Journal Plus Education, ISSN: 1842-077X, E-ISSN (online) 2068 – 1151 Vol X (2013), No. 1
pp. 63-76

PASS THROUGH EXEMPLES OF INSTRUCTIONAL DESIGN - I

Dorin HERLO, PhD,[28]
"Aurel Vlaicu" University of Arad
Faculty of Science of Education, Psychology and Social Work

Abstract
The paper presents different kind of examples for instructional design, applied into the learning process without the intention to be exhaustive or to promote a hierarchy.

Keywords: *Instructional Design, ADDIE model, ARCS model, ASSURE model*

Instructional Design (ID) is concerned with factors that influence how well a person will be able to acquire, recall, and use new knowledge and skills. These are the factors that together with effort, the outcome of motivation, have a direct influence on the quantity and quality of a person's performance in learning.

From other point of view we can find different kind of expressions for **Instructional design** (also called **Instructional Systems Design**) such as:

a. is a technology for the development of learning experiences and environments which promote the acquisition of specific knowledge and skill by students.

b. is a technology which incorporates known and verified learning strategies into instructional experiences which make the acquisition of knowledge and skill more efficient, effective, and appealing;

c. is the process by which instruction is improved through the analysis of learning needs and systematic development of learning materials

On the other hand, ID is a process followed by the teachers/professors for predicting, describing and realising, in a rationale and motivating way, the curriculum for the students for accomplish the learning outcomes.

With a view of conducting learning activities by the teachers/professors we can present a list of instructional design examples which provide some milestones to organise and structure the process of creating learning situations, for benefit of the students which gain learning experiences. These examples can be used by all the educators which want to approach to the art of science of education.

Examples provide guidelines and frameworks to organize and structure the process of creating instructional activities and can be followed or not, choose or not, depending of each educator who wants to design learning processes.

[28] dorinherlo@gmail.com

Below are dotted examples of ID considered accepted by the vast majority of educators:

- ADDIE
- ALGO-HEURISTIC THEORY
- ARCS
- ASSURE
- BACKWARD DESIGN
- COGNITIVE APPRENTICESHIP
- CONDITION OF LEARNING (R. GAGNÉ)
- CRITERION REFERENCED INSTRUCTION (R. MAGER)
- DICK & CAREY
- DISCOVERY LEARNING
- ELABORATION THEORY
- EMPATHIC INSTRUCTIONAL DESIGN
- GOAL-BASED SCENARIOS
- INSTRUCTIONAL SYSTEMS DESIGN
- INTEGRATIVE LEARNING DESIGN FRAMEWORK
- ITERATIVE DESIGN: RAPID PROTOTYPING AND SPIRAL MODEL
- KEMP DESIGN MODEL
- ORGANIZATIONAL ELEMENTS MODEL

In this part we will briefly present some of the mentioned ID models as follows:

ADDIE Model

Consisting of five phases: ***A**nalysis, **D**esign, **D**evelopment, **I**mplementation and **E**valuation*, this model represent a dynamic and flexible guideline for building effective training situations.

In the **analysis phase**, instructional problem is clarified, *the instructional goals and objectives are established* and *the learning environment* and *learner's existing knowledge and skills are identified*. Some of the questions that could be raised during the analysis phase are as follow:

- Who is the audience and their characteristics?
- Identify the new behavioral outcome?
- What types of learning constraints exist?
- What are the delivery options?
- What are the online pedagogical considerations?
- What is the timeline for project completion?

The **design phase** deals with *learning objectives, assessment instruments, exercises, content, subject matter analysis, lesson planning and media selection.* The design phase should be systematic and specific. Systematic means a logical, orderly method of identifying, developing and evaluating a set of planned strategies targeted for attaining the

project's goals. Specific means each element of the instructional design plan needs to be executed with attention to details. The steps used for the design phase:

- Documentation of the project's instructional, visual and technical design strategy
- Apply instructional strategies according to the intended behavioral outcomes by domain (cognitive, affective, psychomotor)
- Create storyboards
- Design the user interface and user experience
- Prototype creation
- Apply visual design (graphic design)

The **development phase** is where *the developers create and assemble the content assets that were created in the design phase. Programmers work to develop and/or integrate technologies. Testers perform debugging procedures.* The project is reviewed and revised according to any feedback given.

During the **implementation phase**, a procedure for training the facilitators and the learners is developed. *The facilitators' training should cover the course curriculum, learning outcomes, method of delivery, and testing procedures.* Preparation of the learners include training them on new tools (software or hardware), student registration. This is also the phase where the project manager ensures that the books, hands on equipment, tools, CD-ROMs and software are in place, and that the learning application or Web site is functional.

The **evaluation phase** consists of two parts: formative and summative. *Formative evaluation* is present in each stage of the ADDIE process. *Summative evaluation* consists of tests designed for domain specific criterion-related referenced items and providing opportunities for feedback from the users.

