

## Design

The **Design** phase involves using the outputs from the Analyze phase to plan a strategy for developing the instruction. During this phase, you must outline how to reach the instructional goals determined during the Analyze phase and expand the instructional foundation.

Some of the elements of the Design Phase may include writing a target population description, conducting a learning analysis, writing objectives and test items, selecting a delivery system, and sequencing the instruction. The outputs of the Design phase will be the inputs for the Develop phase.

## Development

The **Develop** phase builds on both the Analyze and Design phases. The purpose of this phase is to generate the lesson plans and lesson materials. During this phase you will develop the instruction, all media that will be used in the instruction, and any supporting documentation. This may include hardware (e.g., simulation equipment) and software (e.g., computer-based instruction).

## Implementation

The **Implementation** phase refers to the actual delivery of the instruction, whether it's classroom-based, lab-based, or computer-based. The purpose of this phase is the effective and efficient delivery of instruction. This phase must promote the students' understanding of material, support the students' mastery of objectives, and ensure the students' transfer of knowledge from the instructional setting to the job.

## Evaluation

This phase measures the effectiveness and efficiency of the instruction. **Evaluation** should actually occur throughout the entire instructional design process - within phases, between phases, and after implementation. Evaluation may be Formative or Summative.

**Formative Evaluation** is ongoing during and between phases. The purpose of this type of evaluation is to improve the instruction before the final version is implemented.

**Summative Evaluation** usually occurs after the final version of instruction is implemented. This type of evaluation assesses the overall effectiveness of the instruction. Data from the Summative Evaluation is often used to make a decision about the instruction (such as whether to purchase an instructional package or continue/discontinue instruction).

This ADDIE Model descriptive summary was provided by three Graduate Students (Sherri Braxton, Kimberly Bronico, Thelma Looms) in the Computer Science Department at The George Washington University in Washington, D.C.