INSTRUCTIONAL DESIGN AND DISTANCE EDUCATION
What is instructional design?

Instructional Design Models

Instructional Design and Distance Education

Important Considerations

You can go directly to each topic by clicking on the title.
What is instructional design?
Some definitions...

Berger and Kam (1996)
“...the science of creating detailed specifications for the development, implementation, evaluation and maintenance of situations that make it easier to understand small content units, in different levels of complexity.”

Broderick (2001)
“...the art and applied science of creating an instructional environment and clear and affective materials that will help students to develop their ability to perform certain tasks.”

Richey, Fields and Foson (2001)
“...systematical educational planning that includes giving value to the needs, development, evaluation, implementation and maintenance of materials and programs.”

Many attempts to explain what instructional design is, far from giving a conceptual definition, focus on the action and process of designing.
These definitions, while trying to cover a lot, may be somewhat confusing.

This is done in the effort of developing a definition that answers several questions: What is it? How is it done? What for? Who is it for?

In order to make it easier to understand what instructional design is, let’s answer them separately.
What is instructional design?

The systematical planning of an educational process.

Because it is not done in an improvised manner, but developed prior to being implemented.

It follows an order or structure that responds to a theoretical model.
How is it done?

Based on a theoretical model.

There are different instructional design models. Each of them establishes its own order and system; and answers to a specific theoretical framework.

In the following diagram you will see the different theories that have been used as theoretical frameworks for the development of instructional design models in different periods in time.

Dominant Theory

Decade in which it peaked (approximately)

- Behaviorism 1960
- Systems Theory 1970
- Cognitivism 1980
- Constructivism and Systems Theory 1990
- Connectivism After 2000

Peak of the “digital era”
Why design?

→ To guarantee that the instructional objectives will be achieved.
Who is it for?

*For the learners.*

This seems obvious, but one of the most important characteristics of instructional design is that it’s based on the needs and characteristics of the people to whom the educational process is directed to.
Instructional Design Models

Always, in some way, educational processes have been the result of planning. The contribution of instructional design, as a discipline, resides in the systematization of the designing process.

For instructional design, these models are actually tools that serve as a theoretical framework from where the structural guides of an educational product emerge (program, course, or tutorial among others).
Benefits of Instructional Design:

- It establishes the guides for the development of an educational product.
- It avoids distractions.
- It makes the job of the instructor easier.
- It provides focus.
- It provides order and structure.
- It is based on the needs of the learner.
- It adapts to the resources available.
Most Known Instructional Design Models

You can go directly to each topic by clicking on the image.
## Dick and Carey’s Model

### General Considerations
There is a relationship between the stimulus (educational material) and the response (learning) which is predictable and secure (Reductionist Model). The model presents the educational process as a system, not as the sum of isolated parts.

### Stages/Designing Process
1. Identifying the educational goal.
2. Instruction analysis.
3. Analyzing of the students and the context.
4. Writing the objectives.
5. Developing the evaluation instruments.
6. Preparing an instructional strategy.
7. Designing and developing a formative evaluation.
8. Designing and developing a summative evaluation.
9. Reviewing the instruction.
Dick & Carey Model

1. Assess Needs to Identify Goal(s)
2. Analyze Learners and Contexts
3. Conduct Instructional Analysis
4. Write Performance Objectives
5. Develop Assessment Instruments
6. Develop Instructional Strategy
7. Develop and Select Instructional Materials
8. Revise Instruction
9. Design and Conduct Formative Evaluation of Instruction
10. Design and Conduct Summative Evaluation

## Gagne’s Model

**General Considerations**

It integrates elements of the stimulus-response theories with information process theories. It focuses on results. It presents a systematical model of the educational process and states it is divided in 9 steps.

<table>
<thead>
<tr>
<th>Stages/Designing Process</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) Capturing their attention.</td>
</tr>
<tr>
<td>2) Letting them know about the objectives.</td>
</tr>
<tr>
<td>3) Stimulating memories of previous knowledge and abilities that are essential and relevant in order to make easier the integration of new knowledge.</td>
</tr>
<tr>
<td>4) Presenting content in a way that stimulates students.</td>
</tr>
<tr>
<td>5) Guiding the learner’s work.</td>
</tr>
<tr>
<td>6) Provoking answers/results.</td>
</tr>
<tr>
<td>7) Giving feedback.</td>
</tr>
<tr>
<td>9) Facilitating retention.</td>
</tr>
</tbody>
</table>
Gagne's 9 steps of instruction

1. Gain attention
2. Inform learner of objectives
3. Stimulate recall of prior knowledge
4. Present stimulus
5. Provide guidance
6. Elicit performance
7. Provide feedback
8. Assess performance
9. Enhance retention & transfer

