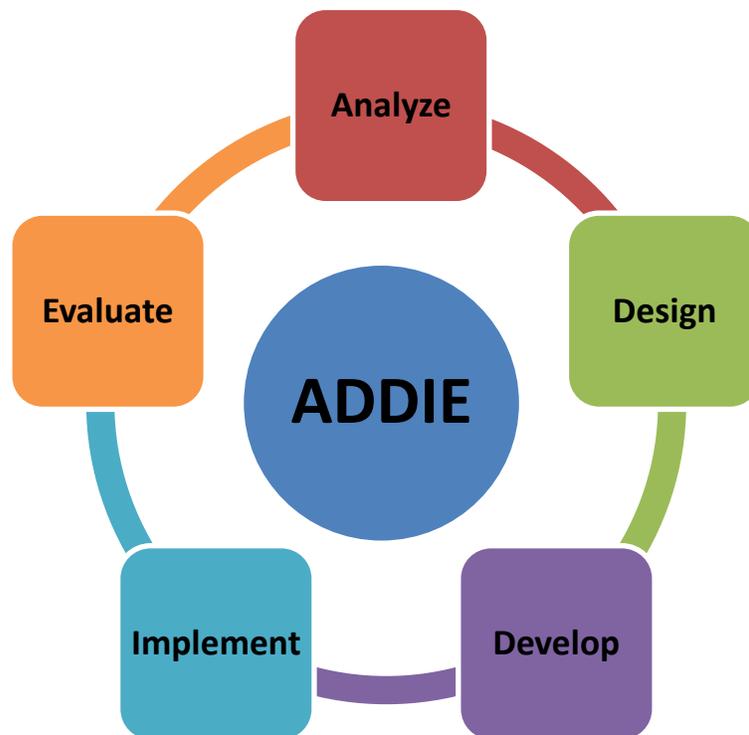


Course Design: A Systematic Approach

Following the steps of a widely accepted Instructional Design (ID) model can assist instructors in preparing and delivering meaningful and effective instruction. “The term instructional design refers to the systematic and reflective process of translating the principles of learning and instruction into plans for instructional materials, activities, information resources, and evaluation” (Smith and Ragan, 1999). It is during this systematic process that you should consider the audience for whom the instruction is designed, what goals drive the instruction, and which objectives will students follow to ensure they do what you want them to do.

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Instructional Design (ID) is a process that can help improve the design and development of courses and course content. Often associated with training in business and industry, ID has been widely used by educators in revising and modifying existing courses and to plan and implement new instruction. The process is systematic and systemic; steps are taken in the design (planning) phase of the course that are dependent upon each other to generate a successful product (course). One of the more tried and true ID models is ADDIE (Analyze, Design, Develop, Implement, Evaluate) although many others exist and are used in different learning situations. The ADDIE model is presented below.



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Keep in mind that all materials, methods, and media should be carefully selected based on the learning objectives.

You will have to decide whether or not to create instructional products yourself or to employ an expert to create that special video or website.

Analyze

When using the ADDIE model, the first step is to *analyze* and understand all aspects of the instructional problem. In other words, why are we teaching what we teach, who are our learners (students), and will instruction get our students to where we want them to be at the end of the semester? Knowing your students will help guide your course design and even if the semester is about to begin or already has begun, it's good to know something about your students.

Example: Have students take a self-assessment inventory at the beginning of the semester to get better acquainted with the skills and knowledge they bring to the course. The inventory could include questions related to the course content, i.e., “What events lead to the American Civil War?” or “How many groups are represented in the Periodic Group of Elements?” or “What skills do you bring to this class?” Another part of the self-assessment could ask students

Design

In the *design* phase, consider all components of instruction (from beginning to the end). When designing instruction it often helps to work backwards and think about how you will evaluate, implement, and develop materials, methods, and media that facilitate instruction. This is the creative and inventive phase in which you can collaborate with colleagues and be open to new techniques and approaches. During the design phase, write learning objectives for events and tasks required of students, determine which methods (lecture demonstration, group work), materials (handouts, lab equipment, CD ROM's) and media (computer multimedia, flip charts, video) will be incorporated in the course. Keep in mind that all materials, methods, and media should be carefully selected **based on the learning objectives**. Effective instruction should be well planned and nothing should be designed arbitrarily.

Example: Identify what students are supposed to learn in the course and write instructional objectives for each of them; decide what kinds of handouts and/or worksheets will be used for particular content areas; determine how many examinations and/or quizzes will be given during the semester.

Development

Development (or production) is the step where you actually create the “things” used in teaching: the lecture material, the Web site that supports the course, the handouts and assessment rubrics that instructors and students will use, a PowerPoint presentation, or a video tape on case studies digitized for viewing online. You will have to decide whether or not to create instructional products yourself or to employ an expert to create that special video or website. Ask yourself whether you can get by with an existing product, if it can be modified, or to begin from scratch. Time is of the essence at this point, and efficient instructional design relies on best practice, from planning to evaluation.

Validate what is developed during this phase—this is sometimes called rapid prototyping (or continuous evaluation)—which ensures everything which has been created goes well and is checked against goals and learning objectives.

Prototyping keep things running smoothly and minimizes potential problems later in the semester.

Example: Create activities conceptualized in the design phase—prepare the actual materials which will be used for an in-class activity such as a handout or worksheet.

Implement

Students rely on the expertise of their instructors to present the content in a meaningful way.

Implement is where the actual instruction takes place. Students rely on the expertise of their instructors to present the content in a meaningful way. At the same time, students should be engaged in the learning process. All of the planning done in the design and development stages is onstage in the *implementation* phase. This is where instructor's expertise shines, along with the selected approach to teaching, whether in the classroom, the lab, the field setting or online. Implementation then, involves facilitation of learning.

Example: After going through the design and develop phases in preparing course materials, now is the time to follow the plan and teach the course! It's a good idea to keep an ongoing record of the good and the not so good aspects of the implementation phase. These notations (known as formative evaluation) will be helpful in delivering subsequent material, whether during the next class period or the next semester.

Evaluate

Evaluation happens at two levels: formative which tells us what is occurring and summative which tells us what has occurred.

Evaluation happens at two levels: *formative* which tells us what is occurring and *summative* which tells us what has occurred. Formative evaluation takes place during the planning and instruction and evaluates what instructors and students are doing. Summative evaluation occurs after instruction—here we can evaluate the instruction and what the students have done. Evaluation tells us whether or not the students have participated in and retained the information stated in the instructional objectives. With data in hand, instructors need to ask, "How can I modify the instruction to improve its next presentation?"

Examples (formative):

- 1) Keep a notebook of what happened during the class period – how well an activity went, the feedback received from the students, your thoughts and feelings of the lecture. Use these notes to plan new activities, lectures, and assessments.
- 2) Elicit feedback from students at the end of the class period, every two-to-three weeks, or midway through the semester. This form of feedback can simply be a few questions on their impression of a particular lecture or activity, questions they might have on content, and how they feel about their own progress in the class. This information provides a snap shot of the course and if any adjustments need to be made.

Example (summative): Give students a quiz to evaluate knowledge level. If the results are less than what you had expected, determine the cause (could the delivery method be inappropriate for the content or are students not reading the

material) and proceed from there (have students been given adequate time to practice the material).

Summary

The systematic instructional design process can be used to create effective instruction which will be meaningful for instructors and students. Following the basic processes and procedures that constitute instructional design, instructors can become more efficient in developing their courses and approaches to different learning situations.

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