ARCS Model

The ARCS model (created by J. Keller, 1983) – ***A**ttention, **R**elevance, **C**onfidence and **S**atisfaction* - is an instructional design approach that focuses on the motivational aspects of learning environment having **two major parts**:

- **The first** is a set of categories representing the *four components of motivation: arousing interest*, *creating relevance*, *developing an expectancy of success*, and *producing satisfaction through intrinsic/extrinsic rewards.*
- **The second** part of the model is a *process that assists instructional designers in creating appropriate motivational elements for the intended learners.*

ARCS categories are following:

Attention	Relevance	Confidence	Satisfaction
. Perceptual arousal . Inquiry arousal . Variabil	.Goal orientation .Motive matching .Familiarity	.Learning requirements .Success opportunities .Personal control	.Intrinsic reinforcement .Extrinsic rewards .Equity

ity			

The ARCS motivational design process is a systematic problem solving approach that requires knowledge of human motivation and progresses from learner analysis to solution design and includes:

- Knowing and identifying the elements of human motivation,
- Analyzing audience characteristics to determine motivational requirements,
- Identifying characteristics of instructional materials and processes that stimulate motivation,
- Selecting appropriate motivational tactics, and
- Applying and evaluating appropriate tactics.

Thus, motivational design includes a systematic process that contains these steps and results in the preparation of learning environments that contain tactics, or activities, that have a predictable influence on the amount and direction of a person's behavior. Motivation consists of the amount of effort a person is willing to exert in pursuit of a goal; hence, motivation has magnitude and direction. Consequently, motivational design is concerned with connecting instruction to the goals of learners, providing stimulation and appropriate levels of challenge, and influencing how the learners will feel following successful goal accomplishment, or even following failure.

ASSURE Model

The ASSURE (Heinch, Molenda, Russell, Smaldino (1996)) model incorporates Robert Gagne's events of instruction and emphasizes:

- Teaching to students with different learning styles and
- Constructivist learning where students are required to interact with their environment and not passively receive information

The ASSURE model is helpful for designing courses using different kinds of media. This model assumes that instruction will not be delivered using lecture/text book only. It allows for the possibility of incorporating out-of-class resources and technology into the course materials. This model is especially helpful for instructors designing online courses.

The acronym ASSURE means:

A — *Analyze learners*

- General character
- Specific entry competencies
- Learning Style

„First, ASSURE starts with looking at the learner in detail. Nothing we plan or design is effective, unless we have taken the time to look at the learners. Teachers must assess their students' knowledge and skills prior to instruction to ensure that they differentiate instruction. That means that by understanding where the learners are at the start of instruction, a teacher will make every effort to assist all learners to be successful in their learning endeavors." (S.Smaldino, 2008)

S — *State standards & objectives*

- Learning outcomes
- Conditions of performance
- Degree of acceptable performance

S — *Select strategies, technology, media & materials*

- Select available materials
- Modify existing materials
- Design new materials

The educational developers should to „know the intended outcomes or expectations. No instruction should begin without everyone having a clear understanding of what is supposed to happen in the instruction. This does not preclude the possibility of additional learning taking place, but without a road map, some of your learners may well be "lost." Learners need to know what they are to do" and we „cannot assess learning without knowing what was expected." (S.Smaldino, 2008)

U — *Utilize technology, media & materials*

- Preview the materials
- Prepare the materials, environment
- Provide the learning experience

R — *Require learner participation*

- In-class and follow-up activities so learner can process the information

E — *Evaluate & revise*

- Before, during and after instruction
- Assess learner, media methods

„Once we have completed the design and instruction and gathered the data about the outcomes and impressions from our learners, we need to take the time to consider what went well and what could be changed in that particular instructional event. This information will help us re-design that instructional event for future opportunities. But, this information also guides we on how to better address our learners in instruction beyond this particular instructional event." (S.Smaldino, 2008)

The ASSURE model is an ISD (Instructional Systems Design) process that was modified to be used by teachers in the regular classroom. The ISD process is one in which teachers and trainers can use to design and develop the most appropriate learning environment for their students. We can use this process in writing our lesson plans and in improving teaching and learning.

References:

Keller, J., (1983), *Motivational design of instruction*. In C. Riegeluth (ed.), Instructional Design Theories and Models. Hillsdale, NJ: Erlbaum.

Merrill, M. D., Drake, L., Lacy, M. J., Pratt, J., & ID2 Research Group, 1996. *Reclaiming instructional design*. Educational Technology, 36(5), 5-7

Rummler, G. A., & Brache, A. P. (1995). *Improving performance: How to manage the white space on the organization chart* (2nd ed.). San Francisco: Jossey-Bass Publishers.

http://www.nwlink.com/~donclark/perform/process.html

http://www.slideshare.net/msquareg/comparing-instructional-design-models