ASSURE by Heinich and col. Model

<table>
<thead>
<tr>
<th>General Considerations</th>
<th>It is based on Gagne’s Model. It focuses on the right environment for learning.</th>
</tr>
</thead>
</table>
| **Stages/Designing Process** | **A** Analyze learners  
**S** State Objectives  
**S** Select Strategies and resources  
**U** Utilize technology, media and materials  
**R** Require learner participation  
**E** Evaluate an revise |
ASSURE Model

1. Analyze Learners
2. State Objectives
3. Select method, media or materials
4. Utilize media and materials
5. Require learner’s participation
6. Evaluate and revise

Retrieved from: https://onlinelearninginsights.wordpress.com/tag/instructional-design-models/
### ADDIE Model

#### General Considerations
This model is the one that is used the most in the field of instructional design. Although it states the basic stages, what stands out about this model is the integration of evaluation processes in each of the designing stages and the difference between formative and summative evaluations. The evaluation process allows going back to previous stages in order to modify and improve them according to the results of the formative evaluation.

#### Stages/Designing Process
- Analysis
  - Formative Evaluation
- Design
  - Formative Evaluation
- Development
  - Formative Evaluation
- Implementation
  - Formative Evaluation
- Summative Evaluation
Analysis

Design

Development

Implementation

Formative Evaluation

Summative Evaluation

## Jonassen’s Model

<table>
<thead>
<tr>
<th>General Considerations</th>
<th>This model is based on constructivist theories. In this sense, it makes emphasis in the student’s role as the builder of their own knowledge.</th>
</tr>
</thead>
</table>
| **Stages/Designing Process** | 1) States a problem (question case or project). Goal: solving it.  
2) Related cases (related experiences).  
3) Information resources.  
4) Cognitive tools.  
5) Conversation/collaboration.  
6) Social. |
Model for Designing Constructivist Learning Environments

Instructional Design and Distance Education

**Distance Education**
- It is asynchronous.
- It exists with little or no visual contact.
- It depends on technology.

**Instructional Design**
- It requires more detailed and careful processes.
- The evaluation of the processes acquires a more relevant role.

**Implications**
- We lack the kind of information available with nonverbal language.
- It makes input or feedback hard for the instructor.
- The technological resources and technological skills of those who are part of the educational process vary, thus, communication may or may not be easier, depending on the case. The instructions is not necessarily aware of this.
Final Considerations

We could state two different dimensions of instructional design in distance education.

**Technological Dimension**
- It is related to the selection of technological tools that are most appropriate for delivering the content of the instruction.

**Educational Dimension**
- It is related to the contents of the materials developed in order to achieve the educational objectives.

The technological dimension serves the educational dimension. This means that the job of the instructional designer is choosing the technological resources that best serve to deliver or communicate the contents and the specific characteristics of the students. This selection must be based on the characteristics of the students and the context in which the educational process is being developed.
Design Criteria

- Characteristics and needs of the students
- Available technological resources
- The type of content you will have to work with
- The technological skills of the instructor and the students
It’s important to keep in mind that, in distance education, most of the time students work independently. Because of this, the materials should include all the information we think they will need.

It’s common to find materials that sacrifice content due to aesthetics, and the consequence of this is that the information does no arrive complete, just a an outline of it.

Example:

Instructional Design Models

- Dick and Carey’s Model
- Gagne’s Model
- ASSURE Model by Heinich and col.
- ADDIE Model
- Jonassen’s Model

Two Dimensions of Instructional Design

- Technological
- Educational

A template like the one presented here, doesn’t necessarily have errors in its structure, but if it is going to be given to a student, as informative material, it lacks sense because the content is not explained. It could be useful, however, for supporting a presentation.
As a conclusion

Designing is a process or educational resource that has to take into consideration many elements of the participants, time, context, content and technological resources that are available. Its success will depend, mostly, on the questions that we ask ourselves at the beginning of the process. These questions should be fairly similar to the following ones:

<table>
<thead>
<tr>
<th>Question</th>
<th>Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>To who is it directed? (Characteristics and skills)</td>
<td>What are the (educational) objectives that we aim to achieve?</td>
</tr>
<tr>
<td>What financial and technological resources are available for the teaching-learning process?</td>
<td>Who will facilitate the process and what are their characteristics?</td>
</tr>
<tr>
<td>How much time do I have to work on the material?</td>
<td>How is the content going to be delivered (supported by a platform, infographic, audiovisual material, videoconference...)?</td>
</tr>
<tr>
<td>How long will the educational process be?</td>
<td></td>
</tr>
</tbody>
</table>


